The St. Louis Metropolitan Re-Employment Project: An Impact Evaluation

Research and Evaluation Report Series 93-B

U.S. Department of Labor
Robert B. Reich, Secretary

1993

THE ST. LOUIS METROPOLITAN RE-EMPLOYMENT PROJECT: AN IMPACT EVALUATION

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OVERVIEW

Title III of the Job Training Partnership Act of 1982 (JTPA) authorized states to establish employment and training programs for dislocated workers -- skilled, experienced workers who, upon layoff from their job, are likely to have trouble finding a comparable new job because of weak demand for their skills in their local labor market. This study evaluates the net impacts of one such Title III program -- the Metropolitan Re-Employment Project (MRP) of St. Louis, Missouri -- on the employment and earnings of its program participants.

More specifically, the purposes of the study are threefold:

- To estimate the net impacts of a selected JTPA Title III program on participants' subsequent earnings, receipt of unemployment insurance (UI) benefits, and reemployment.

- To differentiate these impacts by the types of services which program participants received, ranging from basic job-search assistance to classroom and on-the-job training.

- To estimate how these program impacts vary over time.

The analysis compared outcomes for a treatment group comprised of the 1,195 clients served at MRP during program year 1987 with those for a comparison group comprised of 1,114 randomly selected St. Louis area residents who filed for unemployment insurance (UI) claims over a comparable period, but who did not receive MRP services. The primary source for data on these sample members' characteristics and their employment and earnings was state UI records, supplemented by telephone interviews conducted by Abt Associates Inc. and MRP program records.

Previous evaluations of dislocated worker programs leave several policy questions unanswered. The current evaluation, combined with the results of previous studies, will enhance policymakers' understanding of the potential net impacts of programs designed to increase earnings, reduce receipt of UI benefits, and improve reemployment prospects of dislocated workers. Like previous dislocated worker studies, the current study employed a relatively short analysis follow-up period (approximately eight quarters following initial UI claim). This study, however, makes an effort to overcome the relatively short analysis period by developing and analyzing alternative time frame specifications of the data. The significance of these alternative time frames is not that they provide different conclusions about the impact of dislocated worker programs than the other studies, but rather, that they enhance our understanding of the timing of program impacts.

TIME FRAME SPECIFICATION

In analyzing the net impact of dislocated worker programs, one must recognize that some program participants may spend months in training during a period when comparison group members may have sought and found a job. The employment and earning patterns of treatment and comparison group members will, therefore, differ with program participants likely to exhibit longer initial unemployment spells and lower initial earning levels than comparison group members. In other words, if a training program has a positive effect on its participants' later employment and earnings, that effect is not likely to appear immediately upon exit from the program.

This study attempted to estimate the longer term effects of MRP participation on clients' subsequent employment and earnings through three alternative specifications of the time frame for the analysis, each based on a different starting point:

- the date of the initial UI claim (the claim-referenced time frame);
- the date of exit from the MRP program (the program-referenced time frame); and
- the approximate date of reemployment (reemployment-referenced time frame).

The claim-referenced time frame has often been used in evaluations of program impacts; the other two specifications were developed for this study.

In the claim-referenced time frame, employment and earnings outcomes are measured for each sample member in a series of quarters starting with the first full calendar quarter following his or her initial UI claim date. The advantage of this approach is that it measures impacts as soon as they may start taking effect; its disadvantage is that it does not account for differences resulting from the fact that some treatment group members are not employed because they are engaged in training.

In the program-referenced time frame, outcomes are measured for each sample member over three stages. The first, the pre-program period, is defined for both MRP and comparison group members, as the period prior to the initial UI claim. The second stage, the in-program period, is defined for MRP members as the period between the initial UI claim date and the MRP program termination date, and for comparison group members (who obviously did not have an MRP termination date) as the period between the initial UI claim and a date approximating each members' likely termination date from the program had he or she entered the program. The third stage is the post-program period, defined as the period after exit from MRP for each MRP group member, and as the period after the approximated exit date for each comparison group member. The advantage of the program-referenced approach is that it

explicitly identifies both the point of entry into the program and the point of exit from the program; it does not, however, allow us to differentiate program impacts from the point of reemployment.

In the reemployment-referenced time frame, employment and earnings outcomes are measured for each MRP group member in a series of quarters starting with the first quarter following exit from the program (since most MRP participants were or became employed upon their exit). For comparison group members the reemployment point was approximated as the first full quarter without UI activity. The advantage of this approach is that it captures earnings for both groups starting with the point at which members of each group were likely to begin receiving earnings.

THE IMPACT MODEL

The model developed to evaluate the MRP program (see Chapter 5) attempted to isolate program impacts on earnings from those on employment. Both the earnings and employment regressions were calculated under all three of the time frame specifications outlined above. The model controlled for differences between MRP and comparison group members by including such observable characteristics as gender, age, and ethnicity; to control for potential unobservable differences, it included prior earnings (i.e., earnings in the quarter before the initial UI claim). To isolate the effect of the type of MRP service received, the model incorporated six program service variables:

- MRP member but not enrolled in JTPA;
- received job-placement services only;
- received job-placement services and job-search assistance only;
- received on-the-job training only;
- received classroom training and other services;
- received some other mix of services.

Finally, to investigate the impact of timing in the provision of program services, the model included a variable that measured the time elapsed between the initial UI claim and MRP entry and another variable that measured the length of time enrolled in the program.

IMPACT ON EARNINGS

Using the claim-referenced time frame, we found substantial differences in program impacts on earnings over time (see Chapter 6). Over the first four quarters (following the initial UI claim), MRP group members as a whole had average earnings $944 less than those of the comparison group. Over the next four quarters, MRP group members as a whole earned on average $2,028 more than comparison group members. These results reinforce the importance of the length of the follow-up period in evaluations of dislocated worker programs. Measured over a one-year period, the results indicate a negative program impact on earnings. Measured over a longer period, the impact is strongly reversed.

The findings under the program-referenced time frame present a somewhat different picture, however. During the first year after exit from the program, MRP program impacts in general are positive. However, those MRP members not enrolled in JTPA and those receiving placement services and job-search assistance only experienced negative earnings impacts. A more detailed analysis of quarterly earnings during the first year after exit from the program reveals inconsistent quarterly earnings impacts.

The findings under the reemployment-referenced time frame analysis yielded results for the first year (after the approximate reemployment point) that were similar to the results obtained using the program-referenced time frame; that is, MRP program impacts were in general positive (except for those MRP members not enrolled in JTPA and those receiving placement services and job-search assistance only). The largest positive impacts were found for those MRP members receiving the most intensive services (on-the-job training and classroom training). Holding other factors constant, those receiving classroom training earned $4,137 more than comparison group members in the year following program exit; those receiving on-the-job training experienced a greater program impact -- $6,043 for the year following program exit.

The quarterly results obtained under the reemployment-referenced approach, however, were quite different from the results obtained using the program-referenced time frame. Unlike the inconsistent impacts found above, each of the six service categories examined under the reemployment-referenced approach revealed a time pattern of program impacts. Some categories started off with negative earnings impacts in early quarters, becoming positive and increasing in later quarters (e.g., placement services only, placement and job-search assistance, and other services). Other categories had a positive and generally increasing impact over time (classroom training and on-the-job training). Only a single category -- MRP members not enrolled in JTPA -- experienced consistently negative earnings impacts in the four quarters following reemployment.

All told, impact results derived from program-referenced and reemployment-referenced specifications reinforce the results obtained using the claim-referenced specification. The significance of the two alternative time frames, however, lies in the information they provide about the timing and trend of program impacts, supplying policymakers with an indication of the potential program impacts over the longer run.

Since early intervention is an important feature of the recently passed EDWAA program, we incorporated into our regression analyses indicators of the impact of early intervention. Specifically, we incorporated into the regressions a measure of elapsed time between UI claim and MRP entry as well as a measure of the length of time in the MRP program. The results indicated that the longer the elapsed time between UI claim and MRP entry, the lower were subsequent earnings; also, the longer the MRP in-program period, the lower were subsequent earnings. While these results are suggestive, caution should be exercised in reaching conclusions about the importance of early intervention. Such caution is warranted due to the potential for selectivity-bias to effect the results.

IMPACT ON UI BENEFITS RECEIPT

An analysis of receipt of UI benefits indicated that, during the first year following the initial UI claim, MRP group members collected more benefits than comparison group members (see Chapter 7). Among MRP group members over the same time period, those who received classroom training combined with other services collected substantially more in benefits than any other subgroup; specifically, holding other factors constant, this subgroup collected on average $2,154 more than the comparison group (over the year following the initial UI claim). Other MRP participant subgroups collected between $90 and $549 more in UI benefits than the comparison group over this period. One exception to this pattern was found for the subgroup receiving on-the-job training; this subgroup collected $267 less in UI benefits than the comparison group over the same period. Measured over the second year following initial claim, these impacts are reversed -- MRP participants in all categories collected less in UI benefits than comparison group members.

The finding that the MRP group collected higher UI benefits during the first year following initial UI claim suggests that program participation may have delayed reemployment for MRP participants relative to the comparison group. On the other hand, the finding that the MRP group collected lower UI benefits during the second year suggests that MRP participants may have experienced greater long-term employment stability relative to the comparison group.

IMPACT ON REEMPLOYMENT

Survey data, collected approximately 21 months following the initial UI claim date, were used to analyze program impacts on reemployment. These survey data provided information on employment periods of MRP and comparison group members. Using these data, we constructed a measure of the proportion of the follow-up period not employed for each group member that was surveyed. Analysis of this measure indicated that, on average, those MRP members assigned to on-the-job training experienced a substantially lower proportion of the follow-up period without employment than comparison group members. On the other hand, those assigned to classroom training experienced a higher proportion of time without employment. Other service categories were similar to the comparison group in the proportion of time without employment.

CONCLUSION

In this study, we evaluated the Metropolitan Re-Employment Project and estimated its net impact on participants' earnings, receipt of UI benefits, and reemployment. While this net impact evaluation, based on a single site, cannot provide policymakers with national impact estimates of Title III programs, it can provide important information on program operations and impacts.

Previous studies of dislocated worker programs have used a variety of study designs, analysis techniques, and time frames. A common feature of all of these studies, however, is their relatively short analysis follow-up period. Partly as a result of the relatively short follow-up periods, previous studies have yielded conflicting and inconclusive results on the impact of training programs on dislocated workers. Some studies found that training had a positive effect on employment and earnings, while other studies found the reverse.

In this study, we make an effort to overcome a relatively short analysis period by developing and analyzing alternative time frame specifications of the data. It is hoped that the methodology developed in this study will provide a framework and an impetus for further refinements in the evaluation of dislocated worker programs.

CHAPTER 1

BACKGROUND

OVERVIEW

Dislocated workers form a distinct part of the larger population of the unemployed: they are skilled, experienced workers who, upon their layoff, find little demand for their skills in the local labor market or few prospects for reemployment at a wage comparable to their pre-layoff rate. For more than a decade now, a variety of transformations in the U.S. economy have contributed to the nature and extent of the problem of worker dislocation: technological change, shifts in labor demand from the manufacturing to the service sector and from blue-collar to white-collar jobs, and plant closings.

Title III of the Job Training Partnership Act of 1982 authorized states to establish employment and training programs for these dislocated workers to reduce the duration of their unemployment spells and to increase their wages at reemployment. As described in the next chapter, this study evaluates the net employment and earnings impacts of one such JTPA Title III program, the Metropolitan Re-Employment Project (MRP) of St. Louis, Missouri. The purpose of this chapter is to offer background on dislocated workers in the United States; the Title III programs serving them; and evidence from previous research on the effects of these programs on such outcomes as the duration of the unemployment spells, the receipt of unemployment insurance benefits, and earnings.

DISPLACED WORKERS

For statistical purposes the U.S. Bureau of Labor Statistics defines displaced workers as those persons who have lost their jobs because of "plant closings, slack work, or position or job abolished, and who had three years or more of tenure on the job they lost".[1] The size of the displaced worker population nationally has been measured in biannual supplements to the Current Population Survey in January 1984, 1986, 1988 and 1990.

The 1984 and 1986 surveys found that 5.1 million workers (20 years old and older) who had three or more years of tenure at their jobs had been displaced over the five-year period prior to each survey. Eliminating the three-year tenure requirement from the definition raised the number of displaced workers, in the 1986 survey, to 10.8 million over the same period. The

[1]See Francis Horvath, "The Pulse of Economic Change: Displaced Workers of 1981-1985," *Monthly Labor Review,* June 1987, pp. 3-12.

1988 survey presented a more positive picture, however.[2] The number of displaced workers in the five-year period prior to the survey had declined to 4.6 million (from 5.1 million in 1986 and 1984) and their rate of reemployment at the time of the survey had risen to 71 percent, 4 percentage points higher than the rate in 1986 and 11 points higher than that found in 1984.

Although the overall picture may have improved, obviously many Americans continued to experience substantial difficulties resulting from displacement. For example, 40 percent of the displaced workers surveyed in 1988 were unemployed for more than six months following their job loss; and of the 62 percent who received unemployment insurance (UI) benefits, about half had exhausted those benefits. The 1988 survey also found that about one in six displaced workers moved to another city or county to find work. Those who moved were more likely to be unemployed (81 percent) than those who stayed (70 percent). And although more than half of those who were reemployed at the time of the survey were earning as much as or more than they earned before their displacement,[3] nearly one-third were earning 20 percent or more below their pre-layoff earnings.

The 1990 survey found some continuing improvements. Over the five years from January 1985 to January 1990, 4.3 million workers with at least three years' job tenure were displaced, among a total, without the tenure restriction, of 9.2 million displaced workers. The results on reemployment rates and earnings at the new jobs showed only a slight improvement over the 1988 results, however.[4]

JTPA PROGRAMS FOR DISPLACED WORKERS

In 1983 the Job Training Partnership Act (P.L. 97-300) replaced the Comprehensive Employment and Training Act (CETA) as the nation's primary employment and training program. Passage of JTPA in late 1982 marked a major shift in the federal government's approach to employment and training services. Whereas CETA had focused in large measure on public service employment, JTPA placed much greater emphasis on training for private sector jobs and on specific program performance standards. The new law also shifted much of the authority and responsibility for program performance among the parties involved in providing

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[2]This survey covered the five-year period from January 1983 to January 1988. See Diane E. Herz, "Worker Displacement in a Period of Rapid Job Expansion: 1983-87," *Monthly Labor Review*, May 1990, pp. 21-33.

[3]This comparison includes only those who were employed in full-time wage and salary jobs both before and after their dislocation.

[4]U.S. Department of Labor, Bureau of Labor Statistics, "News Release," July 17, 1990.

services. The provisions of JTPA are divided into five Titles; Title III of JTPA targets dislocated workers.

Title III Provisions. Title III, "Employment and Training Assistance for Dislocated Workers," authorizes the Department of Labor to disburse funds to state governments for programs to meet the reemployment needs of dislocated workers, through:

- training,
- job-search assistance and job-search training,
- supportive services such as counseling,
- pre-layoff assistance,
- programs with employers or labor organizations, and
- relocation assistance.

Three-quarters of Title III funds were to be allocated to the states based on a formula that reflected the extent of unemployment and long-term joblessness in each state, with states required to match these funds with funds from nonfederal sources. The remaining one-quarter was retained in the National Reserve Account of the U.S. Secretary of Labor for funding special projects in response to mass layoffs, natural disasters, federal government actions, and areas of high unemployment in designated enterprise zones.

The Title III legislation (Section 302 of JTPA) defines individuals eligible for services as workers who:

- have been terminated or laid off or have received notice of termination or lay-off from employment, are eligible for or have exhausted their entitlement to unemployment compensation, are unlikely to return to their previous industry or occupation; or
- have been terminated or who have received a notice of termination of employment as a result of any permanent closure of a plant or facility;
- are long-term unemployed and have limited opportunities for employment or reemployment in the same or similar occupation in the area in which such individuals reside, including any older individuals who may have substantial barriers to employment by reason of age; or

- are self-employed (including farmers) and are unemployed as a result of general economic conditions or because of natural disasters.

Title III in Operation. Table 1.1 summarizes national data on Title III program performance and costs in program years (PY) 1987 and 1988, a period that subsumes the time frame of our analysis. As shown, during PY 1988 (July 1, 1988 to June 30, 1989) 207,201 dislocated workers participated in Title III programs, an 11.4 percent increase over the number in PY 1987. Among terminees (that is, those who exited from the program) in PY 1988, the average length of program participation was 21 weeks, and average employment rate upon exit was 69 percent. Among those who were employed or who became employed upon exit, the average hourly wage was $7.54

Although Title III programs are often thought of as retraining programs for dislocated workers, classroom occupational skills training has been less prevalent than originally anticipated. The single most prevalent type of service provided has been job-search assistance. According to Job Training Quarterly Survey (JTQS) data for PY 1988, for example, enrollees in Title III programs were assigned to services in the following proportions:

- job-search assistance, 34 percent,
- classroom occupational skills training, 30 percent,
- on-the-job training, 20 percent, and
- other services (such as vocational and personal counseling), 16 percent.[5]

This mix of program services is only roughly reflected in the breakdowns of program costs shown in Table 1.1. Three-quarters of all accrued Title III costs in PY 1988 went to training (classroom and on-the-job) , while 6 percent went to supportive services (which tend to be less expensive than training), with the remainder allocated to administration.

[5]The Job Training Quarterly Survey is an ongoing data collection effort conducted by the U.S. Bureau of the Census (under contract to the U.S. Department of Labor) and reported by Westat, Inc.

Table 1.1 **Selected National Summary Statistics on JTPA Title III Program Performance and Costs for Program Years 1987 and 1988**

	PY 1987	PY 1988
Program Performance		
Number of Participants	186,052	207,201
Number of Terminations	129,984	134,978
Average Length of Participation (in weeks)	22	21
Number Entered Employment upon Termination	91,591	93,595
Entered Employment Rate among Terminees	70	69
Average Hourly Wage upon Termination[a]	$7.11	$7.54
Program Costs		
Total Accrued Costs for Training	$176,322,874	$252,929,170
Accrued Costs for Training	$144,254,315	$190,348,259
Training Costs as Percent of Total Costs	82	75
Accrued Costs for Support	$8,155,325	$13,742,098
Support Costs as Percent of Total Costs	5	6
Total Administrative Accrued Costs	$23,913,234	$48,838,813
Administrative Costs as Percent of Total Costs	14	19
Cost per Participant	$948	$1,221
Cost per Trainee Entering Employment	$1,925	$2,702

Sources: U.S. Department of Labor, Employment and Training Administration, "Summary of Title III Program Performance for Program Year 1987" and "Summary of Title III Program Performance for Program Year 1988," memoranda (Washington, D.C. 1988, 1989).

a. Average calculated using only those terminees employed upon exit.

Title III Program Participants. Table 1.2 presents selected characteristics of Title III program terminees in PY 1987 and PY 1988. As shown, the averages for specific characteristics remained relatively stable over the two years. Around 60 percent of terminees were male and 40 percent, female. Relatively few terminees were in the younger or older age brackets; while 88 percent fell in the 22- to 54-year-old category. By ethnicity the population of Title III terminees was 71 percent white, 17 percent African American, 9 percent Hispanic, and 3 percent other. Around half of all terminees in the two program years were receiving UI benefits and a majority had been unemployed for fewer than 15 weeks during the half-year preceding their enrollment; only 3 percent in PY 1988 were defined as not in the labor force.

Recent Legislation Affecting Title III Programs and Participants. The recently passed Economic Dislocation and Worker Adjustment Assistance (EDWAA) legislation and the Worker Adjustment and Retraining Notification (WARN) Act have altered the nature of JTPA Title III services for dislocated workers. Neither of these was in effect during the period when the treatment group for our evaluation was receiving services, PY 1987, and so our results apply only to Title III program operations under the delivery system in place at that time. Nevertheless, since early intervention was an important goal at MRP, our research site, our analysis may provide some insights on the potential impact of provisions in the new legislation that promote early intervention.

The EDWAA program was established by Subtitle D of Title IV of the Omnibus Trade and Competitiveness Act of 1988. This legislation amended Title III to provide for a new service delivery system, a system of rapid response units, and several new approaches to serving dislocated workers. Passed in August 1988 and implemented on July 1, 1989 (PY 1989), the legislation addressed the concerns that many dislocated workers were unaware of services available under Title III, while many others were not receiving services sufficient to prepare them for a new career. Of particular concern was evidence of delay in program responses to plant closings and mass layoffs.[6] The experience of other countries, especially Canada's with its Industrial Adjustment Service, had demonstrated that prompt service delivery can be crucial to the success of dislocated worker programs.

EDWAA provisions were therefore designed to promote the initiation of services early in the dislocation--either before or shortly after layoffs take place. They were also designed to correct for some of the perceived causes of delay: slow allocation and funding procedures at the federal and state levels, as well as a fragmented organizational structure that had hampered local service delivery efforts. More specifically, EDWAA calls for:

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[6]See Task Force on Economic Adjustment and Worker Dislocation, *Economic Adjustment and Worker Dislocation in a Competitive Society* (Washington, D.C., U.S. Secretary of Labor, Task Force on Economic Adjustment and Worker Dislocation, December 1986).

Table 1.2: **Selected Characteristics of JTPA Title III Program Terminees in Program Years 1987 and 1988 (in percentage terms)**

Characteristic	PY 1987	PY 1988
Gender		
Male	62	60
Female	38	40
Age		
Under 22	4	4
22-54	88	88
Over 54	8	8
Ethnicity		
White	72	71
Black	17	17
Hispanic	9	9
American Indian	1	1
Asian or Pacific Islander	2	2
Unemployment Status		
Unemployment Insurance Claimant	53	47
Unemployed 15 or More Weeks during the 26 Weeks Preceding JTPA Enrollment	42	42
Not in the Labor Force	n.a.[a]	3
Number of Terminees	129,984	134,978

Sources: U.S. Department of Labor, Employment and Training Administration, "Summary of Title III Program Performance for Program Year 1987" and "Summary of Title III Program Performance for Program Year 1988," memoranda (Washington, D.C. 1988, 1989).

a. Not available.

- the elimination of matching;
- the establishment of substate areas;
- improved coordination among labor, management, and government; and
- greater emphasis on long-term quality training.

The WARN Act, also enacted in August 1988, requires (with certain exceptions) that employers with 100 or more employees give at least 60 days' notice of a plant closing that will affect 50 or more full-time workers. The act mandates a notice of layoffs expected to last six months or longer and to affect at least one-third of the work force (or at least 500 workers). Since it went into effect, WARN has enhanced service providers' ability to identify dislocated workers before their layoff, thereby complementing EDWAA's rapid response provisions.

EVIDENCE FROM PREVIOUS EVALUATIONS OF DISLOCATED WORKER PROGRAMS

Previous studies have evaluated the impact of programs for dislocated workers on their later employment and earnings. Four studies were selected for review here because they are particularly relevant to this study. The following subsections briefly describe each study and its findings, concluding with a summary of their collective implications for the current analysis.

The Downriver Program. The Downriver Community Conference Economic Readjustment Program was the first large-scale employment and training program for dislocated workers in the United States. A program operating between July 1980 and September 1983 (essentially before JTPA Title III went into effect), the Downriver program served some 2,100 automotive supply and assembly workers laid off from plants in the Detroit area over that period.

In an evaluation of the Downriver service delivery approach and its impact on participants' post-program employment and earnings,[7] Abt Associates Inc. constructed an analysis sample of 1,800 workers laid off from six similar auto industry plants in the area. Workers from three of the plants participated in the Downriver program (the treatment group), while those in the other three served as the comparison group.

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[7]Kulik, J., D.A. Smith, and E. W. Stromsdorfer, *"The Downriver Community Conference Economic Readjustment Program: Final Evaluation Report"* (Cambridge, Mass., Abt Associates, Inc., September 1984).

Findings from the study indicated that involvement by both labor and management in recruiting program participants resulted in high participation rates. Program participants were found to have a higher average number of weeks employed after layoff than nonparticipants. Their average weekly earnings in the follow-up period were also higher than those of comparison group members. Most of the earnings impact, however, was attributable to more employment (number of weeks employed) among program participants than comparison group members, as opposed to higher wages or more hours worked on a weekly basis.

The study also investigated the relative impacts of classroom occupational skills training -- a costly program component -- versus job-search assistance, a less expensive alternative. The analysis found no evidence to conclude that classroom training improved reemployment outcomes beyond the outcomes achieved with job-search services alone. This finding, however, may have been due to the small sample sizes and the short follow-up period.

The Buffalo Demonstration. Following the start of the Downriver project, the U.S. Department of Labor, with assistance from Abt Associates Inc., designed seven related demonstrations to test alternatives to the Downriver approach under a wide range of operating conditions.[8] Mathematica Policy Research, Inc., conducted a process and implementation analysis for all seven projects; its impact evaluation, however, was limited to a single site: Buffalo, New York.[9]

The Buffalo Worker Reemployment Demonstration was instituted to serve workers laid off in the Buffalo area during 1982. The program focused on nine area employers (mostly in the steel and automobile industry) who laid off approximately 8,000 workers during 1982. Seventy percent of the program slots were reserved for these firms and the remaining slots were reserved for other area workers who were laid off after 1980. In six of the nine plants, these program slots were rationed through a lottery that generated randomly selected treatment and comparison groups to be used in the evaluation. In the remaining three targeted plants, as well as in the non-targeted area plants, random selection into treatment and comparison groups was not possible, and so the final study design assigned to the comparison group individuals who applied to the program too late for inclusion in the designated slots. The resulting study sample comprised roughly 1,500 dislocated workers under age 55 who had been laid off since 1978.

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[8]Six of the demonstrations were funded by the Department of Labor (DOL) and the seventh, by state and private sources.

[9]Corson, W., S. Long, and R. Maynard, *"An Impact Evaluation of the Buffalo Dislocated Worker Demonstration Program"* (Princeton, N.J.: Mathematica Policy Research, Inc., March 1985).

The main findings of the Buffalo demonstration were that:

- the dislocated workers studied eventually became reemployed on their own (after 14 to 15 months of unemployment);
- earnings at the reemployment jobs were substantially lower than at the pre-layoff jobs;
- only a minority (20 percent) of the dislocated workers recruited to the program, chose to participate (which may have been due to the long average period of time between layoff and program recruitment); and
- job-search assistance and classroom training services were found to significantly increase the proportion of time that participants were employed during the post-program period. On-the-job training, on the other hand, did not have a significant impact on this outcome.

In general, the findings of this study were similar to the findings of the earlier Downriver study. The main difference was in the finding on the net impact of training. The Buffalo study found a positive, significant effect on employment attributable to classroom training, whereas the Downriver study found no classroom training impacts on employment beyond those achieved by job-search assistance services alone.

The Texas Demonstration. The Texas Department of Community Affairs with assistance from Abt Associates Inc., designed a controlled experiment to test the applicability of a two-tier, sequenced model of service delivery for dislocated workers. The basic premise for the model was that most dislocated workers could be reemployed through job-search assistance alone, so that the more costly services need be provided only to those who failed to find a job through the less costly approach. This Texas Worker Adjustment Demonstration (WAD) was operated as an experiment within the state's existing JTPA Title III program at three sites during PY 1984 and PY 1985.[10]

A major goal of the study was to measure the net and differential impacts of the two service paths on dislocated workers' reemployment, earnings, and receipt of UI benefits. The study sample comprised 2,250 dislocated workers at the sites, who were randomly assigned to one of three options:

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[10]Bloom, Howard and Jane Kulik, *"Evaluation of the Texas Worker Adjustment Demonstration: Final Report"* (Cambridge, MA, Abt Associates Inc., July 1986).

- Tier I -- job-search assistance only;
- Tiers I and II -- job-search assistance with potential referral to classroom or on-the-job training; or
- Control status -- not eligible for Title III services.

Data on employment and earnings were collected for four quarters following random assignment, while data on UI benefits receipt covered a period of 30 weeks from random assignment.

The principal findings of the study were:

- Program participants experience short-run positive impacts on their earnings. The impact was statistically significant among women in the first and second quarters following random assignment; among men it was so only in the second quarter.
- The program appeared to expedite some individuals' initial reemployment. Among women, the impact on reemployment was significant in post-assignment quarters (one, two, and three) but among men no significant impacts were found.
- UI benefits received during the post-assignment period were lower among those receiving program services (tiers I and II) than among the control group.
- Program impacts overall were more pronounced and more consistent among women than among men.
- Tier II services did not appear to produce differential impacts beyond the net impacts of tier I services.
- Program-induced earnings gains for four quarters after random assignment were $790 for men and $890 for women (only the results for women were statistically significant).[11]

As noted above, adding classroom occupational skills training to job-search assistance did not appear to increase program effectiveness. In fact, job-search assistance alone appeared to be more effective. One reason for this is the delay in job search and reemployment necessary for those who participated in skill training. Another is that training offered by the Title III program was not appropriate to the needs and interests of the participants. The target group at

[11] The results were significant at the 0.025 level in a one-tailed test.

the three participating sites was largely composed of former petrochemical workers who had been highly paid, whereas the training offered was primarily technical or vocational in nature.

The researchers concluded that job-search assistance alone may be as effective as a combination of services that incorporates training with job-search assistance. They cautioned against over-generalizing the results of the study, however, because of the mismatch between the participants' interests and skills and the type of training offered. Based on these observations, the researchers recommended that future skills training be provided to fewer, more carefully screened participants.

The New Jersey UI Demonstration. The New Jersey Unemployment Insurance Reemployment Demonstration was designed to test whether the UI system could be used to identify dislocated workers early on and to provide them with alternative services to accelerate their return to work. Those services were provided through coordinated efforts of the states' UI, JTPA, and employment service systems. Mathematica Policy Research, Inc., conducted the demonstration with sample selection taking place between July 1986 and June 1987.[12]

Ten local UI offices participated in the project, targeting services to those claimants likely to have trouble finding a job. More specifically, to be eligible for demonstration services, claimants had to have been employed by their previous employer for at least three years; to have been dismissed without a definite recall date; and to be at least 25 years old. The eligible population was then randomly assigned to treatment or control groups. The 2,385 claimants in the resulting control group received existing services only, whereas the 8,675 claimants in the resulting treatment group were randomly assigned to one of the three treatment streams:

- job-search assistance only,
- job-search assistance combined with training or relocation assistance, or
- job-search assistance combined with a cash bonus for early reemployment.

Participants were required to report for job search workshops; otherwise they could be denied UI benefits.

One main conclusion of the study was that the service delivery model was implemented as designed. Eligible claimants were, for the most part, correctly identified and provided services early in their unemployment spell. The findings suggested, however, that some who

[12]Corson, Walter, et al., *"The New Jersey Unemployment Insurance Reemployment Demonstration Project"* (Princeton, N.J., Mathematica Policy Research, Inc., 1989).

were screened out of the demonstration might have been good candidates for special reemployment services, whereas others who were included in the demonstration found reemployment readily and might not have required special services to accelerate their return to work.

Regarding impact findings, members of all three treatment streams received, on average, lower levels of UI benefits than control group members: $87 less among those in the first stream; $81 less in the second; and $170 less in the third.[13] The treatment group also had higher average employment and earnings levels in the year following the initial UI claim. The gains in earnings were largest in the first two quarters following the claim. Furthermore, these short-term gains in employment and earnings appeared to have been primarily the result of the early job-search assistance, as opposed to the additional training and reemployment bonus offer.

A later report based on data collected over a longer follow-up period -- ten quarters past the initial UI claim -- appeared to alter the conclusion on the impact of training, however.[14] Those data indicated that both classroom and on-the-job training produced higher earnings among trainees than among members of the control group or the job-search assistance-only treatment subgroup. Nevertheless, although this finding was statistically significant, only a small number of the study sample participated in classroom training (314) and on-the-job training (45).

Implications for the Current Study. Like the current evaluation, all four of the previous studies had as their main goal determining the impact of a program for dislocated workers on the subsequent employment and earnings of program participants. The primary differences between the current study and the earlier ones are in the design of the evaluation, the design of the service delivery system, and in the length of the follow-up data collection.

Although two of the previous studies -- the Downriver and Buffalo evaluations -- examined the effects of programs in place before JTPA Title III went into effect in 1983, those designs were not dissimilar from the general Title III program design. The Texas demonstration, on the other hand, tested the efficacy of a design that explicitly assigned program participants; some to job-search assistance only, and others to job-search assistance followed by skills training for those who did not find a job at the first stage. The last study, the New Jersey

[13]This reduction in UI benefits was measured over a benefit year. The study also considered the number of weeks of UI benefits receipt, the number of weeks in the first UI spell, and the UI exhaustion rate of claimants.

[14]Anderson, Patricia, et al., *"The New Jersey Unemployment Insurance Reemployment Demonstration Project--Follow-Up Report"* (Princeton, N.J.: Mathematica Policy Research, Inc., 1990).

demonstration experimented with a rapid response model that coordinated among the state's UI, JTPA, and employment service systems and assigned participants as in the Texas demonstration.

The dislocated worker studies presented above represent a variety of designs, analysis time frames, and program findings. A common feature of these studies, however, is the relatively short follow-up period available for analysis. The impact evaluation in these studies was typically based on the experience of sample members for the period covering approximately one year from random assignment (or initial unemployment spell).

This relatively short follow-up period presents analysis difficulties because Title III services, especially training services, may require more than a year to have an impact on outcomes such as earnings. The delay in measured program impacts may result from the fact that training may not start immediately after entry into the program; furthermore, training itself may take months to complete; finally, earnings immediately following the training program may start at a relatively low level -- especially if the training is for a new occupation. The combination of these factors makes it unlikely that an evaluation of the first year following random assignment (or initial unemployment) will indicate a significant positive effect for training services. This may explain the inconclusive (and sometimes negative) findings derived in previous studies on the impact of training for dislocated workers.

Another feature of previous studies is the relatively low take-up rates. That is, in many previous studies only a relatively small number of participants who were offered training actually received classroom training and/or on-the-job training. As a result, the impact of training would need to be quite large to be detected in regression analyses of treatment and control group differences. Low take-up rates, thus, may also explain the insignificant findings of previous studies.

By contrast to the above studies, the MRP program studied here was selected to be reflective of well-established Title III programs in operation during the fifth program year after JTPA went into effect. As explained in the next chapter, MRP staff used an individualized approach to assessing program participants and then assigning them to one or another of the full array of program services provided under Title III. The study design made no attempt to alter the normal service-assignment process. Furthermore, the present study analyzed program outcomes for a period of approximately two years following the initial UI claim. While this follow-up period is still relatively short, it represents an improvement over some of the previous studies.

CHAPTER 2

AN INTRODUCTION TO THE MRP EVALUATION

OVERVIEW

This chapter provides an introduction to the research objectives, study design, research site, and data sources employed in our evaluation of the Metropolitan Re-Employment Project (MRP). Later chapters describe MRP program services, the study sample, and the evaluation methodology in more detail.

RESEARCH OBJECTIVES

This study of MRP was designed to evaluate program impacts on participants' subsequent earnings, receipt of unemployment insurance (UI) benefits, and reemployment. For each of these outcomes, we examined both overall program impacts and the impact of particular program services, ranging from basic job-placement assistance to classroom and on-the-job training. More generally, the study was motivated by the following goals:

- To estimate the net impacts of a selected JTPA Title III program on participants' subsequent earnings, receipt of UI benefits, and reemployment.

- To differentiate those impacts by the types of services which program participants received, ranging from basic job-search assistance to classroom and on-the-job training.

- To estimate how those program impacts vary over time.

Although one cannot expect the results from a single research site to be representative of Title III programs, this study should enhance policymakers' understanding of the larger issues above, of previous evidence on the impact of Title III programs, and of more specific questions such as whether classroom training yields benefits beyond those of less expensive services.

STUDY DESIGN

The study design adopted for the present evaluation was a nonexperimental comparison sample approach. Under this approach, Abt Associates Inc. analyzed a treatment group of 1,195 clients served by MRP in PY 1987 (July 1, 1987 to June 30, 1988) and selected a comparison group of 1,114 St. Louis area residents who filed UI claims over a comparable period but who did not receive MRP services during that year. Issues of treatment-comparison group

comparability always attend the use of this approach; these issues are discussed in Chapter 4. Briefly, the two groups were quite comparable in measured characteristics.

One key feature of the evaluation methodology is worthy of note. First, in addition to the usual analysis time frame employed in dislocated worker studies -- one based on the point at which sample members made their initial UI claim (or were randomly assigned to services) -- we constructed two additional analysis time frames, each of which has different advantages over this claim-referenced approach. One time frame was based on the date of exit from the MRP program -- a program-referenced specification -- which has the advantage of measuring program impacts at a point after participants have completed their program activities and, unlike the claims-referenced approach—accounts for the fact that program participants are likely to remain unemployed until their exit from the program. The other alternative -- a reemployment-referenced approach has the advantage of capturing earnings impacts for both treatment and comparison groups starting at the point at which members of each group began receiving earnings after their layoff. We employed all three of these time frame specifications in the analyses of program impacts.

As described in the last section of this chapter, data on sample members' employment and earnings were obtained from Missouri UI records and from an Abt Associates telephone survey of the sample. Data on MRP program participation came from MRP program records. The period of data collection on UI claims extended for 19 quarters from 1985 to 1990, while data collection on earnings extended for 14 quarters from 1986 to 1989.

THE RESEARCH SITE

Because the evaluation design was limited to a single research site, the criteria for selecting the site were crucial. This section reviews our criteria for site selection, the characteristics of the local labor market at the site, and general program operations.

Selection Criteria. To develop criteria that would be as reflective as possible of Title III programs in place at the time, we analyzed data gathered by the National Governors' Association on Title III program characteristics. That analysis yielded the following criteria for site selection:

- Program environment -- The site should not reflect an exceptional environment; specifically, the local economic conditions should not be especially favorable or unfavorable. Programs located in areas with unemployment rates deviating more than two percentage points from the national average or exhibiting other extraordinary factors were not considered.

- Size -- The program had to be large enough to provide an adequate number of treatment group members. That is, at least 1,000 program participants during the given program year.

- Participant diversity -- Program participants should not come from one employer, but rather reflect a diversity of employers and occupations.

- Trade Adjustment Assistance (TAA) Program exclusion -- Program participants should not be engaged in programs funded through the TAA program, another federal program serving dislocated workers.

- Program design -- To permit the analysis of particular interest to policymakers, the study site should reflect a program design that emphasizes training over short-term placement services, targets specific plants as opposed to the generally eligible population, and represents a rapid response to layoffs.

An additional criterion was included to ensure that the study findings reflect steady-state operational impacts. Specifically, we sought a well-established site, one at which program operations were well stabilized -- neither starting up nor winding down. This requirement tended to eliminate projects funded by discretionary funds retained by the Secretary of Labor, which are generally short-term projects designed to address isolated cases of mass layoffs.

Site Description. Based on the above criteria, we selected the Metropolitan Re-Employment Project (MRP), a dislocated worker program operated by the St. Louis Community College in St. Louis, Missouri and supported primarily by JTPA Title III funding. MRP represented a stable, well-run program that had been in operation for over five years at the time of selection. Initiated in 1981, before passage of JTPA, the program was specifically designed to provide outplacement services to the large number of workers being laid off from the areas of steel, auto, and other heavy industries.

The St. Louis area had traditionally been a leader in auto manufacturing, with two Chrysler and two General Motors assembly plants and one Ford plant employing about 30,000 people as of the late 1970s. The aerospace industry and other transportation equipment manufacturing also accounted for a large number of workers at that time. Proximity to Illinois' steel manufacturing industries further increased the ranks of blue-collar workers. Furthermore, almost half of all St. Louis area employers had workers represented by unions; and labor unions on the whole in the area have traditionally had strong leadership.

The economic recession of the late 1970s and early 1980s and the decline of the domestic steel and auto industries had a dramatic impact on the area's labor force. While these industries were shrinking, others, such as instrument manufacture, printing and publishing, plastics

manufacture, air transportation, and services were expanding. Thus, at the time, the St. Louis area was undergoing substantial structural shifts in its economy, from declining manufacturing industries to service and high technology firms. With all these structural changes in the metropolitan economy, the economic growth rate from the mid-1980s to the beginning of 1989 was a robust 2.5 percent a year.

According to data from the Missouri Department of Employment Security, the unemployment rate in the St. Louis area had declined steadily from 1983 (10.7 percent) to 1989 (5.5 percent). During that same period employment increased steadily in the St. Louis, Missouri/Illinois Metropolitan Statistical Area (MSA), with total nonagricultural employment growing to 1,174,600 in 1989. Employment growth varied by industry, however. As indicated in Table 2.1, between 1988 and 1989, nonagricultural employment increased by 26,000 (2.2 percent), while manufacturing employment increased by only 0.7 percent and employment in "other commercial services" increased by 4.0 percent. This pattern of a growing service sector and a relatively steady (or declining) manufacturing sector was consistent in the St. Louis area throughout the 1980s.

Program Operations. Table 2.2 summarizes data on MRP Title III program operations in PY 1987. For reference, we also present comparable data on Title III programs nationally in that year. Nationally, Title III expenditures were $176 million in programs that served and terminated almost 130,000 clients. Seventy percent of the national Title III program terminees were or became employed upon their exit from the program, at an average wage rate of $7.11 per hour.

At the same time, MRP expended just over $900,000 dollars in serving 876 terminees.[15] Note that in every performance category, MRP exceeded not only the national results, but also goals the state established for MRP for PY 1987. For example, the MRP entered employment rate (defined as the proportion of program terminees who were or became employed upon their exit from the program) was 89 percent, substantially higher than the state's goal of 75 percent, as well as the actual national rate of 70 percent. Similarly, the average cost per client entering employment from MRP was $1,049, below the state goal of $1,349 and significantly below the national average of $1,925. The average hourly wage at placement for MRP clients was $8.31, again well over the state goal of $6.50 and the national average, $7.11.

[15]Annual Report, Program Year 1987 (July 1, 1987 through June 30, 1988), Metropolitan Re-Employment Project.

Table 2.1: Average Annual Nonagricultural Wage and Salary Employment in the St. Louis MSA, 1988-1989

Sector	1988	1989	Change (1988-89) Number	Change (1988-89) Percent
Total Nonagricultural	1,148,600	1,174,600	26,000	2.2
Construction and Mining	60,000	61,600	1,600	2.6
Manufacturing	222,600	224,100	1,500	0.7
Transportation and Public Utilities	75,000	76,700	1,700	2.2
Retail and Wholesale Trade	279,800	288,200	8,400	2.9
Finance, Insurance, and Real Estate	75,300	74,500	-800	-1.1
Other Commerical Services	294,700	307,100	12,400	4.0
Government	141,200	142,600	1,400	1.0

Source: Missouri Department of Employment Security Records.

Table 2.2: Summary Data on MRP and National JTPA Title III Program Operations, Program Year 1987

Performance Category	National	MRP Actual	State Performance Goal For MRP
Total Title III Expenditures	$ 176,000,000	$903,148[a]	$918,502
JTPA Clients Terminated	129,984	876	869
Clients Participating In:			
Job Search Assistance	n.a.	244	156
Vocational Training	n.a.	146	113
On-the-Job Training	n.a.	196	195
Positive Termination Rate	70%	89%	75%
Average Cost per Entered Employment[b]	$ 1,925	$ 1,049	$ 1,349
Average Hourly Wage at Placement	$ 7.11	$ 8.31	$ 6.50

Sources: MRP Annual Report (July 1, 1987 through June 30, 1988) and National JASR Reports.

a. Includes $174,712 matching funds from the state.
b. Measured as a percentage of total accrued program costs.

MRP also exceeded the state goals for providing specific services to clients. For example, the number of clients in job-search assistance and vocational training classes substantially exceeded the state goals. For on-the-job training, on the other hand, MRP met its target, with 196 placements.

A comparison of PY 1987 MRP terminees with national JTPA terminees in the same year is presented in Table 2.3. This comparison reveals several interesting results. MRP clients were more likely to be black (31 percent versus 17 percent) and in prime working age -- 22 to 54 (93 percent versus 88 percent), and have higher education levels than JTPA clients in general. Furthermore, a substantially higher proportion of the MRP clients are UI claimants (81 percent) than the national proportion (53 percent).

DATA SOURCES

The following subsections describe the three data sources employed in this evaluation:

- Missouri UI earnings records,
- MRP program records, and
- a follow-up telephone survey of MRP clients and comparison group members conducted by Abt Associates Inc. for this evaluation.

Missouri Records. The first source of data on members of the study sample was administrative records on UI claims maintained by the Missouri Department of Employment Security (MDES). Data on UI claims were collected for 19 quarters extending from July 1, 1985 to March 31, 1990; data on wages were collected for 14 quarters extending from July 1, 1986 to December 31, 1989.

These UI claims data were available for all 1,114 members of the comparison sample and for 1,006 of the 1,195 MRP clients. Our inability to obtain MDES records for the remaining 189 MRP clients served in PY 1987 may reflect a variety of scenarios. For example, these clients may not have been laid off during the data-request period, may have been laid off but found jobs quickly, or may not have filed a UI claim after layoff. Another possibility is that they may have moved out of state or have filed a claim under a different social security number (SSN).

The lack of UI claims data on these 189 clients would affect our analysis of MRP program impacts if the UI files obtained were actually incomplete, that is, if these clients actually collected UI benefits under a different SSN or collected UI benefits in another state and

Table 2.3: **Selected Characteristics of Title III Terminees from the MRP Program and from Programs Nationally, for Program Year 1987 (in percentage terms)**

Characteristic	MRP Title III Terminees	National Title III Terminees
Gender		
Male	63	62
Female	37	38
Ethnicity		
White	68	72
Black	31	17
Other	1	11
Age		
Under 22	1	4
22-54	93	88
Over 54	6	8
Education		
Less than 12 Years	8	17
High School Graduate	42	52
Some Post-High School	50	31
UI Claimant		
Yes	81	53
No	19	47
Number of Terminees	876	129,984

Sources: MRP Annual Report (July 1, 1987 through June 30, 1988) and U.S. Department of Labor, Employment and Training Administration, "Summary of Title III Program Performance for Program Year 1987", memorandum (Washington, D.C. 1988).

if the omitted cases differed systematically from the included ones. To investigate the last possibility, we compared the characteristics of the full MRP sample (1,195 clients) with the 1,006 MRP clients found in the MDES files. The results of this comparison presented in Table 2.4 suggest that the MDES subsample was quite similar to the total MRP sample on measured characteristics.

To determine whether the 189 unmatched individuals left the state we examined the UI wage file maintained by MDES,[16] which indicated that only 29 of the unmatched sample members had no wages reported in Missouri during this period.

Finally, we also examined national and state data on Title III programs to determine the proportion of Title III participants likely to be UI claimants. National Title III operating results for PY 1987 indicated that 53 percent of Title III terminees nationally were also UI claimants (DOL's National JTPA Title III data). In Missouri the proportion was 69 percent of Title III terminees. For our analysis sample, the comparable proportion was 86.6 percent. That is, out of 927 JTPA terminees from MRP during PY 1987, 803 filed a UI claim during the period from July 1987 to June 1988. Thus, MRP terminees filed UI claims in greater proportion than Title III terminees statewide or nationally. Based on these findings, we attributed zero UI benefits to the 189 individuals unmatched in the UI files, and zero earnings to the 29 individuals unmatched in the wage file, throughout the analyses conducted for the evaluation.

MRP Administrative Records. The second main source of data was the database MRP maintains on its clients and program operations. Much of the information contained in this file is required for JTPA administrative purposes and the operational needs of the program. For our purposes, we obtained data from this source on all of the 1,195 treatment group members, again on all those on MRP clients who received services between July 1987 and June 1988 (PY 1987), specifically[17]:

- the date they entered MRP;
- the date they enrolled in JTPA;
- the services they received from MRP;

[16]The UI wage file contains data on quarterly earnings for each individual, reported to the state by the employer.

[17]Appendix A contains a copy of MRP's eligibility assessment form.

Table 2.4: **Characteristics of the Full MRP Sample and the MRP Subsample with UI Claim Data (in percentage terms)**

Characteristic	Total MRP Group	MRP Group with UI Data
Gender		
Male	65.3	64.8
Female	34.7	35.2
Ethnicity		
White	65.4	64.2
Black	33.4	35.0
Hispanic	0.7	0.7
Other	0.5	0.1
Age		
Under 21	1.0	0.7
22-30	23.9	23.2
31-40	37.5	38.9
41-50	22.7	22.8
51-60	13.2	12.9
61-70	1.5	1.5
Over 70	0.3	0.1
Education		
Under 12 years	10.3	11.1
12 years	44.0	44.6
Over 12 years	45.6	44.2
Mean Quarterly Pre-Program Earnings during the Quarter Prior to Entry	$ 5,287	$ 5,603
Total Number of Cases	1,195	1,006

Sources: MRP Client Database and Missouri UI Claim Records.

- the date they terminated the program;
- their demographic characteristics; and
- the characteristics of the job from which they had been laid off, including the wage rate, and the characteristics of their new job, including the wage rate, for those who were or became reemployed upon termination.

An examination of the MRP client data base for the subsequent year, PY 1988, indicated that 56 clients appeared in both PY 1987 and PY 1988. These cases may represent reenrollment into MRP after a period of unemployment or a continuation of program services into PY 1988.

Abt Telephone Survey. The third source of data for this evaluation was a follow-up telephone survey of the study sample conducted by Abt Associates between February and October of 1989. The survey investigated sample members':

- employment history (beginning with the date of most recent job or unemployment spell and extending backward in time to the date of initial UI claim);
- training and education received from any agency or institution since layoff;
- unemployment benefits received besides regular UI benefits (such as Extended Benefits, Supplemental Unemployment Benefits, and Trade Readjustment Allowances); and
- family background including number and age of children, number of household members, marital status, housing status (rent or own) and household income.

The survey staff attempted to interview all 1,195 MRP clients and all 1,114 comparison group members. The overall response rate for the survey was relatively low, 45 percent, largely because contact information available was outdated and many sample members had no listed telephone numbers. As shown in Table 2.5, the response rate for the MRP group was 51.3 percent (613 responding cases); that for the comparison group was 36.6 percent (408 responding cases). The case disposition of the entire sample is presented in Table 2.5.

This difference in response rates between the MRP and the comparison group alerted us to the potential for nonresponse bias. That is, if survey respondents differed systematically from nonrespondents (for instance, higher income individuals are generally more likely to respond), using the survey data to measure program impacts would yield biased results. If, on the other hand, respondents and nonrespondents did not exhibit systematic differences, nonresponse bias might not be a serious problem.

Table 2.5: Case Dispositions for the Abt Telephone Survey, by MRP Group and Comparison Group

Case Disposition	MRP Group		Comparison Group	
	Number	Percent	Number	Percent
Interview Completed	613	51.3	408	36.6
Interview Refused	171	14.3	163	14.6
Not Contacted/Located	356	29.8	467	41.9
Other Reason for Nonresponse	48	4.0	62	5.6
Final Status Unknown	7	0.6	14	1.3
Total Number of Cases	1,195	100.0	1,114	100.0

Source: Abt Telephone Survey.

To investigate the potential for nonresponse bias, we compared the measured characteristics of the entire study sample and those of the survey sample. Table 2.6 presents the results of this analysis separately for the MRP group and the comparison group. For both groups, the survey sample consists of a disproportionately high number of whites relative to blacks. On other observable characteristics, however, the study sample and the survey sample appeared to be roughly comparable.

Table 2.6: **A Comparison of the Characteristics of the Total Study Sample and the Survey Sample, by MRP Group and Comparison Group (in percentage terms)**

Characteristic	Total MRP Group	MRP Group Surveyed	Total Comparison Group	Comparison Group Surveyed
Gender				
Male	65.3	64.9	69.2	69.4
Female	34.7	35.1	30.8	30.6
Ethnicity				
White	65.4	73.1	70.9	76.2
Black	33.4	25.9	25.1	18.6
Hispanic	0.7	0.8	0.3	0.5
Other	0.5	0.2	3.7	4.6
Age				
Under 21	1.0	0.7	3.4	2.9
22-30	23.9	21.9	34.2	32.1
31-40	37.5	37.0	28.5	25.0
41-50	22.7	24.1	17.1	19.9
51-60	13.2	14.6	13.1	17.4
61-70	1.5	1.6	3.5	2.5
Over 70	0.3	0.2	0.2	0.3
Mean Quarterly Pre-Program Earnings During the Quarter Prior to Entry	$5,287	$5,799	$4,910	$5,361
Total Number of Cases	1,195	613	1,114	408

Sources: Abt Telephone Survey, MRP Client Database, and Missouri UI Claim Records.

CHAPTER 3

MRP PROGRAM SERVICES

OVERVIEW

MRP services range from job-search assistance and placement services to classroom skills training, on-the-job training and remediation. Program staff assign participants to different services based on a highly individualized approach. Nevertheless, a process analysis conducted by Abt Associates revealed that four service tracks characterize the pattern of services received by most participants. The remainder of this chapter first delineates those service tracks and then describes the individual program services in more detail.

SERVICE TRACKS

Over the years MRP has developed a variety of highly individualized intervention strategies for its clients. Each intake counselor has the responsibility for assessing the needs of eligible applicants, approving their service enrollment decisions, prescribing a reemployment strategy, and following through with the clients until their termination from the program. Nevertheless, the four service strategies, or "tracks" revealed by the Abt process analysis account for 60 percent of all MRP participants in 1987.

The most frequently deployed service strategy was job-search instruction coupled with job-placement assistance. Those clients assigned to this track received a one-week, comprehensive training course on job-seeking skills, followed by job referrals or leads, with a heavy dose of moral support, from case managers and job developers. Approximately 30 percent of the program participants were engaged in this service track.

The second most commonly used service track, serving about 12 percent of the participants, was job-placement services, which included job referrals or leads as just defined. This track was generally restricted to the most job-ready clients, and also represented the least expensive MRP strategy.

The third service track was classroom training plus job-placement services, serving ten percent of the participants. Here, dislocated workers who were found to need either remediation or skills training were enrolled in MRP's open-entry remediation program. Once training was completed, job developers assisted the participants in finding work.

The fourth service track entailed job-search instruction followed by classroom training. This service track was pursued by seven percent of the participants, who together with their counselors had determined that further training was required following a period of unsuccessful

job search. Together the figures on the third and fourth service tracks indicate that approximately one-sixth of MRP's clients were enrolled in some kind of classroom training.

Finally, 18 percent of MRP clients were enrolled in on-the-job training (OJT) combined with a variety of other components. The 22 percent remaining pursued a variety of other service combinations that exhibited no clearly definable pattern.

SERVICE DELIVERY COMPONENTS

The following subsections define MRP client services in more detail, beginning with clients' initial exposure to the program.

Recruitment. By PY 1987 MRP had developed close ties with organized labor and the business community in the St. Louis Metropolitan area, and so MRP staff were frequently called in by employers, unions, or joint labor-management groups involved in layoffs. The general procedure for the staff was to first discuss with the parties how best to meet the particular circumstances of the layoff and then to work closely with them to tailor the proposed service implementation strategy to accommodate the resources and policies of both labor and management.

MRP recruitment efforts then generally took the form of presentations at the employment site to expose the workers to program offerings, with an emphasis on how the services had been tailored to their circumstances. Another recruitment strategy was the use of classified advertisements to attract dislocated workers who were looking for jobs. Both strategies resulted in a large number of applicants; hence, maintaining enrollment levels was not a problem for MRP.

Intake and Assessment. Once recruited, interested individuals were required to call for an appointment with a counselor. Alternatively, interviews with intake counselors could take place at the work site when a mass layoff was announced. Either way, this in-person interview began a counselor-client relationship that lasted throughout program enrollment. The counselor determined the applicant's eligibility for the program and then began a "needs assessment," which relied heavily on interviews and questionnaires that explored the worker's interests, education, work history, credentials, and motivation.

More specifically, counselors used Holland's Self-Directed Job Search survey of employment interests and the Differential Aptitude Test (a measure of reasoning and numerical skills) to help determine to what extent additional education or training was required, as well as clients' interests in and aptitudes for various types of jobs. The intake staff relied primarily on interviews with applicants and knowledge of the job market to form employment plans for their

clients. Where there was a reasonable match with existing job vacancies, job-placement assistance was offered at this point. Enrollment in further services occurred only when the counselor was assured that reemployment was feasible, a judgement often based on how clients responded to initial services such as counseling and job-search assistance.

Job-Search Assistance. Both Title III-eligible applicants and enrollees were allowed to participate in the Job Search Assistance Program (JSAP). Running from 8:30 a.m. to 3:00 p.m. over five days, JSAP classes covered such topics as networking, resume writing, identifying skills transferable to new jobs or occupations, writing cover letters, telemarketing, job-search strategies, and interviewing. Incorporated into the job-search instruction was an orientation to MRP's on-the-job training and classroom training components and an exposure to job-search research materials, which included the Sorkins guide to job listings by business institutions and job leads developed by MRP job developers.

The testing described above was scheduled during this training period, providing additional personal data for incorporation into a job-search strategy. Staff members worked closely with participants to determine each individual's strengths and weaknesses, particularly in terms of motivation. Again, applicants were generally not enrolled in further services until they demonstrated motivation for job search and were deemed ready to take full advantage of program services. In making this determination, counselors considered clients' enthusiasm, their willingness to participate in JSAP class activities, and the extent to which they followed up on job leads.

Another important feature of JSAP was the interaction between instructors and participants and among participants. MRP encouraged these interactions as a basis for mutual help and support and as opportunities to practice networking. Participants were also given resources, tools, and constructive activities to use in pursuit of new employment. Feedback from JSAP instructors about applicants' motivation often influenced the intake counselors' enrollment decisions.

Job and OJT Development. In the years since its establishment in 1981, MRP had experienced minimal turnover in its job development staff. Its job developers therefore had built extensive links and contacts in the business community. Operating on the basis of geographical areas, three full-time job developers were responsible for gathering information on job openings and for securing OJT contracts with employers.

The basic approach was employer-driven, rather than participant-driven. That is, MRP job developers viewed the employers themselves as clients, with needs that might be addressed by MRP's out-placement and training services. According to the developers, instead of focusing on the placement of individual MRP participants, they would scour the business community for openings in the hope that MRP clients could fill job orders available. When they obtained leads

on potential job openings, they contacted the employers in question to confirm openings and explain the benefits of hiring MRP clients. In addition, companies with which the job developers had worked in the past, and those familiar with MRP's reputation, contacted the job developers when they had openings to fill.

The job developers rarely dealt directly with MRP clients, except to speak with JSAP participants about the job development component. Instead, they would write up job orders for distribution to the job service technician and for the MRP counselors, who would then attempt to match individual clients to openings. MRP reported finding it more effective and easier for job developers to use their experience to serve companies looking for employees rather than to help specific clients search for jobs.

Another element of the job developers' mission was to develop OJT positions and secure OJT contracts with St. Louis area employers. (MRP reimbursed employers 50 percent of a client's wages during OJT, generally up to a limit of $1,000 per OJT client.) The job developers secured OJT contracts in several ways. In most cases they actively marketed OJT to companies, emphasizing the benefits of the training program and the general quality of Title III workers, and if a company agreed to participate, the job developer put together a training plan with the company. In other cases, however, companies approached MRP directly to request OJT money for dislocated workers they themselves had recruited. MRP willingly provided OJT funds for such "company referrals" and often was able to place some of its own clients at the company as well. In other words, working in partnership with such companies actually increased MRP's ability to place its own clients in OJT slots.

As in the case for job placements, the job developers rarely worked with individual MRP clients to find specific OJT slots for their training needs. Instead, they would secure numerous OJT slots in a variety of companies and then leave it to the counselors and the job service technician to fill the slots with MRP clients. Job developers did, however, follow up with companies at the conclusion of the OJT contracts to check on the clients' progress.

Job-Placement Assistance. MRP effected the matching of clients to job orders in three ways: the clients themselves searched through job orders, counselors referred their clients to job openings, and MRP's job service technician matched client resumes to job openings. Once the job developers had confirmed job-opening information with employers, they completed job order forms that were compiled in a notebook. Based upon the information in the job order forms (such as company type or name, job title, necessary skills or other requirements, and salary and benefits), MRP clients could apply directly for specific jobs in which they were interested. In addition, the counselors received copies of the job orders each week and could encourage their clients to apply for appropriate job openings. Finally, the job service technician also regularly reviewed client resumes against state employment services listings, using a variety

of resources, such as Dictionary of Occupational Titles job codes, to match the skills and experience of individual clients with the job openings listed.

Classroom Training. MRP offers classroom training for both remediation purposes and job skills development. In PY 1987 MRP offered basic skills remediation in-house to about 70 enrollees. The approach was highly individualized with learning programs tailored to each participant's needs in math, reading, or language skills, or in basic computer literacy. Remediation classes varied in length, averaging about three days a week for six to eight weeks.

There was no mechanism by which program participants were systematically screened and referred to remediation. Instead, participants enrolled primarily on their own initiative, or upon referral by a counselor who noted an apparent basic education deficiency from the assessment process, or when a brief stint of customized training or tutoring could qualify them for jobs.

MRP extended its customized services approach to the point of tutoring participants for common employment tests, high school equivalency tests, or admission to skills training classes. Topics covered could include almost anything employment related. In addition to basic instructional materials, MRP instructors also took advantage of computerized interactive videos where appropriate, frequently blending one-on-one coaching with self-instructional materials.

Occupational job-skills training, on the other hand, was handled through various post-secondary educational institutions on an individual referral basis. Half of the occupational skills training participants in PY 1987 attended a university or community college, while 18 percent attended a business school, and 34 percent attended various technical schools. MRP's classroom skills training was funded through Missouri's JTPA Title II-A 8 percent set-aside, while Carl D. Perkins Vocational Educational Act funding supported related counseling and referral services. Participants had to establish that they were either economically or educationally disadvantaged to be eligible for special counseling support. A vocational education coordinator screened all training candidates referred by counselors to determine eligibility for Perkins or JTPA funds and whether remediation was required. Training programs were then selected and referrals made accordingly. About 75 percent of participants completed training and, of those, 86 percent obtained training-related jobs.

On-the-Job Training. As described earlier, OJT slots were generated either by MRP job developers or by corporate inquiries regarding particular Title III-eligible clients of MRP. The developers cleared each OJT slot with the relevant union, while the intake counselors checked applicants' eligibility. Once these clearances were secured, MRP counselors developed a training plan outlining the specific skills to be learned, the time to be allotted, and any other methods of training (such as classroom or customized training) that might be required. In

addition, employers were required to provide trainees with an orientation covering such topics as the company dress code, standards of conduct, and other company policies.

CHAPTER 4

CHARACTERISTICS OF THE STUDY SAMPLE AND ISSUES OF SAMPLE SELECTION

OVERVIEW

This chapter first compares the characteristics of the study sample vis-à-vis the population of JTPA Title III terminees statewide and nationally. It then presents comparisons of selected demographic characteristics of the treatment and comparison groups within the sample. The remainder of the chapter addresses statistical issues regarding the selection of these two groups and the nature of the methods used to control for any differences between the two samples in the analyses that follow.

A COMPARISON OF THE MRP GROUP AND TITLE III TERMINEES STATEWIDE AND NATIONALLY

As noted in Chapter 2, the treatment group in our analysis comprises all the clients served by MRP in PY 1987 (July 1, 1987 through June 30, 1988). It is important to note that not all of these 1,195 clients were enrolled in JTPA. Some merely received intake services without further assistance; those enrolled in JTPA received more intensive services including classroom training, on-the-job training, and job placement services. We will examine the issue of who received each of the various types of program services later in this chapter.

As indicated in Table 4.1, the MRP client base was composed largely of whites (65 percent), males (65 percent), and individuals from 22 to 54 years of age (91 percent). Comparing the demographic characteristics of the overall MRP group with those of the subgroup of MRP Title III terminees indicates that the two groups were distributed almost identically in terms of gender, ethnicity, and age. A comparison of demographic characteristics of MRP terminees with Missouri and national Title III terminees in PY 1987 (also presented in Table 4.1) indicates that generally the demographic characteristics of MRP terminees were similar to the characteristics of Missouri and national Title III terminees. Interestingly, MRP terminees appear to have been distributed somewhat more like the national population than the Missouri population of JTPA terminees.

Table 4.1: **A Comparison of the Demographic Characteristics of MRP Clients and JTPA Title III Terminees Statewide and Nationally, in Program Year 1987 (in percentage terms)**

Characteristic	Total MRP Clients	Title III MRP Terminees	Title III Missouri Terminees	Title III National Terminees
Gender				
Male	65	66	58	62
Female	35	35	42	38
Ethnicity				
White	65	68	78	72
Black	33	31	21	17
Hispanic	1	1	1	9
American Indian/Alaskan Native	a	a	a	1
Asian and Pacific Islander	a	a	a	2
Missing Data	a	a	a	a
Age				
16-21	1	1	3	4
22-54	91	91	90	88
Over 54	8	8	7	8
Missing Data	a	a	a	a
Total Number of Cases	1,195	903	4,097	129,984

Sources: MRP Client Database and U.S. Department of Labor, Employment and Training Administration, "Summary of Title III Programs for Program Year 1987", memorandum (Washington, D.C. 1988).

a. Finding less than 0.5 percent.

CHARACTERISTICS OF THE MRP GROUP AND THE COMPARISON GROUP

The comparison group comprised of 1,114 individuals randomly selected from Missouri UI claims records[18]. The selection was restricted to individuals in the five-county MRP service area who filed a UI claim between July 1986 and June 1988[19]. The following subsections compare, in turn, the demographic and labor market characteristics of the treatment and comparison groups.

Demographic Characteristics. Table 4.2 compares data on the demographic characteristics of the MRP groups and the comparison group. It also presents separately the demographic characteristics of those MRP clients (954) who filed UI claims between July 1986 and June 1988, termed here the MRP-UI claimant subgroup. As explained later in this chapter, there are strong similarities between the measured characteristics of the MRP group as a whole and those of the MRP-UI claimant subgroup.

The MRP group and the comparison group exhibited some differences. Specifically, the comparison group had a higher proportion of males and whites, and was younger than the MRP group. Our impacts analyses control for differences in measured characteristics between the two groups. Any unmeasured differences, however, may create a more serious problem. This problem, known as selectivity bias, is discussed later in this chapter and reviewed more fully in Appendix B.

The Abt Associates telephone survey provided additional information on the characteristics of the MRP and comparison groups. As shown in Table 4.3, in terms of household size, number of dependents, marital status, years of current marital status, and home ownership status, the two groups exhibited a striking similarity[20].

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[18]Originally 1,132 individuals were selected from the Missouri UI records but 18 of these were later excluded because their claim dates were not within the analysis period.

[19]The MRP service area includes the following five Missouri counties: Franklin, Jefferson, St. Charles, St. Louis, and St. Louis City.

[20]We also compared some additional characteristics, including the percentage receiving Extended Benefits (EB), Supplemental Unemployment Benefits (SUB), and Trade Re-Adjustment Allowance (TRA). We do not include these comparisons here because very few sample members received these benefits and the comparisons were likely to reflect program effects to some degree (for the MRP group) since the survey was conducted early in the follow-up period.

Table 4.2: **Selected Demographic Characteristics of the MRP Group, the MRP Claimant Group, and the Comparison Group (in percentage terms)**

Characteristics	MRP Group	MRP-UI Claimant Subgroup	Comparison Group
Gender			
Male	65.3	64.8	69.2
Female	34.7	35.2	30.8
Ethnicity			
White	65.4	64.2	70.9
Black	33.4	35.0	25.1
Hispanic	0.7	0.7	0.3
Other	0.5	0.1	3.7
Age			
Under 21	1.0	0.6	3.4
22-30	23.9	22.9	34.2
31-40	37.5	39.1	28.5
41-50	22.7	23.0	17.1
51-60	13.2	12.9	13.1
61-70	1.5	1.6	3.5
Over 70	0.3	0.0	0.2
Education			
Under 12 years	10.3	11.3	n.a.[a]
12 years	44.0	45.0	n.a.[a]
Over 12 years	45.6	43.7	n.a.[a]
Mean Quarterly Pre-Program Earnings during the Quarter Prior to Entry	$5,287	$5,748	$4,910
Total Number of Cases	1,195	954	1,114

Sources: MRP Client Database and Missouri UI Claim Records.

a. Not available.

Table 4.3: **Selected Household Characteristics of the MRP and Comparison Groups**

Characteristic	MRP Group	Comparison Group
Number of Household Members		
1	16.5	13.7
2-5	79.5	82.8
Over 5	4.0	3.5
Mean	3.0	3.0
Number of Dependents		
0	45.2	48.5
1	22.7	22.3
2	22.8	19.1
3	6.7	8.1
4	1.8	1.2
Over 4	0.8	0.5
Mean	1.0	0.9
Marital Status (Percent of Sample)		
Single	21.2	21.6
Married	59.2	63.5
Living together	0.7	1.0
Separated or Divorced	16.2	12.0
Widowed	2.1	2.0
Don't Know or Refused	0.7	0.3
Years of Current Marital Status		
1	6.2	6.4
2-5	17.2	17.2
6-10	18.4	14.0
Over 10	36.4	40.0
Home Ownership Status (Percent of Sample)		
Own Home	61.2	62.3
Rent	31.3	32.1
Other	6.2	4.7
Don't Know or Refused	1.3	1.0
Total Number of Cases	613	408

Source: Abt Telephone Survey.

Previous Labor Market Experience. Table 4.4 compares the initial UI claim date of comparison group members with those of members of the MRP-UI claimant subgroup; these results are graphically depicted in Exhibit 4.1.[21] The figure indicates a general correspondence between the two samples in the timing of their initial UI claims. The largest discrepancy between the two groups was early in the period (August 1986) when 17.5 percent of the MRP-UI claimant subgroup filed an initial claim and 10.5 percent of the comparison group filed. In general, the results indicate that the comparison group filed on average somewhat earlier than the participant group, with 38 percent of the former, and only 29 percent of the later, filing during PY 1986.

To investigate the adequacy of the comparison sample further, we examined the pre-program UI benefits and earnings of the MRP and comparison groups. In Table 4.5 we present the UI benefits for each pre-program quarter between July 1985 and June 1987 (quarters designated as 1985-3 through 1987-2).[22] An examination of Table 4.5 indicates a general similarity in the pattern of UI benefits in the pre-program period -- i.e., prior to July 1987. A comparison of quarterly earnings between 1986-3 and 1987-2 (lower panel of Table 4.5), on the other hand, indicates consistently higher earnings for the MRP group than for the comparison group.[23]

This comparison of UI benefits and earnings on a calendar basis may not accurately reflect the pre-program period for both MRP and comparison groups however. That is, since comparison group members were selected from among those who filed an initial UI claim in the period from July 1986 to June 1988 (i.e., 1986-3 to 1988-2), they were more likely than MRP group members to have been unemployed and to collect UI benefits in the period between 1986-3 and 1987-2. A more relevant comparison to evaluate pre-program differences is a comparison of UI benefits and earnings prior to each sample member's initial unemployment

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[21]Since UI records are available only for the comparison group and the MRP-UI claimant subgroup, the analysis in this section is limited to these two groups.

[22]All dollar amounts in the subsequent analysis have been adjusted to 1989 dollars using the Consumer Price Index (CPI) obtained from the Bureau of Labor Statistics.

[23]The similarity in 1987-2 earnings for the two groups may reflect the pre-program earnings dip reported in other dislocated worker studies. See, for example, Howard Bloom's *Back to Work: Testing Reemployment Services for Displaced Workers* (Kalamazoo, Michigan: W.E. Upjohn Institute for Employment Research, 1990).

Table 4.4: **Distribution of the Initial UI Claim Dates of MRP-UI Claimants and Comparison Group Members, Program Years 1986 and 1987 (in percentage terms)**

Year	Month	MRP-UI Subgroup	Comparison Group
PY 1986	July	2.1	5.1
	August	17.5	10.5
	September	1.7	6.3
	October	2.0	3.9
	November	4.1	7.2
	December	2.1	5.7
	January	3.6	6.6
	February	2.4	4.8
	March	5.1	4.0
	April	4.3	2.7
	May	5.0	3.2
	June	3.2	2.9
PY 1987	July	4.8	3.3
	August	6.9	5.0
	September	2.4	2.3
	October	2.8	2.2
	November	6.5	2.8
	December	2.4	3.3
	January	6.1	6.9
	February	2.9	3.0
	March	2.4	2.6
	April	3.6	2.8
	May	4.9	2.3
	June	1.0	1.6
Missing		0.1	0.6
Total Number of Cases		954	1,114

Source: Missouri UI Claim Records.

Exhibit 4.1

Distribution of UI Claim Dates (in percentage terms) for Program Years 1987 and 1988, by the MRP-UI Subgroup and the Comparison Group

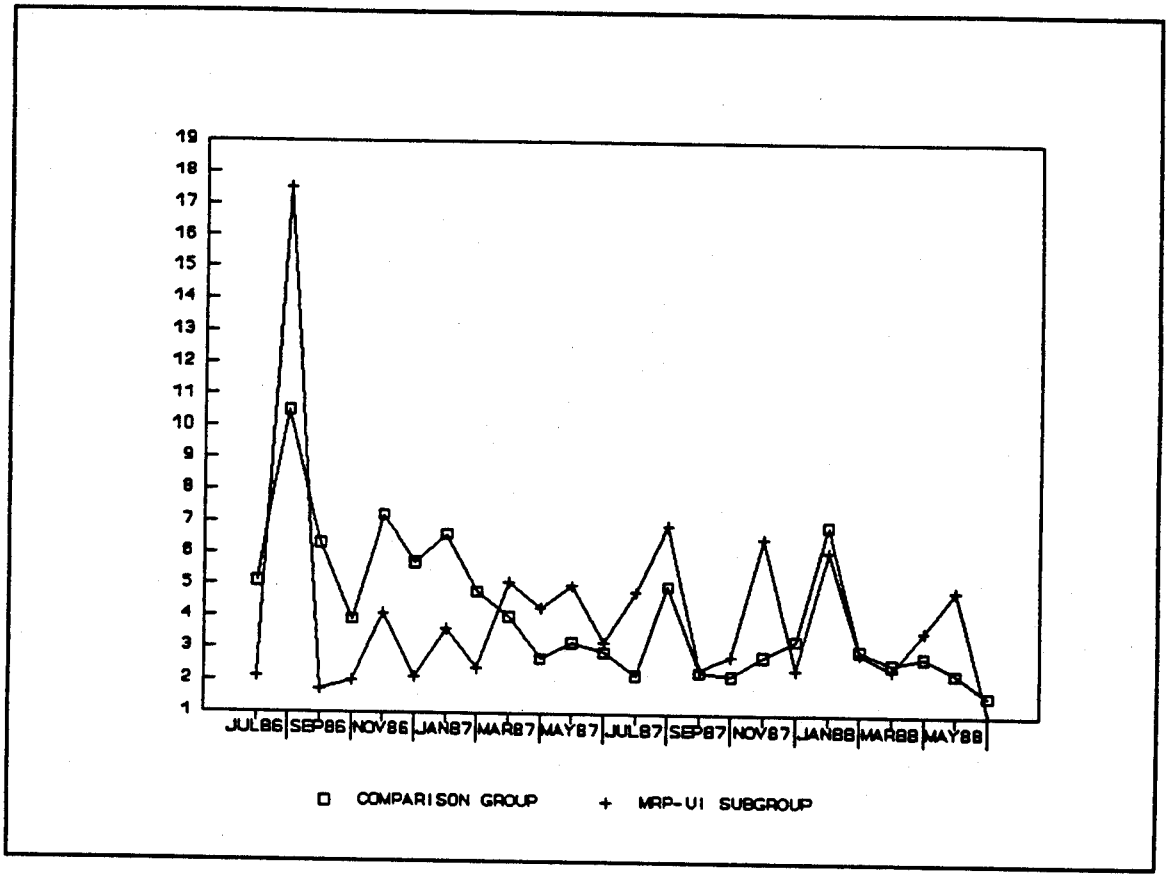

Table 4.5: Mean Quarterly UI Benefits and Earnings of the MRP Group and the Comparison Group, 1985-87 (in 1989 dollars)

Measure	MRP Group	Comparison Group	Mean Difference
UI Benefits			
1985-3	$ 16	$ 17	$ - 1
1985-4	45	42	- 3
1986-1	55	96	- 41
1986-2	59	66	- 7
1986-3	133	152	- 19
1986-4	97	207	-110
1987-1	159	264	-105
1987-2	250	200	50
Earnings			
1986-3	$ 4,874	$ 4,470	$ 404
1986-4	5,380	4,521	855
1987-1	4,767	3,689	1,078
1987-2	4,285	4,234	51
Total Number of Cases	1,192	1,114	

Source: Missouri Wage and UI Claim Records.

Note: All observations include quarters with zero UI benefits or earnings. Data on earnings were only collected for the quarters shown.

spell.[24] (The calendar quarter immediately prior to the unemployment spell is referred to as QB1, the quarter before that is QB2, and so on through QB4). In Tables 4.6 and 4.7, we present a comparison of UI benefits and earnings for the four quarters immediately prior to each individual's initial unemployment spell. The results of this comparison indicate that prior to this initial unemployment spell, MRP clients, on average, collected more UI benefits and earned higher incomes than comparison group members. These results hold when evaluating the entire sample or when restricting the evaluation to those with earnings and those with UI benefits during the pre-program period.

The above differences in pre-program UI benefits between MRP clients and comparison group members, alert us to the potential for selectivity bias. To examine this issue more formally, we estimated regressions on pre-program UI benefits and pre-program earnings (the details of this analysis are presented in Appendix C). In these regressions we controlled for observable group differences such as age, race, and sex. We also included a lagged dependent variable in the regressions. To test for the presence of unobservable differences between MRP and comparison group members, we included a dummy variable to reflect MRP status. The results of these regressions indicate that pre-program differences between MRP and comparison groups largely reflect the mechanism used in selecting the comparison group rather than unobservable differences.

Reemployment Services Received. Two sources provided information on program services. The MRP client database provided data on the program services that each of the 1,195 MRP clients received, while the Abt survey provided information on MRP and non-MRP services for both MRP clients and comparison group members.

As shown in Table 4.8, one of the most interesting findings from the MRP database is that 22.4 percent of the MRP clients, though eligible for JTPA Title III, were not enrolled in it.[25] In our impact analysis we isolated this group in measuring program impacts, thereby controlling the low level of service received by this group (referred to as Group T1 in the Table). The remaining 77.6 percent of the MRP group received some JTPA services, grouped into the following categories:

[24]The procedure for identifying the starting point of an individual's unemployment spell is presented in Chapter 5.

[25]Discussions with MRP personnel indicate that these clients received limited services such as handouts of job materials and an evaluation of job readiness.

Table 4.6: Mean Quarterly UI Benefits of the MRP Group and the Comparison Group in the Year Prior to Initial Claim (in 1989 dollars)

Sample		MRP Group	Comparison Group	Mean Difference
All Cases	QB1	$ 84	$ 27	$ 57
	QB2	107	48	59
	QB3	74	63	11
	QB4	64	61	3
QB1-QB4		$ 329	$199	$ 130
Benefits >0	QB1	$ 562	$ 431	$ 131
	QB2	572	553	19
	QB3	688	507	181
	QB4	423	503	-79
QB1-QB4		$ 1,351	$ 833	$ 648
Total Number of Cases		1,195	1,114	

Source: Missouri Wage and UI Claim Records.

Note: QB1 refers to the first complete quarter before initial claim date, QB2 refers to the second complete quarter before the initial claim date, etc.

Table 4.7: Mean Quarterly Earnings of the MRP Group and the Comparison Group in the Year Prior to Initial Claim (in 1989 dollars)

Sample		MRP Group	Comparison Group	Mean Difference
All Cases	QB1	$ 5,287	$ 4,910	$ 377
	QB2	5,189	4,988	201
	QB3	5,399	4,924	475
	QB4	5,239	4,711	528
QB1-QB4		$ 21,113	$ 19,533	$ 1,580
Earnings >0	QB1	6,015	5,091	924
	QB2	5,805	5,117	688
	QB3	6,076	5,076	1,000
	QB4	5,959	4,968	992
QB1-QB4		$ 22,736	$ 19,646	$ 3,090
Total Number of Cases		1,195	1,114	

Source: Missouri Wage and UI Claim Records.

Note: QB1 refers to the first complete quarter before initial claim date, QB2 refers to the second complete quarter before the initial claim date, etc.

Table 4.8: Distribution of MRP Group Members by MRP Program Service Categories

Variable	Service Category	Number	Percent
T1	Not enrolled (limited MRP services)	268	22.4
T2	Job Placement Only	412	34.5
T3	Job Placement and Job-Search Assistance Only	155	13.0
T4	On-the-Job Training Only	143	12.0
T5	Classroom Training and Other Services	155	13.0
T6	Other Service Combinations	62	5.2
Total Number of Cases		1,195	100

Source: MRP Client Database.

- T2: job-placement assistance only;
- T3: job-placement and job-search assistance only;
- T4: on-the-job training only;
- T5: classroom training and other services, and
- T6: other service combinations.

The distribution presented in Table 4.8 indicates that 34.5 percent of MRP group received job-placement services only; the remaining MRP members received more intensive services, including on-the-job and classroom training.

To investigate whether MRP provided a different level of service to selected subgroups, we examine in Table 4.9 the characteristics of MRP clients in each of the above service categories. The results indicate that those not enrolled in Title III (group T1) differed somewhat from the remaining service groups. That is, those in group T1 were less likely to be white and had a lower average hourly wage at layoff than those in the remaining MRP groups. Among those enrolled in Title III (groups T2 through T6), there appears to have been little difference in measured characteristics. Among these groups, however, the OJT-only group (T4) appears to have had longer tenure at their layoff job (33.7 months) and a higher proportion of whites (78.3 percent). And the educational level of those receiving classroom training services appears to have been somewhat higher than that of the other groups, with more than half of the T5 group reporting post-secondary education.

The Abt telephone survey results serve as an alternative information source on program services. MRP group respondents reported information on reemployment services received through MRP as well as other agencies; comparison group respondents reported on similar services obtained from other agencies. The results in Table 4.10 indicate, as expected, that a much higher proportion of the MRP group received such services than the comparison group. In fact, this was true for every service category included in the survey. It is important to note, however, that to some extent comparison group members received a similar mix of employment and training services, even though the overall level of services received was considerably lower than that of the MRP group.

Table 4.9: Selected Characteristics of the MRP Group by Type of Program Service

Characteristic	Not Enrolled in JTPA (T1)	Job Placement Only (T2)	Job Placement and JSA (T3)	On-the-Job Training Only (T4)	Classroom Training and Other Services (T5)	Other Service Combinations (T6)	All Service Categories Combined
Average Age	38.3	39.0	38.9	36.2	39.3	36.1	38.4
Percent Female	36.2	35.2	38.9	36.2	39.3	36.1	34.7
Percent White	44.8	69.4	58.1	78.3	69.0	62.9	65.4
Percent by Average Level of Education:							
Under 12 Years	14.6	7.5	14.8	14.0	3.9	6.5	10.3
12 Years	40.3	43.4	43.9	44.8	44.5	61.3	44.0
Over 12 Years	45.1	49.0	41.3	41.3	51.6	32.3	45.7
Average Months Worked at Layoff Job	23.1	27.3	27.1	33.7	23.9	24.3	26.5
Average Hourly Wage at Layoff Job	$ 9.35	$ 11.40	$ 9.89	$ 10.35	$ 11.63	$ 9.63	$ 10.56
Average Rehire Wage (Including $0.00)	n.a.[a]	$7.13	$6.51	$7.83	$6.71	$6.23	$ 7.00[b]
Total Number of Cases	268	412	155	143	155	62	1,195

Source: MRP Client Data base.

a. Not available since the rehire wage was not recorded in the MRP files for individuals not enrolled in JTPA.
b. Cases in the T1 service category were excluded from this computation since $0.00 was reported for these cases.

Table 4.10: Distribution of MRP Group and Comparison Group Members by Various Reemployment Services Received (in percentage terms)

Service	MRP Group	Comparison Group
Counseling	71.6	9.3
Training in job search skills	48.1	6.1
Testing	47.8	12.3
Help in finding a job	41.6	8.8
On-the-Job training	12.6	4.2
Training in specific skills	11.8	5.4
Training in basic skills	6.7	2.7
Preparation for High School Equivalency	1.3	0.7
Training in English as a Second Language	1.4	0.5
Total Number of Cases	613	408

Source: Abt Telephone Survey.

CHAPTER 5

THE EVALUATION MODEL: TIME FRAMES, OUTCOME MEASURES, AND PROGRAM IMPACT MODEL

OVERVIEW

This chapter describes the methodology we employed to estimate MRP program impacts on participants' labor market experience. The first three sections discuss, in turn, the three alternative specifications of time frames used in measuring program impacts, detailing the purpose, derivation, and advantages and disadvantages of each one:

- the claim-referenced approach,
- the program-referenced approach, and
- the reemployment-referenced approach.

All three approaches were employed in measuring overall program impacts and service-specific impacts on earnings; the first and third approach were employed in measuring impacts on UI benefits receipt and reemployment. How the approaches differed was in the specified beginning point of the impact measurement. The claim-referenced approach uses the initial UI claim, the program-referenced approach uses the exit (or approximated exit) from the program, and the reemployment-referenced approach uses the approximated reemployment point. The penultimate section of the chapter outlines the procedures followed in measuring the primary outcomes of interest: earnings, UI benefits receipt, and reemployment. Finally, the last section describes the program impact model employed in our regression analyses.

THE CLAIM-REFERENCED APPROACH

Purpose and Definition. The claim-referenced time frame is designed to begin observing sample members' labor market experiences at the first point at which a dislocated worker program could begin to have an effect on those experiences. This is generally considered to be the point at which dislocated workers first become aware of the availability of Title III services. For some, this awareness might occur around the time of their layoff; for others, it might be when they initially apply for UI benefits.

Because our data do not include information on layoff dates, we defined the claim-referenced time-frame as beginning with the actual or approximated date of the initial UI claim (as derived below), with observations collected for each subsequent calendar quarter until the last quarter for which we had relevant data on the outcome in question.

Derivation. More specifically, for those MRP clients who filed a UI claim prior to their entry into MRP[26] (846 out of 1,195 cases), we used the date of the actual claim as the beginning point. For those MRP clients who filed a UI claim during PY 1987 or PY 1988 (and who did so prior to their program entry), we measured the average time interval between their UI claim date and their program entry date, which was 141 days. We then subtracted 141 days from the MRP program entry date of those without a UI claim prior to their entry. The resulting date served as the approximated UI claim date. For comparison group members, the beginning point was simply the initial UI claim date since we had data on their claims from the Missouri UI records.

Advantages and Disadvantages. The primary advantage of the claims-referenced approach is that it is the best available approximation of program impacts from the first point at which they might begin to take effect. For this reason most previous evaluations followed this approach.

The main drawback of the approach is that it does not account for the fact that program participants' reemployment is often delayed -- vis-à-vis that of comparison group members -- by their very participation in the program. That is, some participants may not actively seek employment, or find it, until they complete the program activity to which they have been assigned. This is particularly likely among classroom training participants.

Thus, by not explicitly accounting for the period of in-program participation of treatment group members, the claim-referenced time frame can result in program impact estimates that are misleading, especially during quarters that coincide with the in-program period of treatment group members. In other words, because of the likely difference in the duration of the initial unemployment spell between treatment group and comparison group members, results for early quarters may indicate that MRP group members earned less than comparison group members, whereas the results for later quarter may indicate the reverse. It is therefore difficult, using this approach, to disentangle program impacts on earnings from program impacts on the duration of unemployment.

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[26]The program entry date was defined as the earlier of (a) the date enrolled in JTPA Title III or (b) the date the client's record was entered into MRP's management information system (database). The program entry date therefore represents the earliest known date of a client's awareness of Title III services.

THE PROGRAM-REFERENCED APPROACH

Purpose and Definition. It was precisely these drawbacks of the claim-referenced approach that led us to develop an alternative, whose purpose would be to account for differences in labor market outcomes between the treatment and comparison groups that might result from the duration of MRP clients' participation in the program.

We defined this alternative approach, the program-referenced time frame, as beginning with the actual or approximated date of exit from MRP (as derived below), with observations collected for each subsequent calendar quarter for which we had relevant data on the outcome in question.

Derivation. By definition, the program-referenced time frame required us to establish a program exit date for each MRP client and a date for comparison group members that would approximate the point at which they would have exited had they participated in the program.

MRP staff recorded program termination dates for all clients enrolled in JTPA Title III. A large majority of MRP clients in PY 1987 -- 927 -- were enrolled in Title III, and so for this group we simply used individuals' termination date as their program exit date.

According to MRP staff the remaining 268 MRP clients received some limited form of services short of job-placement assistance or other, more intensive services. In other words, they may have been given printed handouts on job search, an evaluation of their job readiness, or an evaluation of their potential interest in the program (hence, they were defined as "clients"), but they did not pursue the more intensive services, participation in which would have required their enrollment in Title III. Because MRP staff did not record the equivalent of a Title III termination date for these clients, we had to approximate an exit date for this group that would be comparable to that recorded for Title III enrollees.

To do so, we first computed the duration of time (D) between the initial UI claim date (as derived under the claim-referenced approach) and the Title III termination date of each Title III enrollee (calculated as D = the termination date minus the initial UI claim date). We then expressed this duration as a function of each Title III enrollee's measured demographic characteristics, layoff job characteristics, and program services and estimated this model using ordinary least squares. The model and explanatory variables were specified as follows:

$$D = \beta_0 + \beta_1 AGE + \beta_2 NONWHITE + \beta_3 FEMALE + \beta_4 EDLT12 +$$

where:

$$\beta_5 EDGT12 + \beta_6 HRLYWAG + \beta_7 WORKED + \beta_8 NUMACT + u$$

AGE = age in years on January 1, 1988 (the midpoint of PY 1987)

NONWHITE = 1 for African-American, Hispanic, Asian, or Indian, and 0 for white

FEMALE = 1 for female and 0 for male

EDLT12 = 1 for less than 12 years of education and 0 otherwise

EDGT12 = 1 for more than 12 years of education and 0 otherwise

HRLYWAG = hourly wage at layoff job

WORKED = number of months worked at layoff job

NUMACT = number of program activities assigned

u = a random disturbance term.

The results of this regression appear in Table 5.1.[27] Several of the estimated coefficients in the model are statistically significant. Specifically, the regression results indicate that, controlling for other factors:

- the older the participant, the shorter the duration of program participation, with each additional ten years of age reducing participation by six days, on average;
- nonwhites tended to stay in the program longer than whites;
- individuals with less than 12 years of schooling tended to stay in the program longer than those with 12 years of schooling (the base category);

[27]Among the 927 Title III enrollees, 903 had valid dates; among the latter, 709 had complete data on the variables in the model. The remaining 194 enrollees had missing data and therefore were omitted from the regression.

Table 5.1: Determinants of the Duration of Program Participation

Variable	Effect on Duration (In Days)
CONSTANT	25.6
	(16.8)
AGE	-0.6*
	(0.3)
NONWHITE	21.8***
	(6.7)
FEMALE	-6.5
	(6.7)
EDLT12	-10.6
	(12.6)
EDGT12	-13.3**
	(6.3)
HRLYWAG	3.6***
	(0.8)
WORKED	-0.1
	(0.1)
NUMACT	53.5***
	(4.8)
R^2	0.2
F	19.8
Sample Size	709

Source: Estimated Using data from MRP Client Data base

* Coefficient is statistically significant at the 90 percent confidence level.
** Coefficient is statistically significant at the 95 percent confidence level.
*** Coefficient is statistically significant at the 99 percent confidence level.

- the higher the hourly wage in the layoff job, the longer the stay in the program; and

- an additional recorded program activity added more than 50 days, or over seven weeks, to the duration of participation.

Using these findings we applied the estimated coefficients to the characteristics of each MRP client who was not enrolled in Title III and calculated an approximated duration of program participation.[28] We then added this approximated duration to the individual's initial UI claim date (again, as derived under the claim-referenced approach). The resulting date served as the individual's approximated program exit date.

The comparison group posed a different estimation problem, since its members were, by definition, not MRP clients. Nevertheless, for analysis purposes we had to identify for comparison group members a point in time comparable to the actual or approximated program exit dates of the MRP group. The procedure we developed took several steps.

First, we calculated the average interval between the initial UI claim date and the program entry date for all those MRP clients with a UI claim date prior to their program entry date -- 141 days. We then calculated the average interval between the program entry date and the actual or approximated program exit date for all MRP clients -- 98 days. The total -- 239 days -- represents an average estimated elapsed duration from UI claim to program exit for the MRP group. We then added 239 days to the initial UI claim date of each member of the comparison group. The resulting date served as the approximated program exit date at which each comparison group member would have left MRP had he or she participated.

This procedure therefore yielded the same average "in-program" duration for both the MRP group and the comparison group. Note, however, that among the MRP clients the in-program duration actually varied across individuals as displayed in Table 5.2, whereas among the comparison group members the "in-program" duration was constant across individuals. The implications of this difference are addressed in the "Advantages and Disadvantages" section below.

[28]In predicting the duration of participation for nonenrollees, if data were missing for any of the predictive variables (such as age or education), we substituted the mean value for the variable calculated over the entire sample.

Table 5.2: Distribution of the Duration of the Program Period for the MRP Group

Duration of In-Program Period (in days)	Number	Percent
1 to 30	10	0.8
31 to 60	58	4.9
61 to 90	55	4.6
91 to 120	91	7.1
121 to 150	104	8.7
151 to 180	187	15.7
181 to 210	130	10.9
211 to 240	91	7.6
241 to 270	85	7.1
271 to 300	59	4.9
301 to 330	64	5.4
331 to 360	43	3.6
361 to 390	44	3.7
391 to 420	38	3.2
More than 421	133	11.2
Sample Size	1,192	100.0
Average	239	

Source: MRP Client Data base, supplemented with estimates by the authors.

Advantages and Disadvantages. The primary advantage of the program-referenced approach is that it accounts for the fact that program participants are likely to be unemployed during the duration of their participation in the program -- which the claim-referenced approach does not do. Although we expected this alternative approach to yield additional perspective on how the program impacts varied over time, we were aware that the approach had certain drawbacks of its own.

As noted in Chapter 2, 89 percent of all MRP Title III enrollees were or became employed upon their exit from the program (the "entered employment rate"). For the MRP group, then, the period immediately following their program exit date was highly likely to be one of employment. The program exit date for comparison group members, however, was uniformly assigned at 239 days from their initial UI claim -- that is, approximately eight months later. At that point a comparison group member may or may not have been employed.

Thus, although the program-referenced approach may prove useful in disentangling program effects on earnings from effects on the duration of unemployment, it may yield a positive MRP impact on earnings, when in fact the impact may be attributable to specifying the beginning point of the analysis time frame as the program exit date.

THE REEMPLOYMENT-REFERENCED APPROACH

Purpose and Definition. In an attempt to overcome these limitations of the program-referenced approach, we developed a third time frame for the analyses that would capture impacts at a more comparable beginning point: the point at which members of each group started receiving earnings after their layoff. In other words, beyond this point both MRP group and comparison group members were likely to be employed.

Specifically, we defined this reemployment-referenced time frame as beginning with the approximated date of reemployment following the initial UI claim, with observations collected for each subsequent calendar until the last quarter for which we had relevant data on the outcome in question.

Derivation. To approximate a point of reemployment for MRP group members, we used each members' program exit date as a proxy, since, again, such a large majority (89 percent) of MRP's Title III enrollees were or had become employed upon their termination from the program. That is, as in the derivation of the program-referenced approach described earlier, we used the program termination date for those MRP clients with a recorded date, and the approximated program exit date (based on the regression results) for those clients without a recorded date.

For comparison group members we first examined each individual's UI claims record and identified the first full quarter in which there was no UI activity.[29] Then we used the last date of UI activity preceding this first full quarter without UI activity as a proxy for the point of reemployment. In other words, we assumed that an entire quarter without UI activity indicated a departure from UI and, hence, reemployment. In some cases, of course, that absence of activity might have been the result of an exhaustion of UI benefits or several other possibilities. Nonetheless, this approximated point of reemployment represents a reasonable analogy to the reemployment date approximation derived for the MRP group.

Exhibit 5.1 illustrates this approximation for the comparison group. Suppose that the initial UI claim date of a comparison group member was January 5, 1987 and that the claimant renewed the claim at least once during each of the three subsequent quarters (the second through the fourth quarters of 1987). Suppose further that this comparison group member filed no claim throughout the next consecutive quarter (the first quarter of 1988). If the last date on which the individual filed a claim prior to this quarter was, say, December 10, 1987, then we considered that as the approximated reemployment date for this individual and measured impacts from the first quarter after this point.

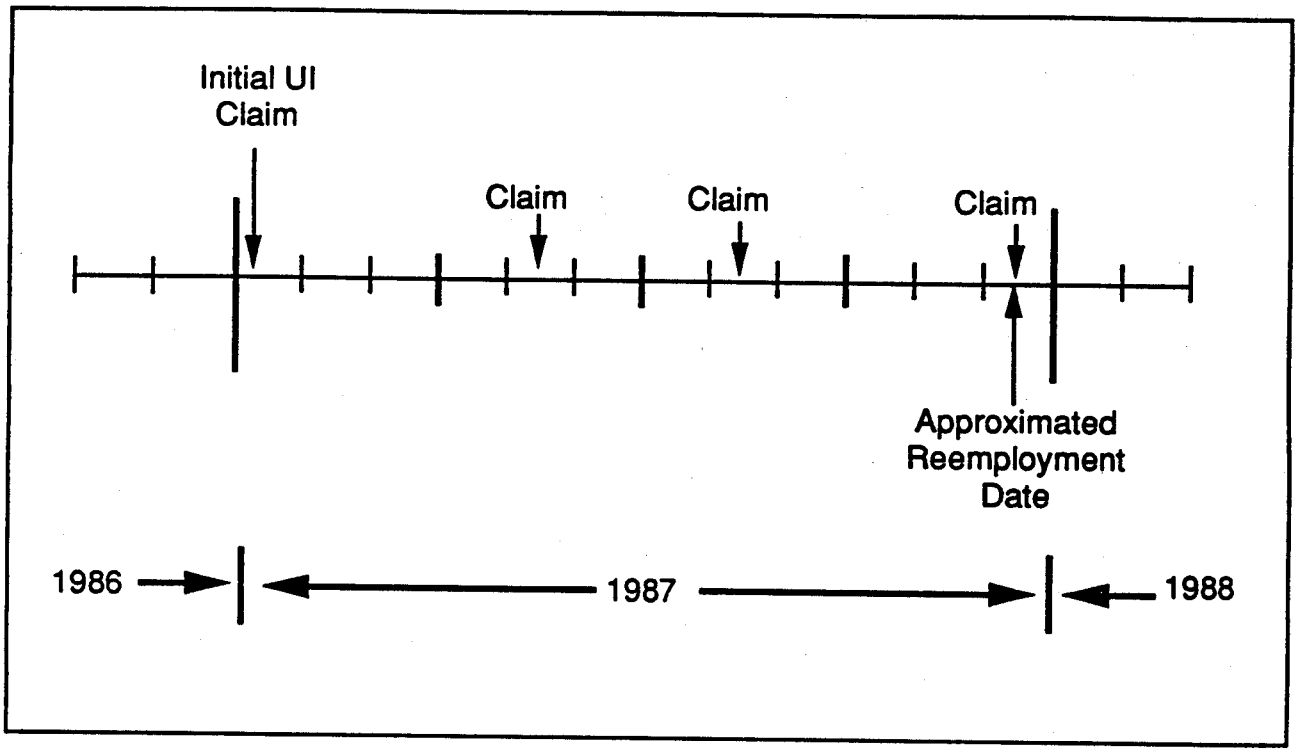
Advantages and Disadvantages. The principal advantage of the reemployment-referenced approach over the claim- and program-referenced approaches is that it explicitly recognizes the likelihood that MRP clients and comparison group members would exhibit different reemployment patterns. As noted earlier, program participation in and of itself likely delayed reentry into employment for MRP clients relative to comparison group members. Thus, measuring program impacts beginning at the approximate point of reemployment serves as a means for isolating program impacts on earnings without engendering the bias that might result from not accounting for the different reemployment patterns of the treatment group and the comparison group.

Another advantage of the reemployment-referenced approach is that, unlike the other two approaches, it isolates effects of the program by removing the influence of any advantage/ disadvantage program participants may have had over comparison group members by virtue of their more/less rapid reemployment. This isolation of effects may offer insight into the impacts of similar programs that have different effects on the duration of unemployment. For example, EDWAA, which emphasizes early intervention to minimize reemployment delays, may have

[29]UI activity was defined as the presence of any of the following codes recorded in the weekly UI claim file: paid claim, waiting week, week of excessive earnings, or week of disqualification.

Exhibit 5.1

Derivation of the Approximated Reemployment Date for a Hypothetical Comparison Group Member



similar impacts on earnings as Title III programs, but different impacts on duration of unemployment.

Finally, the reemployment time frame may also be useful in estimating longer term program effects that occur after the duration of the initial unemployment spell ceases to have an influence on earnings levels.

The main drawback of the reemployment-referenced approach is that, like the program-referenced approach, it does not capture program effects early in the post-layoff period--that is, between layoff (or the initial UI claim) and program entry and between program entry and program exit. As explained in the next section, we therefore used the claim-referenced approach to estimate impacts in this early period.

SPECIFICATION OF OUTCOME MEASURES

The primary goal of dislocated worker programs is to facilitate the reemployment of dislocated workers in stable jobs at wage rates comparable to those received at their layoff job. To assess whether MRP achieved these goals we analyzed three main outcome measures. A description of these outcome measures follows.

The Program Impact on Earnings. In Missouri, known as "a wage reporting state," employers report earnings quarterly for each employee covered by state UI laws. We obtained Missouri UI data on earnings, by employer, for each sample member, from the third quarter of 1986 through the fourth quarter of 1989. With this data we constructed a quarterly earnings figure for each individual by summing across all employers during a quarter. With these quarterly earnings data in hand, we used different quarters or sets of quarters to answer different research questions using the time frames described above. To analyze impacts in the early period, for example, we examined observations collected under the claim-referenced approach for the first four quarters following the initial UI claim date. To analyze earnings in the immediate post-program period, we used observations collected under the program-referenced approach for the first quarter following the actual or approximated program exit date. Regarding impacts over a longer follow-up period, we summed observations collected for the four quarters following the program exit date. We were also able to analyze patterns, for example, by examining observations on each of the four post-program quarters.

The Program Impact on UI Benefits Receipt. To the extent that it facilitates reemployment into permanent jobs, a dislocated worker program may reduce dependency on UI benefits and, hence, reduce benefit payments. To evaluate the impact of MRP on its clients' UI benefits receipt, we analyzed sample members' receipt over three intervals:

- the first year following the initial claim date (with the claim-referenced approach),
- the second year following the initial UI claim date (with the claim-referenced approach), and
- the first year following the approximated date of reemployment (with reemployment-referenced approach).

For these intervals we measured the total amount of UI benefits received by each sample member during the quarters involved. Since the amount of benefits received is a function of both the weekly benefit amount (WBA) and the number of weeks of receipt, we also examined measures of the latter. The number of weeks of receipt is a more direct indication of program impacts than the WBA amount, since a dislocated worker program cannot directly influence the WBA for which its clients are eligible.[30]

The Program Impact on Reemployment. As noted earlier, the goal of dislocated worker programs is not only to improve the earnings prospects of laid-off workers, relative to what they would be in absence of some intervention, but also to facilitate their reemployment into stable jobs. To evaluate MRP impacts on reemployment, one could investigate the duration of the initial unemployment spell. Alternatively, one could investigate the longer term impacts of MRP on employment by analyzing the proportion of time employed over specific time intervals (for example, one year after the initial UI claim). The latter analysis is more relevant for our study since MRP targeted individuals who were long-term unemployed (unemployed 15 or more weeks). For this reason, we investigated program impacts on employment by analyzing the proportion of time that sample members were employed during the total analysis period.[31]

The administrative data available were not sufficiently detailed to construct accurate measures of employment duration. We therefore used the Abt telephone survey data to construct measures of the percentage of time during the follow-up period (approximately 21 months following the initial UI claim) that each sample member was not employed. We analyze the impact of MRP on this measure.

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[30]WBA is partly a function of prior earnings. Thus, MRP may indirectly affect the WBA, through its influence on clients' reemployment earnings.

[31]Other studies have used a similar approach. See, for example, J. Kulik, D. A. Smith, and E.W. Stromsdorfer, *The Downriver Community Conference Economic Readjustment Program: Final Evaluation Report* (Cambridge, Mass.: Abt Associates Inc., September 1984).

The Program Impact Model. The general model we employed in the regression analyses presented in the next chapter was:

$$y_i = \beta o + \underline{x}' \underline{\beta}_1 + z\gamma + u_i$$

where y_i = the outcome measure (earnings, UI benefits receipt, or reemployment) for individual i;

$\underline{x}$ = a vector of explanatory variables;

z = a dummy variable for MRP status (0,1); and

u_i = a random disturbance term.

In other words, this basic outcome equation controls for any preexisting differences between the treatment and comparison groups in characteristics $(\underline{x})$ -- such as age, education, prior reported earnings, gender, and ethnicity -- that might otherwise be confounded with the effect of the program, γ. This is a relatively simple model used in estimating the average effect of all program services on all MRP participants. It was adjusted as appropriate for the analyses of specific outcomes and for the analyses of specific program services.

CHAPTER 6

MRP IMPACTS ON EARNINGS

OVERVIEW

For MRP members, training may lead to a change in occupation. As a result of this change in occupation, reemployment may result in a relatively low starting wage (most likely lower than the pre-layoff wage). As these MRP members gain experience at their new occupation, wages and earnings are likely to increase. Comparison group members, since they are less likely to undergo retraining and a change of occupations, may not experience this reemployment wage pattern (i.e., initially low and subsequently rising wage). As a result of these likely differences in post-program earnings patterns between MRP and comparison groups, different impact results may be derived depending on when in the analysis period the comparison is made.

The hypothesized earnings patterns described above are depicted in the diagram in Exhibit 6.1.[32] MRP members start off earning less than their comparison group counterparts; after some period, they "catch up" and exceed the earnings levels of the comparison group. Given such an earnings pattern, the analysis period used in the impact analysis is critical. If, for example, the comparison is made for QA2 (i.e., second quarter after program termination), the results in the above example would indicate a negative program impact. If, on the other hand, the comparison is made for QA4 (fourth quarter after program termination), the results in the example would indicate a positive program impact. Since we do not know *a priori* when this crossover point occurs, in practice, we do not know whether we are measuring program impacts prior to, or after this point.

To investigate these and other issues, we employ the three time frames previously developed in Chapter 5. Using these time frames, we investigate MRP and comparison group earnings patterns. To the extent that MRP earnings start low and later catch up to and then exceed the comparison group earnings, we identify the point where this crossover occurs. Finally, we examine the temporal pattern of earnings for the MRP and comparison groups to determine whether these patterns provide an indication of long-run program impacts. Following the analysis of earnings patterns, we analyze MRP impacts by type of service provided using the program impact model described earlier. Specifically, we investigate the impacts of each of the service categories described in Chapter 4.

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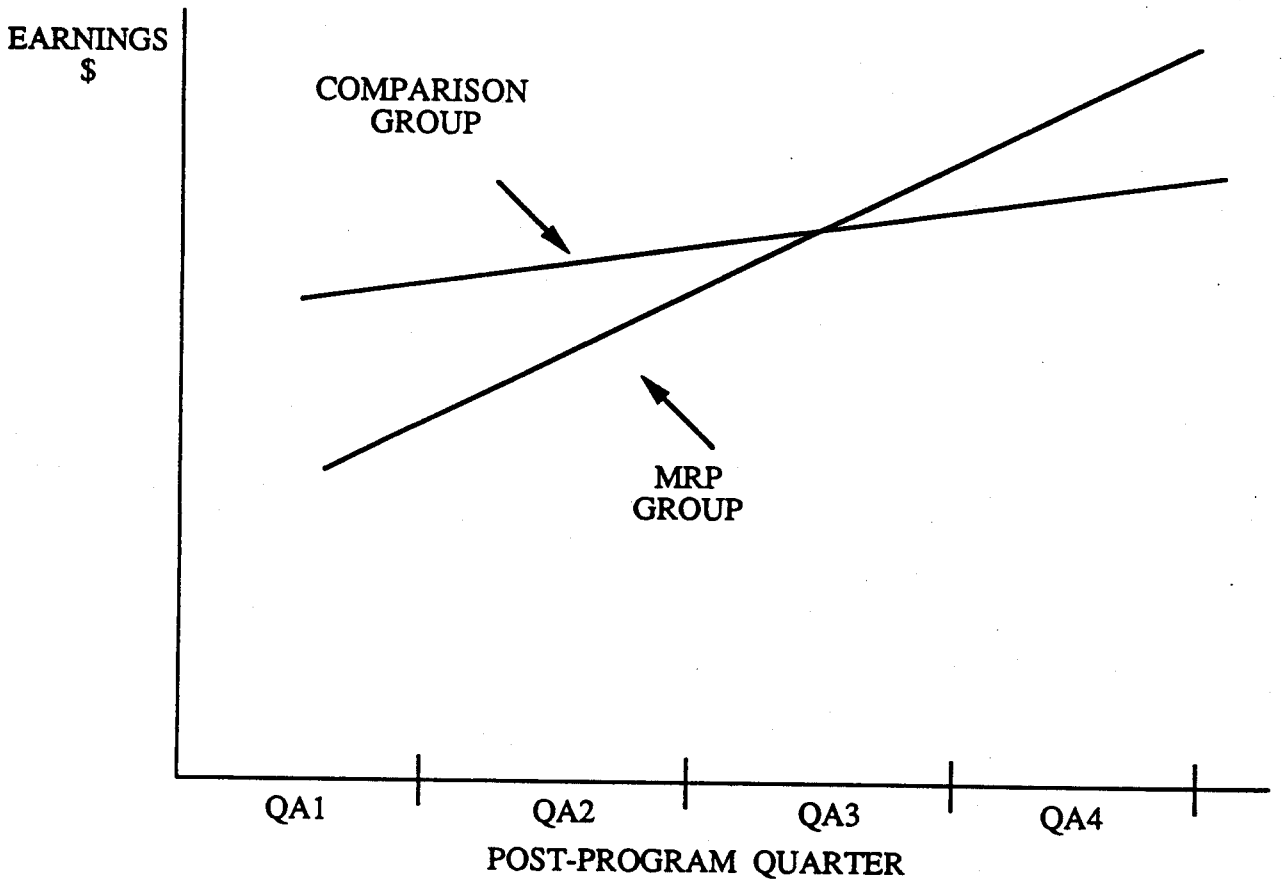
[32] We limit the discussion here to the post-program period for ease of exposition. Incorporating the in-program period into the discussion substantially complicates the presentation since we would have to consider different employment rates for the two groups.

Exhibit 6.1

Earnings Patterns In the Post-Program Period



EARNINGS PATTERNS OVER TIME

In this section, we investigate the pattern of earnings derived from each of the time frame specifications previously discussed. As expected, altering the analysis time frame has significant implications for the pattern of mean earnings for MRP and comparison group members.

Results Under the Claim-Referenced Approach. In Table 6.1 we present a comparison of quarterly earnings for MRP and comparison group members using the claim-referenced approach. The claim-referenced approach uses the initial claim date, or an approximation of that date, as the point of reference for evaluating program effects. We present these mean earnings for descriptive purposes; later in this chapter, we evaluate program impacts using the regression model developed earlier. All dollar figure results are presented in 1989 dollars. The results in Table 6.1 indicate that, on average, comparison group earnings initially exceeded MRP group earnings (quarters Q1 through Q3); at Q4, earnings for the two groups were approximately equal ($3,526 for MRP and $3,541 for the comparison group); finally, beyond Q4, on average, MRP group earnings exceeded comparison group earnings consistently.

Examination of the sum of quarterly earnings over the entire two-year period following initial UI claim date indicates that MRP group earnings did not catch up to the comparison group ($26,704 versus $27,627). The pattern in the second year, however, suggests that cumulative MRP group earnings might soon catch up and exceed total comparison group earnings.

Results Under the Program-Referenced Approach. In order to temporally align the post-program period for MRP and comparison groups, we developed (in Chapter 5) a procedure for placing comparison group members at the same point in time as the average MRP member's program exit point. In Table 6.2, we present the earnings patterns of MRP and comparison group members using this program-referenced approach.

The results suggest that earnings for MRP members, in the first quarter following program exit, were approximately the same as earnings for comparison group members in the first quarter following temporal alignment ($3,604 for MRP members and $3,658 for the comparison group). After that point, however, MRP earnings exceeded comparison group earnings. Summing the four quarters following program exit, MRP earnings, on average, exceeded comparison group earnings by $1,250 ($15,698 versus $14,448). Similar results were obtained when we considered only those sample members with earnings greater than zero. For this group, MRP earnings exceeded comparison group earnings by $1,562 ($17,097 versus $15,535).

Results Under the Reemployment-Referenced Approach. A third approach for analyzing program impacts on earnings was developed in Chapter 5. This reemployment-

Table 6.1: **Mean Earnings of the MRP and Comparison Groups, by Sample and Time Periods from Point of Initial Claim (in 1989 dollars)**

Sample	Quarters Following Initial Claim	MRP Group	Comparison Group
All Cases	Q1	$ 2,491	$ 2,946
	Q2	2,866	3,573
	Q3	3,083	3,927
	Q4	3,526	3,541
	Total (Q1-Q4)	$ 11,965	$ 13,988
	Q5	3,716	3,584
	Q6	3,937	3,496
	Q7	3,696	3,615
	Q8	3,390	2,944
	Total (Q5-Q8)	$ 14,738	$13,639
	Total (Q1-Q8)	$ 26,704	$27,627
Sample Size		1,192	1,114

Source: Missouri Wage and UI Claim Records.

Table 6.2: **Mean Earnings of the MRP and Comparison Groups, by Sample and Quarter Following MRP Program Exit (in 1989 dollars)**

Sample	Quarter Following Program Exit	MRP Group	Comparison Group
All Cases	QA1	$ 3,604	$ 3,658
	QA2	3,914	3,525
	QA3	4,055	3,488
	QA4	4,125	3,777
	Total (QA1-QA4)	$ 15,698	$ 14,448
Earnings > 0	QA1	4,404	4,429
	QA2	4,694	4,287
	QA3	4,814	4,241
	QA4	5,041	4,728
	Total (QA1-QA4)	$ 17,097	$ 15,535
Sample Size		1,192	1,114

Source: Missouri Wage and UI Claim Records.

referenced approach defines the post-program period differently for MRP and comparison group members. In general, for MRP members, this is the period following the MRP termination date; for comparison group members, this is the period following an interruption of UI activity for an entire quarter. In both cases, the analysis begins at the point where individuals are most likely to have returned to work in order to obtain a clean measure of the earnings effects of the program where it is not confounded by differences in employment rates.

A comparison of mean earnings using this time frame is presented in Table 6.3. Just as we speculated earlier, MRP earnings started off below comparison group earnings. By the third quarter following the approximate point of reemployment (QA3), MRP earnings exceeded comparison group earnings. We find the same pattern when we consider the entire sample or only those with earnings greater than zero. For the entire sample, MRP earnings in the first full year following program termination, on average, exceeded comparison group earnings ($15,698 versus $15,506).

Summary. The results of the earnings pattern analyses presented above suggest the following conclusions:

- Earnings for MRP members were lower than comparison group earnings immediately after initial claim.
- It took approximately one year (from initial claim) for MRP average quarterly earnings levels to catch up with the comparison group's average quarterly earnings levels.
- Even two years after initial claim, cumulative earnings of MRP members had not quite caught up with comparison group cumulative earnings.
- Immediately following program exit, MRP members earned slightly less than their comparison group counterparts.
- By the second quarter following exit, quarterly earnings levels for MRP members exceeded quarterly earnings for comparison group members.
- Within a year following program exit, MRP members' cumulative earnings exceeded cumulative comparison group earnings.
- Immediately following the approximate reemployment of both groups, comparison group members earned more than MRP members.

Table 6.3: Mean Earnings of the MRP and Comparison Groups, by Sample and Quarter Following Approximate Date of Reemployment (in 1989 dollars)

Sample	Quarter Following Reemployment	MRP Group	Comparison Group
All Cases	QA1	$ 3,604	$ 4,357
	QA2	3,914	4,023
	QA3	4,055	3,672
	QA4	4,125	3,454
	Total (QA1-QA4)	$ 15,698	$ 15,506
Positive Cases	QA1	4,404	5,087
	QA2	4,694	4,703
	QA3	4,814	4,482
	QA4	5,041	4,211
	Total (QA1-QA4)	$ 17,097	$16,747
Sample Size		1,192	1,114

Source: Missouri Wage and UI Claim Records.

- By the third quarter following approximate reemployment, MRP members, on average, earned more than comparison group members.

- Within a year following approximate reemployment, MRP members' cumulative earnings exceeded cumulative comparison group earnings.

These results highlight the importance of time frame in the analysis of program impacts on earnings.

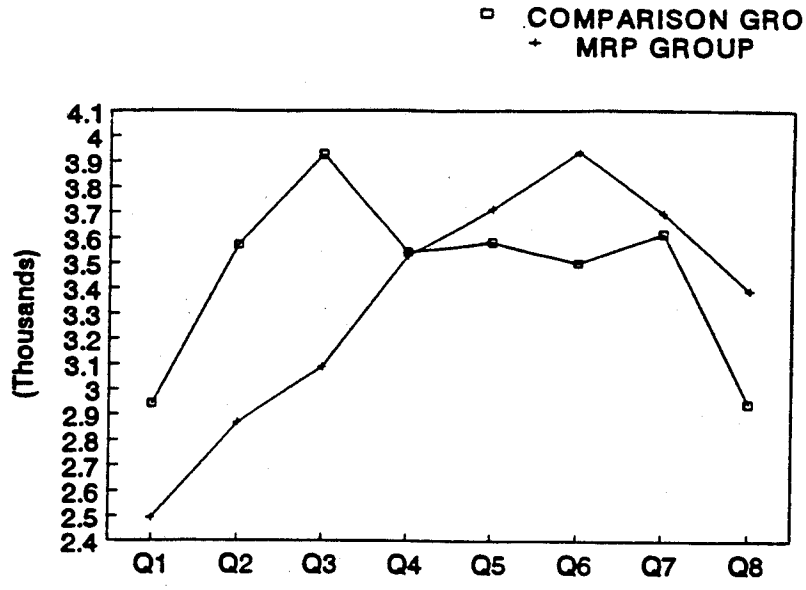
The results of the above analysis are depicted graphically in Exhibit 6.2. Panel A presents the quarterly earnings for the eight quarters following initial UI claims; panel B presents the quarterly earnings for the first four quarters after MRP program exit using the program-referenced approach. Panel C presents the earnings pattern found when using the approach that approximates the reemployment point for MRP and comparison group members. The last two panels indicate that early in the post-program period, MRP group members earned less than comparison group members; later the pattern was reversed.

While the above results are only descriptive and do not necessarily indicate impacts, nonetheless, they suggest that analyses of longer post-program follow-up periods may indicate greater program impacts than analyses of shorter follow-up periods. In fact, evaluating program impacts early in the post-program period may provide erroneous conclusions about program impacts. That is, in the short run, program impacts on earnings may be negative; over a longer time period, program impact evaluations may yield positive impacts. Special care, therefore, should be exercised in evaluating previous studies that utilize short post-program follow-up periods for their impact analysis. The above results reinforce the importance of a lengthy post-program follow-up period for evaluating dislocated worker programs.

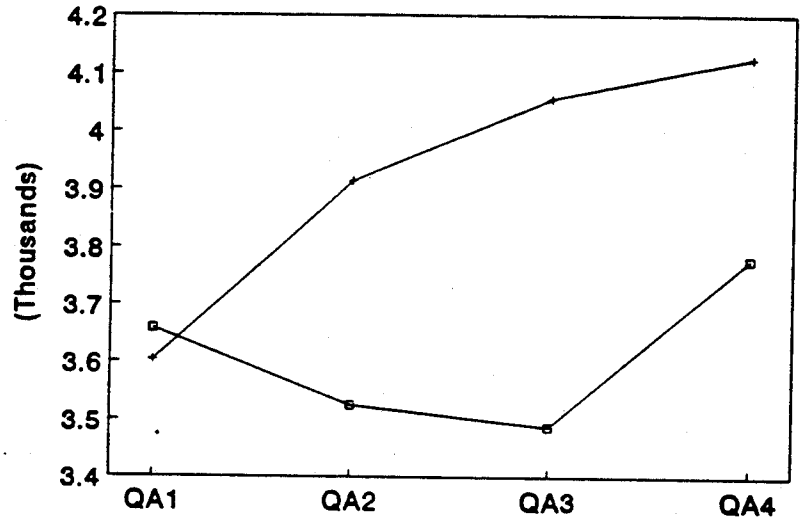
EARNINGS PATTERNS BY TYPE OF PROGRAM SERVICE

In the previous section, we compared quarterly earnings for MRP and comparison group members. That analysis, however, did not take into account the different characteristics of the comparison and MRP members. In this section, we examine the earnings results, holding constant observable characteristics of the sample. We also examine the differential impacts of various MRP program services. We address whether or not more intensive (and costly) program services (e.g., training) result in greater program impacts. To examine this and other questions, we employ the regression model described in earlier chapters.

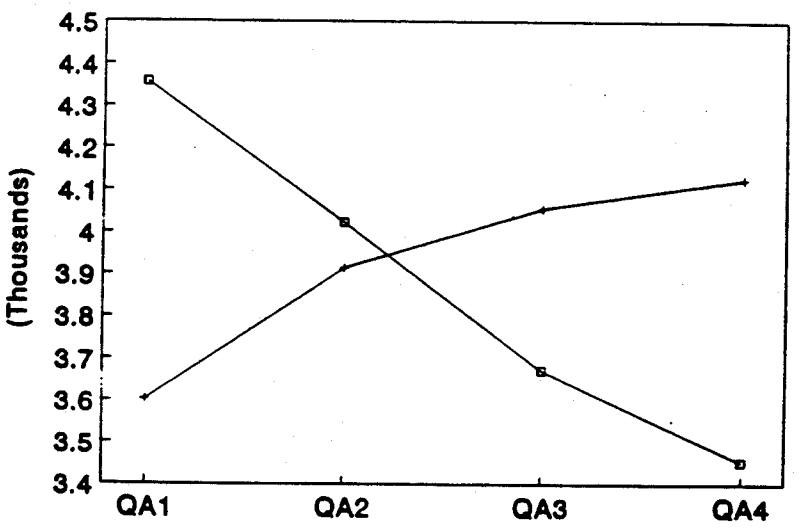
Exhibit 6.2
Comparison of Alternative Time Frames--Quarterly Earnings



(A)
INITIAL CLAIM APPROACH



(B)
MRP EXIT APPROACH



(C)
APPROXIMATE REEMPLOYMENT APPROACH

A potential problem in using program related variables in the impact analysis regressions results from selection bias. That is, individuals may be assigned to program services based on perceived needs and/or abilities. If assignment to services is based on unmeasured characteristics such as motivation and ability and these characteristics also affect earnings, one may derive biased estimates of the true effects of the program service. As a result of this problem, one should use care in interpreting the net impacts by program activity.[33] The variables included as explanatory variables in the model are presented in Table 6.4. MRP members are divided into six service categories; the least intensive service category (perhaps reflecting no service) is T1. This category identifies individuals who completed the MRP application, but who were never enrolled into JTPA. Other levels of MRP service are identified as categories T2 through T6. Of particular interest are the T4 (on-the-job training) and T5 (classroom training and other services) categories, which identify MRP members who receive the most intensive and costly services.

In addition to the above MRP service categories, we include variables in the regression to capture the impact of the length of program services. 'MRP Days' is defined as the number of days between MRP entry and MRP termination. This variable is also included as a squared term to capture non-linear impacts of program duration.

To evaluate the impact of service timing, we include the number of days elapsed between UI claim and MRP entry ('Wait Days'). The coefficient on this variable may be thought of as a measure of the impact of early intervention. It is expected that the shorter (longer) the interval between UI claim and enrollment in MRP, the greater (lower) the program impact. Thus, a negative coefficient on Wait Days would indicate a positive earnings benefit to early intervention.[34]

In addition to these program related variables, we include several demographic characteristics. These variables are included to control for differences in characteristics between MRP and comparison group members. The demographic characteristics included are: age, age squared, sex, and race. Finally, we include earnings in the pre-program quarter to control for potential unobservable and observable differences between MRP and control group members.

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[33] Methods for dealing with selection bias are discussed in Appendix B.

[34] As a result of selection bias, one should be cautious in inferring causal relationships from the coefficients of those program related variables. For example, individuals who enroll in the program quickly or who leave the program early may be more motivated than others. As a result, the coefficients partly may reflect these characteristics.

Table 6.4: Names and Definitions of the Regression Variables

Variable Name	Definition
MRP	= 1 if a member of the MRP Group; = 0 if a member of the Comparison Group
T1	= 1 if MRP Group member but never enrolled in JTPA; = 0 otherwise
T2	= 1 if received placement services only; = 0 otherwise
T3	= 1 if received placement services and job search assistance only; = 0 otherwise
T4	= 1 if received on-the-job training only; = 0 otherwise
T5	= 1 if received classroom training and other services; = 0 otherwise
T6	= 1 if received other mix of services; = 0 otherwise
MRP Days	= Number of days between contact with MRP and End Date
Wait Days	= Number of days between date of filing an initial claim and entry into the MRP program
Age Age^2	= Age (in years) = Age squared
Female	= 1 if sex is female = 0 if sex is male
Non-White	= 1 if race is African-American, Hispanic, or other = 0 if race is White
Wage QB1	= Earnings the quarter prior to Claim Date

Source: Based on information in the MRP Client Data base and UI earnings data.

Results Under the Claim-Referenced Approach. Before proceeding with the analysis of the full model discussed above, we present a series of regressions in Table 6.5 that illustrate the interpretation of the coefficients in our full model.[35] The dependent variables in these regressions are total earnings in the four quarters following the initial UI claim date. Using this claim-referenced approach, program impacts are evaluated starting with the first full calendar quarter following the initial UI claim.

Regression specification A includes demographic characteristics, previous earnings (as measured by the earnings in the quarter immediately preceding the initial claim date -- QB1), and a dummy variable to indicate MRP membership status (1 if MRP member; and 0 otherwise). The coefficient on the MRP variable provides the overall program impact of MRP membership. The results of this regression indicate that MRP participation has a significant and negative impact on earnings in the first year following initial claim.

In order to examine separately the impact of different program services, we substitute in regression specification B, the six service categories described earlier (T1 through T6) for the single MRP dummy variable. The results of this regression indicate that the negative earnings impact in the first year is not maintained across all service categories. For example, the group of MRP members that received OJT services only (T4), experienced a significant and positive program impact ($3,816) in the first year following initial UI claim. This result is not surprising since this subgroup was able to earn income while in the MRP program. Another subgroup, T6 (those who received a mix of services not included in T1 through T5), experienced no significant program impacts in the first year. All other service category subgroups experienced significant negative program impacts.

To evaluate the impact of program length and the impact of elapsed time between UI claim date and MRP entry, we include the variables that capture these features in regression specification C. The coefficient on MRP Days (the number of days in the program) is negative and the coefficient on MRP Days^2 is positive. These coefficient estimates indicate that the longer an individual remains in the program, the lower the impact on earnings.[36] The time trend of this impact, however, is not linear; rather the decline in effect slows as the in-program

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[35] The regressions presented are estimated using the OLS regression technique. In Appendix B we describe a test of a technique to correct for selection bias. The results of this test indicated that correction did not improve the regression results. We therefore use OLS in the remaining regression analyses.

[36]This reverses at approximately 14 months. Few participants, however, remained in the MRP program that long (the average duration was 98 days).

Table 6.5: Determinants of Total Earnings Following Initial UI Claim in Quarters Q1 through Q4 (in 1989 dollars)

Explanatory Variable	Coefficient Estimates by Model		
	A	B	C
Constant	3,295.0	2,733.7	2,799.6
MRP	-944.4**		
T1		-2,219.5***	862.3
T2		-1,222.9**	3,672.8***
T3		-1,811.2**	3,198.8***
T4		3,816.0***	7,997.5***
T5		-2,212.9***	5,349.7***
T6		-423.8	5,212.5***
MRP Days			-46.2***
MRP Days^2			0.07***
Wait Days			-10.6***
Age	327.0***	335.9***	334.0***
Age^2	-4.1***	-4.2***	-4.2***
Female	-2,738.9***	-2,610.8***	-2,729.5***
Non-White	-2,953.3***	-2,655.1***	-2,318.0***
Wage QB1	1.1***	1.2***	1.2***
R^2	0.23	0.24	0.27
F	98.0	58.5	51.0
Sample Size	2,016	2,016	2,016

Source: Estimated using data from MRP client data base and UI earnings.

* Statistically significant at 90 percent confidence level for a two-tailed test.
** Statistically significant at 95 percent confidence level for a two-tailed test.
*** Statistically significant at 99 percent confidence level for a two-tailed test.

period increases. For example, an individual who remains in the program for 30 days is predicted to experience a reduction of $1,323 in earnings for the first year following initial claim. An individual who remains in the program twice as long (60 days), is predicted to experience a $2,520 reduction in earnings (less than twice the 30-day result).

The impact of elapsed time between initial claim date and MRP entry is estimated by the coefficient on the variable Wait Days. The negative and significant coefficient on this variable indicates that for every day elapsed, first-year earnings are reduced by $10.60. Thus, a 100-day delay in program entry (following UI claim) results in an earnings reduction of $1,060 in the first year following the initial claim.

In this full regression specification (C), the coefficients on the service category dummies (T1 through T6), alone, do not measure program impacts on earnings. To derive the impact of each of the service categories, we must first calculate (for each subgroup) the impact of the MRP Days and Wait Days variables. To calculate these, we substitute in the average values of these variables into the fitted equation and add the results to the corresponding coefficient on the service category dummy. Thus, for example, the average number of MRP Days for group T2 (job-placement services only) is 93.1; the average number of Wait Days is 143.7. Using these values we estimate the impact of MRP Days and Wait Days as follows:

$$(-46.2 \times 93.1) + (0.07 \times 13{,}018.5) + (-10.6 \times 143.7) = \$ - 4{,}913.1$$

Adding this value to the coefficient of T2 yields an impact estimate of $ - 1,240 (or $3,672.8 - 4,913.1). Thus, the impact of the T2 service category (job-placement only) is to lower earnings in the first year by $1,240, and not to increase earnings by $3,673 (as indicated by the coefficient of T2). The net impact of other service categories are estimated similarly and presented in Table 6.7.

In Table 6.6, we present a similar set of regressions for the second year following initial claim (Q5 through Q8). The results of these regressions are interesting in that they reveal that overall program impacts in the second year are positive, compared with the negative impact results obtained for the first year. Evaluating program impacts by the six service categories (regression specification B) indicates insignificant impacts for groups T1 and T3; all other service categories have a positive impact on second-year earnings. Thus, the overall positive impact on second-year earnings is not consistent across all service categories. Finally, we present the full model results for the second-year in regression specification C. As above, program impacts for this regression are obtained by inserting the mean values of the MRP Days and the Wait Days variables (for each subgroup) into the fitted regression and combining these results with the coefficients on the service category dummies.

Table 6.6: Determinants of Total Earnings Following Initial UI Claim in Quarters Q5 through Q8 (in 1989 dollars)

Explanatory Variable	Coefficient Estimates by Model		
	A	B	C
Constant	5,468.7**	5,686.8**	5,742.9**
MRP	2,028.3**		
T1		-677.8	1,037.5
T2		2,290.1***	5,028.4***
T3		-46.3	2,707.8**
T4		6,246.8***	8,551.0***
T5		3,429.9***	8,085.3***
T6		2,868.6**	6,033.8***
MRP Days			-22.4**
MRP Days^2			0.02
Wait Days			-6.5**
Age	283.4**	258.5*	257.5*
Age^2	-4.3**	-3.9**	-3.9**
Female	-3,962.0***	-3,901.1***	-4,001.4***
Non-White	-1,864.5***	-1,469.3***	-1,253.9**
Wage QB1	1.1***	1.1***	1.1***
R^2	0.19	0.21	0.22
F	78.6	48.3	39.3
Sample Size	2,016	2,016	2,016

Source: Estimated using data from MRP client data base and UI earnings.

* Statistically significant at 90 percent confidence level for a two-tailed test.
** Statistically significant at 95 percent confidence level for a two-tailed test.
*** Statistically significant at 99 percent confidence level for a two-tailed test.

In Table 6.7, we provide the earnings impact results for the first and second years following the initial UI claim. These results are based on the full model regressions (i.e., regressions specification C) and are estimated at the mean values for each subgroup for the MRP Days and Wait Days variables. The results indicate that, for the first year (Q1-Q4), only T4 (OJT only) had a strong positive impact. Other service categories were either negative or very weak. The second year results, however, indicate a strong positive impact for a majority of the service categories. Only T1 (MRP group member but not enrolled in JTPA) and T3 (placement and job search assistance only) had negative impacts (though these negative impacts appear relatively small).

The above results provide an indication of program impacts over time. More importantly, however, they provide strong evidence for the significance of the time frame in the analysis of dislocated worker programs. Measured over a one-year period (following over initial UI claim), impact results may indicate a negative program effect on earnings. Measured over longer time periods, program impacts may be positive. For these reasons, impact analyses of dislocated worker programs require long follow-up periods when using the claim-referenced approach.

Results Under the Program-Referenced Approach. To isolate earnings and employment effects, we estimate earnings regressions using the program-referenced approach (discussed in Chapter 5) which temporally aligns comparison group members with the average in-program period of the MRP participants. This approach thus establishes a program exit date for comparison group members comparable to the program exit date available for MRP members. The results of a regression on the sum of earnings in the four quarters following the program exit date are presented in Table 6.8. A more detailed analysis of quarterly earnings is presented in Table 6.9.

In Table 6.10, we present the estimated earnings impacts of each of the service categories. These impact estimates are evaluated at the mean subgroup values of MRP Days and Wait Days. The results indicate that those assigned to T1 (MRP member but not enrolled in JTPA) and those assigned to T3 (placement services and job-search assistance) experienced lower earnings than comparison group members in the four quarters following program exit.

Those assigned to other service categories generally experienced positive earnings impacts in the four quarters following program exit. The impact results, however, are inconsistent over time and do not indicate a time trend in impacts.

Results Under the Reemployment-Referenced Approach. The results of estimating a regression on the sum of earnings in the four quarters following the approximated reemployment date is presented in Table 6.11. These results indicate that all MRP service categories except T1 (MRP group member but not enrolled in JTPA) had a significant and

Table 6.7 **Program Impact Estimates on Earnings for the Six Service Categories (Adjusted for Length of Stay and Claim Duration) During the First and Second Years Following Initial UI Claim (in 1989 dollars)**

Treatment Category	Q1-Q4	Q5-Q8
T1	$ - 2,318	$ - 734
T2	- 1,240	2,269
T3	-1,935	- 140
T4	3,797	6,227
T5	- 2,127	3,388
T6	- 429	2,837
Sample Size	2,016	2,016

Source: Estimated using data from MRP client data base and UI earnings.

Table 6.8: Determinants of Quarterly Earnings for the Four Quarters Following MRP Program Exit (in 1989 dollars)

Explanatory Variable	Coefficient	Standard Error
Constant	5,179.8*	2,648.8
T1	-272.1	919.8
T2	4,635.9***	1,033.8
T3	3,075.8**	1,269.8
T4	9,250.6***	1,188.0
T5	7,865.5***	1,568.3
T6	5,923.5***	1,661.4
MRP Days	-34.8***	11.5
MRP Days^2	0.09***	0.03
Wait Days	-6.0***	2.6
Age	300.2**	138.9
Age^2	-4.2**	1.7
Female	-3,666.7***	506.8
Non-White	-1,911.9***	522.3
Wage QB1	1.1***	0.1
R^2	.23	-
F	43.9	-
Sample Size	2,015	-

Source: Estimated using data from MRP client data base and UI earnings.

* Statistically significant at 90 percent confidence level for a two-tailed test.
** Statistically significant at 95 percent confidence level for a two-tailed test.
*** Statistically significant at 99 percent confidence level for a two-tailed test.

Table 6.9: Determinants of Quarterly Earnings by Quarter Following MRP Program Exit (in 1989 dollars)

Explanatory Variable	Coefficients by Quarter Following MRP Program Exit			
	QA1	QA2	QA3	QA4
Constant	1,536.7**	1,068.5	1,086.8	1,487.6*
T1	-346	128.0	-111.3	56.8
T2	1,157.7***	1,254.9***	1,050.9***	1,172.3***
T3	808.8**	757.4**	617.5*	892.0**
T4	2,410.7***	2,380.4***	2,404.2***	2,055.2***
T5	2,206.8***	1,971.5***	1,757.2***	1,929.8***
T6	1,576.3***	1,361.7**	1,427.8***	1,557.6***
MRP Days	-12.3***	-5.3	-8.2**	-9.0***
MRP Days^2	0.03***	0.01	0.02**	0.02**
Wait Days	-1.1	-1.8**	-1.5*	-1.7**
Age	58.2	73.6*	89.2**	79.1*
Age^2	-0.8*	-1.0**	-1.2**	-1.2**
Female	-823.7***	-833.4***	-976.3***	-1,033.4***
Non-White	-558.5***	-517.0***	-428.7***	-407.8***
Wage QB1	0.3***	0.3***	0.3***	0.3***
R^2	0.18	.18	.20	.20
F	32.2	30.4	35.5	35.4
Sample Size	2,015	2,015	2,015	2,015

Source: Estimated using data from the MRP client data base and UI earnings.

* Statistically significant at 90 percent confidence level for a two-tailed test.
** Statistically significant at 95 percent confidence level for a two-tailed test.
*** Statistically significant at 99 percent confidence level for a two-tailed test.

Table 6.10 Program Impact Estimates for the Six Service Categories (Adjusted for Length of Stay and Claim Duration) During the First Year Following MRP Exit (in 1989 dollars)

Treatment Category	QA1-QA4	QA1	QA2	QA3	QA4
T1	$ - 2,304	$ - 912	$ - 322	$ - 605	$ - 497
T2	1,705	245	633	332	350
T3	- 46	- 187	119	145	23
T4	6,599	1,623	1,818	1,759	1,329
T5	4,895	1,167	1,169	968	931
T6	2,708	525	686	634	638
Sample Size	2,015	2,015	2,015	2,015	2,015

Source: Estimated using data from the MRP client data base and UI earnings.

Table 6.11: Determinants of Total Earnings in the Four Quarters Following the Approximate Point of Reemployment (in 1989 dollars)

Explanatory Variable	Coefficient	Standard Error
Constant	4,763.9*	2,664.0
T1	-861.7	923.9
T2	3,936.7***	1,038.4
T3	2,442.7*	1,275.2
T4	8,685.2*	1,193.1
T5	7,117.6***	1,574.9
T6	5,302.0**	1,668.2
MRP Days	-34.9***	11.5
MRP Days^2	0.09***	0.0
Wait Days	-5.9**	2.6
Age	334.5**	139.7
Age^2	-4.4***	1.7
Female	-3,679.2***	509.5
Non-White	-1,997.6***	525.0
Wage QB1	1.2***	0.1
R^2	.24	-
F	45.3	-
Sample Size	2,008	-

Source: Estimated using data from the MRP client data base and UI earnings.

* Statistically significant at 90 percent confidence level for a two-tailed test.
** Statistically significant at 95 percent confidence level for a two-tailed test.
*** Statistically significant at 99 percent confidence level for a two-tailed test.

positive impact on post-program earnings. The lack of significance for the coefficient on T1 is not unexpected since this group received minimal services (if any). The coefficients on MRP Days and MRP Days^2 indicate that the longer MRP members remained in the program, the lower the impact on post-program earnings. This impact, however, is not linear; the effect slowed, as the in-program period increased.

The Wait Days variable indicates that, for every day of delay between UI claim and MRP entry, post-program annual earnings declined by $5.90. Thus, a 100-day delay in program entry (following UI claim) resulted in a reduction of post-program annual earnings of $590. This estimate may provide an indication of the relative impacts of early versus late intervention programs for dislocated workers. The remaining coefficients in the regression indicate a pattern found in many previous studies. Age, as expected, has a positive effect on earnings but at a decreasing rate. Females earn less than males; non-whites earn less than whites; and prior earnings level (as measured by earnings in QB1) is positively related to post-program earnings.

Using the same explanatory variables, we also estimated regressions for each of the four post-program quarters. The results of these regressions are presented in Table 6.12. These quarterly results generally confirm the findings reported above. The most intensive MRP services, T4 (OJT) and T5 (classroom training and other), are consistently the categories with the largest effects in all quarters. The other MRP service categories are generally insignificant in the early quarters, becoming significant in later quarters.

In Table 6.13, we present the impacts of the six service categories, holding constant other factors. These impact estimates are evaluated at the mean subgroup values of MRP Days and Wait Days. The impact results for the sum of earnings in the four quarters following the approximate point of reemployment indicate that the T1 service category (MRP group member but not enrolled in JTPA) experienced lower earnings in the year following reemployment than the comparison group. Subgroup T3 (those who received placement and job search assistance only) also experienced lower earnings than the comparison group. All other service categories had higher earnings than the comparison group. The largest positive impacts are found for the most intensive service categories, T4 and T5 (on-the-job training and classroom training/other, respectively). Holding other factors constant, the service category T4 (on-the-job training) had a $6,043 average impact on earnings and T5 (classroom training/other) had an average impact of $4,137 on earnings.

An examination of the impacts on earnings in quarters QA1 through QA4 (each of the four quarters following reemployment) indicates that the impacts of T4 (on-the-job training) and T5 (classroom training) were consistently positive in all four quarters. For the T1 category (not enrolled in JTPA), the impact was consistently negative but declined monotonically over time. In fact, each of the service categories revealed a time pattern of program impacts. T2 (placement services only), for example, starts off negative, becoming positive and increasing in

Table 6.12: Determinants of Quarterly Earnings by Quarter Following the Approximate Point of Reemployment (in 1989 dollars)

Explanatory Variable	Coefficients by Quarter Following Reemployment			
	QA1	QA2	QA3	QA4
Constant	976.2	1,167.8	1,271.1*	1,259.9*
T1	-936.6***	-474.9*	78.9	470.8*
T2	488.2	584.2*	1,237.6***	1,626.5***
T3	185.8	144.1	813.1**	1,299.6***
T4	1,845.0***	1,783.4***	2,586.0***	2,470.6***
T5	1,519.0***	1,299.1***	1,937.7***	2,361.6***
T6	976.7**	736.4	1,603.7***	1,985.0***
MRP Days	-12.5***	-5.7	-8.2**	-8.4**
MRP Days^2	0.03***	0.02*	0.02**	0.02**
Wait Days	-1.1*	-1.7**	-1.4*	-1.7**
Age	102.0**	93.7**	71.3*	67.5*
Age^2	-1.2**	-1.2**	-1.0**	-1.0**
Female	-1,006.9***	-914.0***	-844.3***	-914.0***
Non-White	-537.8***	-559.1***	-499.3***	-401.4***
Wage QB1	0.3***	0.3***	0.3***	0.3***
R^2	.21	.19	.20	.19
F	38.2	33.8	35.8	32.8
Sample Size	2,008	2,008	2,008	2,008

Source: Estimated using data from the MRP client data base and UI earnings.

* Statistically significant at 90 percent confidence level for a two-tailed test.
** Statistically significant at 95 percent confidence level for a two-tailed test.
*** Statistically significant at 99 percent confidence level for a two-tailed test.

Table 6.13 Program Impact Estimates for the Six Service Categories (Adjusted for Length of Stay and Claim Duration) During the First Year Following Reemployment (in 1989 dollars)

Treatment Category	QA1-QA4	QA1	QA2	QA3	QA4
T1	$ - 2,882	$ - 1,510	$ - 908	$ - 400	$ -61
T2	1,011	- 443	70	533	861
T3	- 676	- 830	- 391	63	491
T4	6,043	1,045	1,266	1,957	1,782
T5	4,137	432	1,064	1,161	1,502
T6	2,086	- 100	235	822	1,142
Sample Size	2,008	2,008	2,008	2,008	2,008

Source: Estimated using data from the MRP client data base and UI earnings.

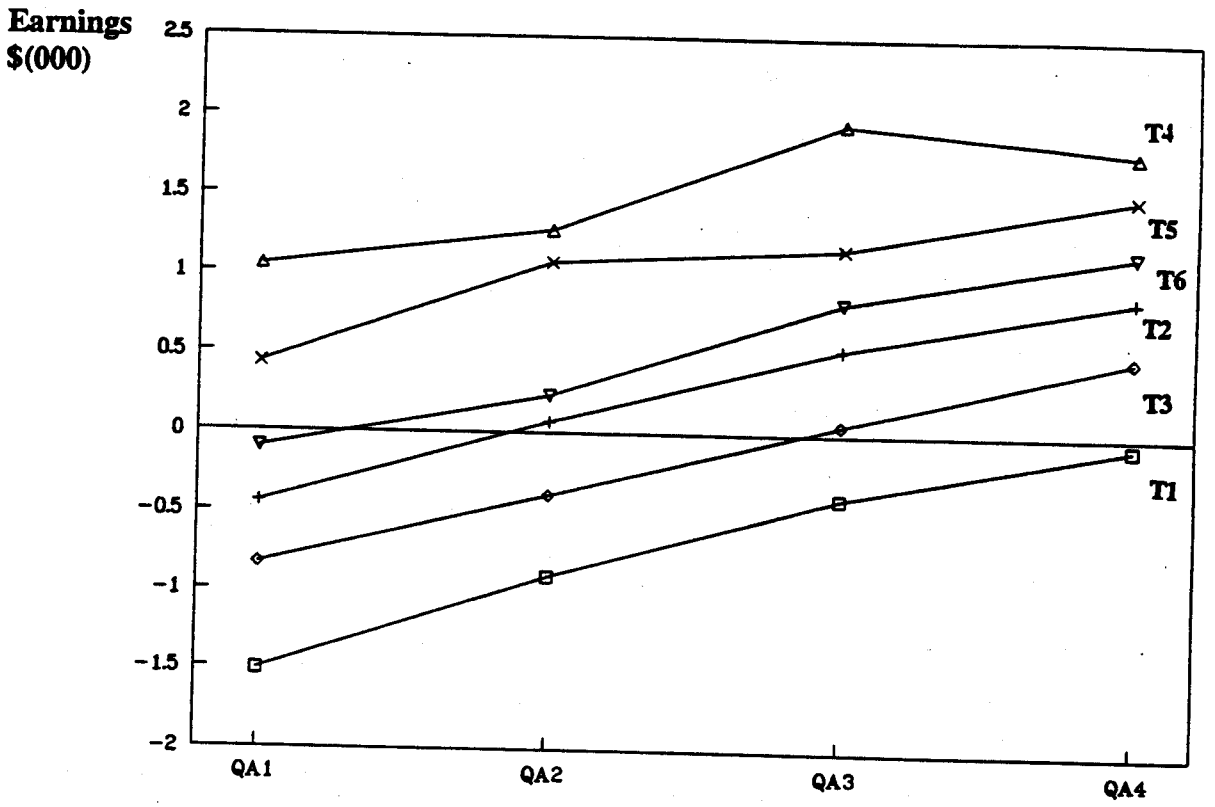
later quarters. A similar time pattern is exhibited by T3 (placement and job-search assistance) and T6 (other services) in that they start off negative and become positive and increase in later quarters. These results reinforce the importance of time frame and the danger inherent in reaching conclusions on program impacts based on the analysis of a single post-program point in time.

In Exhibit 6.3 we present these impact results graphically. The trend in program impacts is clearly positive for all service categories. Those categories that start off with negative impacts become less negative or positive in later quarters. Those categories that start off with positive earnings impacts also exhibit a positive trend.

Summary. In general, the results of the analysis presented in this chapter suggest that MRP participants, other than those in subgroup T1 (those not enrolled in JTPA), experienced a significant positive impact on their post-program earnings. Those who received on-the-job training or classroom training -- T4 and T5 -- experienced the largest positive impacts on earnings. While the results are generally true for annual data, individual quarterly analysis may yield inconsistent results.

Exhibit 6.3

Time Pattern of Program Impacts on Earnings by Service Category



CHAPTER 7

MRP IMPACTS ON UNEMPLOYMENT INSURANCE BENEFITS RECEIPT AND PROPORTION OF TIME NOT EMPLOYED

OVERVIEW

One goal of Title III programs is to facilitate the readjustment of dislocated workers, following their job loss. This readjustment may require a substantial unemployment period for retraining. It is unclear, therefore, whether Title III programs, on average, reduce or lengthen the period of unemployment. In this chapter, we evaluate MRP's impact on the amount of UI benefits received. We also evaluate the percent of time spent unemployed during the follow-up period.

IMPACTS ON UI BENEFITS RECEIPT

To measure the impact of MRP on the receipt of UI benefits, we analyze the following benefit measures:

- the dollar amount of UI benefits paid to claimants in each of the initial four full quarters following the initial UI claim date;[37]
- the dollar amount paid in each of the next four full quarters; and
- the dollar amount paid in the initial four full quarters following approximated point of reemployment.

In addition to evaluating program impacts on amounts of UI benefits received, we also evaluate program impacts on the number of weeks of benefits collected. This analysis on benefit weeks is performed over the same time frames as the benefit amounts: (1) the initial four full quarters following initial UI claim date; (2) the next four full quarters; and (3) the four quarters following the approximated reemployment date.

Mean Impacts. In the top panel of Table 7.1, we present the mean amounts of UI benefits received in each of the first eight quarters following initial UI claim date. These results indicate that initially, on average, MRP group members received more UI benefits than comparison group members. This pattern continued for the initial three quarters; after that

[37] This date is defined as the first UI claim date in the period from 1986-3 to 1988-2.

Table 7.1: **Mean UI Benefits of the MRP and Comparison Groups by Time Period Over All Cases (in 1989 dollars)**

Reference Point	Time Period	MRP Group	Comparison Group
Initial Claim	Q1	$ 718	$ 622
	Q2	414	287
	Q3	167	155
	Q4	122	208
	Total (Q1-Q4)	$ 1,909	$ 1,538
	Q5	$ 135	$ 235
	Q6	90	246
	Q7	76	172
	Q8	59	163
	Total (Q5-Q8)	$ 379	$ 834
	Total (Q1-Q8)	$ 2,288	$ 2,372
Approximate Point of Reemployment	QA1	$ 148	$ 0
	QA2	90	87
	QA3	75	189
	QA4	78	258
	Total (QA1-QA4)	$ 392	$ 534
Sample Size		1,192	1,114

Source: Missouri Wage and UI Claims Records.

point, the comparison group received more in UI benefits.

In the four quarters following the initial claim, on average, UI benefits for MRP group members exceeded comparison group benefits ($1,909 for the MRP group versus $1,538 for the comparison group). In quarters five through eight, the results were reversed with comparison group benefits, on average, exceeding the MRP group benefits ($834 for the comparison group versus $379 for the MRP group). Over the two-year period following the initial claim, the comparison group received, on average, more in UI benefits than the MRP group ($2,372 for the comparison group versus $2,288 for the MRP group).

Table 7.1 also presents the UI benefits paid following the approximated reemployment date. These results indicate that in the first full quarter following the approximated reemployment date (QA1), MRP members received $148 in UI benefits. Following this initial quarter, however, UI benefits declined to between $75 and $90 per quarter.

Using this time frame, the pattern of UI benefit receipt is quite different for comparison group members. In the first quarter following exit from UI, comparison group members had zero UI benefits.[38] Beyond that initial quarter, UI benefits increased monotonically to $258 in the fourth quarter (QA4). Thus, while post-program UI benefits declined over time for MRP members, UI benefits increased over time for comparison group members.

Above we presented the level of UI benefits received by MRP and comparison group members on average. In Table 7.2, we examine the percent of each of these groups receiving benefits over the same time frame (eight quarters following the initial UI claim in the top panel and four quarters following the approximate point of reemployment in the bottom panel). These results indicate that for both the MRP and comparison groups, the proportion of the group receiving UI benefits declined over time after the initial claim. Following the approximate point of reemployment, however, the proportion of MRP members receiving UI benefits declined, while the proportion of the comparison group increased. These latter results reaffirm our earlier speculation that MRP members may have been reemployed in more stable jobs than comparison group members. Hence, they were less likely to receive UI benefits following reemployment.

The above results reflect the combined effect of both the level of weekly benefits and the number of weeks of UI benefits. To investigate the number of weeks of paid benefits separately from the benefit levels, we present the mean number of UI benefit weeks received by MRP and comparison group members in Table 7.3 for the same set of time periods. Following initial

[38] This result is true by definition (see Chapter 5).

Table 7.2: **Receipt of Benefits of the MRP and Comparison Groups, by Time Period (in percentage terms)**

Reference Point	Time Period	MRP Group	Comparison Group
Initial Claim	Q1	59.9	68.3
	Q2	44.5	43.4
	Q3	21.4	27.6
	Q4	14.1	32.0
	Q5	15.2	33.2
	Q6	14.1	31.1
	Q7	12.9	24.0
	Q8	8.4	26.1
Approximate Point of Reemployment	QA1	18.0	0.0
	QA2	12.2	19.4
	QA3	12.1	30.3
	QA4	11.7	34.3
Sample Size		1,192	1,114

Source: Missouri Wage and UI Claims Records.

claim (see the upper panel of Table 7.3), the results indicate a pattern similar to that found for the amount of UI benefits. That is, in the initial period, MRP members collected more weeks of UI benefits; after the third quarter, comparison members collected more weeks of benefits.

These results suggest that the higher initial level of UI benefits collected by MRP members reflects a longer initial unemployment spell for MRP members. This longer initial unemployment spell for MRP members may be due partly to the time required to complete MRP service programs (e.g., training). The higher level of benefits collected by comparison group members later in the observation period suggests that comparison group members may have had less stable post-program employment pattern than MRP members.

Similar results are obtained for the number of weeks of UI benefits following the approximated reemployment date. In the first quarter following reemployment (QA1), MRP members, on average, collected 1.1 weeks of benefits. In later quarters, average weeks of benefits ranged between 0.6 and 0.7. Comparison group members, on the other hand, gradually increased their weeks of benefits from 0.0 (by definition) to 2.0 between QA1 and QA4.

REGRESSION-ADJUSTED IMPACTS

While the above results provide an indication of program impacts on UI benefits, a more reliable measure of program impacts is provided by a multivariate analysis that controls for differences in individual characteristics between the MRP and comparison groups. To identify program impacts by service category, our model includes the MRP service category variables described in Chapter 6.

The results of the regressions on first and second year UI benefits received following initial claim date are presented in Table 7.4. All other variables from the earlier model are included as well.[39] These results indicate that, holding other factors constant, the longer the duration of time that an MRP client spent in the program (as measured by variable MRP Days), the more he or she collected in UI benefits; in fact, each additional day in the program increased UI benefits by $9 (less the impact of MRP Days^2). The results of the regression also indicate that the longer the elapsed time between UI claim and MRP entry (Wait Days), the higher the UI benefits received.

[39] The models were estimated using OLS.

Table 7.3: **Mean Weeks of UI Receipts of the MRP and Comparison Groups Over All Cases**

Reference Point	Time Period	MRP Group	Comparison Group
Initial Claim	Q1	5.3	4.9
	Q2	3.1	2.3
	Q3	1.3	1.3
	Q4	0.9	1.6
	Total (Q1-Q4)	14.1	12.3
	Q5	1.0	1.8
	Q6	0.7	1.9
	Q7	0.6	1.3
	Q8	0.5	1.6
	Total (Q5-Q8)	2.9	6.5
Approximate Point of Reemployment	QA1	1.1	0.0
	QA2	0.7	0.7
	QA3	0.6	1.5
	QA4	0.6	2.0
	Total (QA1-QA4)	3.0	4.2
Sample Size		1,192	1,114

Source: Missouri Wage and UI Claim Records.

Table 7.4: **Determinants of UI Benefits Following Initial Claim by Time Period (in 1989 dollars)**

Explanatory Variable	Coefficients by Quarter Following Initial Claim (Q1-Q4)	(Q5-Q8)
Constant	-72.6	140.5
T1	-603.9***	-564.1***
T2	-750.0***	-704.2***
T3	-826.0***	-559.8***
T4	-1,250.6***	-755.0***
T5	-863.5***	-817.4***
T6	-1,138.0***	-736.3***
MRP Days	9.0***	1.5*
MRP Days^2	-0.01***	0.00
Wait Days	2.3***	1.5***
Age	40.9***	24.5**
Age^2	-0.4***	-0.3*
Female	110.5*	-70.5
Non-White	276.1***	7.7
Wage QB1	0.0***	-0.0
R^2	0.16	0.06
F	27.4	9.6
Sample Size	2,016	2,016

Source: Estimated using data from the MRP client data base and UI earnings.

* Statistically significant at 90 percent confidence level for a two-tailed test.
** Statistically significant at 95 percent confidence level for a two-tailed test.
*** Statistically significant at 99 percent confidence level for a two-tailed test.

Impacts by Type of Program Service. In Table 7.5, we present the impact estimates for each of the service categories, estimated at the mean for MRP Days and Wait Days for each of the subgroups. The results indicate that only the T4 service category (on-the-job training only) reduced UI benefits in the first year. All other categories exhibited higher UI benefits during the first year following initial claim, relative to the comparison group. In the second year, however, MRP group members in all service categories received lower UI benefits, relative to the comparison group. Again, our results indicate that program participation may lengthen initial unemployment and thus lead to higher UI benefits in the year following initial claim. However, the results also indicate that MRP members may be reemployed in more stable jobs than comparison group members. As a result, following reemployment, MRP members collected lower UI benefits than comparison group members.

Since UI benefit amount is a function of both weeks collected and weekly benefit amount, we estimated separately the impact of MRP on number of benefit weeks collected. The results of these regressions on the number of weeks collected (see Table 7.6) are similar to the results on amount of UI benefits received. Specifically, all MRP service categories have negative coefficients; longer periods in the program (MRP Days) and longer waiting periods (Wait Days) were associated with additional UI benefit weeks. Furthermore, program effects on the number of UI benefit weeks collected were greater in the first year than in the second year.

The impact estimates for each of the service categories (estimated at the mean for MRP Days and Wait Days of each subgroup) are presented in Table 7.7. The results in the first year following initial claim (Q1-Q4), indicate that only category T4 (on-the-job training only) experienced fewer UI benefit weeks than the comparison group. All other categories experienced more UI benefit weeks than the comparison group. In particular, category T5 (classroom training and other services) experienced approximately twelve weeks of additional UI benefit weeks relative to the comparison group.

During the second year following the initial claim (Q5-Q8), however, all service categories experienced fewer benefit weeks than the comparison group. This latter result reinforces the previous finding that MRP members may have been reemployed in more stable jobs.

IMPACTS ON TIME NOT EMPLOYED DURING FOLLOW-UP PERIOD

Distribution and Determinants of Time Not Employed. As described earlier, to measure program impacts on unemployment, we utilize the follow-up survey data. The survey provides information on the number and length of employment periods between the initial claim

Table 7.5 **Program Impact Estimates on UI Benefits Receipt for the Six Service Categories (Adjusted for Length of Stay and Claim Duration) During the First and Second Years Following Initial UI Claim (in 1989 dollars)**

Treatment Combination	Q1-Q4	Q5-Q8
T1	$ 90	$ - 281
T2	549	- 349
T3	515	- 214
T4	- 267	- 426
T5	2,154	- 284
T6	493	- 365
Sample Size	2,016	2,016

Source: Estimated using data from the MRP client data base and UI earnings.

Table 7.6: Determinants of the Number of UI Benefit Weeks Collected Following the Initial Claim by Time Period

Explanatory Variable	Coefficients by Quarter Following Initial Claim (Q1-Q4)	(Q5-Q8)
Constant	2.2	1.9
T1	-5.1***	-4.3***
T2	-6.1***	-5.4***
T3	-6.8***	-4.5***
T4	-9.9***	-5.7***
T5	-7.0***	-6.2***
T6	-8.8***	-5.4***
MRP Days	0.07***	0.01
MRP Days^2	-0.00***	0.00
Wait Days	0.02***	0.01***
Age	0.2*	0.2*
Age^2	-0.0	-0.0
Female	1.2***	-0.2
Non-White	2.3***	0.3
Wage QB1	0.0***	-0.0
R^2	0.14	.06
F	23.1	9.4
Sample Size	2,016	2,016

* Statistically significant at 90 percent confidence level for a two-tailed test.
** Statistically significant at 95 percent confidence level for a two-tailed test.
*** Statistically significant at 99 percent confidence level for a two-tailed test.

Table 7.7 **Program Impact Estimates on Number of UI Benefit Weeks for the Six Service Categories (Adjusted for Length of Stay and Claim Duration) During the First and Second Years Following Initial UI Claim**

Treatment Combination	Q1-Q4	Q5-Q8
T1	0.5	- 2.4
T2	3.3	- 3.0
T3	2.9	- 2.2
T4	- 2.3	- 3.5
T5	11.7	- 2.6
T6	2.5	- 2.9
Sample Size	2,016	2,016

Source: Estimated using data from the MRP client data base and UI earnings.

date and interview date. Using these data, we construct a measure of percent of time not employed during the follow-up period.[40] The distribution of this measure for MRP and comparison group members is presented in Table 7.8. An examination of this distribution indicates a similar pattern for both the MRP and comparison groups. Approximately one quarter of both groups were without employment 10 percent or less of the follow-up period. (Alternatively, we may say approximately one quarter of both groups were employed during more than 90 percent of the follow-up period.) On average, MRP members were without employment 32.0 percent of the follow-up period, while comparison group members were without employment 33.8 percent of the follow-up period.

Impacts by Type of Program Service. An analysis of MRP program impact on the proportion of the survey follow-up period not employed is presented in Table 7.9. The regression results indicate that all MRP service categories substantially reduced the proportion of time not employed (i.e., increased the proportion of time employed). As we found with earnings regressions, the T1 subgroup (MRP member but not enrolled in JTPA) exhibited a smaller effect than other service subgroups.

Also, as before, both MRP Days and Wait Days had positive and significant effects. That is, the longer the in-program period (MRP Days) and the longer the period between UI claim and MRP entry (Wait Days), the greater the proportion of the follow-up period an MRP member remained not employed. Of course, part of this effect may be definitional since Waiting Days and MRP Days generally reflect unemployment. The effect, nevertheless, is powerful considering that the dependent variable is the percent of total follow-up period not employed. Finally, unlike the previous regressions on earnings, the effects of age, sex, and prior earnings are not significant. Race remains significant, with non-whites exhibiting a higher percent of follow-up period not employed by 9.8 percentage points.

In Table 7.10, we present the impact estimates of each of the service categories on the proportion of time not employed. The results indicate that the classroom training group (T5) experienced the largest proportion of time without employment during the follow-up period (11.9 percentage points higher than the comparison group). The group assigned to OJT (T4) experienced the lowest proportion of time without employment (13.1 percentage points lower than the comparison group). The remaining service categories experienced similar proportions of time without employment as the comparison group.

[40] This measure differs from the percent of time unemployed since it may include out-of-the-labor-force periods.

Table 7.8: Distribution of the Proportion of Time Not Employed During Follow-Up Period

Percent of Time Unemployed (in days)	MRP Group		Comparison Group	
	Number of Individuals	Percent of Time Not Employed	Number of Individuals	Percent of Time Not Employed
10 or less	145	26.1	86	24.4
11-20	91	16.4	55	15.6
21-30	77	13.9	40	11.4
31-40	65	11.9	48	13.6
41-50	57	10.3	28	8.0
51-60	29	5.2	33	9.4
61-70	34	6.1	21	6.0
71-80	26	4.7	17	4.8
81-90	20	3.6	16	4.6
91-100	12	2.2	8	2.3
Total	556	100.1	352	100.1
Average		32.0		33.8

Source: Abt Telephone Survey.

Table 7.9: Determinants of the Proportion of Time Not Employed During the Follow-Up Period

Explanatory Variable	Coefficient	Standard Error
Constant	27.3***	9.8
T1	-9.1***	3.4
T2	-20.9***	3.6
T3	-24.2***	4.4
T4	-29.8***	4.2
T5	-26.7***	5.2
T6	-26.4***	0.0
MRP Days	0.14***	0.04
MRP Days^2	-0.00	0.00
Wait Days	0.05***	0.00
Age	0.4	0.5
Age^2	-0.0	0.0
Female	2.1	1.9
Non-white	9.8***	2.0
Wage QB1	-0.0	0.0
R^2	0.14	-
F	9.4	-
Mean of Dependent Variable (Days)	32.7	-
Sample Size	813	-

Source: Estimated using data from the MRP client data base and UI earnings.

* Statistically significant at 90 percent confidence level for a two-tailed test.
** Statistically significant at 95 percent confidence level for a two-tailed test.
*** Statistically significant at 99 percent confidence level for a two-tailed test.

Table 7.10 **Program Impact Estimates on the Proportion of Time Not Employed During the Follow-Up Period for the Six Service Categories (Adjusted for Length of Stay and Claim Duration)**

Treatment Combination	Follow-Up Period
T1	3.6
T2	- 0.7
T3	- 3.5
T4	- 13.1
T5	11.9
T6	- 2.6
Sample Size	2,016

Source: Estimated using data from the MRP client data base and UI earnings.

CHAPTER 8

CONCLUSIONS

OVERVIEW

The results presented in previous chapters provide a comprehensive evaluation of the impact of a selected Title III program on earnings, UI benefits, and employment. We analyzed program impacts from a variety of temporal perspectives using three time frame specifications. Each of the time frame specifications contributed to the overall understanding of program impact dynamics.

The first time frame analyzed is referred to as the claim-referenced time frame. In this time frame we identified, for each sample member, a series of calendar quarters starting with the first full quarter following his or her initial UI claim. Program impacts were then evaluated by comparing corresponding quarters for MRP and comparison group members.

Using the claim-referenced time frame specification, we analyzed program impacts on earnings for the two-year period following initial UI claim. Our analysis indicated that early in this period, MRP members earned less than comparison group members. While most MRP clients suffered a loss of earnings during this early period, one subgroup, those MRP clients assigned to on-the-job training (OJT), experienced a gain in earnings relative to the comparison group. This gain was most likely due to the fact that members of this subgroup earned wages while participating in the MRP program.

Evaluating program impacts over the latter part of this two-year period (i.e., second-year following the initial UI claim), indicated totally different results. During the second year, MRP program services generally had a positive impact on earnings. The combined results from year one and year two suggest that, initially, program participants sacrificed earnings in order to participate in the MRP program; later, MRP participants' earnings "caught up." Only two MRP subgroups failed to catch up over the two-year period -- MRP members not enrolled in JTPA and participants who received placement services and job-search assistance only.

The above analysis, based on the claim-referenced time frame, did not explicitly identify the period of time spent in the MRP program (in-program period) and the period following program participation (post-program period). To explicitly evaluate MRP program impacts on post-program earnings, we analyzed the data using a second time frame specification -- the program-referenced time frame. In this time frame, the post-program period was defined differently for MRP members and comparison group members. For MRP members, the post-program period was defined as the period following MRP program termination. For comparison group members, a comparable period was derived by adding the average MRP program duration (239 days) to the initial UI claim date of each comparison group member. This procedure

temporally aligned the MRP post-program period with a comparable period for comparison group members. Post-program impacts were then evaluated by comparing corresponding quarters for MRP and comparison group members.

Regression results based on this time frame indicated generally positive program impacts on earnings for the first post-program year. Two subgroups, those MRP participants not enrolled in JTPA and those receiving placement services and job-search assistance only, however, experienced a decrease in earnings during the first post-program year. A more detailed evaluation of impacts in each of the four post-program quarters, however, did not yield a consistent impact pattern across quarters.

In this study we also developed a third time frame -- the reemployment-referenced time frame -- to isolate program impacts on earnings following reemployment. This approach recognized the fact that following MRP exit, most MRP members were employed. As a result, it was necessary to identify a comparable reemployment point for comparison group members. To approximate the reemployment point for comparison group members, we used the first full quarter without UI activity. For MRP members, therefore, post-program quarters started with the first full quarter following MRP termination; for comparison group members, post-program quarters started with the first full quarter without UI activity.

Based on this reemployment-referenced approach, we evaluated the program impact on earnings in the first post-program year. The results of this analysis were similar to the results obtained using the program-referenced approach. That is, except for the subgroup of MRP participants not enrolled in JTPA and the subgroup that received placement services and job-search assistance only, MRP services had a positive impact on earnings in the first post-program year.

An analysis of quarterly earnings (using the reemployment-referenced approach) revealed interesting time patterns of program impacts for the various service categories. Those service categories that started off with negative impacts in the early quarters, later exhibited either positive impacts or declining negative impacts. The other service categories that exhibited positive impacts throughout the post-program period, exhibited increasing positive impacts over time.

These results are consistent with the observation that dislocated workers often change occupations following Title III retraining. As a result, dislocated workers are often reemployed at a relatively low wage. Following reemployment, however, they tend to catch up and exceed comparison group earnings.

Our analysis also evaluated the effect of program features of specific interest to policy-makers. For example, we analyzed the effect of length of time in the program and the effect

of elapsed waiting time between UI claim and program entry. The regression coefficients on these variables indicated, that the longer the in-program period, the lower were earnings. Also, the longer the waiting period between initial UI claim and MRP entry, the lower were earnings. This latter result, may be important as an indicator of the potential impact of the early intervention component of EDWAA programs. While these results may reflect early intervention effects, caution should be exercised in inferring causality due to the potential effect of selectivity bias.

The study also evaluated the impact of MRP services on UI benefits collected and the proportion of time not employed. This analysis was conducted using the initial UI claim-referenced time frame. The results of the analysis are consistent with and reinforce the earlier findings on earnings. Early in the period following initial UI claim, MRP participants collected more UI benefits than comparison group members. Later in the observation period, MRP participants collected less in UI benefits than comparison group members.

The impact of MRP participation on the proportion of time not employed was analyzed over the entire follow-up period. The results of this analysis indicated that MRP participation reduced the proportion of time not employed (i.e., increased the proportion of time employed) for those MRP members assigned to on-the-job training. The results also indicated, however, that MRP participation increased the proportion of time not employed (i.e., reduced the proportion of time employed) for those assigned to classroom training.

Previous studies of dislocated worker programs used a variety of study designs, analysis techniques, and time frames. Partly as a result of relatively short follow-up periods in these analyses, past studies have yielded conflicting and inconclusive results on the impact of training programs on dislocated workers. Some studies found that training had a positive effect on employment and earnings, while other studies found the reverse. In the present study we attempted to sort out these conflicting results by evaluating alternative time frame specifications.

The impact results presented above indicated that MRP services generally had a positive impact on earnings. These impacts, however, were not consistent over all MRP service categories nor were they consistent over time. For example, for some MRP services, the impact was positive; for other services, it was negative. Early in the observation period, program impacts were sometimes negative; later, impacts were generally positive. Thus, the results of the study reinforce the value of carefully specifying an evaluation time frame. It is hoped that the specifications developed in this study will provide a framework and an impetus for further refinements.

APPENDIX A

ELIGIBILITY ASSESSMENT FORM FOR THE MRP PROGRAM

ELIGIBILITY ASSESSMENT

1. SOCIAL SECURITY NUMBER

2. DATE ENROLLED (NEW) Mo. Day Yr. (OLD)

3. OFFICE ID NO.

4. COUNSELOR

5. PROGRAM TYPE
- ☐ 0 Ineligible
- ☐ 1 Title IIA
- ☐ 3 Worker Re-Entry (Title III)
- ☐ 6 Other
- ☐ 9 Eligible

6. COMPONENT/ TITLE

7. COUNTY CODE

8. AGE

9. U.S. CITIZEN
- ☐ 0 No
- ☐ 1 Yes
- ☐ 3 Elig. Non-Cit.

LAST NAME, FIRST, MIDDLE INITIAL

10. LABOR FORCE STATUS
- ☐ 1 Employed
- ☐ 2 Unemployed
- ☐ 3 Not in Labor Force

11. IN-SCHOOL
- ☐ 0 No
- ☐ 1 Yes

12. FAMILY STATUS
- ☐ 0 Single Parent Under 6
- ☐ 1 Single Parent 6-17
- ☐ 2 Parent in Two Parent Family
- ☐ 3 Family Member
- ☐ 4 Non Dependent Individual
- ☐ 5 Foster Child

Teenage Parent ☐ Yes ☐ No

17. ADDRESS (NUMBER, STREET)

18. CITY

19. STATE MO

20. ZIP CODE

13. TOTAL NUMBER IN FAMILY

PUBLIC ASSISTANCE

14. OTHER
- ☐ 0 No
- ☐ 1 General Assistance
- ☐ 2 Refugee Act
- ☐ 3 SSI

15. AFDC
- ☐ 0 No
- ☐ 1 Yes

21. TELEPHONE NUMBER Area Code

22. BIRTH DATE Mo. Day Yr.

23. SEX
- ☐ 1 Male
- ☐ 2 Female

24. APPLICANT TYPE
- ☐ 1 Youth
- ☐ 2 Adult

25. DISPLACED HOMEMAKER
- ☐ 0 No
- ☐ 1 Yes

26. HANDICAPPED
- ☐ 0 No
- ☐ 1 Yes
- ☐ 2 Handicapped Individual

27. FOOD STAMP RECIPIENT
- ☐ 0 No
- ☐ 1 Yes

28. ANNUALIZED FAMILY INCOME

NOTE: 6 MONTH X 2

29. GRANT INCOME AT ELIGIBILITY

Monthly Amount

INCOME TEST

30. OMB GUIDELINES
- ☐ 0 No
- ☐ 1 Yes

31. LOWER LIVING STANDARD
- ☐ 0 No
- ☐ 1 70%

32. YEARS OF EDUCATION COMPLETED ☐ GED ☐ H.S. Diploma

Name of School _____

Type _____

Courses _____

33. EDUCATIONAL STATUS
- ☐ 1 Student (High School or Less)
- ☐ 2 Dropout
- ☐ 3 High School Complete Not Attending School
- ☐ 4 Post High School Attendee
- ☐ 5 Associate Degree
- ☐ 6 Bachelor Degree

34. LONG TERM ADC
- ☐ 0 No
- ☐ 1 Yes

36. U.I. CLAIM
- ☐ 0 No
- ☐ 1 Eligible Claimant
- ☐ 2 Exhaustee

37. WEEKS UNEMPLOYED
- ☐ 0 No
- ☐ 1 1-14 Wks.
- ☐ 2 15-26 Wks.
- ☐ 3 Over 26 Wks.

RACE/ETHNIC
- ☐ 1 White Not Hispanic
- ☐ 2 Black Not Hispanic
- ☐ 3 Hispanic
- ☐ 4 American Indian/Alaskan Native
- ☐ 5 Asian and Pacific Islander

☐ Refugee ☐ Parolee

38. MIGRANT SFW (MSFW)
- ☐ 0 No
- ☐ 1 Yes

40. VETERAN
- ☐ 0 Non-Vet
- ☐ 2 Vietnam Era
- ☐ 3 Disabled
- ☐ 4 Recently Separated
- ☐ 5 Other

FROM _____ TO _____ BRANCH _____

TYPE OF DISCHARGE _____

41. SELECTIVE SERVICE REGISTRANT
- ☐ 0 Not Required
- ☐ 1 Yes
- ☐ 2 No

42. OFFENDER
- ☐ 0 No
- ☐ 1 Yes

43. LIMITED ENGLISH LANGUAGE PROFICIENCY
- ☐ 0 No
- ☐ 1 Yes

44. PRIOR JTPA. Have you ever participated under JTPA (Manpower) Program in this SDA or another SDA?

Not a data entry item.
- ☐ 0 No
- ☐ 1 Yes

45. HIGHEST READING LEVEL

46. CATEGORY
- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4

47. BARRIER
- ☐ 1 Yes
- ☐ 2 Homeless

48. ☐ I CERTIFY THAT I AM A RESIDENT OF _____ COUNTY/CITY OF THE STATE OF MISSOURI.

49. WORK HISTORY. Most recent. Last 26 Weeks Required. (Additional Boxes on Back.) (Title III applicants see MIS Manual Instructions)

COMPANY NAME

CITY STATE JOB TITLE

LENGTH OF JOB (In Months)

DATE STARTED (DO NOT KEY) Mo. Day Yr.

DATE ENDED Mo. Day Yr.

HOURLY WAGE

HOURS PER WEEK

☐ Full-Time ☐ Part-Time

REASON FOR LEAVING
- ☐ 1 Layoff; Date _____
- ☐ 2 Quit
- ☐ 3 Fired
- ☐ 4 Job Ended
- ☐ 5 Other

DOT CODE

# of Weeks Worked in Last 13 Weeks

EARNINGS

DUTIES: _____

Applicant Working Below Potential ☐ Yes ☐ No

Skill Level ☐ Entry ☐ Semi-Skilled ☐ Unskilled

Advancement Opportunity ☐ Yes ☐ No

CODE _____ ALTERNATE TELEPHONE NUMBER Area Code

CODE _____ ALTERNATE TELEPHONE NUMBER Area Code

I CERTIFY THAT THE INFORMATION GIVEN ON THIS APPLICATION IS TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE AND BELIEF. I UNDERSTAND THAT SUCH INFORMATION IS SUBJECT TO VERIFICATION AND I FURTHER REALIZE THAT FALSIFIED OR FRAUDULENT INFORMATION MAY RESULT IN THE REJECTION OF THIS APPLICATION, SUBSEQUENT TERMINATION FROM THE JTPA PROGRAM OR PROSECUTION UNDER THE LAW.

WE ARE ASKING YOU TO PROVIDE VOLUNTARILY YOUR SOCIAL SECURITY ACCOUNT NUMBER SO THAT THIS AGENCY CAN PROVIDE EMPLOYMENT ASSISTANCE TO YOU IN THE MOST TIMELY AND EFFICIENT WAY. THIS INFORMATION WILL BE USED TO IDENTIFY YOUR RECORD IN FILING SYSTEMS, FOR FOLLOW-UP SERVICES PROVIDED YOU, FOR VERIFICATION OF ELIGIBILITY FOR SERVICES INCLUDING MONETARY, AND FOR STATISTICAL REPORTING PURPOSES.

APPLICATION DATE M M D D Y Y

(Date) _____

(Signed) - 137 _____

(Parent or Guardian Signature) _____

(Interviewer's Signature) _____ (Date) _____

MO 825-0981 (6-88)

MODES-JTPA-1 (8-88)

WORK HISTORY

COMPANY NAME

CITY | STATE | JOB TITLE

LENGTH OF JOB (In Months) | DATE STARTED (DO NOT KEY) Mo. Day Yr. | DATE ENDED Mo. Day Yr.

HOURLY WAGE

HOURS PER WEEK

☐ Full-Time ☐ Part-Time

REASON FOR LEAVING

☐ 1 Layoff; Date _____ ☐ 2 Quit

☐ 3 Fired ☐ 4 Job Ended ☐ 5 Other

DOT CODE

Duties _____

EARNINGS

Applicant Working Below Potential ☐ Yes ☐ No

Skill Level ☐ Entry ☐ Semi-Skilled ☐ Unskilled

Advancement Opportunity ☐ Yes ☐ No

WORK HISTORY

COMPANY NAME

CITY | STATE | JOB TITLE

LENGTH OF JOB (In Months) | DATE STARTED (DO NOT KEY) Mo. Day Yr. | DATE ENDED Mo. Day Yr.

HOURLY WAGE

HOURS PER WEEK

☐ Full-Time ☐ Part-Time

REASON FOR LEAVING

☐ 1 Layoff; Date _____ ☐ 2 Quit

☐ 3 Fired ☐ 4 Job Ended ☐ 5 Other

DOT CODE

Duties _____

EARNINGS

Applicant Working Below Potential ☐ Yes ☐ No

Skill Level ☐ Entry ☐ Semi-Skilled ☐ Unskilled

Advancement Opportunity ☐ Yes ☐ No

NAME AND ADDRESS OF PARENT'S OR GUARDIAN'S EMPLOYER

Position _____ Salary _____ Supr. _____

WORKER RE-ENTRY PROGRAM TITLE III

a. Name of Employer _____

b. Contact Person _____

c. Telephone No. _____

d. Date of Permanent Layoff _____

INCOME TEST

PLEASE ENTER IN THE FOLLOWING BLANKS THE TOTAL AMOUNT OF INCOME ACCORDING TO EACH SOURCE FOR THE PAST 6-MONTH PERIOD

INCLUDABLE INCOME	6 MO.	EXCLUDABLE INCOME	6 MO.
WAGES (Applicant)		VA EDUCATION	
WAGES (Mother & Father or Spouse)		VA DISABILITY	
OTHER WAGES (Brother/Sister)		SOCIAL SECURITY	
		Retirement/Death Benefits/Disability/One Time/Death	
		PUBLIC ASSISTANCE: ADC, SSI, or Other Cash	
		(From _____ to _____) Type(s) _____	
		FOSTER PAYMENT	
VA RETIREMENT		UNEMPLOYMENT COMPENSATION	
OTHER (Explain)		(From _____ to _____)	
TOTAL		STUDENT GRANTS, LOANS, SCHOLARSHIPS	
X 2		CHILD SUPPORT	
		OTHER (Explain)	
ANNUALIZED INCOME		TOTAL NUMBER IN FAMILY ____ 6 MONTHS	
QUALIFYING INCOME: OMB _____ 70% _____		CASE WORKER NAME _____	
		CASE WORKER TELEPHONE NO. _____	
		CASE LOAD NO. _____	

ECONOMICALLY DISADVANTAGED: ☐ YES ☐ NO

IF "YES" CHECK REASON(S)

☐ FAMILIES RECEIVING PUBLIC ASSISTANCE — AFDC

Case No. _____ Amount _____ Date Began _____

☐ FAMILIES RECEIVING GENERAL ASSISTANCE

Case No. _____ Amount _____ Date Began _____

☐ FAMILIES RECEIVING REFUGEE ASSISTANCE

Case No. _____ Amount _____ Date Began _____

☐ FAMILIES RECEIVING PUBLIC ASSISTANCE — SSI

☐ ANNUAL FAMILY INCOME DOES NOT EXCEED OMB POVERTY LEVEL OR 70 PERCENT OF THE LOWER LIVING STANDARD INCOME LEVEL

☐ FOOD STAMP RECIPIENT

☐ FOSTER CHILD

☐ HANDICAPPED INDIVIDUAL

☐ HOMELESS

BARRIERS

☐ 1 Limited English Language Proficiency
☐ 2 Displaced Homemaker
☐ 3 School Dropout
☐ 4 Teenage Parent
☐ 5 Handicapped
☐ 6 Experienced Worker
☐ 7 Veteran
☐ 8 Offender
☐ 9 Worker Re-Entry
☐ 10 Upgrade Eligible
☐ 11 Other _____

ELIGIBLE FOR: (CHECK PROGRAMS)

☐ TITLE IIA ☐ TITLE III ☐ OTHER _____

SUPPLEMENTAL INFORMATION:

EMERGENCY CONTACT: NAME _____ TELEPHONE _____

30 DAY REVIEW

APPLICATION COMPLETE ☐ YES ☐ NO

CORRECT DETERMINATION ☐ YES ☐ NO

APPLICATION IS REASONABLE AND INTERNALLY CONSISTENT ☐ YES ☐ NO

CONDUCTED BY _____
(Name and Title)

DATE _____

MODES-JTPA-1-2

APPENDIX B

THE ISSUE OF SELECTIVITY BIAS

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THE ISSUE OF SELECTIVITY BIAS

OVERVIEW

In this appendix we discuss how the issue of selectivity bias arises in this study and describe our attempts to deal empirically with the issue. Selectivity bias in program evaluation is a concern whenever nonexperimental methods of analysis are used. In nonexperimental studies assignment to the treatment and comparison groups may not be random, but instead may be conditional on observable variables and/or unobservable variables. In such cases, a comparison of the average program outcomes between the two groups is no longer a valid measure of the program's impact. If sample selection is based on observables, then one can use regression analysis to control for these variables in the outcome equation to obtain consistent estimates of the program's impact. However, if selection is based on unobservables, then the situation is more complicated

APPROACH TO THE PROBLEM

One approach that has been used in dealing with selectivity bias is to explicitly model the selection process. This approach is based on the assumption that a causal relationship exists between unobservable characteristics and selection into the program; and, furthermore, that a causal relationship exists between the unobservable variables and the outcome measures (e.g., earnings). Under this approach, one treats selectivity bias as a form of model specification error or omitted variable bias.

A two-stage estimation procedure has been proposed to account for selectivity.[1] In the first stage, one explicitly models selection into the treatment and comparison groups as shown:

$$(B.1) \quad Pr(z = 1) = Pr(w > -\underline{\nu}'\underline{\gamma}) = \frac{\Phi(\underline{\nu}'\underline{\gamma})}{\sigma}$$

where z is the (0,1) comparison/treatment group indicator, w is a normal random variable, ν is a vector of characteristics that influence participation, σ is the standard deviation of z, and Φ is the unit-normal cumulative distribution function. The probit model (B.1) is estimated and a correction factor, λ, is then formed for each observation:

[1] See Burt S. Barnow, Glen G. Cain, and Arthur S. Goldberger in "Issues in the Analysis of Selectivity Bias" (in Ernest Stromsdofer and George Farkas (eds.), *Evaluation Studies Review Annual*, Vol. 5, 1980).

$$\lambda = \frac{\phi(H)}{(\Phi(H))} \textit{ for a treatment group member;}$$

and $$\lambda = \frac{-\phi(H)}{(1 - \Phi(H))} \textit{ for comparison group members;}$$

where $\phi(\cdot)$ *is the normal density function;*

and $$H = \frac{(\underline{\nu}'\underline{\chi})}{\sigma}.$$

In the second stage, the estimated value of the correction factor, $\hat{\lambda}$, is included as a regressor in the outcome equation below:

(B.2) $$y_i = \beta_o + \underline{x}_{1i}'\underline{\beta}_1 + \gamma z_i + \delta\hat{\lambda}_i + u_i$$

where y_i = outcome measure for individual i;
$\underline{x}_1$ = vector of explanatory variables;
z_i = indicator of MRP status (dummy 0,1 variable);
$\hat{\lambda}_i$ = estimated values of the correction factor; and
u_i = individual random disturbance term.

The equation is then estimated using ordinary least squares.[2] By modeling the selection process in this way, one seeks to specify a multiple regression that "holds constant" those characteristics not already in the model that both affect the outcome (y_i) and are correlated with selection into the program (z_i).

[2] Though the OLS coefficient estimates are consistent, OLS estimates of the standard errors are not. Estimates reported in this appendix were obtained using a routine in the LIMDEP econometric package which produces corrected, consistent standard errors.

LIMITATIONS OF THE APPROACH

In practice, several limitations to the above approach exist. First, small sample properties of the estimator are unknown. Second, estimating treatment/comparison group status using probit analysis may not yield accurate predictions. Low predictive power in stage one produces a weak estimate of the correction factor and leads to increases in the standard error of the treatment estimate. In essence, the technique is only as good as its ability to predict treatment/comparison group status. Third, given that the small sample properties of these estimators are unknown, there is no way to guarantee that any statistical power will be achieved in statistical tests. Recognizing these limitations, we describe below our empirical efforts to deal with selectivity bias.

EMPIRICAL RESULTS

We performed the two-stage estimation procedure on the overall impact model. In the first stage, we modeled selection into two groups: the MRP (treatment) group and comparison group. Specifically, selection into the two groups was modeled as a function of basic demographic and labor market characteristics. In the second stage, we modeled earnings (the sum of quarterly earnings for the four quarters following initial claim) as a function of demographic variables, labor market characteristics, program-related variables, MRP/comparison group dummy, and the estimated value of the selection correction term ($\hat{\lambda}$). Table B-1 reports the estimated coefficients from each stage.

The coefficients on the variables in the selection equation[3] indicate that the effect of age on the probability of selection into the MRP group is positive while the effect of age squared is negative; nonwhites have a higher probability than whites of being selected into MRP based on this model.

The model passes the usual Chi-Square test, which tests for the overall significance of all the coefficients, and would seem to have some predictive power in relation to the available data. However, an examination of the distribution of predicted probabilities leads one to

[3] The change in the probability of selection from a unit change in any given independent variable may not be interpreted directly because of the nonlinear relationship between the probability of selection and the independent variables.

Table B-1: Determinants of Program Participation and Total Earnings for the Four Quarters Following Initial Claim (1989 Dollars for Earnings) Using the Selection Correction Estimation Methodology

Explanatory Variable	Stage 1: Selection Equation	Stage 2: Outcome Equation
Constant	-2.6***	11,114.3
MRP (1 = Yes, 0 = Comparison Group)	-	19,366.4
MRP Days	-	-32.1***
MRP Days^2	-	0.05***
Wait Days	-	-10.5***
Age	0.1***	-496.7
Age^2	-0.0***	5.4
Female	0.0	-3,050.4***
Non-white	0.3***	-4,485.3***
Wage QB1	0.0*	1.1***
$\hat{\lambda}$	-	-10,249.2
Log of the Likelihood	-1,331.6	-
R^2	-	0.24
Chi-Squared	93.6	-
F	-	64.6
Mean of the Dependent Variable	0.6	12,672.8
Sample Size	2,016	2,016

Source: Estimated using data from the MPR client data base and UI earnings.

* Statistically significant at 90 percent confidence level for a two-tailed test.
** Statistically significant at 95 percent confidence level for a two-tailed test.
*** Statistically significant at 99 percent confidence level for a two-tailed test.

question the predictive power of the model. The model correctly predicts[4] only 1,244 cases out of a total of 2,016 cases (or 61.7 percent).[5]

These results of the probit procedure indicate that we were unable to accurately predict selection into the treatment and comparison groups for close to half the sample.

This lack of predictive power in the first stage led to questionable impact estimates when including the correction factor (our instrumental variable for selectivity) in the second stage. Specifically, the second stage coefficients on MRP participation and the correction factor are statistically insignificant; in addition, their magnitudes appear unreasonably large (the coefficient on MRP is $19,233 and the coefficient on the correction factor, $\hat{\lambda}$, is -$10,249).[6]

These results may be an indication of multicollinearity between $(\hat{\lambda})$ and the other variables (x) in the second stage. To examine this possibility, in Table B-2 we present OLS results without including the correction factor in the outcome equation. The magnitude of the overall program impact (the MRP coefficient) differs considerably from that obtained when the selection factor is included among the set of regressors ($2,801.7 versus $19,366.4, respectively). Such volatility in the estimated coefficients leads one to suspect the presence of multicollinearity.[7] Examination of the other regression coefficients provides an additional indication of multicollinearity. Specifically, the estimates on those variables not included in the selection equation are robust to the inclusion of the selection correction factor. However, the coefficient estimates on those variables also included in the selection equation (with the exception of prior earnings) differ substantially in terms of magnitude and, in the case of age squared, in terms of sign.

---

[4] When the estimated probability is greater than or equal to 0.50 for a treatment group member, the prediction is considered to be correct. Similarly, when the estimated probability is less than 0.50 for a comparison group member, the prediction is considered to be correct.

[5] Specifically, this breaks down as follows: 954 out of the 1,146 in the MRP group (or 83.2 percent) are predicted correctly; 290 out of 870 in the comparison group (or 33.3 percent) are predicted correctly.

[6] These numbers compare to an overall mean of $12,673 of the dependent variable, earnings.

[7] Multicollinearity also produces large standard errors of the coefficient estimates.

Table B-2: **Determinants Total Earnings for the Four Quarters Following Initial Claim (1989 Dollars for Earnings) – Comparison of Results With and Without the Correction Factor**

Explanatory Variable	Outcome Equation	
	With Selection Correction	Without Selection Correction
Constant	11,114.3	2,811.1
MRP (1 = Yes, 0 = Comparison Group)	$19,366.4	2,801.7
MRP Days	-32.1***	-32.0***
MRP Days^2	0.05***	0.05**
Wait Days	-10.5***	-10.5***
Age	-496.7	-349.6***
Age^2	5.4	-4.4***
Female	-3,050.4***	-2,799.6***
Non-white	-4,485.3***	-2,745.5***
Wage QB1	1.1***	1.1***
$\hat{\lambda}$	10,249.2	-
R^2	0.24	0.24
F	64.6	71.6
Mean of the Dependent Variable	12,673	12,673
Sample Size	2,016	2,016

Source: Estimated using data from the MRP client data base and UI earnings.

* Statistically significant at 90 percent confidence level for a two-tailed test.
** Statistically significant at 95 percent confidence level for a two-tailed test.
*** Statistically significant at 99 percent confidence level for a two-tailed test.

The questionable coefficient estimates derived from the two-stage procedure may also partly reflect the inappropriateness of the underlying assumptions about the process. As Ernest Stromsdorfer and George Farkas ("Methodology", *Evaluation Studies Review Annual*, Volume 5, 1980, p. 39) state:

> "... the corrected estimates will occasionally appear to make no sense at all. This may be due to inappropriate assumptions regarding the variables and their appearance in each of the model equations, or it may be due to the incorrectness of the bivariate normal distributional assumption."

Further difficulties arise in analyzing the effects of JTPA enrollment or individual JTPA services. This results from the fact that assignment into the treatment and comparison groups may not be the only level of selection in operation. For example, in the present study, there is reason to believe that an important element of selectivity bias arises in the decision to whether or not to enroll MRP clients into JTPA. That is, program operators may choose to enroll a client into JTPA and to provide program services, or they may choose not to enroll a client based on an evaluation of "job readiness". Operationalizing such a sequential selection process model would require the estimation of an ordered or polychotomous probit.[8]

As a result of the issues described above--low predictive power, multicollinearity, uncertain assumptions, and a complex selection process--we were unable to accurately characterize the nature of the selection process and, thus, to correct for potential biases. Given these difficulties in appropriately modeling and estimating the selection process, we chose to estimate the impact equations using ordinary least squares (OLS) without the correction factor. This decision was based on our conclusion that the selectivity bias correction could not be implemented successfully with the available data in the present study.

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[8] See, for example, James J. Heckman and Richard Robb, Jr., "Alternative Identifying Assumptions in Econometric Models of Selection Bias" in *Advances in Econometrics*, vol. 5, 1986 and "Alternative Methods for Evaluating the Impact of Interventions" in *Longitudinal Analysis of Labor Market Data*, James J. Heckman and Burton Singer, eds., 1985.

APPENDIX C

ANALYSIS OF PRE-PROGRAM DIFFERENCES

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ANALYSIS OF PRE-PROGRAM DIFFERENCES

To measure unobservable pre-program difference between MRP participants and comparison group members, we estimated regressions on pre-program UI benefits and earnings, controlling for observable group differences. This procedure has been proposed as a criterion for evaluating whether a comparison group and treatment group differ on unmeasured characteristics.[1] Before proceeding with the analysis, we should point out that if differences in pre-program outcomes are found, these differences may be controlled for in the impact analysis by the inclusion of lagged pre-program outcome variables as explanatory variables. Furthermore, this analysis of pre-program outcomes is useful to the extent that unobservable variables affect outcomes similarly in the pre- and post-program periods. Otherwise, adjustments for unobservable variables based on pre-program findings may understate or overstate the impact of these variables. Thus, these regressions on pre-program outcomes are only useful for providing an indication of the direction and potential magnitude of selection bias. Care should be exercised before making use of these results for adjusting program impacts.

In these regressions on pre-program earnings and UI benefits, we include the following observable independent variables:

- age;
- age squared;
- sex;
- race; and
- lagged quarterly earnings (or lagged UI benefits).

To test for the presence of unobservable differences between MRP and comparison group members, we include a dummy variable indicating MRP status (1 = MRP group and 0 = comparison group).

The results of the quarterly earnings regression for the quarter immediately prior to the initial UI claim (QB1) indicate an insignificant coefficient on the MRP dummy (see Table C.1).

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[1]See Johnson, Terry, "JTPA Evaluation at the Local Level" in *An Implementation Manual for Net Impact Evaluations,* Volume VI, Battelle Institute, March 1986, pp. 70-74.

Thus, we cannot reject the null hypothesis that the coefficient on the MRP dummy is equal to zero. This result suggests no pre-program earnings difference between MRP and control group members. An examination of the remaining coefficients indicates that most of the variation in QB1 earnings is explained by variation in lagged earnings (i.e., QB2, QB3, and QB4). Sex is the only demographic independent variable in this regression which remained significant. Regressions on other pre-program quarters (i.e., QB2, QB3, and QB4), however, yielded mixed results.

A similar regression on the amount of UI benefits for the quarter immediately prior to the initial UI claim (QB1), alternatively, indicates a significant difference between the MRP and comparison groups. This result, however, may reflect the selection process used in identifying our comparison group. That is, to be included in the comparison group, an individual had to file an initial UI claim during the period from 1986-3 to 1988-2. As a result, the quarter immediately prior to filing the initial UI claim would have been very late in comparison group members' previous benefit year. Thus, the significant difference (between MRP and comparison group) in receipt of UI benefits in the quarter immediately prior to the initial claim may reflect the comparison group selection criteria, rather than unobserved differences between the two groups.

Table C-1: Determinants of Pre-Program Earnings and UI Benefits

Explanatory Variables	Coefficient Estimates	
	Earnings QB1	UI Benefits QB1
Intercept	90.9 (660.5)	-54.4 (40.4)
AGE YRS	46.8 (34.8)	2.9 (2.1)
AGE SQ	-0.6 (0.4)	-0.0 (0.0)
FEMALE	-291.3** (135.5)	11.9 (7.5)
RACE	-134.1 (135.2)	5.1 (7.79)
MRP	33.4 (128.7)	26.9*** (7.2)
EARNINGS-QB2	0.4*** (0.0)	
EARNINGS-QB3	0.3*** (0.0)	
EARNINGS-QB4	0.1*** (0.0)	
UI BEN-QB2		0.5*** (0.0)
UI BEN-QB3		-0.2*** (0.0)
UI BEN-QB4		0.1*** (0.0)
R^2	0.68	0.38
F	285.0	172.5
Sample Size	1,072	2,309

Source: Estimated using data from the MRP client data base and UI earnings.

Note: The quarters are measured as full calendar quarters prior to the quarter in which the initial UI claim occurs.

* Statistically significant at 90 percent confidence level for a two-tailed test.
** Statistically significant at 95 percent confidence level for a two-tailed test.
*** Statistically significant at 99 percent confidence level for a two-tailed test.

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