Methodological Notes Regarding the Impact Analysis

Final Report
Prepared as Part of the
Evaluation of the Trade Adjustment Assistance Program
August 2012

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The U.S. Department of Labor
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200 Constitution Ave., N.W.
Washington, DC 20210

DOL Contract No. AK-13690000430
SPR Project No. 1147

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DISCLAIMER

This report has been funded, either wholly or in part, with Federal funds from the U.S. Department of Labor (USDOL), Employment and Training Administration (ETA), Office of Policy Development and Research (OPDR) under Contract Number AK-13690-4-30. The report has been edited by OPDR. The contents of this publication do not necessarily reflect the views or policies of the Department of Labor, nor does mention of trade names, commercial products, or organizations imply endorsement of same by the U.S. Government.

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REPORT OVERVIEW

In a series of chapters, this report provides an overview of methodological issues pertaining to the impact analysis for the Evaluation of the Trade Adjustment Assistance (TAA) Program. The report contains the following seven chapters:

I. **"The Sample Design for Selecting the TAA Worker Samples."** This chapter discusses the design that was used to obtain a nationally representative sample of states and eligible TAA workers within those states.

II. **"The Selection of the Comparison Group Samples."** This chapter discusses the selection of comparison samples for each of the TAA worker samples.

III. **"The Baseline Survey."** This chapter provides a discussion of the design of the baseline survey, interview response rates, and a comparison of interview respondents and nonrespondents in the TAA and comparison samples.

IV. **"The Follow-Up Survey."** This chapter discusses the design of the follow-up survey, interview response rates for the TAA and comparison samples, and a nonresponse analysis.

V. **"The Collection of Administrative Records Data."** This chapter discusses Unemployment Insurance (UI) wage records, TAPR, and WIASRD data that were collected for the evaluation.

VI. **"The Follow-Up Survey Sample for the Impact Analysis."** This chapter discusses the weighting of the follow-up survey sample to generate impact estimates.

VII. "**The Construction of Sample Weights."** This chapter discusses the calculation of sample weights so that estimates based on interview and administrative data can be generalized to the full study population.

The details of the TAA evaluation design discussed in this report are complex. Thus, to help guide readers of this report, we summarize the main features of the design as follows:

- *A nationally representative sample of twenty-five states was randomly selected using probabilities proportional to their share of the national TAA worker population (Chapter I).* An additional replacement state was added, resulting in a total of 26 states, which contained about 90 percent of the TAA population nationwide.

- *Random samples of TAA-eligible workers who received a first UI payment were selected for the evaluation within each of the 26 study states (Chapter I).* The primary treatment sample for the impact study includes TAA "participants" who received a significant TAA service, primarily TAA-funded training or Trade Readjustment Allowances (TRA) after they exhausted their regular UI benefits. However, we also selected a second treatment sample of eligible TAA "nonparticipants," who did not receive a significant TAA service, but may have received "light-touch" employment services.

- *Matched comparison samples were initially obtained for each treatment sample using UI claims records (Chapter II).* The matched comparison samples were UI claimants from the manufacturing sector who came from the same local labor market areas as the treatment samples, but who were not TAA eligible. The matching variables included demographic information (gender, age, and race/ethnicity), base-period earnings, UI claim start date, the maximum UI benefit amount, and local area characteristics (such as the unemployment rate). Nearest neighbor propensity score matching methods with replacement were used to select the comparison samples, separately for each treatment sample (that is, TAA participants and nonparticipants) within each state. Two comparison workers were selected for each treatment worker.

- *Two rounds of surveys were conducted with a random subset of participants and their matched comparisons (Chapters III, IV, and V).* The initial survey was conducted an average of 29 months after the UI claim date and collected detailed information pertaining to (1) the pre-UI claim period and (2) key outcomes covering the post-UI claim period, such as the receipt of reemployment, education, and training services, as well as earnings and employment. This first survey was also conducted with the nonparticipant treatment group and their matched comparisons. The follow-up survey, however, was conducted with only TAA participants and their matched comparisons. This second survey took place an average of 51 months after the UI claim date and collected longer-term outcome data. Respondents to the follow-up survey were the primary analysis sample used for estimating impacts. The follow-up interview response rate for the treatment group was 63 percent. Sample weights for the treatment group were developed to account for potential survey nonresponse bias and to help ensure that the treatment survey sample was nationally representative of all TAA workers in the sample universe.

- *Using detailed baseline data collected in the first survey, the comparison groups were "rematched" to the treatment groups to ensure that the two groups had similar baseline characteristics (Chapter VI).* The initial survey collected much more detailed pre-UI claim information than was available in the UI claims data that were initially used for matching. The information covered worker demographics (such as education level, marital status, and health status), family background, employment history, and pre-UI job characteristics (including job tenure, union status, company size, actual and expected job recall status, fringe benefits, industry, occupation, and main reason stopped working). Because there were some differences in these baseline measures between the treatments and initially-matched comparisons, we statistically adjusted (that is, "rematched") the two samples using the richer baseline measures from the survey. Kernel matching methods were used for this rematching, where weights were assigned to each comparison worker based on how similar that worker's characteristics were to those of the treatment workers. The rematching produced equivalent distributions of characteristics in both the treatment and comparison samples on a large number of variables.

- *Administrative UI wage records were collected for all treatment and comparison group sample members (Chapter V).* These data, used to estimate impacts on employment and earnings for the first 12 quarters post-UI claim, do not suffer from potential survey nonresponse bias and are based on much larger samples than the survey samples. Thus, the UI wage records data were critical for assessing the

robustness of the main survey-based impact findings for the three years after the initial UI claim. The evaluation also collected administrative data on TAA and Workforce Investment Act (WIA) program services.

- ***Impacts of TAA were estimated by comparing the mean outcomes of participants to those of their matched comparison groups (Chapter VII).*** The same method was used for estimating impacts for nonparticipants. Regression methods were used to estimate impacts where each study outcome was regressed on a treatment status indicator variable and a fixed set of baseline covariates. All impact estimates were calculated using weights to adjust for the sample and survey designs (including survey nonresponse), so that the impact estimates can be generalized to TAA workers in the considered sample universes. In addition, estimated standard errors were adjusted for design effects due to unequal weighting and the clustering of workers within the study states.

CHAPTER I

THE SAMPLE DESIGN FOR SELECTING THE TAA WORKER SAMPLES

A. INTRODUCTION

The TAA evaluation collected survey and administrative wage records data on samples of eligible TAA workers and matched comparison groups to obtain unbiased estimates of the impact of TAA on participants' employment-related outcomes. The ideal design—random assignment—was not feasible for the evaluation, because TAA services cannot be denied to eligible workers under current program rules (so that it would not be possible to construct a control group). Furthermore, it was not feasible to randomly assign participants to different service groups, because workers cannot be denied the services to which they are entitled. Consequently, the evaluation employed a comparison group (propensity score matching) design to obtain estimated impacts.

The sample design for the TAA impact evaluation was structured to achieve several critical analysis objectives. First, it was structured to produce TAA worker samples that are representative of the national population of workers who are eligible for and receive TAA services and benefits. Second, it was structured to produce samples that are representative of the national population of TAA-eligible nonparticipants to estimate program take-up rates and reasons for program participation and nonparticipation. Third, it was structured to generate comparison samples of dislocated workers who were as similar as possible to workers in the TAA samples at the time of job layoff, except for the offer of TAA services. These comparison samples were used to assess what the outcomes of treatment group members would have been in the absence of the TAA program. Finally, the sample design was structured to provide sufficient statistical precision for estimating policy-relevant program impacts.

The evaluation samples of eligible TAA workers were selected in two stages. In the first stage, 26 states were randomly selected and recruited for the study. In the second stage, the following two samples of eligible TAA workers were selected from each study state:

1. ***The "TAA certified-worker sample."*** This primary analysis sample included the following workers: (1) those whose names appeared on certified worker lists that states obtain from employers as part of states' mandatory worker notification process for petitions certified for TAA, and (2) those who received a first Unemployment Insurance (UI) payment from the state in which the firm named on the petition was located.
2. ***The "TRA-beneficiary sample."*** This supplementary sample consists of workers who received Trade Readjustment Allowances (TRA) payments after they exhausted their regular UI benefits. These workers had similar UI claims dates as the TAA certified-worker sample; thus, the two "*treatment*" group samples received TAA services at roughly the same time.

The remainder of this chapter is in six sections and discusses the sample design for selecting these two nationally representative treatment group samples and obtaining data on them. Section B provides a summary of the design. Section C discusses the selection of states for the study, and Section D discusses key administrative records data that were used to obtain the study samples. Section E discusses the sample frame for the certified-worker samples, and Section F discusses the sample frame for the TRA-beneficiary sample. Finally, Section G discusses the overlap between the survey and administrative samples, and between the certified worker and TRA beneficiary samples. Our design for selecting the comparison group samples is discussed in Chapter II.

B. OVERVIEW OF DESIGN

Figure I.1 displays a flow chart of the evaluation design for selecting the certified-worker and TRA beneficiary samples. The main steps were as follows:

1. Twenty-five states were randomly selected in geographic strata with probabilities proportional to the expected number of TAA participants in the state.

2. Recruitment efforts resulted in all 25 states agreeing to participate in the study, along with one additional state that was recruited as a replacement state due to the initial reluctance of some states to participate in the study.

3. Data from two sources were collected from each study state to identify the treatment groups. First, data on TAA-eligible workers were collected from lists of trade-affected workers provided to state agencies by firms who were certified for TAA. Second, UI claims data were collected from each state that contain demographic information on UI claimants and information on their TRA and UI benefit receipt.

4. TAA petition data were collected from the U.S. Department of Labor (USDOL). These data contain historical information on certification decisions and dates for all petitions submitted to USDOL. These data were used to identify workers from firms whose petitions were certified within our sampling frame window.

5. The certified-worker lists and UI claims data were merged by SSN (or name and zip code if SSN was not available), and this file was then merged to the USDOL petition file by petition number (which was available in the certified-worker lists).

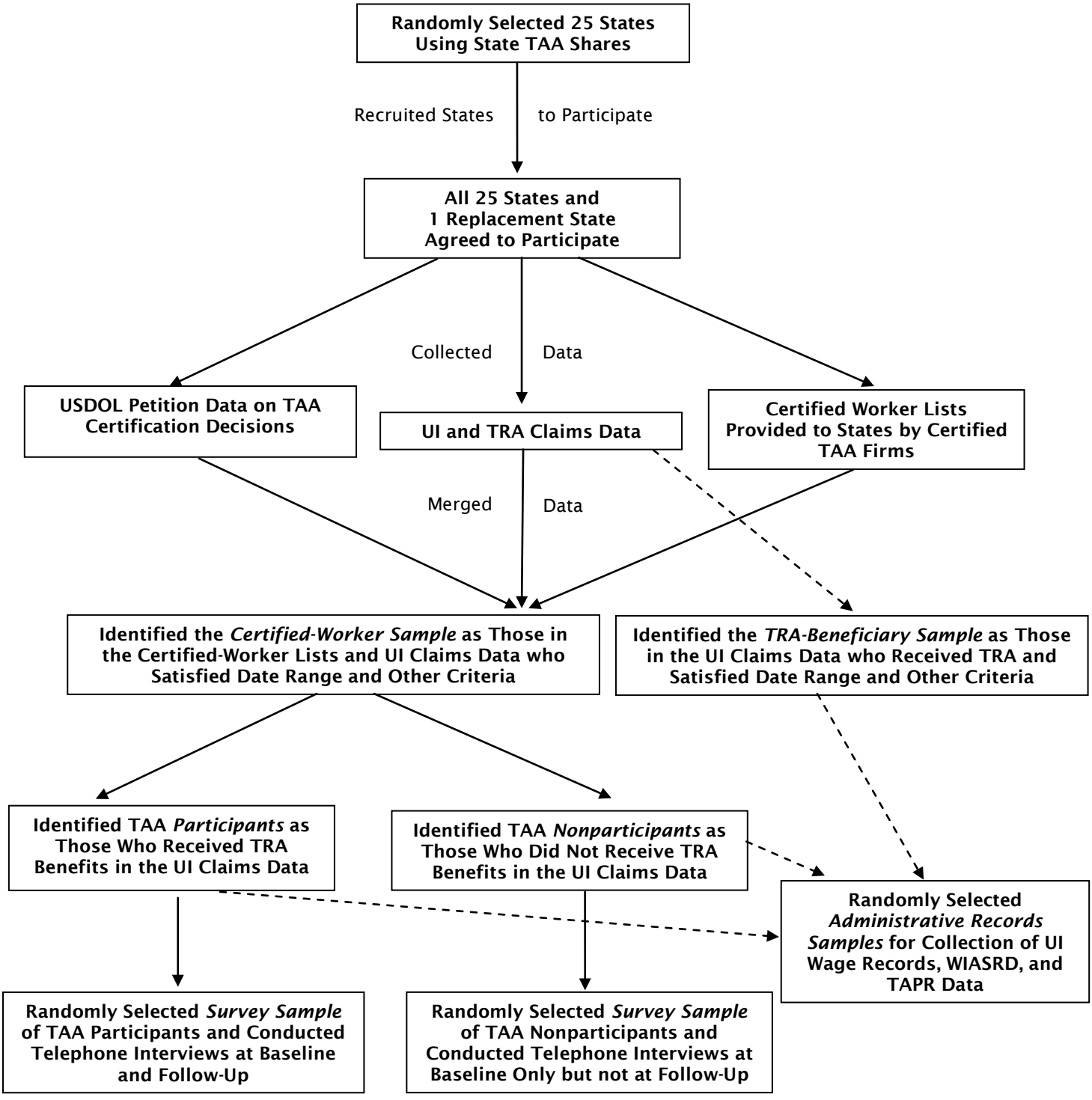
6. The sample frame for the *certified-worker sample* was identified using the merged file and includes those in both the certified-worker lists and the UI claims data who satisfied date range and other sample frame criteria. Thus, the certified-worker sample contains workers who were laid off and are a part of a worker group certified for TAA during the period covered by certification, and who subsequently received UI benefits.

7. Not all certified workers actually receive TAA services. Thus, within each state, the certified-worker sample frame was divided into "*TAA participants"* (those who received TRA benefits according to the UI claims records) and "*TAA nonparticipants"* (those who did not receive TRA benefits according to the UI claims records).

8. The sample frame for the *TRA-beneficiary sample* included those in the UI claims files who collected TRA benefits and satisfied date range and other sample frame criteria, regardless of whether they appeared on a certified-worker list the state provided us.

9. Baseline and follow-up interviews were conducted using the certified-worker sample only. Within each state, the "*baseline survey sample"* was obtained by randomly selecting separate subsamples of TAA participants and TAA nonparticipants using stratified sampling techniques. Twice as many TAA participants than nonparticipants were selected for baseline interviewing. The contact information in the UI claims data was used to locate sample members for telephone interviews. The "*follow-up survey sample*" included *TAA participants* in the baseline survey sample.

Figure I.1. Overview of the Study Design



10. Administrative UI wage records, Workforce Investment Act Standardized Record Data (WIASRD), and Trade Act Participant Report (TAPR) records were collected for large random subsamples of the certified-worker and TRA-beneficiary populations.

An important evaluation design feature was the selection of two TAA treatment samples. These two samples became eligible for TAA services at roughly the same time. Thus, impact estimates for each sample could be compared to examine the robustness and credibility of study findings under the quasi-experimental design to improve the ability of the evaluation to yield informative conclusions about program impacts.

Each treatment sample has advantages and disadvantages. The primary treatment group, the certified-worker sample, contains both TAA participants and TAA nonparticipants. Thus, this sample can be used to obtain information on TAA participation rates among eligible workers and reasons for their participation or nonparticipation (see Dolfin and Berk 2010). Furthermore, TAA-eligible workers might receive Rapid Response and other Workforce Investment Act (WIA) and Employment Service (ES) early intervention services and One-Stop Career Center core services that could obviate their need for TAA. Thus, both TAA participants and nonparticipants in the certified-worker sample were considered treatment groups for the study, and impacts were estimated for each. A disadvantage of the certified-worker design, however, is that the certified worker lists that states provide could be incomplete. Furthermore, a worker that appears on a certified worker list in one state might be drawing UI benefits in a neighboring state, and, hence, would have no chance of being included in the sample.

The TRA-beneficiary sample is conceptually similar to the TAA participant sample described above because these samples were aligned in terms of their UI claim and TAA eligibility dates. An advantage of the TRA-beneficiary sample, however, is that it includes everyone who received a TRA payment in any of the randomly selected states in the study's sample. Thus, this sample generalizes to the universe of those who receive TRA. On the other hand, not all TAA participants receive TRA, so impact estimates generated for this group do not apply to TAA participants as a whole. For example, at the time the study was designed, TAPR data indicate that about 78 percent of TAA participants received TRA; this percentage has fallen to 68 percent for more recent cohorts. (These percentages include in the base those who received only a waiver, who are not considered TAA participants for purposes of the impact evaluation. Excluding those who received only a waiver, 92.9 percent of TAA participants received TRA).

The remainder of this chapter discusses each design step in Figure I.1 in more detail.

C. SELECTION OF STATES

This section discusses the state selection design and the state recruitment process.

1. State Selection Design

Our design called for selecting a random subset of states rather than all states nationwide for two reasons: (1) the TAA caseload is relatively concentrated, and (2) sample selection and data acquisition costs would have increased significantly with the number of states selected. Although a clustered sample of states results in a slight loss in the precision of study estimates (but no bias), the

savings in resources and reduced administrative complexity provided by sampling states more than offset this loss.

To select the states for the evaluation, we obtained from USDOL petition data on all TAA and North American Free Trade Agreement (NAFTA) industry certifications from fiscal year (FY) 1999 through FY 2006. These petition data provided a sample frame from which to select the states, because each petition contains information on the estimated number of trade-affected workers (that is, those who are likely to lose their jobs in the period covered by the certification). The petition data contain information on more than 14,200 certified firms, covering nearly 1.5 million dislocated workers.

Although the study included workers from firms whose petitions were certified during the one-year period from November 1, 2005 to October 31, 2006, we collected petition data from multiple years to examine the extent to which state shares of the eligible TAA population changed over time. This analysis was important for several reasons. First, we wanted to set state sampling probabilities that were based on "typical" state shares to "smooth out" unusually high or low state TAA activity in a given year. For example, we did not want to assign a low sampling probability to a state that had an unusually low TAA share in FY 2006, but that had much higher shares in FY 1999 to FY 2005. Second, the information in the petitions on the estimated number of trade-affected workers is known to be somewhat noisy. Thus, using historic petition data could help remove this noise, and yield more accurate estimates of actual state shares during the period covered by the study.

The trend analysis revealed that state shares were relatively constant over time; that is, states with relatively high TAA activity in one year tended to have relatively high TAA activity in other years. For instance, from FY 2003 to FY 2006, the correlation between state shares in any two years was about .85, and similarly for the correlations between state share rankings. In addition, there was little change over time in the 15 or 20 states with the largest TAA worker shares.

Given these analysis findings, we randomly selected states using the *average* of the state shares in FY 2005 and FY 2006. Table I.1 displays these state shares (Column 3) and state selection probabilities (Column 4) assuming sampling with replacement. The figures pertain to the 50 states, the District of Columbia, and Puerto Rico. The state selection probabilities sum to 25, the number of states originally selected for the study. The table also displays selection probabilities that sum to 26 (Column 5), because the final study sample included one additional (replacement) state that was approached in the recruitment phase of the study and that agreed to participate in the evaluation (see below). For simplicity, this 26-state design was "assumed" for calculating sample weights (see Chapter VIII). The data are ordered by state, according to their shares of the TAA population, from largest to smallest.

Using Table I.1, we randomly selected 25 original states with probabilities proportional to the state shares shown in Column 3. State selection occurred in late 2006. Thirteen states (North Carolina, California, Pennsylvania, Michigan, South Carolina, Georgia, Tennessee, Ohio, Illinois, Indiana, Texas, New York, and Alabama) were chosen with certainty. Four additional states (Kentucky, Virginia, Wisconsin, and Missouri) were also chosen with certainty, because after removing the initial thirteen certainty states, the probability of selecting these four states was .96, .96, .88, and .87.

Table I.1. State Selection Probabilities for the TAA Evaluation

State	USDOL Region	Average Annual Share of Trade-Affected Workers in Certified Firms in FY 2005 and FY 2006 (Percentages)[a]	State Selection Probability Under a 25-State Design	State Selection Probability Under a 26-State Design
North Carolina	3	9.7812	1.0000	1.0000
California	6	9.5307	1.0000	1.0000
Pennsylvania	2	5.7822	1.0000	1.0000
Michigan	5	5.6956	1.0000	1.0000
South Carolina	3	4.8528	1.0000	1.0000
Georgia	3	4.7894	1.0000	1.0000
Tennessee	3	4.5840	1.0000	1.0000
Ohio	5	4.4514	1.0000	1.0000
Illinois	5	4.2700	1.0000	1.0000
Indiana	5	3.9740	1.0000	1.0000
Texas	4	3.6127	1.0000	1.0000
New York	1	3.5500	1.0000	1.0000
Alabama	3	3.0492	1.0000	1.0000
Kentucky	3	2.5598	1.0000	1.0000
Virginia	2	2.5555	1.0000	1.0000
Wisconsin	5	2.3617	1.0000	1.0000
Missouri	5	2.3319	1.0000	1.0000
Massachusetts	1	1.9201	0.6898	0.7760
Arkansas	4	1.8641	0.6697	0.7534
New Jersey	1	1.4914	0.5358	0.6028
Oklahoma	4	1.4737	0.5294	0.5956
Mississippi	3	1.2177	0.4375	0.4922
Minnesota	5	1.1652	0.4186	0.4709
Colorado	4	1.1638	0.4181	0.4704
Iowa	5	1.0916	0.3922	0.4412
Oregon	6	1.0808	0.3883	0.4368
Florida	3	1.0023	0.3601	0.4051
New Hampshire	1	0.9446	0.3393	0.3818
Maryland	2	0.8953	0.3216	0.3619
West Virginia	2	0.8616	0.3095	0.3482
Rhode Island	1	0.8310	0.2985	0.3359
Washington	6	0.8246	0.2963	0.3333
Connecticut	1	0.7194	0.2585	0.2908
Arizona	6	0.5757	0.2068	0.2327
Maine	1	0.5018	0.1803	0.2028
Vermont	1	0.3782	0.1359	0.1528
Kansas	5	0.3318	0.1192	0.1341
Idaho	6	0.2475	0.0889	0.1000
Utah	4	0.2276	0.0818	0.0920
Arkansas	4	0.2034	0.0731	0.0822
Nevada	6	0.1940	0.0697	0.0784
Nebraska	5	0.1828	0.0657	0.0739
Louisiana	4	0.1784	0.0641	0.0721
Delaware	2	0.1663	0.0597	0.0672
South Dakota	4	0.1587	0.0570	0.0641
Montana	4	0.1200	0.0431	0.0485
Puerto Rico	1	0.0973	0.0350	0.0393
Hawaii	6	0.0634	0.0228	0.0256
New Mexico	4	0.0515	0.0185	0.0208
North Dakota	4	0.0429	0.0154	0.0173
Wyoming	4	0.0000	0.0000	0.0000
District of Columbia	2	0.0000	0.0000	0.0000
Total		**100.0000**	**25.0000**	**26.0000**

Source: DOL petition data on all industry certifications in FY 2005 and FY 2006.

[a]Figures pertain to the estimated number of trade-affected workers that are denoted in each petition.

The remaining eight noncertainty states were randomly sampled from the universe of 35 noncertainty states, with the probabilities shown in Column 4 of Table I.1. We selected the noncertainty states by ordering them by the six USDOL regions and using a systematic sampling approach; this ensured that the sample of states would be dispersed geographically. Geographic stratification was a useful way of ensuring that the sample of states would represent the full range of TAA programs and participants, because states within a geographic area tend to have similar industries, workers, and labor markets. The selected noncertainty states were as follows: *Region 1*: New Hampshire, New Jersey, and Rhode Island; *Region 3:* Florida; *Region 4:* Arkansas and Colorado; *Region 5:* Minnesota; and *Region 6:* Washington.

After selecting the 25-state sample, we also randomly selected "replacement" states in the event that "primary" states refused to participate in the study. We sequentially randomly selected replacement states within each region using the sampling techniques discussed above. The plan was to contact replacement states in a region (moving down the ordered list) if we could not solicit the cooperation of the primary states in that region. This process yielded the sample of primary and ordered replacement states shown in Table I.2.

As discussed further below, based on *actual* data collected from the 26 states, we estimate that the 17 certainty states contain about 78 percent of all TAA-eligible workers in the sample frame for the study. The corresponding figure is 10 percent for the 9 noncertainty states (including the replacement state Maryland). Consequently, the total sample of 26 certainty and noncertainty states contains nearly 90 percent of all workers in the sample frame.

2. State Recruitment

State recruitment started in early 2007 and involved contacting senior regional and state workforce agency officials, and state TAA coordinators and administrators. The study team conducted initial telephone calls with regional and state staff, explaining the nature and importance of the study and its data requirements. Study materials were subsequently sent to the states describing the evaluation and data requests in more detail.

All 25 selected states eventually agreed to participate in the study. However, it typically took many months and considerable involvement by USDOL and evaluation staff to solicit the cooperation of states, obtain formal agreements with them, and obtain the requested data. The primary reasons why states were initially reluctant to participate in the evaluation were (1) they did not have enough programming resources to provide the considerable amounts of longitudinal administrative data that were requested for the study, and (2) legal issues needed to be resolved before they could release confidential data. These issues were resolved through negotiations between states, USDOL, and the study team, and by our simplifying our data request to the fullest extent.

Table I.2. Selected States for the TAA Evaluation, by Region

25-State Sample	Replacement States (in Order of Selection)
Region 1	Connecticut, Massachusetts, Vermont, Maine, Puerto Rico
New Hampshire	
New Jersey	
New York[a]	
Rhode Island	
Region 2	Maryland, Delaware, West Virginia, Washington D.C.
Pennsylvania[a]	
Virginia[a]	
Region 3	Mississippi
Alabama[a]	
Florida	
Georgia[a]	
Kentucky[a]	
North Carolina[a]	
South Carolina[a]	
Tennessee[a]	
Region 4	Utah, Oklahoma, Montana, Louisiana, South Dakota, North Dakota, New Mexico, Wyoming
Texas[a]	
Arkansas	
Colorado	
Region 5	Iowa, Nebraska, Kansas
Illinois[a]	
Indiana[a]	
Michigan[a]	
Minnesota	
Missouri[a]	
Ohio[a]	
Wisconsin[a]	
Region 6	Arizona, Oregon, Idaho, Hawaii, Nevada
California[a]	
Washington	

[a]Denotes a certainty state.

Finally, during the recruitment phase, there was considerable uncertainty as to which of the 25 selected states would ultimately participate in the evaluation. Once we realized the time it was going to take to obtain final responses from the 25 states and the protracted recruitment and negotiation process, we contacted several replacement states (using the ordered list shown in Table I.2). Replacement states were first contacted in regions where recruitment efforts for the primary states were progressing slowly. During this process, Maryland (the first replacement state in Region 2) agreed to participate in the study. Therefore, USDOL decided to include Maryland in the study. Thus, the final sample has 26 states rather than 25. As shown in Table I.1, the sampling

probabilities are similar for a 25-state or 26-state design. Thus, for simplicity, we "assume" for the analysis that 26 states were originally randomly selected for the study.

The states provided the first round of data beginning in the fall of 2007 and throughout 2008. These data included the certified-worker lists and the UI claims data, which were needed to identify the sample frame for the certified-worker sample. Complete data were provided by 6 states in the final quarter of 2007, 8 states in the first quarter of 2008, 3 states in the second quarter of 2008, 6 states in the third quarter of 2008, and 3 states in the fourth quarter of 2008. All states sent the requested data to the study contractors, except California, where study programmers selected the study samples on site and copied, to CDs, pertinent information for these samples only. None of the state MOUs specified a maximum study sample size, except California.

D. SUMMARY OF KEY DATA PROVIDED BY THE STUDY STATES

The sample frame for the certified-worker sample contains workers who were covered under a petition certified for TAA during the period covered by certification, and who subsequently received a first UI payment. The TRA-beneficiary sample frame includes those who received TRA after exhausting their UI benefits. This section discusses the two primary sources of administrative state data that were used to define these sample frames: (1) certified-worker lists and (2) UI/TRA claims data.

1. Certified-Worker Lists

The sample frame for the certified-worker sample was obtained using all workers on the worker lists certified for TAA that the affected firms provided to the 26 states included in the evaluation. These lists are available (and include the workers' contact information) because, under the 1988 legislative changes to the TAA program, state agencies became required (1) to identify potentially eligible workers by obtaining lists of workers who were separated or partially separated from trade-affected firms during the period covered by certification, and (2) to notify each potentially eligible worker in writing.

The Office of Management and Budget's (OMB) approval for the study's data collection was obtained in November 2006. Shortly thereafter, the evaluation team contacted each of the 26 states and asked them to provide certified-worker lists for all petitions that were certified anytime during the one-year period selected for the study: November 1, 2005 through October 31, 2006. Workers covered by a petition are potentially eligible for TAA services if they receive a layoff anytime from one year before the petition was filed to two years after the petition was certified. Thus, affected workers in our sample universe could have experienced their layoff anytime from September 1, 2004 (the earliest layoffs covered by the earliest petition certified in the petition date range) through October 31, 2008 (the last layoffs covered by the last petitions certified), roughly a four-year period.[1] The certified lists were typically provided by states in EXCEL spreadsheets or hardcopy form.

[1] By law, DOL has 40 days to make a determination once it receives a completed petition. Thus, if a petition was certified on November 1, 2005, it might have been filed 40 days earlier, or September 22, 2005. An applicable layoff could have occurred one year before this date, or even earlier if USDOL took longer than 40 days to make a determination.

The certified-worker lists usually contain information on the SSN, name, and address of each worker. These data items were critical for matching workers to the UI claims data to select the certified-worker samples (as discussed below). For each worker in the certified-worker lists, there is also information on the *TAA petition number* for the worker's firm. This petition number was used to merge the certified-worker lists to a petition file provided by USDOL that contains historic information on each petition submitted to USDOL. This petition file contains certification decisions and dates, which were critical for defining the sample frame for the study.

Not all states were able to provide a certified-worker list for every petition that was certified during the study's one-year certification window. The number and percentage of certified-worker lists that the states were able to provide are shown in columns 3 and 4 in Table I.3. Overall, we received 1,010 certified lists, or 87.3 percent of the 1,157 petitions that were certified for TAA within this date range in the study states.[2]

The number of worker names included on a certified-worker list did not always match the expected number of affected workers identified for that petition. Discrepancies could have occurred for three reasons: (1) the estimated number of affected workers provided by the petition filer either over- or under-stated the actual number of workers who experienced dislocations, (2) the certified-worker lists provided names of those who had experienced a dislocation at the time the lists were provided, while the estimates provided with the petitions included these as well as dislocations that were expected to occur subsequently, or (3) the certified-worker lists were incomplete or inaccurate for other reasons.

Comparisons of the number of workers included on the certified worker lists and the estimated number of affected workers included with the petitions are provided in the final three columns of Table I.3. The simple correlation between the two worker counts is .33. However, excluding Pennsylvania and Wisconsin, the correlation is .87, because these two states show especially large mismatches between the two data sources.[3] Moreover, during site visits to the states, state TAA coordinators assured us that certified lists are generally complete and accurate.

These results suggest that the certified-worker lists are comprehensive, and thus, constitute a reasonable sampling frame for the TAA study. However, it is important to emphasize that our results generalize formally only to those workers listed on the certified-worker lists (and who could be matched to records in the UI claims data), and not necessarily to all trade-affected workers.

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[2] In actuality, 1,204 petitions were certified during this period in these states. Petition numbers are designated by a five-digit number, sometimes followed by a suffix. For petitions with a suffix, the suffixes typically designate the separate locations in which a firm certified for TAA operates and has affected workers, with the leading five-digit number remaining the same. Some states provided certified lists with suffixes, and some did not. States in the latter group provided a single list for each five-digit number, covering all eligible workers at any location operated by the firm, and in these states the total number of certified petitions was calculated as the number of unique five-digit numbers.

[3] These two states often asked affected firms to include all the firms' workers on the worker lists, regardless of whether the worker had been or was expected to soon be separated from employment.

Table I.3. Study Coverage of Certified Petitions and Affected Workers

State	Number of Petitions Certified			Number of Affected Workers		
	Petitions Certified by USDOL	Certified Lists Provided	Percentage Provided	Estimated Affected Workers	Names on Certified Lists	Percentage Provided
Alabama	34	32	94.1	5,146	2,684	52.2
Arkansas	33	32	97.0	2,768	4,508	162.9
California	106	85	80.2	11,520	6,505	56.5
Colorado	24	20	83.3	1,506	1,947	129.3
Florida	12	10	83.3	819	968	118.2
Georgia	58	50	86.2	7,367	5,211	70.7
Illinois	43	38	88.4	3,841	5,385	140.2
Indiana	36	34	94.4	3,179	1,555	48.9
Kentucky	30	23	76.7	3,343	3,559	106.5
Maryland	11	10	90.9	1,298	968	74.6
Michigan	110	83	75.5	8,906	NA	NA
Minnesota	16	11	68.8	739	263	35.6
Missouri	23	19	82.6	2,293	3,797	165.6
New Hampshire	9	7	77.8	1,305	1,060	81.2
New Jersey	26	23	88.5	1,214	949	78.2
New York	56	53	94.6	3,748	1,998	53.3
North Carolina	151	130	86.1	10,580	7,812	73.8
Ohio	57	53	93.0	8,062	7,639	94.8
Pennsylvania	90	90	100.0	4,733	13,969	295.1
Rhode Island	15	13	86.7	834	318	38.1
South Carolina	49	41	83.7	5,028	3,523	70.1
Tennessee	54	49	90.7	4,752	2,797	58.9
Texas	30	29	96.7	2,035	1,660	81.6
Virginia	32	32	100.0	3,971	3,649	91.9
Washington	13	13	100.0	402	532	132.3
Wisconsin	39	30	76.9	2,874	24,646	857.6

Source: Certified-worker lists and certified TAA petitions from the 26 study states.

Note: The Estimated Affected Workers represents the number of affected workers as shown on the petition when it was filed for certification. Names on Certified Lists represent the number of names on the certified lists we obtained from the states (who in turn had obtained them from the affected employers).

NA = Not available

2. UI/TRA Claims Data

UI/TRA claims data were critical for the evaluation because they were used to:

- Restrict the certified-worker sample frame to those who received UI benefits.
- Provide information on the receipt of TRA benefits to (1) classify members of the certified-worker sample as TAA participants or TAA nonparticipants, and (2) identify workers for the TRA beneficiary sample.
- Identify comparison group members, who consist of UI recipients who were matched to treatment group members based on information contained in the UI claims files (see Chapter II)
- Provide contact information (name, address, telephone number, and SSN) that was needed to locate TAA (and comparison group) members for baseline interviews.

Once we obtained OMB approval in November 2006, we requested UI/TRA claimant data from each of the 26 study states. We requested data dumps of all workers who received a first UI payment of any type from the first quarter of 2004 to the most recent quarter that UI records were available when the data were extracted.

Some states provided data promptly, while others took almost two years to do so. Thus, the data coverage period differs somewhat across states (Table I.4). For instance, the *latest* UI first claim date in the state files ranges from December 2006 (in a handful of states that provided data early) to August 2008. As noted, for petitions certified between November 2005 and October 2006, qualifying layoffs could have occurred as early as September 1, 2004 or as late as October 31, 2008. Thus, as discussed in more detail below, states differ in the extent to which their files provide full coverage of layoffs that occurred late in the petition eligibility period for the study. Furthermore, five states could not provide first-payment claimant data going back to September 2004, so some early layoffs in the eligibility window may also not be captured.

States differed in the specific data elements that are included in their claimant files. However, all files included the following information:

- ***Identifying information:*** SSN, name, address, and telephone number.
- ***Demographic information:*** Gender, date of birth, and race/ethnicity.
- ***Job characteristics:*** Base-period earning and industry of main base-period employer.
- ***UI claim and benefit data:*** Benefit year begin date; date of UI or TRA first payment; date of UI or TRA last payment; UI claim type (regular UI, emergency UI, TRA, etc.); UI and TRA maximum benefit amount; UI and TRA weekly benefit amount; and UI and TRA remaining claim balance.

About half the states also provided worker profiling information (such as profiling scores), and a few states also provided additional information, such as weeks worked on the job or claimant's education level.

Table I.4. Date Range of First UI Payments in UI/TRA Claimant Files, by State

State	Earliest First Payment Dates the State Provided	Latest First Payment Dates the State Provided
Alabama	11/05	7/08
Arkansas	4/04	2/08
California	4/04	7/08
Colorado	4/04	4/08
Florida	4/05	8/08
Georgia	4/04	1/08
Illinois	12/03	4/07
Indiana	4/05	9/07
Kentucky	1/04	12/06
Maryland	1/04	6/07
Michigan	4/04	12/06
Minnesota	4/04	11/07
Missouri	10/04	12/06
New Hampshire	11/04	9/07
New Jersey	4/04	12/07
New York	4/04	3/08
North Carolina	1/04	5/07
Ohio	4/04	10/07
Pennsylvania	4/04	3/08
Rhode Island	4/04	2/08
South Carolina	4/04	3/08
Tennessee	1/04	3/07
Texas	4/04	10/07
Virginia	11/03	3/08
Washington	4/04	9/07
Wisconsin	1/04	12/06

Source: UI/TRA Claims files from the 26 study states.

Finally, for purposes of matching TAA participants to comparison group members and for creating subgroups for analysis, we merged, by state, county, and year (if relevant), the following local area characteristics into the UI claims records:

- *The annual unemployment rate in 2000 to 2006* using data from the U.S. Bureau of Labor Statistics (BLS).
- *The poverty rate in 2004* using data from the Area Resource File (ARF).
- *The percentage of workers in manufacturing in 2000 and 2005* using ARF data.

- ***The average earnings per job in 2005*** using data from the Inter-University Consortium for Political and Social Research (ISPSR).

- ***The percentage population growth between July 1, 2000 and July 1, 2005*** using ICPSR data.

- ***The U.S. Department of Agriculture, Economic Research Service (ERS) 2003 Rural-Urban Continuum Code*** using ICPSR data. These codes form a classification scheme that distinguishes metropolitan counties by the population size of their metropolitan area, and nonmetropolitan counties by degree of urbanization and adjacency to a metropolitan area or areas. There are nine such codes that range from a metropolitan area with a population of 1 million or more to rural areas that are not adjacent to a metropolitan area.

- ***Local area unemployment statistics (LAUS) area type indicators in 2007*** using BLS data. These indicators pertain to labor market areas that are economically integrated geographic areas within which individuals can reside and find employment within a reasonable distance or can readily change employment without changing their place of residence. Labor market areas are metropolitan areas, micropolitan areas, or small labor market areas, and exhaust the geography of the U.S. These area definitions are often used to allocate Federal program funds to states and local areas.

3. Merging Petition, UI/TRA Claimant, and Certified Worker Files

To obtain the sample frame for the certified-worker sample, we merged the certified-worker lists, the USDOL petition file, and the UI/TRA claims data within each state. The certified-worker lists were first concatenated within each state and then merged with the USDOL petition file using the TAA petition number. In this way, workers certified for TAA had associated with them the characteristics of the petition that was associated with their certification (such as the petition determination, impact, and termination dates). The resulting file was next merged with that state's UI/TRA claims file based on the worker's SSN, or in cases where SSNs were not available in the certified worker file, using name and zip code matching.[4] Only matches of certified workers to regular UI claims were attempted.[5]

Some certified workers in a state did not appear in that state's claimant file with a regular UI claim. This could have occurred because the worker (1) did not experience a dislocation; (2) experienced a dislocation but did so after the date range covered by the state's claims file; (3) experienced a dislocation during the period covered by the state's claims file but was not eligible for UI, was eligible for UI but elected not to file a claim, or found reemployment before receiving a first payment; or (4) experienced a dislocation, but filed a claim in a state other than the state in which

[4] In the 21 states whose certified worker lists provided SSNs for all or nearly all workers in the files, 76 percent of certified workers were matched to at least one record in the UI claims files. In the 5 states whose certified worker lists lacked SSNs, the rate of matching was an average of 58 percent.

[5] Workers can only collect TRA if they first exhaust UI. Thus, certified workers were matched to UI claims (rather than to TRA claims) to identify the beginning of the benefit receipt spell associated with their dislocation.

the firm covered by the petition was located. The rate at which certified workers appeared in the state's claims file varied by state (Table I.5), ranging from a low of about 25 percent (i.e., relatively few certified workers appeared in the state's claims file) to nearly 100 percent (i.e., nearly all certified workers appeared).

Table I.5. Rate at Which Certified Workers Appear in States' Claimant Files and Are Matched to a Claims Records

State	Number of Certified Workers	Percentage of Certified Workers Found in Claimant File	Percentage of Certified Workers Matched in Claimant File
Alabama	2,684	98.3	97.9
Arkansas	4,506	91.0	70.0
California	6,539	76.9	54.4
Colorado	1,947	43.6	39.6
Florida	968	39.9	37.3
Georgia	5,202	95.6	89.5
Illinois	5,377	67.4	47.3
Indiana	1,555	91.4	84.2
Kentucky	3,476	56.5	45.5
Maryland	1,714	43.2	40.1
Michigan	4,815	59.3	45.0
Minnesota	263	75.3	66.2
Missouri	3,797	31.3	26.2
New Hampshire	1,060	68.0	53.0
New Jersey	947	85.5	77.1
New York	1,998	87.0	75.3
North Carolina	7,812	82.6	65.2
Ohio	7,563	65.4	54.1
Pennsylvania	13,745	54.4	34.9
Rhode Island	318	99.4	98.4
South Carolina	3,509	79.3	64.7
Tennessee	2,801	97.0	85.8
Texas	1,658	72.1	66.2
Virginia	3,647	95.8	67.2
Washington	NA	NA	NA
Wisconsin	24,646	25.1	15.6

Source: Certified-worker lists and UI/TRA claims files from the 26 study states.

Note: The numbers of certified workers appearing in the first column of this table differ slightly from those shown in Table I.3 because workers who appear on a state's certified worker list more than once, with different petition numbers, are excluded from this table but not the earlier one.

NA=Not available, because Washington did not provide complete administrative data.

Conversely, some certified workers appeared in a state's claims file multiple times, each with a different UI claim begin date, suggesting that the worker filed multiple UI claims over the covered period. The challenge in these cases was identifying the single claim that appeared to relate to the trade-related dislocation. This identification was important for two reasons. First, the claim begin date was taken to approximately represent the date of the job dislocation, and, hence, constitutes the dividing line for the measurement of pre- and post-displacement employment and earnings. Second, using propensity score methods, comparison group members were selected who closely matched the certified-worker treatment group members with respect to the date of job dislocation and the characteristics of base-period employment (such as base-period earnings).

For cases with multiple UI claims, we identified the single claim associated with the TAA petition using the following criteria:

- The UI claim was selected if we could find a corresponding TRA claim associated with it. Although the specifics varied from state to state, this criterion typically meant that there was a TRA claim in the file whose benefit-year begin date was the same (or nearly the same) as a UI claim benefit-year begin date, or the TRA claim's first payment date was shortly after a UI claim last payment date.
- The UI claim benefit-year begin date fell within the range of the petition's eligibility period (that is, the approximately three-year period running from the petition's impact date to the termination date).

In sum, matches between the certified-worker file and the UI/TRA claims file were deemed acceptable if: (1) the certified worker appeared only once in the claims file and the UI claim begin date fell within the petition's impact-to-termination date range, or (2) the certified worker appeared multiple times in the claims file but only one claims record met either of the two criteria above. Thus, workers who appeared on a state's certified-worker list are *not* part of the certified-worker sample frame for one of several reasons:

1. The certified worker did not appear in the state's UI claims file at all, for any of the reasons discussed earlier.
2. The certified worker appeared in the state's claims file with a UI claim only once, but the benefit-year begin date of this claim fell outside the petition's eligibility period.
3. The certified worker appeared in the state's claims file with more than one UI claim, but a single claim corresponding to the trade-related dislocation could not be identified (i.e., no single UI claim had a spell of TRA associated with it, and multiple UI claims showed a benefit-year begin date within the petition's eligibility period, or none did).[6]

The percentages of certified workers meeting the required conditions within each state are shown in the final column of Table I.5. The low match rate in some states (for example, Missouri and Wisconsin) suggests that the certified-worker sample (discussed in the next section) may not be

[6] By implication, workers who suffered a trade-related dislocation and filed for UI, but who were recalled and then separated again, were systematically excluded from the sample frame.

fully representative of all certified workers in the sample universe. Thus, we adjusted the sample weights to account for this unevenness in state match rates (see Chapter VII). In addition, as part of the impact analysis, we conducted sensitivity analyses by estimating impacts using alternative samples of states, such as excluding states with low match rates and excluding states with a high share of dates out of range (see Chapter VII of the main impact report). It is important to note that the unevenness in the state match rates has no effect on the internal validity of the impact estimates (that is the comparability of the treatment and comparison groups), but could affect external validity (that is, the generalizability of the impact findings).

E. SAMPLE FRAME FOR THE CERTIFIED-WORKER SAMPLE

This section first discusses the definition of the sample frame for the certified-worker sample, and then discusses our approach for separating the sample into "TAA participants" and "TAA nonparticipants." The final section presents counts of workers in the sample universe, by state and TAA participation status.

1. Defining the Sample Frame

The sample frame for the certified-worker sample was obtained using the merged file discussed above. The sample frame includes the following workers:

- ***Workers on worker lists covered by petitions that became certified for TAA between November 1, 2005 and October 31, 2006.*** As discussed, these petitions were identified using the USDOL petition file. Importantly, even though states furnished data at different times, the petition certification period for the study was the *same* for all states. We specified a one-year window to account for potential seasonal layoff patterns.

- ***Those whose UI benefit year started in the approximately three-year period covered by the applicable petitions' TAA certification.*** The study included only UI recipients, because doing so ensured that the certified workers in fact experienced a separation during the eligibility period. Furthermore, the comparison group sample was selected from UI recipients, so UI claims records data for certified workers were needed for matching purposes. Finally, the UI data provided contact information for the baseline interview.

  Workers covered by a certification include those laid off between one year prior to the petition *filing* date and two years after the petition *certification* date. It typically takes USDOL one or two months to make certification determinations. Thus, the sample frame for the certified-worker sample consists of workers whose UI benefit year started between September 1, 2004 and October 31, 2008.

- ***Workers between the ages of 16 and 80.*** Worker ages were calculated using UI data on birth dates and claim dates. A small number of workers had calculated ages that were outside the 16-to-80 range, and we suspect that some of these were due to data-entry errors. Age was a critical variable for matching TAA sample members to comparison group members, for checking the identity of sample members at the start of the telephone survey, and for screening survey respondents for age-related survey questions (for example, questions on Alternative Trade Adjustment Assistance [ATAA] were asked

only of those 50 or older). Thus, we excluded those outside the 16-to-80 age range and those with missing birth dates.

- ***Workers who received regular UI benefits.*** UI records associated with special UI programs (such as emergency unemployment compensation, disaster unemployment assistance, and state and federal extended unemployment benefits) were excluded from the study. This is because these programs are atypical and could influence the types and amount of TAA services that are received by trade-affected workers. For instance, benefits from these special UI programs are typically paid *before* TRA payments are paid, which could influence TAA training decisions. Furthermore, these special UI benefits would be received by *both* treatment and comparison group members, which could result in smaller differences between the UI benefits received by the two research groups, and hence, smaller TAA impacts on training and employment-related outcomes. Less than 1 percent of all records had these claim types.

- ***Workers with nonmissing values for key data items.*** A very small number of cases were excluded who had missing or invalid data values for gender, base wages, the UI benefit year begin and first payment dates, the maximum benefit amount, the UI claim type, and zip code. Finally, for survey purposes, we excluded a small number of cases who did not have a telephone number in the UI claims data.

The number of workers in this certified-worker sample frame is presented later in this section.

2. Rationale for Selecting the TAA Certification Petition Period

A crucial design decision for the evaluation was the time period over which to define the certified-worker sample universe. As discussed, workers covered by a certification include those laid off between one year prior to the petition filing date and two years after the petition certification date. This two-year post-certification coverage period presented a challenge for the study design, because we began requesting claims files of states in early January 2007, and some states sent us their UI/TRA claims file right away, covering persons who filed a claim through December 2006. Thus, to ensure that all workers covered by a certified petition who experienced a separation would appear in the claims file by December 2006, we would have needed to have chosen certifications for a one-year period that ended December 31, 2004 (thus allowing two years after the petition certification date for the layoffs to occur, as allowed by TAA's eligibility provisions).

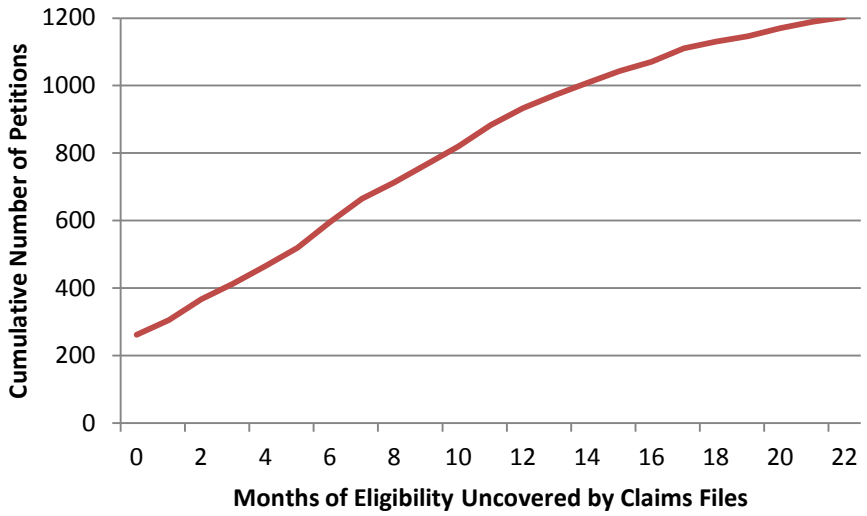
Choosing a certification period that was this early posed two problems. First, some workers covered by a petition certified in this period could have experienced their separation as early as October 2002 (or one year before the filing date for petitions certified in January 2004). This would have been *before* the provisions of the Trade Act of 2002 were to have taken effect, meaning that some workers in the sampling frame would have been receiving services under a different service regimen. Second, the baseline interview did not commence until the spring of 2008, which would have meant that some survey respondents would have been recalling details of their separation and TAA service receipt more than five years after those experiences occurred.

Instead, we selected a one-year petition certification period between November 1, 2005 and October 31, 2006, which results in a sample frame of TAA-eligible workers who received UI benefits between September 1, 2004 and October 31, 2008. Choosing this range: (1) shortened the survey recall period by about two years, (2) ensured that all workers in the sample frame received

TAA services after the implementation of all the provisions of the Trade Act of 2002, and (3) still allowed the bulk of workers covered by the petitions certified during this period to be included in the UI/TRA claims files that were provided by the study states.

Evidence on the last point is suggested by Table I.4 above, which shows that about half the states' UI/TRA claims files covered first payments made at least through the end of 2007. In addition, to examine coverage rates more fully, we calculated the number of months during the three-year petition certification period that was not covered by the states' claims files. This analysis was conducted using each of the approximately 1,200 petitions in the sample. The results are displayed in Figure I.2, where a value of zero represents petitions whose eligibility period was covered entirely by the states' claims files, and the maximum value of 22 means that 22 months of the eligibility period was left uncovered.[7]

Figure I.2. Months of Petition Eligibility Uncovered by States' Claims Files



The data indicate that for 262 petitions—about 21 percent of the total—no months of eligibility were left uncovered (Figure I.2). Furthermore, for more than three-quarters of the petitions, the period left uncovered was 12 months or less. These uncovered months were at the extreme of the eligibility period for most petitions.

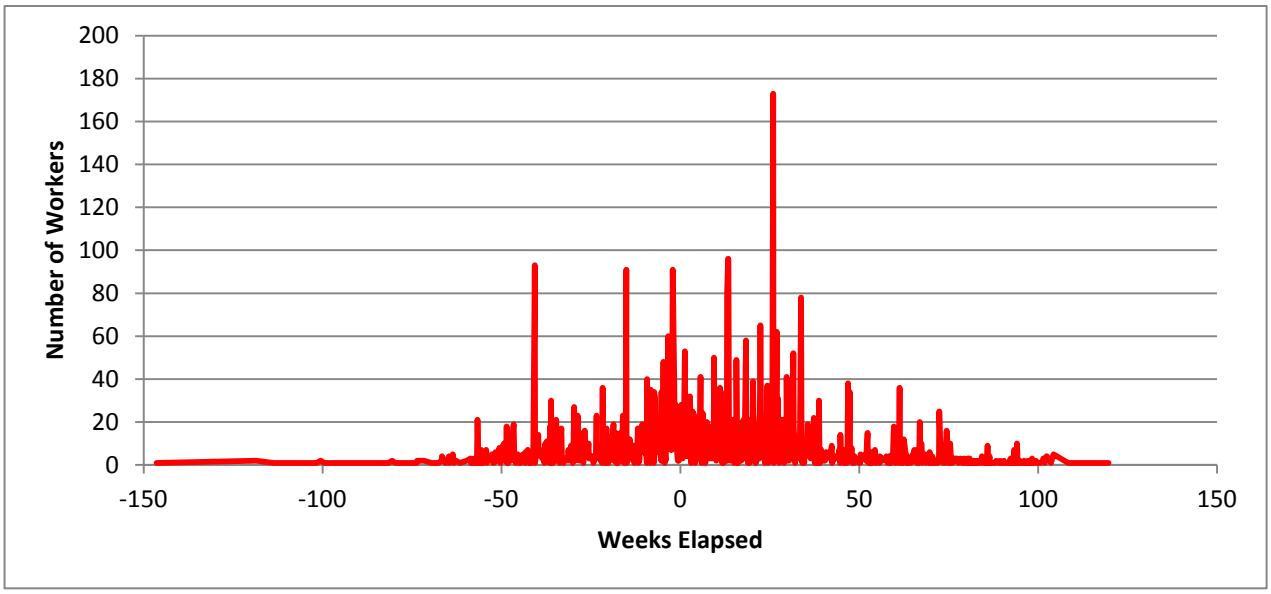
Importantly, relatively few job separations were likely to have occurred during the uncovered months. This is because most separations occurred near the petition determinations dates. To verify this, we calculated the proportion of workers who experienced a dislocation outside of the period covered by the UI/TRA claims data, using only petitions whose eligibility period was

[7] For 88.9 percent of the 1,204 petition certified during this period, the eligibility period (i.e., the time elapsed between the impact date and the termination date) is between 36 and 40 months. The months covered by the claims data was calculated as the impact date or the earliest month covered by the relevant state's claims file (whichever was latest) minus the petition's termination date or latest month covered by the relevant state's claims file (whichever was earliest). This value was then differenced from the total months of the petition's eligibility period to yield the results tabulated in Figure A.2.

completely covered by these data. The results are tabulated in Figure I.3. Recall that the eligibility period for most petitions is a little over 3 years (about 158 weeks), commencing about one year before the petition was filed up to two years after the petition was certified. Figure I.3 shows that about 78 percent of covered workers who filed a UI claim did so in the middle 19 months (76 weeks) of this period. Conversely, only 22 percent of workers filed their claim outside this range.

Table I.6 provides further information on data coverage rates by displaying, by state, the proportion of certified workers with layoff dates expected to be outside the data range covered by the states' claims files. In general, we find that coverage rates were high, although there is some variation across states. For example, in states whose claim files covered first payments only after September 2004 (e.g., Alabama) or before January 2007 (e.g., Kentucky, Michigan, Missouri, Wisconsin), coverage rates are lower than for other states. As discussed in Chapter VIII, we constructed weights to adjust for this unevenness of data coverage across states.

Figure I.3. Weeks from the Petition Certification Date to the Worker's UI Claim Date



3. Initial Definitions of TAA Participants and TAA Nonparticipants

The certified-worker lists contain information for TAA-eligible workers who received TAA services (participants) and for those who did not (nonparticipants). Our evaluation focused on both groups of workers, but the greater share of study resources was targeted to the participants.

The main purpose of the nonparticipant group for the study was to examine reasons for program nonparticipation and learn about other (non-TAA) employment and training services received by these workers (see Dolfin and Berk 2010). The latter services are especially important because of TAA provisions mandating that certified workers have access to Rapid Response and One-Stop core services that could increase their participation in non-TAA training programs, and, potentially lead to increases in their earnings.

However, we expected larger program impacts for TAA participants than for nonparticipants. Furthermore, an important component of the evaluation was to describe fully the TAA experiences of program participants and to estimate impacts for participant subgroups defined by the receipt of specific TAA services. Thus, more survey resources were targeted to the participant group. In particular, we conducted twice as many baseline surveys with participants than nonparticipants, and conducted follow-up surveys with participants only.

Table I.6. Fraction of Certified Workers with Layoff Dates Outside Range of State Data

State	Percentage with Layoffs Before Start of State Data Range	Percentage with Layoffs After End of State Data Range
Alabama	37.8	1.7
Arkansas	0.3	5.1
California	0.3	1.7
Colorado	0.3	3.1
Florida	11.6	1.0
Georgia	0.3	6.6
Illinois	0.2	26.6
Indiana	11.6	11.0
Kentucky	0.2	52.5
Maryland	0.2	17.7
Michigan	0.3	52.5
Minnesota	0.3	9.1
Missouri	31.4	52.5
North Carolina	0.2	22.2
New Hampshire	2.3	11.0
New Jersey	0.3	8.0
New York	0.3	4.2
Ohio	0.3	9.8
Pennsylvania	0.3	4.2
Rhode Island	0.3	5.1
South Carolina	0.3	4.2
Tennessee	0.2	34.6
Texas	0.3	9.8
Virginia	0.1	4.2
Washington	0.3	11.0
Wisconsin	0.2	52.5

Source: Certified-worker lists, TAA petitions, and UI/TRA claims files from the 26 study states.

We initially defined TAA participants and TAA nonparticipants as follows:

1. ***Participants were defined as those who received TRA benefits according to the UI claims data.*** As discussed, most of the sample had a sufficient follow-up period to accurately determine whether they were TRA recipients after they exhausted their UI claims.
2. ***Nonparticipants were defined as those who had not received TRA benefits according to the UI claims data.*** This group includes those with a relatively short follow-up period between job loss and the latest period covered by their states' UI data, as well as those with a longer follow-up period who never received TRA benefits.

The nonparticipant sample was expected to contain some workers who would ultimately receive TRA, as well as those who had already received or might subsequently have received a significant TAA service other than TRA. We anticipated that about 20 percent of these initially-defined nonparticipants would actually be TAA participants. To account for these "switchers," we sampled proportionately more nonparticipants than participants for data collection to achieve our target sample sizes. As discussed in more detail below, we subsequently reclassified initially-defined TAA nonparticipants as TAA participants once we collected survey data on TAA service receipt, and after we received TAPR data and updated UI/TRA information.

4. Certified-Worker Sample Universe

There were 49,531 workers in the certified-worker sample universe in the 26 study states (Table I.7). This figure includes 16,344 TAA participants and 33,187 TAA nonparticipants (based on initial TAA participation designations).

These counts translate into a sample universe of 54,922 workers across the 50 states, the District of Columbia, and Puerto Rico (Table I.7). This figure was estimated using the following formula:

$$(1)\quad Total\ Number\ of\ Workers\ in\ Universe = \sum_{s=1}^{26} \frac{Total_s}{Prob_s},$$

where $Total_s$ is the worker count in state s and $Prob_s = 26 * Share_s$, where $Share_s$ is the estimated share of workers in state s that was used for state selection (see the final column in Table I.7 that reproduces state shares from the 26-state design shown in Table I.1 above). This universe includes 17,892 participants and 37,030 nonparticipants.

These estimates suggest that the 26 study states contain 90.2 percent of all workers in the certified-worker sample universe (49,531 workers in the 26 study states divided by the estimated 54,922 workers in the sample universe). Similarly, the sample contains 91.3 percent of all participants and 89.6 percent of all nonparticipants in the study universe.

In actuality, about 25 percent of initial nonparticipants were reclassified as participants using survey, updated UI/TRA claims, and TAPR data. After accounting for these switchers, we estimate that the sample universe contains 27,565 participants and 27,357 nonparticipants. Thus, roughly one-half of all eligible TAA workers receive a significant TAA services.

Finally, we find that state worker shares using the *actual* data are similar to the *estimated* state worker shares that were used to sample the 26 states (see the last two columns of Table I.7). The correlation between the two shares is 0.79, and 17 of the 18 states with the largest shares using the actual data were defined as certainty states for sampling (Arkansas is the lone exception). These findings suggest that design effects due to state-level weighting are not large (see Chapter VIII).

Table I.7. Counts and Shares of the Certified-Worker Sample Universe, by State and Initial TAA Participation Status

	Certified-Worker Sample Universe			Share of All Workers in the Entire Universe (Percentage)	
Study State	TAA Participants	TAA Nonparticipants	Total	Using Certified-Worker Lists	Original Estimates
North Carolina	3,161	4,233	7,394	13.46	9.78
Pennsylvania	1,382	3,130	4,512	8.22	5.78
Georgia	1,409	2,502	3,911	7.12	4.79
Wisconsin	117	3,706	3,823	6.96	2.36
Ohio	701	3,082	3,783	6.89	4.45
California	477	3,016	3,493	6.36	9.53
Tennessee	1,192	1,276	2,468	4.49	4.58
Illinois	1,022	1,403	2,425	4.42	4.27
Arkansas	763	1,399	2,162	3.94	1.86
Alabama	1,003	1,000	2,003	3.65	3.05
Virginia	823	1,180	2,003	3.65	2.56
Michigan	320	1,269	1,589	2.89	5.70
New York	558	921	1,479	2.69	3.55
Indiana	878	350	1,228	2.24	3.97
South Carolina	431	638	1,069	1.95	4.85
Texas	347	698	1,045	1.90	3.61
Missouri	206	745	951	1.73	2.33
Kentucky	333	557	890	1.62	2.56
Colorado	178	574	752	1.37	1.16
New Jersey	373	344	717	1.31	1.49
Maryland	152	332	484	0.88	0.90
Florida	100	255	355	0.65	1.00
New Hampshire	80	248	328	0.60	0.94
Washington	132	153	285	0.52	0.82
Rhode Island	138	77	215	0.39	0.83
Minnesota	68	99	167	0.30	1.17
Total in the 26 Study States	**16,344**	**33,187**	**49,531**	**91.35**	**89.62**
Estimated Total in the Universe	**17,892**	**37,030**	**54,922**		

Source: Certified-worker lists provided by the 26 study states.

5. Selecting the Certified-Worker Survey and Administrative Records Samples

To efficiently use study resources, baseline and follow-up interviews were conducted with random subsamples of the certified-work sample universe. Twice as many TAA participants were released for baseline surveys than nonparticipants, and follow-up surveys were conducted with participants only. Administrative records were collected for both participants and nonparticipants. The administrative records samples were larger than the survey samples for cost reasons. This section discusses the selection of these data collection samples.

a. Baseline Survey Sample

The baseline survey sample was randomly selected from workers in the certified-worker sample universe. Within each state, sampling was performed separately for TAA participants and TAA nonparticipants (using initial participation designations). In addition, we used systematic sampling methods, where workers were ordered by gender, local labor market area, race/ethnicity, and age to ensure a representative survey sample within key population strata.

Our design was structured to select state sample sizes of participants and nonparticipants to generate survey samples that were as close to self-weighting as possible. This design was adopted to maximize the precision of the study estimates for a given sample size of workers. To achieve this goal, we initially calculated participant and nonparticipant sample sizes in each of the selected states using the figures in Table I.1 and the following formula:

$$(2)\ \ n_s = f\frac{N_s}{p_s},$$

where n_s is the number of TAA-eligible workers selected in state s, N_s is the total estimated number of TAA-eligible workers in state s, and p_s is the probability that state s was selected. The term f is the national sampling fraction for the population being sampled. Thus, the formula in (2) set the initial sample in each state (n_s) so that the probability of selection was f for all program-eligible workers. The total probability that a worker was selected is the probability the state was chosen (p_s) times the probability that a person was chosen in the state (n_s/N_s).

The value of f was selected so that the state samples summed to 2,220 for TAA participants and 1,110 for TAA nonparticipants. These targets were selected so that baseline interviews could be completed with 1,770 participants and 885 nonparticipants, assuming an 80 percent survey response rate.

These initial sample sizes, however, were amended for a number of reasons (see Chapter III):

1. ***State samples were released for interviewing in waves.*** As discussed, states provided data at different times throughout 2008, and thus, survey samples were released in several waves (see Chapter III). During this process, it was difficult to anticipate which states would ultimately provide data and when. Thus, in calculating worker sample sizes for a particular state, it was necessary to make assumptions about the ultimate state sample size. These estimates increased from 18 states (for the earliest

states) to 22 states, to 25 states, and finally to 26 states. These changes affected state sample sizes.

2. ***The baseline survey response rate was lower than anticipated.*** Our initial worker sample sizes were selected assuming an 80 percent response rate to the baseline interview. However, to achieve our target number of completed interviews, we increased the size of the baseline survey sample after it became clear that the response rate would be about 60 to 65 percent (see Chapter III). Furthermore, we released more samples in states with lower response rates than higher response rates, and took into account differential response rates for participants and nonparticipants.

3. ***The sample universe was small in some states.*** In some states, the sample universe was smaller than the size of the worker sample targeted for baseline surveys. In these cases, we selected the entire state universe for the baseline survey sample.

4. ***California specified a maximum sample size.*** Thus, the selected survey sample in California was smaller than the targeted sample size.

5. ***The sampling took into account the likelihood that some nonparticipants would be reclassified as participants.*** To account for these "switchers," we sampled more nonparticipants and slightly fewer participants than equation (2) would suggest, in anticipation that some nonparticipants would be reclassified as participants using baseline interview and more recent TRA benefit receipt data.

Table I.8 (Column 2) displays the resulting baseline survey sample size for the treatment group, by state and initial TAA participation status. The total survey sample contained 4,381 treatment workers (2,875 participants and 1,506 nonparticipants). The state samples ranged from 110 to 365, with a median state sample size of 141.

b. Follow-up Survey Sample

Workers were released for follow-up interviewing about 23 months after their baseline interview release dates (see Chapter IV). The follow-up survey sample was conducted with TAA participants in the baseline survey sample, but not with TAA nonparticipants. Before selecting the follow-up survey sample, we updated the initial TAA participant/nonparticipant designations using baseline survey information on TAA service receipt (for those who completed baselines). Switchers were identified as those who reported in the baseline interview as having received any core TAA services: TRA, TAA-funded training, health coverage through the Health Coverage Tax Credit (HCTC), and, for workers over age 50, wage subsidies through the Alternative TAA (ATAA) program.[8] The worker switching rate using the baseline data was 29 percent; the median state switching rate was 25 percent, but the rate ranged from 0 to 76 percent across the 26 states.

The follow-up survey sample included 3,000 TAA participants in two groups. The first group included all 2,228 participants who completed the baseline survey (including the nonparticipant

[8] We did not use TAPR and updated TRA benefit receipt information for identifying TAA participants, because these data were not yet available when the follow-up survey sample was selected.

switchers). The second group included a random sample of 772 of 872 initially-defined participants who did not complete the baseline interview.[9] The subsample of baseline interview noncompleters was selected using systematic sampling procedures, where the data were ordered by state, gender, local labor market area, race/ethnicity, and age.

Columns 4 and 5 in Table I.8 display, by state and baseline survey completion status, the number of workers in the follow-up survey sample. The figures in parentheses in column 4 are the number of baseline interview completers who switched from being TAA nonparticipants to TAA participants using information in the baseline survey on TAA service receipt. The total state follow-up survey samples range from 82 to 255, with a median state sample size of 98.

c. Administrative Records Sample

Administrative UI wage records, TAPR, and WIASRD data were collected for a random subsample of the certified-worker universe. This sample was selected separately for participants and nonparticipants using systematic sampling procedures, where the data were ordered by state, gender, local labor market area, race/ethnicity, and age. To the extent possible, state administrative records sample sizes were selected to ensure a self-weighting sample using the methods discussed above for selecting the baseline survey samples.

The administrative records sample contains 7,421 participants and 12,319 nonparticipants using initial participant designations (see the final two columns of Table I.8), who were selected from the 25 (of the study's 26 states) that supplied the necessary administrative data. We selected more nonparticipants than participants, because we expected that some nonparticipants were to be reclassified as TAA participants once we obtained additional service receipt data; thus, we expected the final analysis sample of TAA participants to be larger than the sample of TAA nonparticipants.

Finally, we also collected administrative wage records for the smaller certified-worker *survey* samples of TAA participants and nonparticipants. The certified-worker survey and administrative records samples were selected independently, although there is some overlap in these samples (as discussed in Section G below).

d. Identifying Switchers in the Administrative Records Sample

TAPR data on TAA service receipt and updated TRA benefit information were obtained in several stages throughout the evaluation (see Chapter V). As discussed, TAA nonparticipants were originally defined as those who did not have a TRA claim according to the *first round* of UI/TRA claims data that we received. After the study samples were selected, however, we obtained the following additional data: (1) TAPR data from all states (except Alabama) that included service receipt information on all TAA participants between April 2004 and June 2010, and (2) updated UI/TRA claims data from all states (except Washington) that covered the period from the states' first-round submissions through June 2010.

[9] These 872 noncompleters excludes 29 baseline noncompleters who were adamant refusers, were deceased, had physical or cognitive barriers, or did not meet survey criteria.

Table I.8. Certified-Worker Baseline Survey, Follow-up Survey, and Administrative Records Samples, by TAA Participation Status

	Baseline Survey Sample		Follow-up Survey Sample of TAA Participants[a]		Administrative Records Sample	
Study State	TAA Participants[a]	TAA Non-participants[a]	Completed a Baseline Survey	Did Not Complete a Baseline Survey	TAA Participants[a]	TAA Non-participants[a]
Alabama	92	45	67 (7)	26	273	445
Arkansas	88	48	71 (2)	16	276	464
California	241	124	158 (10)	81	477	882
Colorado	93	47	63 (0)	27	175	470
Florida	90	45	54 (4)	31	100	248
Georgia	124	61	94 (8)	34	379	626
Illinois	117	58	85 (16)	43	339	563
Indiana	97	49	73 (8)	27	523	300
Kentucky	92	44	73 (10)	26	270	447
Maryland	85	47	62 (6)	26	152	332
Michigan	135	67	115 (17)	30	319	743
Minnesota	68	42	82 (26)	10	68	99
Missouri	93	45	77 (6)	19	206	463
North Carolina	236	121	201 (26)	54	770	1,229
New Hampshire	79	63	54 (8)	28	79	245
New Jersey	94	52	60 (4)	31	338	281
New York	92	46	71 (6)	23	279	457
Ohio	106	64	90 (12)	24	436	733
Pennsylvania	149	73	111 (5)	37	459	745
Rhode Island	83	44	69 (6)	18	138	76
South Carolina	125	64	108 (14)	24	389	635
Tennessee	109	57	97 (16)	26	314	514
Texas	126	57	70 (7)	53	282	434
Virginia	92	46	84 (17)	23	265	437
Washington	81	53	65 (8)	22	NA	NA
Wisconsin	88	44	74 (5)	13	115	451
Total	**2,875**	**1,506**	**2,228**	**772**	**7,421**	**12,319**

Source: Baseline and follow-up interview data and UI/TRA claims files

Note: The figures in parentheses in the fourth column pertain to the number of nonparticipant-to-participant switchers based on updated TAA participation designations using baseline survey information on TAA service receipt.

[a]Figures pertain to participation status as initially defined using initial TRA benefit receipt information in the UI/TRA claims files.

NA=Not available, because WA did not provide administrative data.

We used these data to identify originally-defined TAA nonparticipants in the administrative records sample who were actually TAA participants. We identified such "switchers" if either of the following two conditions were met:

1. The person appeared in the TAPR data as having received a "high" level of service, defined as those who received training, TRA payments, ATAA benefits, or TAA allowances (such as job search assistance, subsistence while in training, a travel allowance while in training, or a relocation allowance). This definition excludes those in the TAPR data who only received more "light-touch" services such as receiving a waiver, a service plan, or case management services.

2. The person subsequently received a TRA first payment (based on the updated UI/TRA claims data) within the 3-year window covered by the TAA petition that was associated with the worker's layoff.

Using these criteria, about 25 percent of nonparticipants were reclassified as participants for the certified-worker administrative records samples. The switching rates ranged from 5 to 100 percent across states with a median state value of 21 percent.[10] Note that switching was not germane to the follow-up interview sample (the main analysis sample for the impact report), because this sample included TAA participants only as discussed in Section 5b.

F. SAMPLE FRAME FOR THE TRA-BENEFICIARY SAMPLE

The evaluation also selected a supplementary nationally representative sample from the universe of TRA beneficiaries. The primary advantage of this sample over the certified-worker sample is that the UI/TRA records claims data contain information on all TRA beneficiaries, whereas the certified-worker sample may not be fully representative of all TAA-eligible workers. The main disadvantages of the TRA-beneficiary sample are that it (1) excluded TAA participants who did not receive TRA benefits but received other TAA services, and (2) could not be used to examine issues pertaining to program take-up rates. Thus, using both the certified-worker sample and the TRA-beneficiary sample improved the ability of the evaluation to yield informative conclusions about program impacts, because we were able to compare the consistency of results using the two samples.

The sample frame for the TRA beneficiary sample was obtained using the UI/TRA claims files discussed above, and includes workers identified as ***having received a TRA first payment anytime between January 1, 2006 and December 31, 2006***.

Our goal was to select a timeframe so that the certified-worker and TRA-beneficiary samples were receiving TAA services at approximately the same time. To align these samples, recall that the certification window for the certified-worker sample was November 1, 2005 to October 31, 2006. Thus, assuming that the average time from petition determination date to UI claim date is approximately three months (which we estimated from the UI claims data for the certified worker sample) and that TRA benefits commence about 6 months after separation (that is, when UI

[10] The calculations exclude AL and WA who did not provide all necessary administrative data. Chapter V presents sample sizes for the administrative records samples that take into account the switchers.

benefits will typically be exhausted), we estimated that persons in the certified-worker sample began receiving TRA benefits, on average, from August 2006 to July 2007. However, there were 8 states whose UI data did not cover the period up to July 31, 2007. Thus, we used instead the January 1, 2006 to December 31, 2006 timeframe for the TRA-beneficiary sample, because all states provided data through the end of 2006. Although few individuals were randomly chosen for both the certified-worker and TRA-beneficiary samples, the timeframes thus overlap (although the TRA-beneficiary sample received TAA services slightly earlier than the certified-worker sample). In this way, impact analyses using one sample could be used to test the robustness of conclusions estimated from the other sample.

Several additional criteria were also imposed to identify the TRA-beneficiary sample universe (the first three criteria are the same ones imposed for the certified-worker sample):

- *Workers between the ages of 16 and 80.*
- *Workers who received regular UI benefits.*
- *Workers with nonmissing values for key data items.*
- *Workers with logical and plausible dates for the UI spell and TRA payments.* The first TRA payment date could not be more than 9 months after the first UI payment date and could not precede the end of the UI spell by more than 2 months.

With these restrictions, there were 25,810 workers in the TRA-beneficiary universe in the 25 of the 26 study states that provided the necessary data (Table I.9) and 30,973 workers nationwide. The size of the universe ranged from 56 workers in New Hampshire to nearly 6,000 workers in North Carolina.

Administrative UI wage, TAPR, and WIASRD data were collected for a random subsample of the TRA-beneficiary sample, but survey data were not collected for this sample due to project resource constraints. The TRA-beneficiary administrative data collection sample contains 10,095 workers (Table I.9). This sample was randomly selected using the same systematic sampling methods as were discussed above for selecting the certified-worker samples.

G. OVERLAP IN THE TREATMENT SAMPLES

There is some overlap in the treatment samples for TAA participants and similarly for TAA nonparticipants (Table I.10). For instance, among those in the certified-worker survey participant sample, about 69 percent are also in the certified-wage administrative records participant sample and 23 percent are in the TRA-beneficiary sample. Similarly, for nonparticipants, 59 percent in the certified-worker survey sample are also in the certified-wage administrative records sample.

Altogether the sample contains 34,577 treatment observations and 30,013 *unique* workers. About 87 percent of workers are in one treatment sample only, 11 percent are in two samples, and 2 percent are in three samples.

Table I.9. Counts of Workers in the TRA-Beneficiary Sample Universe and the TRA-Beneficiary Administrative Records Sample

State	TRA-Beneficiary Sample Universe	TRA-Beneficiary Administrative Records Sample
Alabama	572	370
Arkansas	346	346
California	678	516
Colorado	273	272
Florida	146	146
Georgia	1,390	506
Illinois	1,454	451
Indiana	982	429
Kentucky	1,154	365
Maryland	213	209
Michigan	2,627	597
Minnesota	252	252
Missouri	300	300
North Carolina	5,989	1,029
New Hampshire	56	56
New Jersey	530	476
New York	732	366
Ohio	893	578
Pennsylvania	1,406	610
Rhode Island	294	289
South Carolina	1,347	520
Tennessee	1,923	481
Texas	1,442	379
Virginia	637	379
Washington	NA	NA
Wisconsin	174	173
Total	**25,810**	**10,095**

Source: UI/TRA claims files provided by 25 study states

NA=Not available, because WA did not provide administrative data.

Table I.10. Overlap in the Five Treatment Samples

Treatment Sample (Sample Size)	Percentage of Those in the Treatment Sample in Column 1 Who Are Also in the Indicated Treatment Sample			
	TAA Participants[a]		TAA Nonparticipants[a]	
	Certified-Worker Administrative Records	TRA-Beneficiary	Certified-Worker Survey	Certified-Worker Administrative Records
TAA Participants[a]				
Certified-Worker Survey (2,875)	68.8	23.4	0.0	0.0
Certified-Worker Administrative Records (7,421)	100.0	20.7	0.0	0.0
TRA-Beneficiary (10,095)	15.3	100.0	0.0	0.0
TAA Nonparticipants[a]				
Certified-Worker Survey (1,506)	0.0	0.0	100.0	59.1
Certified-Worker Administrative Records (12,452)	0.0	0.0	7.2	100.0

Source: UI/TRA claims files and certified-work lists provided by the 26 study states

[a]Figures pertain to participation status as initially defined using initial TRA benefit receipt information in the UI/TRA claims files.

CHAPTER II

THE SELECTION OF THE COMPARISON GROUP SAMPLES

A. INTRODUCTION

The ideal design for the National Evaluation of the TAA Program—random assignment—was not feasible, because TAA services cannot be denied to eligible workers under current program rules (so that it would not be possible to construct a control group). Furthermore, it was not feasible to randomly assign participants to different service groups, because TAA participants cannot be denied the services for which they are eligible. Consequently, the evaluation employed a comparison group (propensity score matching) design to obtain estimated impacts. Under this design, the outcomes of the comparison group are intended to represent the "counterfactual" outcomes of the treatment group had they not received TAA program services.

For the evaluation, we selected separate comparison samples within each state for the following five treatment samples discussed in Chapter I:

1. ***The certified-worker survey sample for TAA participants*** (based on initial participant/nonparticipant designations using UI/TRA claims data)
2. ***The certified-worker survey sample for TAA nonparticipants***
3. ***The certified-worker administrative records sample for TAA participants***
4. ***The certified-worker administrative records sample for TAA nonparticipants***
5. ***The TRA-beneficiary administrative records sample***

In total, we selected 130 matched comparison samples for the five treatment groups across the 26 study states. The comparison samples were selected from workers in each state's regular UI program who were not eligible for TAA services, but who were otherwise similar to treatment group members based on their observable matching characteristics.

We used nearest neighbor propensity score matching methods and administrative UI/TRA claims data to select comparison groups of workers who were laid off from jobs in the manufacturing sector. We used the same matching procedures for each of the five treatment samples. Our propensity score matching process was structured to follow the best practices of nonexperimental methods to help minimize the extent to which unobservable factors would bias the impact findings (see, for example, Glazerman et al. 2003, Deheija and Wahba 1999, Smith and Todd 2005, Heckman et al. 1997 and 1998, Bloom et al. 2005). For instance, we used the same data source—administrative UI claims data—for matching the treatment and the comparison groups using information on workers' basic demographic characteristics, job characteristics, and UI claims and benefits histories. In addition, we matched treatment and comparison samples that lived in the same local labor market areas, and used balancing tests to identify appropriate model specifications.

The remainder of this chapter discusses the selection of the comparison groups in more detail. Section B discusses general issues for a comparison group design. Section C discusses our process for identifying potential comparison group matches, and Section D discusses the data items used for matching. Sections E and F present our propensity score matching methods and results, respectively. Sections G and H discuss the selection of the comparison samples for the baseline and follow-up interviews, respectively. Finally, Section I discusses the selection of the comparison samples for administrative records data collection.

B. GENERAL ISSUES FOR A COMPARISON GROUP DESIGN

Under comparison-group designs, assumptions and statistical models must eliminate differences between the treatment and comparison group samples that could result from sources other than the intervention. If these efforts are successful, remaining differences can be attributed to the intervention, possibly with some measure of statistical confidence. However, if sources of unmeasured differences exist, this approach could produce impact estimates that suffer from sample selection biases.

There is a long-standing debate in the literature about whether social programs can be reliably evaluated using nonexperimental methods. To investigate their validity, data from experiments have been used to try to replicate the experimental estimates—the "gold-standard" estimates—using nonexperimental methods.

In an influential study, LaLonde (1986) found that the impact results from the experimental National Supported Work (NSW) Demonstration could not be replicated using a comparison group design. He estimated program impacts using a number of standard nonexperimental evaluation econometric methods, including simple regression methods, difference-in-difference methods, instrumental variable procedures, and the two-step estimator of Heckman (1979), and found that the alternative estimators produced very different impact results. Fraker and Maynard (1987) came to similarly pessimistic conclusions using a slightly different comparison sample. Similarly, Peikes et al. (2008) found that matching methods produced incorrect impact estimates when compared with a randomized design for the State Partnership Initiative (SPI) employment promotion program.

Using the same data as LaLonde, however, Heckman and Hotz (1989) used a broader set of specification tests to help select among nonexperimental estimators, and found that their tests could exclude those estimators that produced impact results that differed from the experimental ones. Furthermore, in an influential study, Deheija and Wahba (1999) reexamined LaLonde's data using propensity scoring—to find matched comparison group members for the NSW treatment group; their resulting impact estimates were similar to the experimental ones. A key contribution of their study was the careful use of model specification tests that yielded treatment and comparison groups with similar distributions of the matching variables and propensity scores. Mueser el al. (2007) also concluded using JTPA data that matching methods may be effective in evaluating job training programs. Smith and Todd (2005a and 2005b) cautioned, however, that the Deheija and Wahba results are not robust to alternative analysis samples and matching variables included in their models.

Glazerman et al. (2003) surveyed sixteen studies that each used nonexperimental methods to try to replicate impact findings from a social experiment. Their systematic review was intended to shed light on the conditions under which nonexperimental methods most closely approximate impact results from well-designed and well-executed experimental studies. They found that nonexperimental methods occasionally replicate the findings from experimental impact evaluations, but in ways that are not easy to predict. However, they identified several factors that lead to more successful replications. These factors, which are similar to the ones that Heckman et al. (1997, 1998) found in trying to replicate experimental results from the National JTPA Study, are as follows: (1) the data should include a rich set of matching variables relevant to modeling the program participation decision, and in particular, preprogram earnings histories; (2) the same data sources should be used for the treatment and comparison groups; and (3) the treatment and comparison

samples should be from the same geographic areas. Bloom et al. (2005) identify similar criteria for increasing the chances that nonexperimental methods can produce credible impact estimates.

As discussed in the remainder of this Chapter, our propensity score matched design for the TAA evaluation was structured to satisfy these criteria. In addition, we employed key specification tests used in the literature to identify appropriate comparison group samples, to further enhance the integrity of our conclusions. Finally, the use of two treatment group samples and their companion comparison groups allowed us to examine the robustness of study findings.

C. IDENTIFYING THE POOL OF POTENTIAL COMPARISON GROUP MEMBERS

We identified a pool of potential comparison group members from the UI/TRA claims data. Most of the sample restrictions discussed in Chapter I that we used to select the certified-worker and TRA-beneficiary samples also applied to the selection of potential comparison group members. We limited the comparison pool to individuals between the ages of 16 and 80 who received regular UI benefits and who had non-missing values for key variables. We also aligned the treatment and comparison samples in terms of their job layoff dates. We did this by limiting the certified-worker comparison sample to those who started collecting regular UI benefits between September 1, 2004 and October 31, 2008. Similarly, we limited the TRA-beneficiary comparison sample to those who started a UI spell between March 1, 2005 and December 31, 2006 (which was period when the TRA-beneficiary treatment sample started collecting UI benefits).[11]

However, we used additional restrictions that applied only to the comparison group. Using information on the industry of a worker's primary employer, we limited the comparison sample to workers in the manufacturing industry, restricting the sample to workers with North American Industry Classification System (NAICS) two-digit industry codes of 31, 32, or 33. We also dropped workers who received TRA benefits according to the UI/TRA claims data or who were on a certified-worker list for a firm that was certified for TAA outside the data range for the study. We also limited the potential comparison pool to workers who lived in the same local areas as the treatment group, as defined using the local area indicators discussed below.

Under our design, treatments and matched comparisons both consisted of new UI recipients. A disadvantage of this approach is that some treatments started collecting UI benefits *before* their firm became certified for TAA. For instance, we found that about 28 percent of TAA participants were separated from their jobs more than 90 days before their firm's petition was certified. Some of these treatments may not yet have known about TAA at the time of their job loss, and some of them may have ultimately become TAA participants because they could not find jobs (although it is also possible that these workers' job search activities were influenced by the anticipation of being eligible

[11] The TRA-beneficiary treatment sample includes those who started collecting TRA benefits in calendar year 2006. For most workers, the UI first payment dates was about 6 months prior to the TRA first payment date. However, for some workers, the difference between their UI and TRA start dates was as little as 1 month and as long as 12 months. Thus, we selected a UI start date window for selecting the comparison sample that was wider than one year.

for TAA services). Thus, these TAA participants may have been a self-selected sample whose unobserved characteristics were associated with especially poor labor market outcomes, which could have yielded impact estimates that are somewhat biased downwards.

Despite this potential disadvantage, we believe that our design choice is preferable to the alternatives. One approach would have been to match treatments to comparisons who exhausted their UI benefits[12]. Such an approach, however, would not account for the potential effects of the offer of TAA training, TRA, and other TAA services on the job- seeking behavior of TAA participants soon after they lose their jobs and start receiving UI benefits. For instance, some TAA participants in our sample who exhausted their UI benefits and collected TRA might *not* have exhausted UI if TAA had not been an option. Instead, some of these workers might have more quickly found jobs. In fact, more than 80 percent of the TAA participant sample exhausted UI (and two-thirds enrolled in training programs), compared to an UI exhaustion rate of about 45 percent for matched comparisons from the same local areas. Thus, choosing the comparison group from only among UI exhaustees might have yielded comparisons who were less able or willing to obtain employment than what might have been true for the treatments in the absence of TAA. Consequently, a comparison group restricted to UI exhaustees might have created a bias towards more favorable estimates for TAA, while a comparison group with both exhaustees and non-exhaustees is a more conservative approach, typical of much social science research.

Thus, our main impact estimates are based on the comparison group with both non-exhaustees and exhaustees. However, we also provide impact estimates using a comparison group of just exhaustees. While the "true" impacts cannot be known, it is plausible that they lie somewhere between the two sets of estimates.

We also considered a design option where "time 0" for the treatment sample would be set to be the later of the petition certification date and the UI claim date. A problem with this approach, however, is that there was no comparable date for the comparison sample. Furthermore, there could be anticipatory behavior by participants as they await their firm's certification decision. This could occur because workers laid off from firms who applied for TAA but who have not yet been certified by DOL could forego job opportunities in the hopes of eventually receiving TAA services. Consequently, for the matching, we set "time 0" to be the UI claim date (to proxy for the job separation date).

For the impact analysis, we conducted a host of sensitivity analyses to examine the robustness of the earnings impact findings to potential selection biases(in addition to estimating impacts using UI exhaustees). For example, we estimated earnings impacts using samples that excluded treatments whose UI claim dates were before their firm's petition certification dates and that also excluded their matched comparisons. In addition, we estimated impacts by excluding those who were recalled to their prior jobs (based on information gathered from the follow-up surveys), and hence, who did not experience a permanent job loss. We also estimated impacts using eligible TAA nonparticipants and

[12] This approach was used for the previous evaluation of the TAA program (Corson et al., 1993) using a treatment sample of TRA beneficiaries rather than TAA certified workers that is the primary sample used for this evaluation.

their matched comparisons, where we might expect that the direction of the selection biases to be opposite to that using the TAA participants and their comparisons. Finally, to help balance the direction of the selection biases for the TAA participant and nonparticipant samples, we estimated impacts for *all* eligible TAA workers by comparing the outcomes of the *combined* participant and nonparticipant samples to those of their combined comparison samples.

D. DATA ITEMS USED FOR MATCHING

The variables used in the matching process were constructed from the UI/TRA claims data. The matching variables included demographic, job, and local labor market characteristics. Although there was some variation in the claims data across states, we used the following fixed set of characteristics for all states:

- ***Demographic information:*** Gender, age, and race/ethnicity
- ***Job characteristics:*** Base-period earning
- ***UI claim and benefit data:*** Benefit year begin date, date of UI first payment, and UI maximum benefit amount

In addition, we used the zipcode data from the UI files to merge, by state, county, and year (if relevant), the following local area characteristics into the UI claims records:

- ***The annual unemployment rate in 2000 to 2006*** using data from the U.S. Bureau of Labor Statistics (BLS).
- ***The poverty rate in 2004*** using data from the Area Resource File (ARF).
- ***The percentage of workers in manufacturing in 2005*** using ARF data.
- ***The average earnings per job in 2005*** using data from the Inter-University Consortium for Political and Social Research (ICPSR).
- ***The percentage population growth between July 1, 2000 and July 1, 2005*** using ICPSR data.
- ***The U.S. Department of Agriculture, Economic Research Service (ERS) 2003 Rural-Urban Continuum Code*** using ICPSR data. These codes form a classification scheme that distinguishes metropolitan counties by the population size of their metropolitan area, and nonmetropolitan counties by degree of urbanization and adjacency to a metropolitan area or areas. There are nine such codes that range from a metropolitan area with a population of 1 million or more to rural areas that are not adjacent to a metropolitan area.
- ***Local area unemployment statistics (LAUS) area type indicators in 2007*** using BLS data. These indicators pertain to labor market areas that are economically integrated geographic areas within which individuals can reside and find employment

within a reasonable distance or can readily change employment without changing their place of residence. Labor market areas are metropolitan areas, micropolitan areas, or small labor market areas, and exhaust the geography of the U.S. These area definitions are often used to allocate Federal program funds to states and local areas.

Although many of our matching characteristics were continuous variables, we constructed categorical variables to use in the matching models. The categorical variables were constructed for each state and sample after we examined the data and determined natural breakpoints. Since the distributions of many of these characteristics varied significantly across states, this flexible approach to the categorical variables allowed us to accurately represent the variable distributions within each state. While this process was time-consuming, using state-specific categorical variables instead of continuous variables allowed us to match on the full variable distributions rather than variable means only. Although we included the categorical variables in our propensity score models, we assessed the matching specifications using both the categorical and continuous variables.

E. PROPENSITY SCORE MATCHING METHODS

We used propensity score matching methods developed by Rosenbaum and Rubin (1983) to select the study comparison groups. A propensity score is the probability that a worker with a given set of characteristics receives the treatment. Rosenbaum and Rubin (1983) proved the key result that individuals with the same propensity score will also have the same distribution of the matching variables.

To implement the propensity score matching procedure, we estimated a separate logit model for each state and treatment group sample where the dependent variable was set to 1 for treatments and 0 for potential comparisons. The matching (explanatory) variables for all models included the demographic, employment, and UI benefit variables discussed above. In addition, we estimated models where the matching variables also included either the local area indicators or the characteristics of the local labor market (but not both sets of collinear variables). We also estimated all the models separately for males and females.

For each model, we matched each treatment worker to the five comparison group members with the closest propensity scores (predicted probabilities)—that is, to the five "nearest neighbors." Matching was performed *with replacement* so that a comparison group member could be matched to multiple treatment group members. We used a nearest neighbor matching approach instead of alternatives like caliper or kernel matching because of survey budget constraints. Furthermore, Smith and Todd (2005) and Imbens and Wooldridge (2008) conclude that with sufficient sample overlap in the propensity scores and well-balanced matching variable distributions, impact estimates are relatively insensitive to the choice of matching methods.

Our budget allowed us to complete interviews with two comparison workers for every treatment worker. Conducting baseline interviews with a comparison sample that was twice as large as the treatment sample would allow for a second stage of matching that used the richer matching variables from the baseline survey to identify a one-to-one match for the follow-up interviews. While we only planned to use two comparison workers, we identified the five nearest neighbors in

case baseline survey nonresponse generated a need for additional sample (see below and Chapter III).

To assess each matching model specification, we conducted balancing tests on the categorical matching variables and the underlying continuous variables using methods found in the literature. Our primary assessment of the matching model was based on the first-best match, although we also examined the match quality of the second-best match and rarely saw substantive differences. For the balancing tests, we assessed the overlap in the distribution of propensity scores for treatment and matched comparison workers. We conducted *t*-tests for each variable and *F*-tests of the differences in variances for continuous matching variables. We also conducted an *F*-test on the overall set of matching variables by running a regression of treatment status on all matching variables. We repeated these balancing tests within five equally-sized strata defined by the size of the propensity scores, although in some states, we did not focus on the within-strata tests due to small sample sizes.

If the initial models failed the balancing tests, we used an iterative process to find the preferred model specification. Our re-estimation approach depended on the initial problem. In some cases, we estimated models separately for subgroups that were unbalanced (for example, age, race/ethnicity, a base wage rate category, or a particular local area characteristic). In other cases, we estimated models that included interaction terms for the problem variable as additional matching characteristics. We continued this process until we found a satisfactory model specification for each state sample.

F. PROPENSITY SCORE MATCHING RESULTS

Tables II.1 and II.2 display key summary statistics on the estimated propensity scores and matching variables for all 130 matching models using the first-best matches. These summary statistics were selected from the more complete matching results displayed in Tables II.3a to II.7a and II.3b to II.7b for the final model specifications for one randomly selected state from each of the five treatment samples. Tables II.3a to II.7a display the following summary information:

- ***The number and percentage of treatments, matched comparisons, and all potential comparison group members who fell into each of six propensity score classes defined using the treatment group propensity score distribution.*** These figures can be used to assess the overlap in the propensity score distributions for the treatment group and their first-best matches. In addition, the figures can be used to gauge the availability of suitable comparisons within each propensity score class, and in particular, within the highest propensity score class, where propensity score designs often have trouble finding enough quality matches.

- ***The percentages of matched comparisons who were matched to 1 treatment, 2 treatments, 3 treatments, and so on (see footnote 2).*** Recall that matching was performed with replacement. Thus, the figures in footnote 2 can be used to assess the extent to which the same comparisons were repeatedly matched to different treatments.

- ***The p-value from a t-test for testing the equivalence of the mean propensity scores across the treatment and matched comparison groups.*** This test gauges the similarity of the propensity score means across the two research groups.

- ***The p-value from a F-test for testing the equivalence of the collection of matching variables across the treatment and matched comparison groups.*** The tables also display the corresponding *p*-value for comparing the matching variables for the treatment group to those of all potential comparisons, which provides information on whether the matching process produced a matched comparison sample that is better than if that sample were selected randomly from all potential comparisons.

Tables II.3b to II.7b display sample means for each matching variable for the treatment sample, the matched comparison sample, and a randomly selected subsample of all potential comparisons of the same size. The tables also display *t*-test results comparing each matching variable across the treatment and comparison group samples. As discussed, the matching variables were all categorical, but the tables also display statistics for the underlying continuous variables. Furthermore, although the models either included local area indicators or characteristics of the local labor market, both sets of local area variables are included in the tables.

The findings suggest that the propensity score matching process identified matched comparisons from the full comparison group population whose distribution of baseline characteristics are similar to those of the treatment group. None of the 130 *t*-tests comparing mean propensity score values across the treatment and comparison groups are statistically significant at the 5 percent level (Table II.1). Furthermore, only 1 of 130 overall *F*-tests of variable similarity are statistically significant, suggesting that for virtually all models, the full set of matching variables is not a statistically significant predictor of treatment status (see final column of Table II.2). In addition, we find that only a small percentage of *t*-tests comparing the demographic and local area characteristics of treatments and their first-best matched comparisons are statistically significant. Across the 130 models, the average percentage of *t*-tests that are significant for the demographic variables is 1.6 percent and the median percentage is zero (Table II.2). The average percentage of *t*-tests that are significant for the local area variables is 2.8 percent. However, this figure is larger in some states with TAA samples that lived in isolated (rural) areas, and where it was therefore sometimes difficult to find appropriate matches in those same areas.

Importantly, for 129 of 130 models, there are no significant treatment-comparison differences for any of the six base wage categories that were used in the matching models; for the one remaining model, there is a significant difference for only one base wage category (Table II.2). The comparability of the base wage rates for the treatments and comparisons is crucial for the evaluation because employment and earnings are the main evaluation outcomes.

The full sample across the 130 models contains 38,615 treatment observations and 34,182 first-best matched comparison observations (Table II.1).[13] Thus, 4,433 comparison observations (or 13 percent of the total) were matched to more than one treatment observation. Most of these repeat matches were in the top third of the treatment group propensity score distribution, where the sample contains 13,739 treatment and 10,164 comparison observations (Table II.1). The prevalence of repeated matches is somewhat uneven across states and samples (Table II.1).

Finally, the propensity score matching process generated matched comparison groups that are much more similar to the treatment groups than would have been the case if the matched comparisons were randomly selected from all potential comparison workers (unemployed manufacturing workers from the same local areas). The statistics in Tables II.3a,b to II.7a,b indicate that there are many significant differences between the propensity scores and matching variables for treatment workers and a random sample of potential comparison workers of the same size.

G. COMPARISON GROUP SURVEY SAMPLES

As discussed in Chapter I, 4,381 treatments in the certified-worker survey sample were released for baseline interviews (2,875 TAA participants and 1,506 TAA nonparticipants). The baseline survey sample also included 5,760 matched comparisons to the 2,875 participants and 3,115 matched comparisons to the 1,506 nonparticipants. Chapter III provides details on the process for selecting these samples and state sample sizes.

Only TAA *participants* in the certified-worker sample and their matched comparisons were released for follow-up interviews. As discussed in Chapter I, we released 3,000 TAA participants for follow-up interviews, including 2,228 participants who completed the baseline survey and a random sample of 772 of 872 initially-defined participants who did not complete the baseline interview. As discussed in more detail in Chapter IV, on the basis of advice from our expert project consultants, the follow-up survey sample for the comparison group was selected as follows: (1) using baseline interview completers in the treatment and comparison groups, we estimated new matching models that included the original UI and local area variables as well as the baseline interview matching variables, and selected matched comparisons using nearest neighbor matching without replacement; and (2) for baseline survey noncompleters in the comparison group, we randomly selected comparisons who were first best matches to treatment group survey completers or noncompleters.

Combining these samples, the follow-up sample contains 6,000 workers split evenly between the treatment and comparison groups. This sample includes 4,456 baseline survey completers (2,228 treatments and 2,228 comparisons) and 1,544 baseline survey noncompleters (772 treatments and 772 comparisons).

[13] The treatment worker counts in the certified-worker survey samples are sometimes larger than the baseline interview treatment samples presented in Table I.8 above, because we initially selected a baseline survey sample that was sufficiently large to allow for additional releases of workers for interviewing if response rates were lower than expected. Random subsamples of survey releases were selected using the systematic sampling methods discussed in Chapter I.

Table II.1. Summary Statistics for the Estimated Propensity Scores for Treatments and First-Best Matched Comparisons, by Sample and State

Sample and State	Sample Size		Average Propensity Score Value		Number in Top Third of the Treatment Group Propensity Score Distribution	
	Treatments	Matched Comparisons	Treatments	Matched Comparisons	Treatments	Matched Comparisons
Certified-Worker Survey Sample for TAA Participants						
Alabama	174	122	0.278	0.258	73	26
Arkansas	206	190	0.068	0.068	72	60
California	297	293	0.020	0.019	101	96
Colorado	175	154	0.113	0.112	64	46
Florida	100	63	0.356	0.334	42	13
Georgia	222	211	0.014	0.014	74	71
Illinois	247	229	0.058	0.057	85	74
Indiana	225	187	0.144	0.143	84	54
Kentucky	207	145	0.289	0.282	89	29
Maryland	152	116	0.202	0.195	59	31
Michigan	319	305	0.028	0.027	109	99
Minnesota	59	48	0.194	0.190	24	12
Missouri	187	136	0.271	0.250	77	31
New Hampshire	79	63	0.202	0.201	30	18
New Jersey	188	169	0.095	0.092	68	51
New York	173	172	0.014	0.014	58	57
North Carolina	577	559	0.034	0.034	197	182
Ohio	281	274	0.017	0.017	96	89
Pennsylvania	269	252	0.051	0.050	95	79
Rhode Island	138	132	0.027	0.027	47	43
South Carolina	268	217	0.185	0.184	102	60
Tennessee	244	231	0.026	0.026	83	76
Texas	219	174	0.214	0.211	87	44
Virginia	190	180	0.042	0.042	.	.
Washington	125	115	0.068	0.066	43	37
Wisconsin	115	91	0.189	0.174	43	26
Certified-Worker Survey Sample for TAA Nonparticipants						
Alabama	90	71	0.213	0.200	36	18
Arkansas	103	95	0.067	0.067	36	30
California	152	152	0.007	0.007	51	51
Colorado	99	93	0.066	0.060	34	30
Florida	81	71	0.089	0.087	30	21
Georgia	112	109	0.019	0.018	38	36
Illinois	147	146	0.013	0.013	49	49
Indiana	113	108	0.060	0.038	39	35
Kentucky	101	98	0.049	0.047	35	32
Maryland	104	86	0.110	0.110	37	27
Michigan	161	160	0.013	0.013	NA	NA

Sample and State	Sample Size		Average Propensity Score Value		Number in Top Third of the Treatment Group Propensity Score Distribution	
	Treatments	Matched Comparisons	Treatments	Matched Comparisons	Treatments	Matched Comparisons
Minnesota	99	80	0.196	0.192	39	21
Missouri	91	89	0.061	0.053	31	29
New Hampshire	100	65	0.326	0.320	40	15
New Jersey	85	84	0.033	0.032	29	28
New York	86	84	0.033	0.029	30	27
North Carolina	277	275	0.008	0.008	93	91
Ohio	141	140	0.005	0.005	48	46
Pennsylvania	134	133	0.008	0.008	45	44
Rhode Island	76	73	0.009	0.009	26	24
South Carolina	135	131	0.036	0.036	46	43
Tennessee	117	116	0.009	0.009	39	39
Texas	104	101	0.026	0.025	36	33
Virginia	95	94	0.017	0.017	32	31
Washington	88	86	0.032	0.032	29	29
Wisconsin	101	83	0.142	0.123	40	22
Certified-Worker Administrative Records Sample for TAA Participants						
Alabama	273	177	0.340	0.307	117	33
Arkansas	276	214	0.211	0.207	106	58
California	477	454	0.042	0.041	167	144
Colorado	175	146	0.171	0.172	66	41
Florida	100	67	0.356	0.331	41	15
Georgia	379	345	0.065	0.064	135	107
Illinois	339	301	0.087	0.085	121	93
Indiana	523	411	0.203	0.202	203	109
Kentucky	270	160	0.359	0.324	120	24
Maryland	152	127	0.149	0.143	54	39
Michigan	319	299	0.052	0.051	112	94
Minnesota	59	48	0.194	0.190	24	12
Missouri	206	150	0.261	0.232	83	36
New Hampshire	79	65	0.199	0.199	30	18
New Jersey	338	291	0.139	0.137	123	87
New York	279	251	0.097	0.096	101	76
North Carolina	770	725	0.056	0.056	269	230
Ohio	436	413	0.021	0.021	149	134
Pennsylvania	459	429	0.059	0.058	160	136
Rhode Island	138	132	0.027	0.027	47	43
South Carolina	389	304	0.225	0.224	153	78
Tennessee	314	297	0.034	0.034	107	97
Texas	282	229	0.152	0.149	109	62

Sample and State	Sample Size		Average Propensity Score Value		Number in Top Third of the Treatment Group Propensity Score Distribution	
	Treatments	Matched Comparisons	Treatments	Matched Comparisons	Treatments	Matched Comparisons
Virginia	265	251	0.054	0.054	.	.
Washington	NA	NA	NA	NA	NA	NA
Wisconsin	115	90	0.191	0.177	44	25
Certified-Worker Administrative Records Sample for TAA Nonparticipants						
Alabama	445	314	0.286	0.284	181	72
Arkansas	464	415	0.117	0.117	166	127
California	882	859	0.024	0.024	300	281
Colorado	470	392	0.172	0.169	176	112
Florida	248	192	0.217	0.214	96	51
Georgia	626	550	0.084	0.084	226	166
Illinois	563	515	0.074	0.074	197	163
Indiana	300	283	0.043	0.043	104	91
Kentucky	447	365	0.141	0.138	167	104
Maryland	332	241	0.243	0.242	127	64
Michigan	743	702	0.030	0.030	259	223
Minnesota	99	80	0.196	0.192	39	21
Missouri	463	412	0.126	0.123	164	128
New Hampshire	245	126	0.494	0.485	102	22
New Jersey	281	274	0.023	0.023	95	90
New York	457	434	0.039	0.038	160	137
North Carolina	1,229	1,187	0.026	0.026	417	389
Ohio	733	696	0.018	0.018	253	224
Pennsylvania	745	715	0.019	0.019	255	232
Rhode Island	76	75	0.024	0.024	26	25
South Carolina	635	539	0.154	0.154	235	157
Tennessee	514	491	0.043	0.043	175	160
Texas	434	419	0.039	0.039	149	136
Virginia	437	409	0.041	0.040	150	132
Washington	NA	NA	NA	NA	NA	NA
Wisconsin	451	342	0.243	0.233	182	83
TRA-Beneficiary Administrative Records Sample						
Alabama	370	223	0.403	0.401	161	37
Arkansas	346	297	0.111	0.109	127	88
California	516	498	0.021	0.021	175	163
Colorado	272	185	0.338	0.327	115	38
Florida	146	118	0.243	0.240	58	30
Georgia	506	448	0.072	0.072	182	136
Illinois	451	364	0.189	0.189	169	103
Indiana	429	393	0.093	0.092	151	123
Kentucky	365	332	0.050	0.049	128	105

Sample and State	Sample Size		Average Propensity Score Value		Number in Top Third of the Treatment Group Propensity Score Distribution	
	Treatments	Matched Comparisons	Treatments	Matched Comparisons	Treatments	Matched Comparisons
Maryland	209	154	0.264	0.264	82	39
Michigan	597	572	0.024	0.024	205	185
Minnesota	252	231	0.090	0.089	89	72
Missouri	300	255	0.139	0.136	114	71
New Hampshire	56	31	0.518	0.481	26	3
New Jersey	476	367	0.232	0.166	192	89
New York	366	333	0.092	0.091	133	100
North Carolina	1029	958	0.071	0.071	357	306
Ohio	578	556	0.018	0.018	195	183
Pennsylvania	610	560	0.075	0.074	216	174
Rhode Island	289	259	0.102	0.102	101	82
South Carolina	520	458	0.166	0.165	189	137
Tennessee	481	433	0.085	0.083	167	138
Texas	379	314	0.147	0.147	141	91
Virginia	379	348	0.080	0.080	133	110
Washington	NA	NA	NA	NA	NA	NA
Wisconsin	173	106	0.413	0.399	76	17
Total Sample Size	**38,615**	**34,182**			**13,739**	**10,164**

Source: UI/TRA claims files and certified-work lists provided by the 26 study states

Note. Figures are based on the first-best comparison group matches. The TAA participation and nonparticipation designations are based on initial designations using the TRA benefit receipt information in the UI/TRA claims data.

*Statistically significant at the 0.05 level, two-tailed test.

Table II.2. Summary Statistics for Comparing the Matching Variables for Treatments and Matched Comparisons, by Sample and State

Sample and State	Number of Matching Variables	Percentage of *t*-tests Comparing Treatment-Comparison Means That Are Statistically Significant at the 5 Percent Level[a]				*p*-Value from *F*-test to Gauge Overall Treatment-Comparison Differences[b]
		All Matching Variables	All Demographic Variables	Base Wage Indicator Variables	Local Area Variables	
Certified-Worker Survey Sample for TAA Participants						
Alabama	79	3.80	0.00	0.00	6.25	0.968
Arkansas	94	20.21	0.00	0.00	32.20	0.944
California	87	1.15	0.00	0.00	2.22	0.992
Colorado	62	0.00	0.00	0.00	0.00	0.997
Florida	58	0.00	0.00	0.00	0.00	0.939
Georgia	94	6.38	0.00	0.00	9.23	0.930
Illinois	95	2.11	0.00	0.00	3.39	0.998
Indiana	103	1.94	5.13	0.00	0.00	0.982
Kentucky	76	1.32	3.23	0.00	0.00	0.579
Maryland	66	1.52	3.03	0.00	0.00	0.997
Michigan	92	2.17	0.00	0.00	3.64	1.000
Minnesota	79	0.00	0.00	0.00	0.00	0.989
Missouri	83	3.61	0.00	0.00	5.36	0.966
New Hampshire	60	0.00	0.00	0.00	0.00	1.000
New Jersey	68	0.00	0.00	0.00	0.00	1.000
New York	91	7.69	0.00	0.00	15.56	0.990
North Carolina	115	0.87	2.56	0.00	0.00	0.998
Ohio	98	3.06	3.03	0.00	3.08	1.000
Pennsylvania	108	0.93	0.00	0.00	1.49	1.000
Rhode Island	51	0.00	0.00	0.00	0.00	1.000
South Carolina	79	1.27	3.45	0.00	0.00	0.975
Tennessee	103	5.83	5.56	0.00	5.97	0.839
Texas	73	5.48	8.11	0.00	2.78	0.989
Virginia	93	2.15	0.00	0.00	3.85	1.000
Washington	71	2.82	0.00	0.00	5.71	0.996
Wisconsin	80	2.50	2.86	0.00	2.22	0.977
Certified-Worker Survey Sample for TAA Nonparticipants						
Alabama	78	0.00	0.00	0.00	0.00	0.999
Arkansas	86	0.00	0.00	0.00	0.00	1.000
California	80	1.25	0.00	0.00	2.50	1.000
Colorado	60	0.00	0.00	0.00	0.00	1.000
Florida	61	0.00	0.00	0.00	0.00	0.999
Georgia	78	0.00	0.00	0.00	0.00	0.995
Illinois	100	1.00	0.00	0.00	1.61	1.000

Sample and State	Number of Matching Variables	Percentage of *t*-tests Comparing Treatment-Comparison Means That Are Statistically Significant at the 5 Percent Level[a]: All Matching Variables	All Demographic Variables	Base Wage Indicator Variables	Local Area Variables	*p*-Value from *F*-test to Gauge Overall Treatment-Comparison Differences[b]
Indiana	90	0.00	0.00	0.00	0.00	1.000
Kentucky	84	0.00	0.00	0.00	0.00	1.000
Maryland	65	1.54	0.00	0.00	3.13	0.897
Michigan	93	0.00	0.00	0.00	0.00	1.000
Minnesota	79	2.53	0.00	0.00	4.88	0.995
Missouri	80	0.00	0.00	0.00	0.00	1.000
New Hampshire	69	5.80	10.53	0.00	0.00	0.882
New Jersey	67	0.00	0.00	0.00	0.00	1.000
New York	86	0.00	0.00	0.00	0.00	1.000
North Carolina	115	0.00	0.00	0.00	0.00	1.000
Ohio	93	1.08	3.03	0.00	0.00	1.000
Pennsylvania	102	0.00	0.00	0.00	0.00	1.000
Rhode Island	52	0.00	0.00	0.00	0.00	1.000
South Carolina	72	1.39	0.00	0.00	2.33	0.999
Tennessee	98	3.06	0.00	0.00	4.84	0.997
Texas	77	0.00	0.00	0.00	0.00	1.000
Virginia	86	0.00	0.00	0.00	0.00	1.000
Washington	70	0.00	0.00	0.00	0.00	0.998
Wisconsin	91	3.30	5.56	0.00	1.82	0.951
Certified-Worker Administrative Records Sample for TAA Participants						
Alabama	83	7.23	6.45	0.00	7.69	0.840
Arkansas	96	2.08	2.94	0.00	1.61	1.000
California	89	0.00	0.00	0.00	0.00	1.000
Colorado	69	0.00	0.00	0.00	0.00	0.924
Florida	59	1.69	3.23	0.00	0.00	1.000
Georgia	107	4.67	0.00	0.00	6.76	0.999
Illinois	101	5.94	0.00	0.00	9.23	0.998
Indiana	106	1.89	5.26	0.00	0.00	0.998
Kentucky	79	6.33	9.68	0.00	4.17	0.026*
Maryland	66	0.00	0.00	0.00	0.00	0.990
Michigan	86	0.00	0.00	0.00	0.00	1.000
Minnesota	79	0.00	0.00	0.00	0.00	0.989
Missouri	85	10.59	3.33	0.00	14.55	0.823
New Hampshire	60	0.00	0.00	0.00	0.00	0.995
New Jersey	68	0.00	0.00	0.00	0.00	0.991
New York	91	0.00	0.00	0.00	0.00	1.000
North Carolina	119	5.04	2.56	0.00	6.25	1.000

Sample and State	Number of Matching Variables	Percentage of *t*-tests Comparing Treatment-Comparison Means That Are Statistically Significant at the 5 Percent Level[a]				*p*-Value from *F*-test to Gauge Overall Treatment-Comparison Differences[b]
		All Matching Variables	All Demographic Variables	Base Wage Indicator Variables	Local Area Variables	
Ohio	103	5.83	3.03	0.00	7.14	0.998
Pennsylvania	113	0.00	0.00	0.00	0.00	1.000
Rhode Island	51	0.00	0.00	0.00	0.00	1.000
South Carolina	84	1.19	3.23	0.00	0.00	1.000
Tennessee	104	7.69	2.78	0.00	10.29	0.906
Texas	74	8.11	8.11	0.00	8.11	0.979
Virginia	93	5.38	0.00	0.00	9.62	0.998
Washington	NA	NA	NA	NA	NA	NA
Wisconsin	80	2.50	0.00	0.00	4.44	0.997
Certified-Worker Administrative Records Sample for TAA Nonparticipants						
Alabama	85	4.71	3.33	0.00	5.45	0.359
Arkansas	106	0.94	3.13	0.00	0.00	1.000
California	92	0.00	0.00	0.00	0.00	0.992
Colorado	69	0.00	0.00	0.00	0.00	0.997
Florida	64	1.56	0.00	0.00	3.03	0.979
Georgia	103	0.97	0.00	0.00	1.41	1.000
Illinois	110	0.91	0.00	0.00	1.39	1.000
Indiana	98	0.00	0.00	0.00	0.00	1.000
Kentucky	100	1.00	3.13	0.00	0.00	1.000
Maryland	66	0.00	0.00	0.00	0.00	0.881
Michigan	99	0.00	0.00	0.00	0.00	1.000
Minnesota	79	2.53	0.00	0.00	4.88	0.995
Missouri	104	0.00	0.00	0.00	0.00	1.000
New Hampshire	72	9.72	15.79	0.00	2.94	0.313
New Jersey	69	0.00	0.00	0.00	0.00	1.000
New York	99	7.07	0.00	0.00	13.21	0.998
North Carolina	124	0.81	2.56	0.00	0.00	0.999
Ohio	108	2.78	3.03	0.00	2.67	1.000
Pennsylvania	119	0.84	2.38	0.00	0.00	0.995
Rhode Island	52	0.00	0.00	0.00	0.00	1.000
South Carolina	86	1.16	3.03	0.00	0.00	1.000
Tennessee	111	10.81	0.00	0.00	16.00	0.925
Texas	88	7.95	0.00	0.00	13.73	0.996
Virginia	95	6.32	0.00	0.00	10.71	0.998
Washington	NA	NA	NA	NA	NA	NA
Wisconsin	104	2.88	5.56	0.00	1.47	0.874

Sample and State	Number of Matching Variables	Percentage of *t*-tests Comparing Treatment-Comparison Means That Are Statistically Significant at the 5 Percent Level[a]				*p*-Value from *F*-test to Gauge Overall Treatment-Comparison Differences[b]
		All Matching Variables	All Demographic Variables	Base Wage Indicator Variables	Local Area Variables	
TRA-Beneficiary Administrative Records Sample						
Alabama	86	9.30	6.25	16.67	11.11	0.376
Arkansas	109	0.00	0.00	0.00	0.00	0.999
California	82	0.00	0.00	0.00	0.00	0.998
Colorado	65	4.62	8.57	0.00	0.00	0.939
Florida	63	0.00	0.00	0.00	0.00	1.000
Georgia	113	3.54	3.23	0.00	3.66	0.997
Illinois	102	3.92	2.94	0.00	4.41	0.998
Indiana	106	6.60	0.00	0.00	10.00	1.000
Kentucky	107	2.80	0.00	0.00	4.00	1.000
Maryland	65	0.00	0.00	0.00	0.00	0.999
Michigan	95	2.11	0.00	0.00	3.03	0.999
Minnesota	84	1.19	2.63	0.00	0.00	1.000
Missouri	88	1.14	3.33	0.00	0.00	0.992
New Hampshire	55	1.82	2.94	0.00	0.00	0.829
New Jersey	65	7.69	14.71	0.00	0.00	0.764
New York	83	2.41	0.00	0.00	4.08	0.950
North Carolina	111	5.41	2.94	0.00	6.49	0.922
Ohio	105	0.95	0.00	0.00	1.32	1.000
Pennsylvania	114	0.00	0.00	0.00	0.00	1.000
Rhode Island	56	0.00	0.00	0.00	0.00	1.000
South Carolina	87	1.15	0.00	0.00	1.85	1.000
Tennessee	120	0.83	0.00	0.00	1.18	1.000
Texas	91	2.20	0.00	0.00	3.77	0.619
Virginia	101	0.00	0.00	0.00	0.00	1.000
Washington	NA	NA	NA	NA	NA	NA
Wisconsin	89	6.74	11.76	0.00	3.64	0.940

Source: UI/TRA claims files and certified-work lists provided by the 26 study states

Note. Figures are based on the first-best comparison group matches. The TAA participation and nonparticipation designations are based on initial designations using the TRA benefit receipt information in the UI/TRA claims data.

[a] The *t*-tests include the full set of potential matching variables and not just those used in the matching models.

[b] The *F*-tests include only the matching variables that were used in the matching models.
*Statistically significant at the 0.05 level, two-tailed test.

Table II.3a. Distribution of Propensity Scores and Overall Statistical Tests for the Treatment and Comparison Samples, for the Florida Certified-Worker Survey Sample for TAA Participants

Estimated Propensity Score Percentile Among Treatment Group	Range of Estimated Propensity Scores	Treatments		Matched Comparisons		Potential Comparisons	
		Number	Percent	Number	Percent	Number	Percent
Below Minimum Value	< 0.0001	0	0.00	0	0.00	24,749	81.28
0-10%	0.0001 - 0.0102	10	10.00	10	15.87	4,849	15.92
10%-25%	0.0102 - 0.0648	15	15.00	13	20.63	633	2.08
25%-50%	0.0648 - 0.2954	25	25.00	22	34.92	185	0.61
50%-75%	0.2954 - 0.6200	25	25.00	12	19.05	27	0.09
75%-90%	0.6200 - 0.7451	15	15.00	5	7.94	6	0.02
90%-100%	>= 0.7451	10	10.00	1	1.59	1	0.00

	Matched Comparisons[+] $H_0: P_T = P_C$	Matched Comparisons[++] $H_0: X_T = X_C$	Potential Comparisons[++a] $H_0: X_T = X_C$
Estimated *p*-value from Statistical Test	0.610	0.939	0.000
Sample Size	**100**	**63**	**30,450**

Source: State UI/TRA claims data.

Notes:

1. Propensity score percentiles are based on the distribution of estimated propensity scores among the treatment group.

2. Among the matched comparison group:
   74.6% were matched to 1 treatment group member,
   11.1% were matched to 2 treatment group members,
   6.3% were matched to 3 treatment group members,
   3.2% were matched to 4 treatment group members, and
   4.8% were matched to 5 or more treatment group members.

3. P_T and P_C are the estimated propensity scores of the treatment and comparison group, respectively. X_T and X_C are the collections of treatment and comparison group characteristics, respectively.

4. Sample sizes are unweighted.

[+] Based on a *t*-test of the similarity of the estimated propensity score across the treatment and comparison groups.

[++] Based on an *F*-test of the similarity of the collection of available characteristics across the treatment and comparison groups.

[a] Potential comparison figures are based on a randomly selected subsample of potential comparisons that is the same size as the treatment group.

Table II.3b. Matching Characteristics of Treatment and Comparison Groups for the Florida Certified-Worker Survey Sample for TAA Participants

	Sample			
Matching Variables	Treatment (Percentages)	Matched Comparisons (Percentages)	Potential Comparisons [a] (Percentages)	Included in Matching Model?
Average Propensity Score	0.36	0.33		
Individual Characteristics from UI Claims Data				
Age at UI Claim Date				
29-35	10.0	7.0	19.0	Yes
36-40	19.0	18.0	16.0	Yes
41-46	24.0	32.0	24.0	Yes
47-53	22.0	14.0	20.0	Yes
54-58	17.0	20.0	10.0	Yes
59-64	8.0	9.0	11.0	Yes
(Average age)	46.5	47.2	44.3	
Female	43.0	43.0	37.0	Yes
Race/Ethnicity				
White, Non-Hispanic	52.0	52.0	35.0*	Yes
Black, Non-Hispanic	13.0	21.0	10.0	Yes
Hispanic	26.0	19.0	43.0*	Yes
Other	9.0	8.0	12.0	Yes
Benefit Year Start Date				
1/16/2005-9/25/2005	13.0	10.0	6.0	Yes
10/2/2005-12/25/2005	57.0	53.0	11.0*	Yes
1/1/2006-12/31/2006	15.0	24.0	39.0*	Yes
3/25/2007-12/9/2007	15.0	13.0	44.0*	Yes
Days Between UI Benefit Year Start Date and First Payment				
10-13	82.0	81.0	82.0	Yes
20-90	18.0	19.0	18.0	Yes
Maximum Benefit				
$4,529-$6,760	7.0	9.0	53.0*	Yes
$7,150 or more	93.0	91.0	47.0*	Yes
(Average benefit)	$7,047	$6,934	$5,803*	
Total Base Period Earnings				
$18,118-$35,685	10.0	12.0	66.0*	Yes
$36,444-$43,294	15.0	16.0	10.0	Yes
$43,558-$49,213	25.0	34.0	6.0*	Yes
$49,527-$57,215	25.0	14.0	4.0*	Yes
$57,526-$61,777	15.0	14.0	2.0*	Yes
$62,191 or more	10.0	10.0	12.0	Yes
(Average earnings)	$49,632	$49,497	$35,876*	
Multiple UI claims	7.0	4.0	17.0*	Yes
Local Area Code Indicators				
Area code 1	2.0	1.0	5.0	No
Area code 2	5.0	6.0	34.0*	No
Area code 3	68.0	69.0	12.0*	No
Area code 4	3.0	1.0	9.0	No
Area code 5	9.0	5.0	3.0	No
Area code 6	11.0	16.0	6.0	No
Area code 7	2.0	2.0	31.0*	No

Matching Variables	Sample: Treatment (Percentages)	Sample: Matched Comparisons (Percentages)	Sample: Potential Comparisons [a] (Percentages)	Included in Matching Model?
Labor Market Characteristics				
Unemployment Rate in Year of Job Loss				
2.9-3.2	26.0	33.0	59.0*	Yes
3.4-3.7	57.0	55.0	20.0*	Yes
(Average rate)	3.5	3.5	3.4	
Poverty Rate in 2004				
7.6-9.7	28.0	23.0	31.0	Yes
11.1-12.2	13.0	11.0	45.0*	Yes
12.6-17.1	59.0	66.0	24.0*	Yes
(Average rate)	11.7	11.8	11.9	
Average Earnings per Job in 2005				
$31,801-$32,696	19.0	13.0	14.0	Yes
$35,689-$42,639	25.0	22.0	49.0*	Yes
$43,629 or more	56.0	65.0	37.0*	Yes
(Average earnings)	$40,373	$40,941	$40,661	
Percentage of Workers in Manufacturing in 2005				
2.0-3.7	18.0	13.0	28.0	Yes
3.8-3.9	62.0	67.0	39.0*	Yes
4.2-8.7	20.0	20.0	33.0*	Yes
(Average percentage)	3.9	3.9	4.6*	
Percentage Population Growth Between 2000-2005				
0.6-9.4	16.0	11.0	42.0*	Yes
10.1-15.5	67.0	77.0	50.0*	Yes
20.8-32.9	17.0	12.0	8.0	Yes
(Average growth rate)	14.4	14.1	10.5*	
ERS Urban-Rural Continuum Rating in 2003 [b]				
1	75.0	77.0	77.0	Yes
2	25.0	23.0	23.0	Yes
Sample Size	**100**	**63**	**30,450**	

Source: State UI/TRA claims and labor market data.

Notes:

1. Category definitions vary by state.
2. Statistics were estimated using weights, where the weight for each treatment group member equals 1 and the weight for comparison group members equals the number of times the member was matched to a treatment.
3. Matched comparison group members are the first nearest neighbors to each treatment group member based on their estimated propensity scores.
4. Sample sizes are unweighted.

[a] Potential comparison figures are based on a randomly selected subsample of potential comparisons that is the same size as the treatment group.

[b] 1= Counties in metro areas of 1 million population or more
2 = Counties in metro area of 250,000 to 1 million population.

*Significantly different from treatments at the 0.05 level, two-tailed test.

Table II.4a. Distribution of Propensity Scores and Overall Statistical Tests for the Treatment and Comparison Samples, for the Kentucky Certified-Worker Survey Sample for TAA Nonparticipants

Estimated Propensity Score Percentile Among Treatment Group	Range of Estimated Propensity Scores	Treatments		Matched Comparisons		Potential Comparisons	
		Number	Percent	Number	Percent	Number	Percent
Below Minimum Value	< 0.0011	0	0.0	0	0.0	8,254	45.4
0-10%	0.0011 - 0.0034	10	9.9	10	10.2	4,072	22.4
10%-25%	0.0034 - 0.0064	15	14.9	15	15.3	2,351	12.9
25%-50%	0.0064 - 0.0215	25	24.8	25	25.5	2,512	13.8
50%-75%	0.0215 - 0.0698	25	24.8	24	24.5	853	4.7
75%-90%	0.0698 - 0.1091	15	14.9	14	14.3	79	0.4
90%-100%	>= 0.1091	11	10.9	10	10.2	47	0.3

	Matched Comparisons[+] H_0: $P_T = P_C$	Matched Comparisons[++] H_0: $X_T = X_C$	Potential Comparisons[++a] H_0: $X_T = X_C$
Estimated *p*-value from Statistical Test	0.805	1.000	0.000
Sample Size	**101**	**98**	**18,168**

Source: State UI/TRA claims data.

Notes:

1. Propensity score percentiles are based on the distribution of estimated propensity scores among the treatment group.

2. Among the matched comparison group:
   96.9% were matched to 1 treatment group member,
   3.1% were matched to 2 treatment group members,
   0.0% were matched to 3 treatment group members,
   0.0% were matched to 4 treatment group members, and
   0.0% were matched to 5 or more treatment group members.

3. P_T and P_C are the estimated propensity scores of the treatment and comparison group, respectively. X_T and X_C are the collections of treatment and comparison group characteristics, respectively.

4. Sample sizes are unweighted.

[+] Based on a *t*-test of the similarity of the estimated propensity score across the treatment and comparison groups.

[++] Based on an *F*-test of the similarity of the collection of available characteristics across the treatment and comparison groups.

[a] Potential comparison figures are based on a randomly selected subsample of potential comparisons that is the same size as the treatment group.

Table II.4b. Matching Characteristics of Treatment and Comparison Groups for the Kentucky Certified-Worker Survey Sample for TAA Nonparticipants

	Sample			
Matching Variables	Treatment (Percentages)	Matched Comparisons (Percentages)	Potential [a] Comparisons (Percentages)	Included in Matching Model?
Estimated Propensity Score	0.05	0.05		
Individual Characteristics from UI Claims Data				
Age at UI Claim Date				
19-25	11.9	10.9	11.9	Yes
26-31	12.9	9.9	9.9	Yes
32-39	26.7	31.7	19.8	Yes
41-48	24.8	22.8	35.6	Yes
49-54	13.9	13.9	13.9	Yes
55-60	9.9	10.9	8.9	Yes
(Average age)	39.9	40.3	40.7	
Female	59.4	59.4	33.7*	Yes
Race/Ethnicity				
White, Non-Hispanic	86.1	85.1	93.1	Yes
Black, Non-Hispanic	5.0	5.0	6.9	Yes
Hispanic	7.9	7.9	0.0*	Yes
Benefit Year Start Date				
11/21/2004-12/25/2005	34.7	43.6	53.5*	Yes
1/1/2006-3/26/2006	31.7	27.7	4.0*	Yes
4/9/2006-12/17/2006	33.7	28.7	42.6	Yes
Days Between UI Benefit Year Start Date and First Payment:				
6-6	94.1	98.0	96.0	Yes
13-146	5.9	2.0	4.0	Yes
Maximum Benefit				
$1,679-$5,371	34.7	36.6	13.9*	Yes
$5,450-$8,367	31.7	29.7	32.7	Yes
$8,380 or more	33.7	33.7	53.5*	Yes
(Average benefit)	$6,662	$6,492	$8,148*	
Total Base Period Earnings				
$5,037-$10,179	10.9	14.9	2.0*	Yes
$10,333-$12,963	14.9	11.9	2.0*	Yes
$13,249-$19,715	24.8	25.7	15.8	Yes
$19,857-$27,404	24.8	21.8	36.6	Yes
$27,533-$33,722	14.9	12.9	12.9	Yes
$34,241 or more	9.9	12.9	30.7*	Yes
(Average earnings)	$21,894	$21,988	$30,318*	
Number of UI Claims in File				
1	66.3	68.3	58.4	Yes
2	21.8	21.8	30.7	Yes
3 or more	11.9	9.9	10.9	Yes
Local Area Code Indicators				
Area code 1	17.8	17.8	5.9*	Yes
Area code 2	1.0	0.0	3.0	Yes
Area code 3	2.0	0.0	2.0	Yes

Matching Variables	Sample: Treatment (Percentages)	Sample: Matched Comparisons (Percentages)	Sample: Potential [a] Comparisons (Percentages)	Included in Matching Model?
Area code 4	1.0	0.0	3.0	Yes
Area code 5	0.0	0.0	0.0	Yes
Area code 6	1.0	2.0	0.0	Yes
Area code 7	1.0	0.0	3.0	Yes
Area code 8	1.0	1.0	3.0	Yes
Area code 9	5.9	5.0	1.0	Yes
Area code 10	1.0	1.0	5.9	Yes
Area code 11	1.0	1.0	2.0	Yes
Area code 12	1.0	1.0	2.0	Yes
Area code 13	4.0	5.0	1.0	Yes
Area code 14	1.0	1.0	2.0	Yes
Area code 15	1.0	0.0	1.0	Yes
Area code 16	1.0	0.0	4.0	Yes
Area code 17	1.0	2.0	1.0	Yes
Area code 18	12.9	13.9	4.0*	Yes
Area code 19	7.9	6.9	5.9	Yes
Area code 20	1.0	1.0	4.0	Yes
Area code 21	1.0	0.0	5.9	Yes
Area code 22	2.0	3.0	2.0	Yes
Area code 23	2.0	2.0	3.0	Yes
Area code 24	7.9	9.9	9.9	Yes
Area code 25	19.8	21.8	5.9*	Yes
Area code 26	3.0	4.0	8.9	Yes
Area code 27	1.0	1.0	10.9*	Yes
Labor Market Characteristics				
Unemployment Rate in Year of Job Loss				
4.8-5.6	33.7	38.6	48.5*	No
5.7-6.6	32.7	29.7	28.7	No
6.7-10.1	33.7	31.7	22.8	No
(Average rate)	6.6	6.3	6.0*	
Poverty Rate in 2004				
9.6-16.5	42.6	47.5	59.4*	No
16.6-18.8	26.7	23.8	23.8	No
19.0-30.1	30.7	28.7	16.8*	No
(Average poverty rate)	18.2	17.8	16.3*	
Average Earnings in 2005				
$19,165-$27,347	33.7	30.7	24.8	No
$27,983-$33,349	33.7	32.7	46.5	No
$36,310 or more	32.7	36.6	28.7	No
(Average earnings)	$31,805	$32,619	$31,851	
Percentage Manufacturing in 2005				
7.1-11.4	33.7	32.7	38.6	No
11.9-13.5	25.7	24.8	13.9*	No
14.3-28.3	40.6	42.6	47.5	No
(Average percentage)	13.1	13.5	15.3*	

Matching Variables	Sample			Included in Matching Model?
	Treatment (Percentages)	Matched Comparisons (Percentages)	Potential [a] Comparisons (Percentages)	
Percentage Population Growth Rate Between 2000 and 2005				
-0.8-1.0	35.6	37.6	30.7	No
1.6-5.0	31.7	32.7	37.6	No
5.1-11.4	32.7	29.7	31.7	No
(Average growth rate)	3.3	3.2	3.8	
ERS Urban-Rural Continuum Rating in 2003 [b]				
1-3	31.7	36.6	35.6	No
6	38.6	38.6	36.6	No
7-9	29.7	24.8	27.7	No
Sample Size	**101**	**98**	**18,168**	

Source: State UI/TRA claims and labor market data.

Notes:
1. Category definitions vary by state.
2. Statistics were estimated using weights, where the weight for each treatment group member equals 1 and the weight for comparison group members equals the number of times the member was matched to a treatment.
3. Matched comparison group members are the first nearest neighbors to each treatment group member based on their estimated propensity scores.
4. Sample sizes are unweighted.

[a] Potential comparison figures are based on a randomly selected subsample of potential comparisons that is the same size as the treatment group.

[b] 1= Counties in metro areas of 1 million population or more
2=Counties in metro area of 250,000 to 1 million population
3=Counties in metro areas of fewer than 250,000 population
4=Urban population of 20,000 or more, adjacent to a metro area
5=Urban population of 20,000 or more, not adjacent to a metro area
6=Urban population of 2,500 to 19,999, adjacent to a metro area
7=Urban population of 2,500 to 19,999, not adjacent to a metro area
8=Completely rural or less than 2,500 urban population, adjacent to a metro area
9=Completely rural or less than 2,500 urban population, not adjacent to a metro area

*Significantly different from treatments at the 0.05 level, two-tailed test.

Table II.5a. Distribution of Propensity Scores and Overall Statistical Tests for the Treatment and Comparison Samples, for the South Carolina Certified-Worker Administrative Records Sample for TAA Participants

Estimated Propensity Score Percentile Among Treatment Group	Range of Estimated Propensity Scores	Treatments		Matched Comparisons		Potential Comparisons	
		Number	Percent	Number	Percent	Number	Percent
Below Minimum Value	< 0.0001	0	0.0	0	0.0	3,940	12.6
0-10%	0.0001 - 0.0101	38	9.8	39	12.8	22,603	72.1
10%-25%	0.0101 - 0.0320	59	15.2	56	18.4	2,845	9.1
25%-50%	0.0320 - 0.1218	97	24.9	92	30.3	1,459	4.7
50%-75%	0.1218 - 0.3675	97	24.9	77	25.3	410	1.3
75%-90%	0.3675 - 0.6260	59	15.2	33	10.9	63	0.2
90%-100%	>= 0.6260	39	10.0	7	2.3	10	0.0

	Matched Comparisons[+] H_0: $P_T = P_C$	Matched Comparisons[++] H_0: $X_T = X_C$	Potential Comparisons[++a] H_0: $X_T = X_C$
Estimated *p*-value from Statistical Test	0.958	1.000	0.000
Sample Size	**389**	**304**	**31,330**

Source: State UI/TRA claims data.

Notes:

1. Propensity score percentiles are based on the distribution of estimated propensity scores among the treatment group.

2. Among the matched comparison group:
   86.2% were matched to 1 treatment group member,
   9.5% were matched to 2 treatment group members,
   1.6% were matched to 3 treatment group members,
   1.3% were matched to 4 treatment group members, and
   1.3% were matched to 5 or more treatment group members.

3. P_T and P_C are the estimated propensity scores of the treatment and comparison group, respectively. X_T and X_C are the collections of treatment and comparison group characteristics, respectively.

4. Sample sizes are unweighted.

[+] Based on a *t*-test of the similarity of the estimated propensity score across the treatment and comparison groups.
[++] Based on an *F*-test of the similarity of the collection of available characteristics across the treatment and comparison groups.
[a] Potential comparison figures are based on a randomly selected subsample of potential comparisons that is the same size as the treatment group.

Table II.5b. Matching Characteristics of Treatment and Comparison Groups for the South Carolina Certified-Worker Administrative Records Sample for TAA Participants

	Sample			
Matching Variables	Treatment (Percentages)	Matched Comparisons (Percentages)	Potential [a] Comparisons (Percentages)	Included in Matching Model?
Estimated Propensity Score	0.22	0.22		
Individual Characteristics from UI Claims Data				
Age				
21-35	10.8	8.2	33.4*	Yes
36-42	14.7	15.2	20.8*	Yes
43-50	24.7	23.7	20.3	Yes
51-57	26.2	27.2	14.4*	Yes
58-61	17.0	18.5	6.2*	Yes
62-80	6.7	7.2	4.9	Yes
(Average age)	49.1	50.0	41.6*	
Female	62.2	62.5	36.0*	Yes
Race/Ethnicity				
White, Non-Hispanic	52.2	49.9	44.0*	Yes
Other	47.8	50.1	56.0*	Yes
Benefit Year Start Date				
6/19/2005-3/26/2006	17.7	19.0	46.5*	Yes
4/2/2006-6/25/2006	21.6	20.8	4.6*	Yes
7/2/2006-9/24/2006	33.2	35.5	7.5*	Yes
10/1/2006-12/9/2007	27.5	24.7	41.4*	Yes
Days Between UI Benefit Year Start Date and First Payment				
13-15	67.9	67.9	41.9*	Yes
16-131	32.1	32.1	58.1*	Yes
(Average days)	18.6	28.5*	45.7*	
Maximum Benefit				
$2,217-$6,630	16.2	16.2	44.5*	Yes
$6,656-$7,793	15.7	14.7	24.9*	Yes
$7,852 or more	68.1	69.2	30.6*	Yes
(Average benefit)	$7,367	$7,408	$6,266*	
Total Base Period Earnings				
$6,654-$19,783	10.0	9.8	35.7*	Yes
$19,800-$26,841	15.2	18.3	23.4*	Yes
$26,851-$32,296	24.9	27.8	12.9*	Yes
$32,306-$38,987	24.9	22.4	8.5*	Yes
$39,062-$51,701	15.2	13.6	9.3*	Yes
$52,540 or more	9.8	8.2	10.3	Yes
(Average earnings)	$34,828	$33,596	$27,810*	
Multiple UI claims	26.5	30.3	36.8*	Yes
Local Area Code Indicators				
Area code 1	3.9	2.8	2.1	Yes
Area code 2	0.3	0.5	1.3	Yes
Area code 3	0.3	0.3	0.8	Yes
Area code 4	2.3	1.5	1.0	Yes
Area code 5	0.3	0.3	1.3	Yes
Area code 6	0.8	0.8	0.8	Yes

Matching Variables	Sample			Included in Matching Model?
	Treatment (Percentages)	Matched Comparisons (Percentages)	Potential [a] Comparisons (Percentages)	
Area code 7	0.3	0.5	1.8*	Yes
Area code 8	17.2	14.1	1.8*	Yes
Area code 9	0.3	0.8	0.8	Yes
Area code 10	0.5	0.3	1.3	Yes
Area code 11	0.5	0.5	1.3	Yes
Area code 12	7.2	7.2	2.3*	Yes
Area code 13	12.1	14.1	2.3*	Yes
Area code 14	0.3	0.0	1.3	Yes
Area code 15	0.5	0.5	5.7*	Yes
Area code 16	0.3	0.3	1.3	Yes
Area code 17	0.5	0.8	0.5	Yes
Area code 18	20.1	19.8	3.6*	Yes
Area code 19	5.4	5.1	3.1	Yes
Area code 20	1.0	1.5	5.7*	Yes
Area code 21	0.3	0.0	3.1*	Yes
Area code 22	7.2	6.9	14.1*	Yes
Area code 23	0.8	1.8	5.1*	Yes
Area code 24	6.2	5.7	20.6*	Yes
Area code 25	0.3	0.3	0.8	Yes
Area code 26	2.3	3.1	9.3*	Yes
Area code 27	9.3	10.5	7.2	Yes
Labor Market Characteristics				
Unemployment Rate in Year of Job Loss				
4.7-6.8	34.4	36.5	46.5*	No
6.9-8.8	32.6	27.8	35.7	No
9.0-11.1	32.9	35.7	17.7*	No
(Average rate)	8.0	7.9	7.3*	
Poverty Rate in 2004				
11.3-13.9	15.2	16.2	42.7*	No
14.5-15.1	43.2	44.5	18.3*	No
16.0-16.5	20.3	16.7	10.3*	No
17.2-23.2	21.3	22.6	28.8*	No
(Average rate)	15.6	15.6	15.6	No
Average Earnings in 2005				
$27,338-$34,999	30.8	33.9	44.2*	No
$35,873-$38,564	36.8	34.7	19.0*	No
$40,486 or more	32.4	31.4	36.8	No
(Average earnings)	$36,570	$36,574	$36,539	
Percentage Manufacturing in 2005				
3.0-10.9	24.7	24.7	19.3	No
11.3-16.2	17.7	16.7	28.5*	No
17.3-21.1	34.2	39.1	39.6	No
22.1-30.6	23.4	19.5	12.6*	No
(Average percentage)	17.5	17.2	15.8*	No

Matching Variables	Sample			Included in Matching Model?
	Treatment (Percentages)	Matched Comparisons (Percentages)	Potential [a] Comparisons (Percentages)	
Percentage Population Growth Between 2000 and 2005				
-4.5-0.2	22.4	19.0	10.8*	No
0.7-2.8	37.5	40.4	33.9	No
3.4-6.0	28.8	30.8	32.6	No
6.9-14.7	11.3	9.8	22.6*	No
(Average growth rate)	2.9	3.0	4.0*	
ERS Urban-Rural Continuum Rating in 2003[b]				
1-2	41.4	40.6	53.7*	No
3-4	32.1	36.8	31.4	No
6-8	26.5	22.6	14.9*	No
Sample Size	**389**	**304**	**31,330**	

Source: State UI/TRA claims and labor market data.

Notes:

1. Category definitions vary by state.
2. Statistics were estimated using weights, where the weight for each treatment group member equals 1 and the weight for comparison group members equals the number of times the member was matched to a treatment.
3. Matched comparison group members are the first nearest neighbors to each treatment group member based on their estimated propensity scores.
4. Sample sizes are unweighted.

[a] Potential comparison figures are based on a randomly selected subsample of potential comparisons that is the same size as the treatment group.

[b] 1= Counties in metro areas of 1 million population or more
2=Counties in metro area of 250,000 to 1 million population
3=Counties in metro areas of fewer than 250,000 population
4=Urban population of 20,000 or more, adjacent to a metro area
5=Urban population of 20,000 or more, not adjacent to a metro area
6=Urban population of 2,500 to 19,999, adjacent to a metro area
7=Urban population of 2,500 to 19,999, not adjacent to a metro area
8=Completely rural or less than 2,500 urban population, adjacent to a metro area
9=Completely rural or less than 2,500 urban population, not adjacent to a metro area

*Significantly different from treatments at the 0.05 level, two-tailed test.

Table II.6a. Distribution of Propensity Scores and Overall Statistical Tests for the Treatment and Comparison Samples, for the Pennsylvania Certified-Worker Administrative Records Sample for TAA Nonparticipants

Estimated Propensity Score Percentile Among Treatment Group	Range of Estimated Propensity Scores	Treatments		Matched Comparisons		Potential Comparisons	
		Number	Percent	Number	Percent	Number	Percent
Below Minimum Value	< 0.0002	10	1.3	10	1.4	34,482	20.4
0-10%	0.0002 - 0.0020	73	9.8	73	10.2	54,421	32.1
10%-25%	0.0020 - 0.0051	110	14.8	110	15.4	39,546	23.3
25%-50%	0.0051 - 0.0115	182	24.4	180	25.2	25,671	15.2
50%-75%	0.0115 - 0.0245	186	25.0	177	24.8	11,204	6.6
75%-90%	0.0245 - 0.0432	110	14.8	101	14.1	2,991	1.8
90%-100%	>= 0.0432	74	9.9	64	9.0	1,098	0.6

	Matched Comparisons[+] H_0: $P_T = P_C$	Matched Comparisons[++] H_0: $X_T = X_C$	Potential Comparisons[++a] H_0: $X_T = X_C$
Estimated *p*-value from Statistical Test	0.935	0.991	0.000
Sample Size	**745**	**715**	**169,413**

Source: State UI/TRA claims data.

Notes:

1. Propensity score percentiles are based on the distribution of estimated propensity scores among the treatment group.

2. Among the matched comparison group:
   96.1% were matched to 1 treatment group member,
   3.8% were matched to 2 treatment group members,
   0.1% were matched to 3 treatment group members,
   0.0% were matched to 4 treatment group members, and
   0.0% were matched to 5 or more treatment group members.

3. P_T and P_C are the estimated propensity scores of the treatment and comparison group, respectively. X_T and X_C are the collections of treatment and comparison group characteristics, respectively.

4. Sample sizes are unweighted.

[+] Based on a *t*-test of the similarity of the estimated propensity score across the treatment and comparison groups.

[++] Based on an *F*-test of the similarity of the collection of available characteristics across the treatment and comparison groups.

Table II.6b. Matching Characteristics of Treatment and Comparison Groups for the Pennsylvania Certified-Worker Administrative Records Sample for TAA Nonparticipants

	Sample			
Matching Variables	Treatment (Percentages)	Matched Comparisons (Percentages)	Potential Comparisons (Percentages)[a]	Included in Matching Model?
Estimated Propensity Score	0.02	0.02		
Individual Characteristics from UI Claims Data				
Age				
19-28	10.9	10.9	14.6*	Yes
29-37	15.2	13.4	20.4*	Yes
38-47	25.0	27.1	26.8	Yes
48-54	24.3	24.7	20.8	Yes
55-59	15.8	15.7	10.9*	Yes
60-76	8.9	8.2	6.4	Yes
(Average age)	45.4	45.3	42.6*	
Female	31.7	31.7	31.8	Yes
Race/Ethnicity				
White, Non-Hispanic	87.8	87.8	83.8*	Yes
Other	12.2	12.2	16.2*	Yes
Benefit Year Start Date				
11/14/2004-12/25/2005	34.0	35.8	41.3*	Yes
1/1/2006-12/31/2006	42.3	41.2	29.3*	Yes
1/7/2007-3/16/2008	23.8	23.0	29.4*	Yes
Days Between UI Benefit Start and First Payment:				
16-16	42.7	41.9	42.4	Yes
17-27	28.2	27.2	24.6	Yes
30-359	29.1	30.9	33.0	Yes
(Average days)	36.5	41.0	39.2	
Maximum Benefit				
$1,586-$7,618	25.9	23.8	35.7*	Yes
$7,644-$9,932	20.1	22.7	21.6	Yes
$10,010 or more	54.0	53.6	42.7*	Yes
(Average benefit)	$9,849	$9,831	$9,028*	
Total Base Period Earnings				
$3,583-$13,449	10.2	9.5	11.5	Yes
$13,631-$21,422	14.8	13.6	19.6*	Yes
$21,529-$34,525	25.0	26.4	33.3*	Yes
$34,573-$47,594	25.5	27.1	22.8	Yes
$47,635-$60,907	14.9	14.2	8.2*	Yes
$61,084 or more	9.7	9.1	4.6*	Yes
(Average earnings)	$35,830	$35,908	$30,621*	
In WPRS profile pool	21.6	18.1	9.5*	Yes
WPRS Profile Scores				
3579.00-3579.00	0.1	0.1	0.3	Yes
0.00-4049.00	12.2	10.3	7.2*	Yes
4060.00-4495.00	5.8	4.0	3.4*	Yes
4567.00-5563.00	4.4	4.7	1.1*	Yes
Profile Score Missing	77.4	80.8	88.1*	Yes
(Average score)	3904.20	3817.21	3159.69*	

Matching Variables	Sample			Included in Matching Model?
	Treatment (Percentages)	Matched Comparisons (Percentages)	Potential Comparisons (Percentages)[a]	
Multiple UI claims	34.1	37.4	47.4*	Yes
Local Area Code Indicators				
Area code 1	0.0	0.0	0.0	Yes
Area code 2	0.4	0.3	0.9	Yes
Area code 3	0.3	0.4	0.8	Yes
Area code 4	1.2	1.1	0.8	Yes
Area code 5	0.8	0.7	1.7	Yes
Area code 6	0.1	0.1	0.3	Yes
Area code 7	0.3	0.4	0.8	Yes
Area code 8	0.9	1.1	0.9	Yes
Area code 9	0.3	0.5	0.7	Yes
Area code 10	0.7	0.4	0.8	Yes
Area code 11	1.3	0.9	0.3*	Yes
Area code 12	0.1	0.0	0.9*	Yes
Area code 13	1.6	1.7	1.9	Yes
Area code 14	0.9	0.3	1.2	Yes
Area code 15	2.0	1.3	0.9	Yes
Area code 16	2.1	3.4	2.7	Yes
Area code 17	7.2	8.5	1.5*	Yes
Area code 18	0.1	0.1	1.2*	Yes
Area code 19	0.4	0.1	1.9*	Yes
Area code 20	0.5	0.8	2.8*	Yes
Area code 21	0.9	0.3	0.8	Yes
Area code 22	0.1	0.3	1.6*	Yes
Area code 23	1.1	0.9	1.2	Yes
Area code 24	5.4	5.1	5.4	Yes
Area code 25	3.2	2.8	1.9	Yes
Area code 26	6.4	5.6	2.8*	Yes
Area code 27	0.5	0.5	1.7*	Yes
Area code 28	1.2	1.2	1.6	Yes
Area code 29	0.1	0.1	0.7	Yes
Area code 30	0.3	0.1	1.9*	Yes
Area code 31	9.8	11.0	5.8*	Yes
Area code 32	0.1	0.1	2.6*	Yes
Area code 33	0.5	0.7	3.0*	Yes
Area code 34	1.9	1.7	1.2	Yes
Area code 35	1.5	1.6	1.7	Yes
Area code 36	3.4	3.8	3.1	Yes
Area code 37	1.3	1.1	5.9*	Yes
Area code 38	3.1	2.8	4.2	Yes
Area code 39	0.4	0.4	0.5	Yes
Area code 40	1.3	0.8	1.5	Yes
Area code 41	0.4	0.3	0.9	Yes
Area code 42	5.9	5.4	1.9*	Yes
Area code 43	1.1	0.7	1.5	Yes
Area code 44	11.8	12.5	3.4*	Yes
Area code 45	7.1	9.0	5.9	Yes
Area code 46	0.1	0.1	2.6*	Yes
Area code 47	1.9	1.5	3.9*	Yes
Area code 48	0.8	1.1	2.3*	Yes
Area code 49	6.6	5.9	4.2*	Yes

Matching Variables	Sample: Treatment (Percentages)	Sample: Matched Comparisons (Percentages)	Sample: Potential Comparisons (Percentages)[a]	Included in Matching Model?
Area code 50	0.1	0.4	1.5*	Yes
Labor Market Characteristics				
Unemployment Rate in Year of Job Loss				
3.3-3.9	16.5	17.7	16.5	No
4.0-4.9	41.5	43.1	35.6*	No
5.0-7.6	42.0	39.2	47.9*	No
(Average rate)	4.8	4.8	4.9*	
Poverty Rate in 2004				
5.5-9.5	35.2	36.9	29.0*	No
9.6-11.8	40.1	41.5	42.0	No
12.0-21.6	24.7	21.6	29.0	No
(Average rate)	10.6	10.4	11.1*	
Average Earnings in 2005				
$26,201-$35,230	28.7	28.5	31.9	No
$35,619-$39,996	35.4	35.2	28.1*	No
$40,046-$48,327	26.2	27.0	25.6	No
$53,518 or more	9.7	9.4	14.4*	No
(Average earnings)	$39,172	$39,230	$40,162*	
Percentage Manufacturing in 2005				
3.7-9.0	23.0	21.3	27.4*	No
9.2-13.7	27.7	26.3	28.9	No
14.5-17.2	29.0	29.9	24.8	No
17.5-34.5	20.4	22.4	18.9	No
(Average percentage)	14.1	14.5	12.5*	
Percentage Population Growth Rate Between 2000 and 2005				
-5.1--1.1	31.7	30.6	41.7*	No
-0.9-4.0	41.1	42.0	31.8*	No
4.3-16.7	27.2	27.4	26.4	No
(Average growth rate)	1.4	1.5	1.2	
ERS Urban-Rural Continuum Rating in 2003[b]				
1	32.6	31.7	28.7	No
2	43.6	44.2	39.2	No
3-7	23.8	24.2	32.1*	No
Sample Size	**745**	**715**	**169,413**	

Source: State UI/TRA claims and labor market data.

Notes:

1. Category definitions vary by state.
2. Statistics were estimated using weights, where the weight for each treatment group member equals 1 and the weight for comparison group members equals the number of times the member was matched to a treatment.
3. Matched comparison group members are the first nearest neighbors to each treatment group member based on their estimated propensity scores.

4. Sample sizes are unweighted.

[a] Potential comparison figures are based on a randomly selected subsample of potential comparisons that is the same size as the treatment group.

[b] 1= Counties in metro areas of 1 million population or more
2=Counties in metro area of 250,000 to 1 million population
3=Counties in metro areas of fewer than 250,000 population
4=Urban population of 20,000 or more, adjacent to a metro area
5=Urban population of 20,000 or more, not adjacent to a metro area
6=Urban population of 2,500 to 19,999, adjacent to a metro area
7=Urban population of 2,500 to 19,999, not adjacent to a metro area

[*]Significantly different from treatments at the 0.05 level, two-tailed test.

Table II.7a. Distribution of Propensity Scores and Overall Statistical Tests for the Treatment and Comparison Samples, for the Virginia TRA-Beneficiary Administrative Records Sample

Estimated Propensity Score Percentile Among Treatment Group	Range of Estimated Propensity Scores	Treatments		Matched Comparisons		Potential Comparisons	
		Number	Percent	Number	Percent	Number	Percent
Below Minimum Value	< 0.0004	0	0.0	0	0.0	1,285	5.0
0-10%	0.0004 - 0.0063	37	9.8	36	10.3	14,031	54.3
10%-25%	0.0063 - 0.0161	57	15.0	56	16.1	5,165	20.0
25%-50%	0.0161 - 0.0459	95	25.1	91	26.1	3,561	13.8
50%-75%	0.0459 - 0.1001	95	25.1	90	25.9	1,355	5.2
75%-90%	0.1001 - 0.2077	57	15.0	47	13.5	375	1.5
90%-100%	>= 0.2077	38	10.0	28	8.0	73	0.3

	Matched Comparisons[+] H_0: $P_T = P_C$	Matched Comparisons[++] H_0: $X_T = X_C$	Potential Comparisons[++a] H_0: $X_T = X_C$
Estimated *p*-value from Statistical Test	0.988	1.000	0.000
Sample Size	**379**	**348**	**25,845**

Source: State UI/TRA claims data.

Notes:

1. Propensity score percentiles are based on the distribution of estimated propensity scores among the treatment group.

2. Among the matched comparison group:
   92.0% were matched to 1 treatment group member,
   7.2% were matched to 2 treatment group members,
   0.9% were matched to 3 treatment group members,
   0.0% were matched to 4 treatment group members, and
   0.0% were matched to 5 or more treatment group members.

3. P_T and P_C are the estimated propensity scores of the treatment and comparison group, respectively. X_T and X_C are the collections of treatment and comparison group characteristics, respectively.

4. Sample sizes are unweighted.

[+] Based on a *t*-test of the similarity of the estimated propensity score across the treatment and comparison groups.

[++] Based on an *F*-test of the similarity of the collection of available characteristics across the treatment and comparison groups.

Table II.7b. Matching Characteristics of Treatment and Comparison Groups for the Virginia TRA-Beneficiary Administrative Records Sample

	Sample			
Matching Variables	Treatment (Percentages)	Matched Comparisons (Percentages)	Potential Comparisons (Percentages)[a]	Included in Matching Model?
Estimated Propensity Score	0.08	0.08		
Individual Characteristics from UI Claims Data				
Age				
21-30	10.6	9.5	21.4*	Yes
31-39	16.4	18.5	20.3	Yes
40-48	26.1	28.5	24.8	Yes
49-56	24.5	24.5	21.6	Yes
57-62	15.6	12.9	9.0*	Yes
63-79	6.9	6.1	2.9*	Yes
(Average age)	47.0	45.9	42.0*	
Female	64.9	62.3	40.9*	Yes
Race/Ethnicity				
White, Non-Hispanic	65.2	65.2	68.6	Yes
Benefit Year Start Date				
5/1/2005-9/25/2005	26.9	26.6	24.8	Yes
10/2/2005-12/25/2005	21.9	21.9	18.5	Yes
1/1/2006-3/26/2006	26.6	29.3	12.7*	Yes
4/2/2006-9/3/2006	24.5	22.2	44.1*	Yes
Maximum Benefit				
$876-$3,960	20.6	21.1	20.1	Yes
$4,008-$5,984	35.1	36.7	29.8	Yes
$6,000-$7,992	23.0	20.6	25.9	Yes
$8,100 or more	21.4	21.6	24.3	Yes
(Average benefit)	$5,761	$5,746	$5,950	
Total Base Period Earnings				
$3,657-$12,441	10.0	8.4	9.5	Yes
$12,565-$16,980	15.0	15.8	13.2	Yes
$17,023-$22,433	25.1	27.2	23.0	Yes
$22,436-$30,560	25.1	24.0	27.2	Yes
$30,678-$40,806	15.0	15.0	17.4	Yes
$40,826 or more	9.8	9.5	9.8	Yes
(Average earnings)	$24,482	$25,073	$25,962	
WPRS Profile Scores				
0.00-0.00	33.0	34.6	42.5*	Yes
0.20-0.35	42.5	44.1	44.6	Yes
0.35-0.67	24.5	21.4	12.9*	Yes
(Average score)	0.22	0.21	0.18*	
Local Area Code Indicators				
Area code 1	30.3	31.4	7.9*	Yes
Area code 2	0.3	0.3	0.0	Yes
Area code 3	0.5	0.0	1.1	Yes
Area code 4	0.5	0.3	0.8	Yes
Area code 5	0.5	0.3	0.8	Yes
Area code 6	0.3	0.0	0.8	Yes
Area code 7	4.7	6.1	1.3*	Yes
Area code 8	0.3	0.3	0.5	Yes

Matching Variables	Sample			Included in Matching Model?
	Treatment (Percentages)	Matched Comparisons (Percentages)	Potential Comparisons (Percentages)[a]	
Area code 9	3.4	3.7	0.0*	Yes
Area code 10	0.3	0.0	1.1	Yes
Area code 11	0.3	0.3	0.3	Yes
Area code 12	9.2	8.7	1.1*	Yes
Area code 13	1.1	0.8	1.6	Yes
Area code 14	0.5	0.3	1.1	Yes
Area code 15	0.5	0.5	0.0	Yes
Area code 16	2.6	2.6	4.5	Yes
Area code 17	0.5	0.5	0.0	Yes
Area code 18	1.3	0.8	4.2*	Yes
Area code 19	0.5	0.5	11.1*	Yes
Area code 20	1.1	0.8	5.8*	Yes
Area code 21	0.5	0.0	0.3	Yes
Area code 22	0.5	1.3	4.2*	Yes
Area code 23	3.4	3.7	2.6	Yes
Area code 24	3.2	2.1	8.4*	Yes
Area code 25	1.1	0.5	2.1	Yes
Area code 26	2.6	3.4	6.3*	Yes
Area code 27	6.9	6.3	11.1*	Yes
Area code 28	1.8	1.6	9.5*	Yes
Area code 29	1.6	1.3	1.8	Yes
Area code 30	3.2	2.9	0.0*	Yes
Area code 31	14.5	15.8	6.6*	Yes
Area code 32	0.5	0.5	0.5	Yes
Area code 33	1.1	1.6	2.4	Yes
Area code 34	0.3	0.8	0.3	Yes
Labor Market Characteristics				
Unemployment Rate in Year of Job Loss				
2.1-4.3	21.6	19.3	50.7*	No
4.5-5.8	45.1	49.6	33.5*	No
6.1-10.0	33.2	31.1	15.8*	No
(Average rate)	5.8	5.7	4.6*	
Poverty Rate in 2004				
3.4-10.9	10.6	12.7	25.1*	No
11.1-13.4	47.2	47.0	43.0	No
14.0-18.7	17.7	18.5	26.4*	No
19.2-21.1	24.5	21.9	5.5*	No
(Average rate)	14.3	14.0	12.9	
Average Earnings in 2005				
$21,548-$25,657	8.4	10.0	4.7*	No
$26,165-$29,535	20.6	20.8	20.3	No
$30,349-$38,830	5.3	3.4	10.3*	No
$40,516 or more	5.5	5.5	9.2	No
(Average earnings)	$30,868	$30,631	$32,911*	

Matching Variables	Sample			Included in Matching Model?
	Treatment (Percentages)	Matched Comparisons (Percentages)	Potential Comparisons (Percentages)[a]	
Percentage Manufacturing in 2005				
2.9-6.0	10.3	9.8	9.8	No
6.7-12.1	7.7	5.3	15.0*	No
13.2-16.6	9.2	13.5	10.8	No
17.7-32.8	12.7	11.3	8.4	No
(Average percentage)	13.1	13.0	13.5	
Percentage Population Growth Rate Between 2000 and 2005				
-4.4--1.1	39.1	36.9	35.9	No
-0.5-0.8	31.7	34.3	20.1*	No
1.2-5.0	19.8	18.5	24.5	No
5.0-46.9	9.5	10.3	19.5*	No
(Average growth rate)	0.2	0.6	1.7*	
ERS Urban-Rural Continuum Rating in 2003[b]				
1-2	9.2	9.2	24.5*	No
3-3	42.2	42.5	29.0*	No
4-4	1.6	1.3	16.9*	No
6-9	47.0	47.0	29.6*	No
Sample Size	**379**	**348**	**25,845**	

Source: State UI/TRA claims and labor market data.

Notes:

1. Category definitions vary by state.
2. Statistics were estimated using weights, where the weight for each treatment group member equals 1 and the weight for comparison group members equals the number of times the member was matched to a treatment.
3. Matched comparison group members are the first nearest neighbors to each treatment group member based on their estimated propensity scores.
4. Sample sizes are unweighted.

[a] Potential comparison figures are based on a randomly selected subsample of potential comparisons that is the same size as the treatment group.

[b] 1= Counties in metro areas of 1 million population or more
2=Counties in metro area of 250,000 to 1 million population
3=Counties in metro areas of fewer than 250,000 population
4=Urban population of 20,000 or more, adjacent to a metro area
5=Urban population of 20,000 or more, not adjacent to a metro area
6=Urban population of 2,500 to 19,999, adjacent to a metro area
7=Urban population of 2,500 to 19,999, not adjacent to a metro area
8=Completely rural or less than 2,500 urban population, adjacent to a metro area
9=Completely rural or less than 2,500 urban population, not adjacent to a metro area

*Significantly different from treatments at the 0.05 level, two-tailed test.

H. COMPARISON GROUP ADMINISTRATIVE RECORDS SAMPLES

Administrative records data were collected for the following five samples of treatment workers and their matched comparison workers (see Table II.8):

1. 2,875 members of the certified-worker survey sample for TAA participants and 5,760 of their matched comparisons who were released for baseline interviews

2. 1,506 members of the certified-worker survey sample for TAA nonparticipants and 3,115 of their matched comparisons who were released for baseline interviews

3. 7,421 members of the certified-worker administrative records sample for TAA participants and 12,178 of their two best initially-matched comparisons

4. 12,319 members of the certified-worker administrative records sample for TAA nonparticipants and 21,476 of their two best initially-matched comparisons

5. 10,095 members of the TRA-beneficiary sample and 16,982 of their two best initially-matched comparisons.

In total, the administrative data collection sample includes 34,216 treatment observations and 69,026 comparison observations.

As discussed in Chapter I, there is some overlap in the treatment samples and matching was performed with replacement so that comparison group members could match to more than one treatment group member. Accounting for these factors yields an administrative records data collection sample that consists of 30,013 *unique* treatment workers and 55,495 *unique* comparison workers. About 86.6 percent of treatment workers are in one treatment sample only, 11.6 percent are in two samples, and 1.8 percent are in three samples. About 93.5 percent of comparison workers are in one comparison sample only, 5.9 percent are in two samples, and 0.6 percent are in three or four samples.

I. IDENTIFYING COMPARISON GROUP "CROSSOVERS"

Using TAPR data and updated UI/TRA claims data that were collected after the study samples had been selected and interviews were completed, we found that about 9 percent of comparison group members had ever received TAA services. We defined a TAA service as a comparison worker who ever received any level of TAA service according to the TAPR data, or who ever had a TRA claim or first payment date according to the UI/TRA data.

We excluded these comparison group "crossovers" from the analysis samples. For the administrative records samples shown in Table II.8, we dropped 464 of 5,760 comparisons from Sample 1, 215 of 3,115 comparisons from Sample 2, 1,038 of 12,178 comparisons from Sample 3, 1,698 of 21,476 comparisons from Sample 4, and 1,538 of 16,982 comparisons from Sample 5. In addition, we dropped 466 of 5,166 comparisons who completed baseline surveys and 228 of 2,026 comparisons who completed follow-up surveys. In addition, for the administrative records samples, we dropped a small number of treatments who no longer had matches after the crossovers were removed.

Table II.8. Sample Sizes for Administrative Records Data Collection, by State and Sample (T = Treatment Group Worker, C = Comparison Group Worker)

	Sample 1[a]		Sample 2[a]		Sample 3[a]		Sample 4[a]		Sample 5[a]	
State	T	C	T	C	T	C	T	C	T	C
AL	92	148	45	77	273	276	445	574	370	405
AR	88	185	48	99	276	406	464	784	346	565
CA	241	468	124	245	477	892	882	1,693	516	982
CO	93	183	47	92	175	278	470	746	272	333
FL	90	133	45	88	100	114	248	343	146	208
GA	124	244	61	125	379	676	626	1,041	506	868
IL	117	241	58	147	339	571	563	993	451	675
IN	97	204	49	116	523	766	300	546	429	754
KY	92	160	44	94	270	292	447	692	365	642
MD	85	167	47	95	152	242	332	430	209	276
MI	135	291	67	135	319	589	743	1,389	597	1131
MN	68	134	42	84	68	107	99	152	252	448
MO	93	159	45	91	206	275	463	773	300	487
NC	236	512	121	291	770	1,366	1,229	2,346	1,029	1,843
NH	79	136	63	79	79	121	245	211	56	49
NJ	94	220	52	120	338	533	281	543	476	691
NY	92	182	46	89	279	514	457	851	366	629
OH	106	234	64	128	436	787	733	1364	578	1103
PA	149	294	73	147	459	836	745	1404	610	1090
RI	83	214	44	102	138	261	76	146	289	490
SC	125	241	64	125	389	560	635	1006	520	845
TN	109	241	57	143	314	517	514	956	481	828
TX	126	230	57	127	282	399	434	828	379	602
VA	92	182	46	91	265	472	437	795	379	671
WA	81	198	53	103	0	0	0	0	0	0
WI	88	159	44	82	115	133	451	621	173	190
Total	**2,875**	**5,760**	**1,506**	**3,115**	**7,421**	**11,938**	**12,319**	**21,227**	**10,095**	**16,805**

Source: UI/TRA claims files and certified-work lists provided by the 26 study states

[a] Sample 1 = certified-worker survey sample for TAA participants, Sample 2 = certified-worker survey sample for TAA nonparticipants, Sample 3= certified-worker administrative records sample for TAA participants, Sample 4 = certified-worker administrative records sample for TAA nonparticipants, and Sample 5 = TRA-beneficiary sample.

CHAPTER III

THE BASELINE SURVEY

A. INTRODUCTION

This chapter discusses the design and implementation of the baseline interview. First, we discuss the baseline interview design. Second, we discuss response rates to the baseline interview, and finally, we discuss results that compare the characteristics of interview respondents and nonrespondents in the treatment and comparison groups.

B. DESIGN OF THE BASELINE INTERVIEW

Baseline interviewing took place by telephone between March 2008 and April 2009. Across the 26 study states, 4,381 treatment group members in the certified-worker survey sample and 8,875 of their matched comparisons were released for baseline interviews (Table III.1). The average number of months between the UI claim date and the baseline interview completion date was about 29 months. The Office of Management and Budget (OMB) approved the use of incentive fees to sample members for completing the survey.

1. Sample Released for Baseline Interviewing

As discussed in Chapter I, states provided the data necessary for selecting the study samples at different times in 2008. Because of the uncertainty as to which states would participate in the study and the dates when they would provide the data, we released workers for baseline interviewing in several batches between March 2008 and January 2009 (Table III.2). The final batch in January 2009 was a supplemental sample across all states that was released to offset the lower-than-expected survey response rates, so that we could complete our targeted number of 7,965 interviews by the survey end date in April 2009. These completion targets were 1,770 TAA participants, 3,540 of their matched comparisons, 885 TAA nonparticipants, and 1,770 of their matched comparisons.

For the initial releases, treatments were released with their two best matched comparisons to achieve the target number of completed interviews, assuming an 80 percent response rate. After several months of interviewing, however, it became apparent that the assumed 80 percent response rate could not be achieved, largely because contact information was old for some sample members and the design did not call for in-person follow-up interviews. Furthermore, initial response rates were higher for treatments than comparisons (who had little or no attachment to the TAA program). Accordingly, we received permission from OMB to increase incentive payments from $25 to $50 for comparison group members and TAA nonparticipants, and also made procedural changes to increase response rates (such as sending a USDOL letter to request participation in the survey).

While the higher incentive payments and procedural changes did increase the response rate, the expected number of survey completes was still short of the target. Thus, in January 2009, we released a supplemental sample from each of the 26 states that would allow us to meet our sample size targets, assuming an overall response rate of 60 percent. Because the response rate was higher for treatments than comparisons, we released more comparisons than treatments in the supplemental sample. When choosing additional comparison releases, our first priority was to release additional matched comparisons for treatments who had already completed the survey but who did not have a completed comparison match. These newly released comparison members were selected from nearest neighbors three through five. In addition, we released more sample in states with lower response rates than higher response rates.

Table III.1. Baseline Survey Samples for the Treatment and Comparison Groups

Study State	Baseline Survey Samples			
	TAA Participants[a]	Comparisons to Participants	TAA Non-participants[a]	Comparisons to Nonparticipants
Alabama	92	148	45	77
Arkansas	88	185	48	99
California	241	468	124	245
Colorado	93	183	47	92
Florida	90	133	45	88
Georgia	124	244	61	125
Illinois	117	241	58	147
Indiana	97	204	49	116
Kentucky	92	160	44	94
Maryland	85	167	47	95
Michigan	135	291	67	135
Minnesota	68	134	42	84
Missouri	93	159	45	91
New Hampshire	79	136	63	79
New Jersey	94	220	52	120
New York	92	182	46	89
North Carolina	236	512	121	291
Ohio	106	234	64	128
Pennsylvania	149	294	73	147
Rhode Island	83	214	44	102
South Carolina	125	241	64	125
Tennessee	109	241	57	143
Texas	126	230	57	127
Virginia	92	182	46	91
Washington	81	198	53	103
Wisconsin	88	159	44	82
Total	**2,875**	**5,760**	**1,506**	**3,115**

[a]Figures pertain to participation status as initially defined using initial TRA benefit receipt information in the UI claims files.

Table III.2. Distribution of Baseline Interview Release Dates (Percentages)

Release Month and Year (Number of States)	TAA Participants[a]	Comparisons to Participants	TAA Nonparticipants[a]	Comparisons to Nonparticipants
March 2008 (3)	9.0	8.1	9.1	8.3
April 2008 (3)	9.3	7.9	9.0	8.1
May 2008 (1)	3.1	2.8	3.0	2.7
June 2008 (8)	26.3	22.8	25.2	22.5
August 2008 (1)	3.7	3.6	3.6	3.5
September 2008 (4)	13.6	12.5	13.1	12.4
October 2008 (2)	4.9	4.4	4.9	4.6
November 2008 (2)	5.5	4.6	5.4	4.8
December 2008 (3)	17.8	18.6	18.9	18.1
January 2009: Supplemental Sample (26)	6.9	14.7	7.8	15.0
Sample Size	**2,875**	**5,760**	**1,506**	**3,115**

Source: Baseline Interview Data

[a]Participation status was defined using TRA benefit receipt information in the UI claims files.

Altogether, 13,256 individuals were released for baseline interviews. These workers included 2,875 TAA participants, 5,760 of their matched comparisons (848 of whom were matches three to five in the supplemental sample), 1,506 TAA nonparticipants, and 3,115 of their matched comparisons (467 of whom were matches three to five in the supplemental sample).

The process for releasing the survey sample was complex and sometimes involved selecting nearest neighbors three to five instead of our initial plan for releasing only nearest neighbors one and two. Thus, it is important to assess the comparability of the matching variables for all 4,381 treatment and 8,875 comparison group workers who were ultimately released for surveys. As shown in Table III.3 for the combined sample across the 26 states, despite a few significant differences in the matching variables across the research groups, the differences are relatively small for both TAA participants and TAA nonparticipants. Thus, it is likely that the process for releasing the survey sample did not materially distort the initial matching process. The key reason for this finding is that treatment-comparison differences for the first two best matches were typically similar to those for matches three to five.

Finally, because sample members were released for interviews on a rolling basis and interviewing ended in April 2009, the length of the follow-up period for locating and interviewing differed somewhat across the sample (Table III.2). The survey exposure period ranged from four to thirteen months. The exposure period was somewhat shorter for comparison than treatment group members because a higher percentage of comparisons were included in the supplemental sample. As discussed below, survey response rates increased slowly after about four months of exposure. Thus, it is unlikely that the different exposure times across the sample had a large effect on the overall survey response rate.

Table III.3. Matching Characteristics of Treatment and Comparison Samples Who Were Released for Baseline Surveys (Percentages)

Characteristic	TAA Participants[a]	Comparisons to Participants	TAA Non-participants	Comparisons to Non-participants[a]
Key Demographic and Job Characteristics				
Age at UI Claim Date				
16 to 40	31.1	30.7	33.5	34.6
41 to 50	31.6	32.8	31.2	32.6
51 to 60	28.8	27.9	27.6	26.1
Older than 60	8.5	8.6	7.7	6.8
(Average age)	46.1	45.9	45.2	44.8
Female	51.1	49.6	40.4	39.6
Race/Ethnicity				
White	53.1	53.6	52.5	54.5
Black	12.5	13.3	10.8	10.1
Hispanic	10.6	9.9	13.0	11.9
Other	11.6	10.4	11.4	5.3
Total Base Period Earnings				
Less than $28,058	7.7	9.9*	12.0	13.9
$28,058 to $31,760	12.5	11.2	11.4	10.4
$31,760 to $38,026	31.5	30.9	26.0	26.7
$38,026 to $44,925	20.1	20.7	18.5	18.4
$44,925 to $55,716	21.1	20.1	20.5	19.7
$55,716 or higher	7.1	7.2	11.6	10.9
(Average earnings)	$33,619	$33,451	$35,409	$35,178
Local Labor Market Characteristics				
Unemployment Rate in Year of Job Loss (Percents)				
Less than 3.7	9.5	9.6	12.9	10.8*
3.7 to 4.4	17.7	15.1*	16.5	17.4
4.4 to 5.1	24.6	24.9	23.7	23.8
5.1 to 6.0	23.0	25.6*	24.6	23.9
6.0 to 7.3	15.1	14.8	13.7	14.7
7.3 or higher	10.2	10.1	8.6	9.3
(Average rate)	5.4	5.4	5.3	5.3
2004 Poverty Rate (Percents)				
Less than 7.8	10.1	10.9	12.4	11.1
7.8 to 9.8	14.9	14.7	15.2	14.2
9.8 to 12.8	26.1	24.2*	24.2	23.9
12.8 to 15.4	22.4	25.1*	26.6	28.5
15.4 to 18.0	16.1	15.0	12.5	12.6
18.0 or higher	10.4	10.2	9.0	9.7
(Average rate)	13.1	13.1	12.7	12.9

Characteristic	TAA Participants[a]	Comparisons to Participants	TAA Non-participants	Comparisons to Non-participants[a]
Average Earnings per Job in 2005				
Less than $28,058	9.7	9.9	10.3	10.4
$28,058 to $31,760	15.4	15.6	13.6	14.5
$31,760 to $38,026	25.5	25.5	24.1	23.4
$38,026 to $44,925	26.1	23.5*	27.2	26.1
$44,925 to $55,716	14.0	14.9	16.0	16.1
$55,716 or higher	9.3	10.5	8.8	9.4
(Average earnings)	$39,664	$39,836	$39,910	$39,987
Percentage of Workers in Manufacturing in 2005				
Less than 5.3	9.4	8.8	9.7	9.2
5.3 to 7.9	15.5	15.2	15.5	16.0
7.9 to 11.2	25.1	26.6	24.1	24.7
11.2 to 15.8	24.4	24.1	25.3	24.8
15.8 to 21.8	15.3	15.2	14.4	15.1
21.8 or higher	10.3	10.1	10.9	10.2
(Average percentage)	12.6	12.6	12.6	12.5
Percentage Population Growth Between 2000 and 2005				
Less than -1.9	9.3	9.5	10.2	10.4
-1.9 to 0.2	16.7	15.5	13.9	13.8
0.2 to 2.8	27.1	27.2	23.3	23.6
2.8 to 5.9	23.0	24.3	27.0	27.2
5.9 to 12.3	13.9	14.4	14.9	15.1
12.3 or higher	10.0	9.2	10.7	9.9
(Average growth rate)	4.0	4.0	4.4	4.3
ERS Urban-Rural Continuum Rating, 2003				
Metropolitan area with at least 1 million persons	36.4	37.5	35.8	37.4
Metropolitan areas with fewer than 1 million persons	30.6	30.6	33.0	32.3
Small area adjacent to a metropolitan area	24.8	23.9	20.8	20.4
Small area not adjacent to a metropolitan area	8.2	8.0	10.4	9.9
Sample Size	**2,875**	**5,760**	**1,506**	**3,115**

Source: Baseline survey data, state UI/TRA claims data, and local market data.

Note: All figures are unweighted.

[a]Participation status was defined using TRA benefit receipt information in the UI claims files.

*The *t*-test comparing treatment-comparison means is significant at the 0.05 level, two-tailed test.

2. Survey Procedures

The UI claims data and certified worker lists provided the contact information for the survey. The UI data contained a telephone number and address for each record. Because sample members sometimes had multiple records in the UI data, we used information on each unique telephone number and address that was available in the data. The certified worker lists also contained an address and sometimes a telephone number for each treatment group member.

The available contact information was somewhat old for some sample members. The median time between the UI claim and interview release date was about 27 months for all research groups, and the time span was more than three years for about 15 percent of the sample. Thus, UI data on Social Security Numbers (SSNs), names, and dates of birth (which were available for nearly all sample members) were critical for searching national databases (such as Lexis-Nexis) to help locate sample members who could not be initially reached using the contact information in the UI data and the certified worker lists.

OMB approved the use of incentive fees to all treatments and matched comparisons for completing the survey. However, the structure of the incentive payments changed mid-way during the survey period to help boost response rates. Between March 2008 and mid-September 2008, sample members were offered a $25 incentive for completing the survey.[14] For the remainder of the survey period, the incentive increased to $50 for nonparticipants and all comparison group members to help increase their response rates; the incentive remained at $25 for participants, whose initial response rates were higher than for the other workers.[15]

The survey questionnaire included a battery of questions about workers' experiences with the TAA program, their labor market and training experiences, and other key study outcomes. The survey coverage period started with the UI claim date associated with the trade-related job separation. The key categories of survey data items were as follows:

- ***Information on the job that led to the UI claim,*** including occupation, industry, union membership, company size, start and end dates, hours worked per week, earnings, available fringe benefits, main reason stopped working, expected recall status, actual recall status, whether looked for work after the job ended, and the number of jobs and total earnings during the prior three years.

[14] More specifically, an experiment was conducted to test the impact of variations in the timing of the incentive payment on response rates. About 60 percent of workers were randomly assigned to receive $25 for interview completion, 20 percent to receive a $2 pre-payment and a $25 interview completion post-payment, and the other 20 percent to receive a $5 pre-payment and a $20 interview completion post-payment (see Gemmill et al. 2009).

[15] These revised incentive payments were approved by OMB based on results from another incentive experiment that was conducted between September and December 2008 with the following features: (1) for participants, 50 percent continued to be eligible for a $25 incentive, and the other 50 percent became eligible for a $50 payment; and (2) for the other groups, 20 percent continued to be offered $25, 40 percent were offered $50, and the final 40 percent were offered $75 (see Schochet et al. 2008 and Gemmill et al. 2009).

- ***Notification of TAA eligibility***, including ways in which found out about TAA, whether an eligibility notification letter was sent by the state and when, whether attended a TAA orientation, and where that meeting took place.

- ***Knowledge of TAA services,*** including knowledge of TRA benefits and TRA eligibility rules (such as having to enter a training program or receive a waiver), knowledge of TAA-funded training and subsidies for travel and relocation, knowledge of ATAA (for those 50 and older), and knowledge of HCTC.

- ***Application for TAA services,*** including whether completed a program application form (and the main reason for applying/not applying), whether applied for ATAA benefits (and, if not, the main reason for not applying), and whether applied for HCTC (and, if not, the main reason for not applying).

- ***The receipt of TRA, ATAA, and HCTC services,*** including TRA benefit receipt information, whether received the ATAA wage supplement and the amount received, and whether received a HCTC tax credit and the amount received.

- ***The receipt of reemployment services,*** including whether received job search assistance, referrals to jobs, resume writing assistance, information on how to change careers, occupational assessment tests, labor market information about what jobs were in demand, information on education or job training programs, and payments for travel, living, and moving expenses; the place where the majority of reemployment services were received; and the helpfulness of the services that were received in finding a job or a training program.

- ***The receipt of education and training services,*** including, for each program: start and end dates, hours per week attended program, type of program, place where the training was received, program cost, sources of funding (including TAA), program completion status, whether received a program credential, and the main reason left the program.

- ***Information on jobs held since the UI claim date,*** including, for each job: occupation, industry, start and end dates, how the job was found, union membership, hours worked per week, earnings, available fringe benefits, reasons stopped working, and the main activity after leaving the job.

- ***Other sources of income,*** including the receipt of public assistance (such as cash assistance and food stamps), pension benefits, and total income from all sources in the prior year.

- ***Household structure,*** including marital status, housing type, household size, and number of children.

- ***Health status and health insurance,*** including whether has a health condition that limits the amount of work that can be performed, the type of health problem, the number of months covered by health insurance since the UI claim date, and the main type of health insurance held by the worker.

- ***Demographic information,*** including education level, race and ethnicity, main language spoken at home, and English language ability.

The survey took approximately 38 minutes to complete. Data item nonresponse was rare.

C. RESPONSE RATES TO THE BASELINE INTERVIEW

The (unweighted) response rate to the baseline interview was 65.3 percent for the treatment group (68.7 percent for TAA participants and 58.8 percent for TAA nonparticipants) and 58.2 percent for the comparison group (58.9 percent for the TAA participants' comparison group and 56.9 percent for the TAA nonparticipants' comparison group). Overall, interviews were completed with 2,860 of 4,381 treatments and 5,166 of 8,875 comparisons who were released for interviews (Table III.4). We completed interviews with 1,974 of 2,875 released TAA participants, 3,394 of 5,760 of their released matched comparisons, 886 of 1,506 released TAA nonparticipants, and 1,772 of 3,115 of their released matched comparisons. Thus, we achieved our sample size targets.

Table III.4. Number of Completions and Releases for the Baseline Survey, by Research Status

	Research Status				
Number of Completions or Releases	TAA Participants[a]	Comparisons to Participants	TAA Non-Participants[a]	Comparisons to Non-Participants	All
Target Number of Completed Interviews	1,770	3,540	885	1,770	7,965
Actual Implementation					
Number Released for Interviews	2,875	5,760	1,506	3,115	13,256
Number of Completed Interviews	1,974	3,394	886	1,772	8,026

Source: Baseline survey data.

[a]Participation status was defined using TRA benefit receipt information in the UI claims files.

Response rates differed somewhat across key population subgroups (Table III.5). These subgroups pertain to the time that the sample members were laid off from their pre-UI jobs, and were defined using UI/TRA data and local labor market variables that were available for both interview respondents and nonrespondents.

Response rates were higher for females than males and increased with age. Response rates were also higher for whites and blacks than for Hispanics and other race/ethnicity groups. In addition, response rates were noticeably higher in areas with high unemployment rates and in nonmetropolitan areas. Response rates did not differ by USDOL region or the worker's base wage rate. In general, baseline survey response patterns were similar for treatments and their matched comparisons and for TAA participants and nonparticipants. A more formal nonresponse analysis is discussed later in this chapter.

D. TIME UNTIL INTERVIEW COMPLETION AND THE INTERVIEW COVERAGE PERIOD

About 60 percent of treatment group respondents and 57 percent of comparison group respondents completed interviews within one month after being released for interviewing, and about 90 percent of respondents completed interviews within four months (Table III.6). The distributions of the number of months until completion are fairly similar for treatments and comparisons (for both participants and nonparticipants), although TAA participants in the treatment group tended to complete interviews a little faster than the other research groups (about 1.5 months on average, compared to 1.7 months on average for the other groups). Importantly, using only sample members who were "exposed" for interviews for at least 8 months, we find that about 84 percent of treatment respondents and 79 percent of comparison respondents completed interviews within four months (Table III.6). This suggests that response rates did not increase substantially after the first four months of exposure, which was the minimum exposure time for all sample members.

The average number of months between the UI claim date and the baseline interview completion date was about 29 months for each research group (Table III.7). The interview coverage period was more than three years for about 20 percent of treatments and 25 percent of comparisons.

E. REASONS FOR INTERVIEW NONRESPONSE

The main reasons for nonresponse to the baseline interview were that (1) the case was located but refused to complete the survey through the employment and earnings section (about 30 percent of nonrespondents), (2) the case did not answer the telephone (about one-third of nonrespondents), and (3) the case could not be located (about one-third of nonrespondents) (Table III.8). About 3 to 4 percent of nonrespondents had a language barrier; only a very small number were deceased, incarcerated, or in the military. The reasons for nonresponse were similar for the treatment and comparison groups except that a higher percentage of comparisons could not be located largely because the certified-worker lists contained some contact information for the treatment samples but not for the comparison samples.

Table III.5. Response Rates to the Baseline Interview, by Research Status and Key Subgroup (Percentages)

Subgroup	TAA Participants[a]	Comparisons to Participants	TAA Nonparticipants[a]	Comparisons to Non-Participants
Full Sample	68.7	58.2	58.8	58.9
Demographic Characteristics				
Age at UI Claim Date				
16 to 40	64.9	54.2	54.3	50.3
41 to 50	68.2	59.5	56.2	58.3
51 to 60	71.3	62.8	66.0	62.9
Older than 60	75.0	61.2	63.8	60.7
Gender				
Male	66.5	56.4	56.4	54.7
Female	70.7	61.5	62.4	60.3
Race/Ethnicity				
White	72.0	61.7	65.2	60.4
Black	71.1	61.3	56.2	54.2
Hispanic	57.6	52.5	45.4	47.3
Other	60.1	47.5	45.5	51.6
Benefit Year Start Date				
Before 12/11/05	66.9	56.1	52.3	48.4
12/11/05 to 5/28/06	68.3	57.3	58.4	56.1
5/28/06 to 10/29/06	70.1	60.2	56.4	60.4
Later than 10/29/06	69.4	62.2	68.2	62.3
UI Maximum Benefit Amount				
Less than $ 4,524	62.4	59.7	54.0	54.7
$4, 524 to $6,048	69.9	58.0	56.5	57.9
$6,048 to $7,878	68.3	57.3	56.3	53.2
$7,878 to $9,412	68.0	59.2	64.0	60.8
$9,412 to $11,700	70.0	59.4	61.2	58.2
$11,700 or more	72.3	62.7	57.5	55.5
Base Wage				
Less than $ 14,625	68.0	57.9	54.3	52.7
$14, 625 to $20,921	68.4	58.3	57.3	57.4
$20,921 to $29,520	66.9	57.3	54.5	56.0
$29,520 to $42,437	71.4	59.3	61.7	55.6
$42,437 to $57,394	66.5	60.4	64.6	59.0
$57,395 or more	71.1	62.3	60.3	62.3

Subgroup	TAA Participants[a]	Comparisons to Participants	TAA Nonparticipants[a]	Comparisons to Non-Participants
Local Labor Market Characteristics				
USDOL Region				
1	66.1	55.5	53.2	52.3
2	70.2	60.8	59.0	56.8
3	70.2	61.3	62.2	56.3
4	63.5	56.0	52.0	57.9
5	71.9	61.5	66.1	62.3
6	63.7	52.0	47.5	50.6
Annual Unemployment Rate (Percentages)				
Less than 3.7	58.6	56.4	48.2	54.2
3.7 to 4.4	68.2	57.4	56.0	58.7
4.4 to 5.1	62.9	58.2	57.3	57.1
5.1 to 6.0	73.0	58.0	61.2	56.2
6.0 to 7.3	73.7	62.3	63.6	56.9
7.3 or higher	75.4	62.7	70.8	57.7
2004 Poverty Rate (Percentages)				
Less than 7.8	66.6	56.1	56.1	53.8
7.8 to 9.8	69.6	61.3	57.2	56.8
9.8 to 12.8	64.7	56.3	56.3	59.3
12.8 to 15.4	69.6	60.5	59.1	57.6
15.4 to 18.0	72.1	60.4	62.4	57.8
18.0 or higher	71.9	58.9	66.2	51.5
Average Earnings per Job in 2005				
Less than $28,058	79.3	64.0	70.3	62.5
$28,058 to $31,760	70.8	61.7	64.4	61.1
$31,760 to $38,026	72.9	61.5	63.6	57.2
$38,026 to $44,925	67.1	58.6	54.0	57.5
$44,925 to $55,716	61.9	54.4	55.6	53.1
$55,716 or higher	56.8	50.8	44.4	48.1
Percentage of Workers in Manufacturing				
Less than 5.3	62.0	52.8	54.1	50.0
5.3 to 7.9	68.9	57.6	52.8	55.7
7.9 to 11.2	68.2	58.4	61.5	58.5
11.2 to 15.8	68.4	58.5	58.6	55.2
15.8 to 21.8	71.3	62.6	61.8	60.8
21.8 or higher	73.4	63.9	62.7	60.5
Percentage Population Growth Between 2000 and 2005				
Less than -1.9	70.3	60.2	61.2	64.1
-1.9 to 0.2	69.7	61.4	63.5	58.4
0.2 to 2.8	72.3	58.6	62.3	56.0
2.8 to 5.9	66.2	59.1	56.4	54.2
5.9 to 12.3	64.2	59.1	60.3	57.8
12.3 or higher	67.6	53.6	47.2	55.0

Subgroup	TAA Participants[a]	Comparisons to Participants	TAA Nonparticipants[a]	Comparisons to Non-Participants
Economic Research Service Urban-Rural Continuum Rating				
Metropolitan area with at least 1 million persons	62.7	54.6	52.7	53.4
Metropolitan areas with fewer than 1 million persons	69.5	59.3	58.1	57.2
Small area adjacent to a metropolitan area	75.3	64.3	64.6	61.5
Small area not adjacent to a metropolitan area	71.9	61.9	70.5	59.6
Sample Size	**2,875**	**5,760**	**1,506**	**3,115**

Source: Baseline interview data, UI/TRA claims data, and local area characteristics.

Note: All figures are unweighted.

[a]Participation status was defined using TRA benefit receipt information in the UI claims files.

Table III.6. Distribution of the Number of Months Between the Baseline Interview Release Date and Completion of the Interview, by Research Status (Percentages)

	Full Sample				Those Exposed for Interviewing for at Least 8 Months	
Number of Months	TAA Participants[a]	Comparisons for Participants	TAA Nonparticipants[a]	Comparisons for Non-Participants	Combined Treatments	Combined Comparisons
Less than 1	62.6	58.4	58.0	55.8	51.9	43.1
1 to 2	17.0	17.3	16.8	18.9	18.4	17.0
2 to 3	6.5	7.3	7.9	7.4	7.5	8.1
3 to 4	4.0	7.1	6.9	6.1	6.2	11.1
4 to 5	1.8	2.2	1.8	2.7	2.6	4.1
5 to 6	2.1	2.0	2.1	3.2	2.5	4.2
6 to 9	3.2	3.4	4.6	4.0	6.3	7.5
9 to 13	2.7	2.3	1.8	2.0	4.7	4.9
(Average Months)	1.5	1.6	1.7	1.7	2.1	2.5
Sample Size	**1,974**	**3,394**	**886**	**1,772**	**1,493**	**2,289**

Source: Baseline interview data.

[a]Participation status was defined using TRA benefit receipt information in the UI claims files.

Table III.7. Distribution of the Number of Months Between the UI Claim and Baseline Interview Completion Dates (Percentages)

Months Between UI Claim and Baseline Interview Completion Dates	TAA Participants[a]	Comparisons to Participants	TAA Nonparticipants[a]	Comparisons to Nonparticipants
Fewer Than 17	4.1	12.1	9.4	12.6
17 to 23	17.0	15.1	18.9	15.1
23 to 29	28.5	23.3	28.3	25.7
29 to 35	30.5	22.3	25.5	22.2
35 to 41	15.9	14.1	13.5	12.5
41 or More	4.1	13.1	4.4	11.9
(Mean Months)	29.0	29.2	27.6	28.6
Sample Size	**1,974**	**3,394**	**886**	**1,772**

Source: Baseline Interview Data
[a]Participation status was defined using TRA benefit receipt information in the UI claims files.

Table III.8. Reasons for Nonresponse to the Baseline Interview (Percentages)

Reasons for Nonresponse	TAA Participants[a]	Comparisons for Participants	TAA Nonparticipants[a]	Comparisons for Non-Participants
Located				
Full refusal	23.2	24.8	23.9	22.9
Partial refusal (started but did not complete the interview)	5.0	5.4	4.4	5.7
Maximum number of calls reached, case retired, could only get answering machine	35.2	29.5	34.0	29.0
Language barrier	4.0	2.7	2.9	2.3
Physical or cognitive barrier	0.2	0.3	0.2	0.2
Incarcerated	0.1	0.4	0.2	0.5
Active military service	0.1	0.0	0.0	0.1
Deceased	1.8	1.8	1.6	2.4
Did Not Locate	30.4	35.1	32.9	36.9
Sample Size	**901**	**2,366**	**620**	**1,343**

Source: Baseline interview data.
[a]Participation status was defined using TRA benefit receipt information in the UI claims files.

F. RESPONSE RATES FOR MATCHED TREATMENTS AND CONTROLS

It is important to distinguish between survey response rates for individual workers and for linked treatment-comparison matched "groups". For instance, a treatment group member who completed the survey might have zero, one, or multiple comparison group members who completed the survey. Conversely, some comparison group respondents might have no matched treatments who completed the survey.

Table III.9 reports survey completion outcomes for each matched survey group. A matched survey group consists of one treatment group member and all of their matched comparisons (a minimum of 2 and a maximum of 5). The figures are shown separately for TAA participants and TAA nonparticipants. We find that most groups had a completed interview for the treatment group member and at least one of that worker's top five comparison group matches—62 percent for TAA participants and 52 percent for TAA nonparticipants. About 6 to 8 percent of groups had no completed interviews, and a similar percentage had only a treatment group respondent. The remaining 25 to 33 percent had only a comparison group respondent. This decoupling of the original treatment-comparison group matches influenced our approach for releasing sample members for the follow-up survey that is discussed in Chapter IV.

Table III.9. Baseline Interview Completion Information for Matched Treatment-Comparison Groups (Percentages)

Completion Status Category	TAA Participants and Their Matched Comparisons[a]	TAA Nonparticipants and Their Matched Comparisons[a]
Survey Completions for:		
Treatment and at Least 2 Matched Comparisons	34.4	26.2
Treatment and 1 Matched Comparison	28.0	25.9
Treatment and 0 Matched Comparisons	6.1	6.5
At Least 1 Matched Comparison, But Not the Treatment	25.2	32.7
No Survey Completions in Matched Group	6.0	8.4
Total Treatments in Group	**2,875**	**1,506**

Source: Baseline survey data.

[a]Participation status was defined using TRA benefit receipt information in the UI claims files.

G. COMPARING TREATMENT AND COMPARISON GROUP RESPONDENTS

Because of differences in response rates by research status and across population subgroups, it is important to compare the demographic and pre-UI job characteristics of interview respondents in the treatment and comparison groups. We conducted this analysis using UI, local labor market, and baseline interview data. Treatment-comparison differences could reflect not only survey nonresponse bias, but also *pre-existing* differences between the two groups on characteristics—as measured by the baseline interview data—that were not originally available for matching.

For the analysis, we used the original matching variables from the UI and local area data as well as the following key data items from the baseline interview:

- ***Demographic characteristics,*** including education level, self-reported health status, health insurance coverage status, marital status, spouse employment status, number of financially-dependent children under 18, household size, receipt of public assistance, total household income, housing arrangements, and whether speaks a language other than English at home.

- ***Pre-UI job characteristics,*** including the availability of fringe benefits, union status, main reason for job loss, expected and actual recall status, hours worked, hourly wage, occupation, job tenure, employer size, whether received severance pay, and whether looked for work.

These comparisons are presented in Tables III.10 using the UI and local labor market data and in Table III.11 using the baseline interview data. The tables show the percentages of respondents with a particular characteristic (for example, the percentages who are female). We used standard statistical tests to assess the similarity of the compared groups, and the statistical significance of these tests is denoted in the tables by asterisks. We used the methods discussed in Chapter VIII to adjust for the estimates and standard errors for weighting and clustering. We conducted univariate t-tests to compare variable means for binary and continuous variables and chi-square tests to compare variable distributions for categorical variables. In addition, we conducted a more formal multivariate analysis to test the hypothesis that key variable means and distributions are jointly similar.

In general, the survey respondents in the treatment and comparison groups look similar on the UI and local area characteristics that were used for matching. For instance, there are few statistically significant differences between the two groups in the distribution of their demographic characteristics—such as their gender, race/ethnicity, and age—their base wages, and their local area characteristics (Table III.10).

However, we find some important differences between treatment and comparison group respondents using baseline survey data items that were *not* used for matching (Table III.11). This pattern holds for some demographic variables, but especially for their pre-UI job characteristics. For instance, relative to their comparisons, treatments were less likely to have at least a bachelor's degree, to receive food stamps, and to be in poor health, and were more likely to own their home and have health insurance. TAA participants were considerably more likely than their comparisons to be in a union (29 percent, compared to 21 percent), in companies with more than 100 employees (65 percent, compared to 49 percent), in production occupations (71 percent, compared to 61 percent), to have been in their jobs for at least 10 years (52 percent, compared to 36 percent), and to

have had available health insurance and other fringe benefits (about 95 percent, compared to 87 percent for most fringe benefits). In addition, the job loss and recall experiences were considerably different for the treatment and comparison groups. While more than three quarters of TAA participants reported losing their jobs due to their plant closing or moving, only 20 percent of comparisons reported this as a reason for their job loss. Similarly, nearly 60 percent of TAA participants reported receiving severance pay when their job ended, compared to only 26 percent of comparisons. Furthermore, TAA participants were significantly less likely to report that they expected to be recalled to their job (35 percent, compared to 52 percent), and many fewer were actually recalled (8 percent, compared to 33 percent).

Importantly, the same patterns of findings hold when we restrict the sample to the original treatment-comparison group *triads* who completed baselines (not shown). Thus, our findings are not due to nonresponse biases resulting from the breaking up of the original matches. Rather, we continue to find treatment-comparison differences using the originally-matched interview respondents.

These findings influenced our design for releasing sample members for the follow-up interview, as discussed in Chapter IV.

H. COMPARING INTERVIEW RESPONDENTS AND NONRESPONDENTS

As shown in Tables III.12 and III.13, there are some differences, based on the UI data, in the characteristics of baseline interview respondents and nonrespondents that parallel the subgroup differences in response rates that were discussed above in Tables III.5. For example, females, whites, and older workers were significantly more likely than their counterparts to complete an interview, although there are no statistically significant differences between the base wages of respondents and nonrespondents. In addition, response rates were significantly higher in areas with higher unemployment rates and lower average earnings than in other areas. Response rates were also significantly higher in rural areas than in larger metropolitan areas. The explanatory variables in the logit models are jointly statistically significant at the 1 percent level for all research groups.

Because of these respondent-nonrespondent differences, we adjusted, using the UI claims data, the baseline weights to help reduce the potential bias in the estimates due to interview nonresponse (see Chapter VIII). The weights were adjusted so that the weighted baseline characteristics of interview respondents were similar, on average, to those of the full population of respondents and nonrespondents. These adjusted weights were used to calculate all statistics based on the baseline sample. Because the UI data and local area measures include variables that are likely to be correlated with key study outcomes, this procedure can account for some important differences between respondents and nonrespondents. However, there likely remain unmeasured differences that could be correlated with the key study outcomes (including some of the baseline survey data items that were discussed above). Thus, the use of administrative UI wage records data to estimate impacts on key employment and earnings outcomes was critical to assess the presence of potential survey nonresponse bias and the robustness of the survey-based impact findings.

Table III.10. Characteristics of Baseline Survey Respondents in the Treatment and Comparison Groups Using the UI Claims Data (Percentages)

Characteristic	TAA Participants[a]	Comparisons to Participants[b]	TAA Nonparticipants[a]	Comparisons to Nonparticipants[b]
Demographic Characteristics				
Age at UI Claim Date				
16 to 40	30.4	28.7	31.0	30.7
41 to 50	31.4	32.5	30.0	33.0
51 to 60	28.5	29.4	30.5	29.0
Older than 60	9.7	9.4	8.5	7.3
(Average age)	48.5	48.5	48.1	47.7
Female	54.7	53.7	42.2	42.2
Race/Ethnicity		*		
White	64.1	64.8	68.7	68.0
Black	22.2	23.6	15.0	13.1
Hispanic	5.7	5.6	8.1	8.0
Other	8.0	6.0*	8.2	10.9*
UI Benefit Year Start Date		*		
Before 12/11/05	20.7	25.1*	19.9	23.6
12/11/05 to 5/28/06	30.8	23.9*	28.8	23.9*
5/28/06 to 10/29/06	30.5	22.9*	26.3	26.2
Later than 10/29/06	18.0	28.0*	25.0	26.3
UI Maximum Benefit Amount				
Less than $ 4,524	7.8	10.7	11.1	12.0
$4, 524 to $6,048	20.8	18.2	13.3	14.0
$6,048 to $7,878	24.1	23.8	21.2	21.4
$7,878 to $9,412	22.7	22.9	33.3	32.0
$9,412 to $11,700	17.6	16.0	15.5	14.2
$11,700 or more	7.0	8.4	5.7	6.3
(Average benefit amount)	$7,359.4	$7,352.1	$3,081.2	$2,960.8
Pre-UI Job Characteristics				
Total Base Period Earnings				
Less than $14,625	8.0	9.9*	11.9	12.2
$14, 625 to $20,921	17.2	15.8	12.5	14.5
$20,921 to $29,520	27.9	27.7	19.8	21.2
$29,520 to $42,437	26.3	26.4	24.1	22.8
$42,437 to $57,394	13.2	13.2	16.3	15.9
$57,395 or more	7.4	7.0	15.3	13.4
(Average Wage)	$47,005.5	$44,986.6	$27,891.2	$23,148.1
Local Labor Market Characteristics				
USDOL Region				
1	9.4	9.2	6.0	5.9
2	14.6	14.8	14.1	14.0
3	43.7	43.9	31.2	29.0
4	9.6	9.2	9.4	10.8
5	18.2	18.8	31.9	32.0
6	4.5	4.2	7.4	8.3

Characteristic	TAA Participants[a]	Comparisons to Participants[b]	TAA Nonparticipants[a]	Comparisons to Nonparticipants[b]
Unemployment Rate (Percents)		*		
Less than 3.7	6.8	8.9*	8.6	9.5
3.7 to 4.4	16.7	14.1*	13.9	16.4
4.4 to 5.1	23.4	25.6	26.8	27.4
5.1 to 6.0	27.7	27.3	27.3	25.0
6.0 to 7.3	16.5	15.3	14.8	13.7
7.3 or higher	8.9	8.9	8.6	7.9
(Average unemployment rate)	5.4	5.4	5.4	5.3
2004 Poverty Rate (Percents)				
Less than 7.8	6.8	7.3	9.4	9.1
7.8 to 9.8	11.6	12.1	15.7	16.6
9.8 to 12.8	24.3	22.7	25.4	27.5
12.8 to 15.4	26.6	28.3	25.4	24.4
15.4 to 18.0	19.8	18.8	12.4	12.3
18.0 or higher	11.0	10.8	11.8	10.1
(Average poverty rate)	13.6	13.6	13.0	12.8
Average Earnings per Job in 2005				
Less than $28,058	12.7	11.9	12.5	12.0
$28,058 to $31,760	20.4	21.7	16.7	16.7
$31,760 to $38,026	29.6	29.7	26.7	23.9
$38,026 to $44,925	22.4	20.7	25.0	27.6
$44,925 to $55,716	9.6	9.7	13.6	13.6
$55,716 or higher	5.3	6.3	5.5	6.2
(Average earnings per job)	$36,809.8	$37,059.2	$38,016.9	$38,680.7
Percentage of Workers in Manufacturing				
Less than 5.3	8.0	7.5	9.2	8.1
5.3 to 7.9	13.0	12.7	12.7	13.6
7.9 to 11.2	19.2	19.5	20.1	21.7
11.2 to 15.8	24.9	25.7	26.0	24.9
15.8 to 21.8	20.2	20.6	18.9	19.0
21.8 or higher	14.7	14.0	13.0	12.7
(Average percentage)	14.0	14.0	13.6	13.6
Percentage Population Growth Between 2000 and 2005				
Less than -1.9	10.2	10.8	12.5	14.7
-1.9 to 0.2	17.6	17.7	15.5	14.2
0.2 to 2.8	29.1	25.7*	24.0	21.1
2.8 to 5.9	20.2	23.6*	25.5	25.0
5.9 to 12.3	13.5	14.2	13.8	15.3
12.3 or higher	9.4	8.0	8.8	9.6
(Average growth)	3.7	3.6	3.8	4.0

Characteristic	TAA Participants[a]	Comparisons to Participants[b]	TAA Nonparticipants[a]	Comparisons to Nonparticipants[b]
ERS Urban-Rural Continuum Rating				
Metropolitan area with at least 1million persons	28.7	28.1	29.7	32.2
Metropolitan areas with fewer than 1 million persons	31.7	31.9	35.6	34.8
Small area adjacent to a metropolitan area	32.5	32.0	23.9	25.0
Small area not adjacent to a metropolitan area	7.2	8.0	10.9	8.0*
Sample Size	**1,974**	**3,394**	**886**	**1,772**

Source: Baseline interview data, UI claims data, and the local area characteristics.

Note: All figures are calculated using sample weights and significance tests account for design effects due to weighting and clustering.

[a] Participation status was defined using TRA benefit receipt information in the UI claims files.

[b] Significance levels pertains to tests of differences between respondents in the treatment and comparison groups.

*Difference is statistically significant at the .05 level based on a chi-square test (for categorical variables) or t-tests (for binary or continuous variables).

Table III.11. Characteristics of Baseline Survey Respondents in the Treatment and Comparison Groups Using the Baseline Interview Data (Percentages)

Characteristic	TAA Participants[a]	Comparisons to Participants[b]	TAA Nonparticipants[a]	Comparisons to Nonparticipants[b]
Demographic Characteristics				
Race/Ethnicity (Recoded)				
White, Non-Hispanic	65.3	64.9	69.7	69.3
Black, Non-Hispanic	22.7	23.2	15.3	13.7
Hispanic	7.1	7.6	9.3	9.7
Other	4.9	4.3	5.7	7.3
Speaks Language Other Than English at Home	10.1	10.3	11.7	13.7
Education		*		
Less than high school	15.6	17.0	16.3	14.8
High school diploma or GED	62.3	58.3*	57.2	55.5
Associate's degree of some college	17.1	16.2	16.9	17.8
Bachelor's degree or above	5.0	8.6*	9.6	11.8
Marital Status				*
Married	58.5	56.0	62.9	56.0*
Divorced, separated, widowed	22.5	24.7	17.9	23.3*
Never married	19.1	19.3	19.3	20.7
Spouse Worked for Pay (for Those Married)	70.9	68.7	70.1	71.8
Received Food Stamps in the Past Year	3.2	5.6*	4.3	6.3
Received Cash Assistance Other than UI in the Past Year	11.3	10.5	9.4	8.2
Total Household Income in the Past Year		*		
$14,625 or less	10.4	14.2*	10.6	13.1
$14,625 to $20,921	10.2	10.1	7.1	8.1
$20,921 to $29,520	15.5	13.3	12.8	13.8
$29,520 to $42,437	27.0	23.9*	20.3	21.9
$42,437 to $57,394	15.0	16.4	18.8	16.1
Greater than $57,394	21.9	22.0	30.4	27.0
(Average income)	$41,979.1	$40,970.9	$47,611.9	$45,844.2
Housing Arrangement		*		*
Owns residence	71.6	64.8*	70.6	63.8*
Rents	22.9	29.7*	23.5	28.7*
Other	5.5	5.5	5.8	7.4

Characteristic	TAA Participants[a]	Comparisons to Participants[b]	TAA Nonparticipants[a]	Comparisons to Nonparticipants[b]
Self-Reported Health Status		*		*
Excellent	23.8	24.4	26.4	26.5
Good	56.6	53.3	56.3	50.8*
Fair	16.3	17.6	14.2	17.3
Poor	3.3	4.8*	3.1	5.4*
Covered by Health Insurance	91.6	84.4*	87.5	83.7*
Household Size				
1	19.8	19.3	18.0	19.8
2	33.8	35.2	35.3	34.0
3	21.3	21.8	19.8	19.6
4 or more	25.2	23.8	26.9	26.6
(Average size)	2.7	2.6	2.7	2.7
Number of Financially-Dependent Children Under 18				
0	54.1	51.8	59.1	52.7*
1	20.9	22.9	17.0	19.8
2	16.8	17.2	15.7	18.7
3 or more	8.2	8.1	8.1	8.8
(Average number)	0.8	0.9	0.7	0.9*
Pre-UI Job Characteristics				
Belonged to a Union	29.0	20.7*	34.9	21.8*
Number of Company Employees in Worker's Location		*		*
25 or fewer	11.0	23.7*	9.9	23.7*
25 to 100	23.6	26.9*	19.0	25.5*
100 to 500	46.3	34.7*	46.1	32.9*
More than 500	19.1	14.7*	24.9	17.9*
(Average number)	451.7	378.6	596.0	476.1*
Occupation[c]		*		*
Production	71.4	60.9*	62.9	55.8*
Office and administrative support	7.2	8.9	6.9	7.7
Installation, maintenance, and repair	4.8	4.7	7.1	6.0
Transportation and material moving	6.1	8.6*	7.7	9.3
Architecture and engineering	1.4	1.7	2.1	2.7
Business and financial operations	1.7	1.9	2.3	3.4
Management	2.1	3.0	2.9	3.9
Construction and extraction	1.0	2.8*	1.3	2.6*
Other	4.2	7.5*	7.0	8.7

Characteristic	TAA Participants[a]	Comparisons to Participants[b]	TAA Nonparticipants[a]	Comparisons to Nonparticipants[b]
Job Tenure (Years)		*		*
Less than 5	22.1	42.3*	29.8	44.0*
5 to 10	25.5	21.2*	21.7	21.6
10 to 15	16.1	10.7*	14.1	10.3*
15 to 20	12.8	9.1*	10.2	6.1*
20 or more	23.5	16.6*	24.2	17.9*
(Average years)	13.4	10.0*	12.7	9.8*
Usual Hours Per Week Worked				
Less than 40	4.8	5.9	5.1	5.3
40	49.8	51.7	49.1	50.8
41 to 50	33.3	31.1	35.1	31.5
More than 50	12.1	11.2	10.7	12.4
(Average hours)	44.3	43.9	44.2	44.3
Hourly Wage				
$6.60 or less	5.9	6.9	5.7	6.7
$6.60 to $9.90	20.2	21.5	18.3	20.9
$9.90 to $12.90	29.8	30.1	22.1	26.0
$12.90 to $15.90	21.9	18.0*	22.6	18.4
$15.90 to $19.90	12.7	13.4	16.0	12.9
More than $19.90	9.5	10.2	15.3	15.1
(Average wage)	13.0	13.0	14.1	13.8
Available Fringe Benefits				
Health insurance	95.2	87.2*	92.7	86.0*
Paid vacation	95.5	87.2*	91.0	84.8*
Paid holidays	97.7	91.7*	95.1	89.8*
Paid sick leave	53.7	45.9*	52.8	47.3*
Retirement or pension	84.2	70.3*	79.5	69.9*
Reason for Job Loss		*		*
Laid off due to the plant moving or closing	76.5	20.4*	60.8	19.0*
Laid off for another reason	22.1	57.8*	32.2	55.5*
Other	1.4	21.9*	7.0	25.5*
Expected To Be Recalled to Job	10.0	39.0*	18.8	35.0*
Given a Specific Date to Return to Work (for Those Expected to be Recalled)	34.5	51.9*	43.6	54.7*
Actually Recalled to Job	7.7	32.8*	15.4	29.8*
Received Severance Pay, a Buyout, or Some Other Payment When Job Ended	59.3	25.5*	55.5	27.4*
Looked for Work When Job Ended	75.2	73.0	83.2	75.8*

Characteristic	TAA Participants[a]	Comparisons to Participants[b]	TAA Nonparticipants[a]	Comparisons to Nonparticipants[b]
Employment Experiences Prior to the Pre-UI Job				
Number of Jobs in the Past Three Years		*		*
1	81.3	70.6*	76.5	70.7*
2	68.6	64.6	66.7	63.5
3 or more	31.4	35.4	33.3	36.5
(Average number)	1.3	1.5*	1.3	1.4*
Total Earnings from All Paid Jobs in the Past Year				
$10,000 or less	13.5	16.3	12.6	15.6
$10,000 to $20,000	23.6	21.7	17.1	17.3
$20,000 to $30,000	29.7	27.2	25.7	24.8
$30,000 to $50,000	24.9	25.2	29.7	25.4*
Greater than $50,000	8.3	9.5	14.8	16.9
(Average earnings)	$27,500.0	$27,516.3	$32,077.2	$32,172.3
Sample Size	**1,974**	**3,394**	**886**	**1,772**

Source: Baseline interview data, UI claims data, and the local area characteristics.

Note: All figures are calculated using sample weights and significance tests account for design effects due to weighting and clustering.

[a] Participation status was defined using TRA benefit receipt information in the UI claims files.

[b] Significance levels pertains to tests of differences between respondents and nonrespondents in the treatment or comparison groups.

[c] Occupations were coded using the 2010 Standardized Occupation Classification (SOC) system.

*Difference is statistically significant at the .05 level based on a chi-square test (for categorical variables) or t-tests (for binary or continuous variables).

Table III.12. Characteristics of Baseline Survey Respondents and Nonrespondents for TAA Participants and Their Comparisons (Percentages)

Characteristic (Based on UI Claims Data)	TAA Participants[a]		Comparisons to TAA Participants	
	Respondents	Nonrespondents[b]	Respondents	Nonrespondents[b]
Demographic and Pre-UI Job Characteristics				
Age at UI Claim Date				*
16 to 40	30.4	35.0*	28.7	34.1*
41 to 50	31.4	31.8	32.5	32.8
51 to 60	28.5	25.6	29.4	24.6*
Older than 60	9.7	7.6	9.4	8.6
(Average age)	48.5	44.7*	48.5	45.1*
Female	54.7	48.1*	53.7	47.4*
Race/Ethnicity		*		*
White	64.1	59.9	64.8	60.5*
Black	22.2	18.6	23.6	21.0
Hispanic	5.7	9.8*	5.6	8.1*
Other	8.0	11.7*	6.0	10.4*
UI Benefit Year Start Date				*
Before 12/11/05	20.7	22.7	25.1	28.2
12/11/05 to 5/28/06	30.8	30.0	23.9	25.4
5/28/06 to 10/29/06	30.5	28.3	22.9	22.4
Later than 10/29/06	18.0	19.1	28.0	24.0*
UI Maximum Benefit Amount				
Less than $ 4,524	7.8	9.8	10.7	10.8
$4, 524 to $6,048	20.8	18.8	18.2	18.6
$6,048 to $7,878	24.1	22.9	23.8	24.5
$7,878 to $9,412	22.7	25.2	22.9	22.8
$9,412 to $11,700	17.6	16.5	16.0	16.0
$11,700 or more	7.0	6.8	8.4	7.3
(Average benefit amount)	$7,359.4	$9,547.8	$7,352.1	$8,659.1
Total Base Period Earnings				
Less than $14,625	8.0	8.1	9.9	10.9
$14, 625 to $20,921	17.2	17.1	15.8	16.3
$20,921 to $29,520	27.9	28.3	27.7	27.3
$29,520 to $42,437	26.3	23.7	26.4	26.0
$42,437 to $57,394	13.2	15.9	13.2	13.0
$57,395 or more	7.4	7.0	7.0	6.6
(Average Wage)	$47,005.5	$51,046.9	$44,986.6	$46,900.0
Local Labor Market Characteristics				
USDOL Region				*
1	9.4	10.9	9.2	10.9
2	14.6	14.0	14.8	13.9
3	43.7	40.5	43.9	41.0
4	9.6	9.4	9.2	10.1*
5	18.2	19.7	18.8	18.4
6	4.5	5.5*	4.2	5.7*

Characteristic (Based on UI Claims Data)	TAA Participants[a]		Comparisons to TAA Participants	
	Respondents	Nonrespondents[b]	Respondents	Nonrespondents[b]
Unemployment Rate (Percents)		*		
Less than 3.7	6.8	10.7*	8.9	9.2
3.7 to 4.4	16.7	16.3	14.1	14.8
4.4 to 5.1	23.4	28.4*	25.6	25.9
5.1 to 6.0	27.7	23.8	27.3	28.2
6.0 to 7.3	16.5	13.8	15.3	13.8
7.3 or higher	8.9	7.1	8.9	8.0
(Average unemployment rate)	5.4	5.2*	5.4	5.3
2004 Poverty Rate (Percents)				
Less than 7.8	6.8	7.8	7.3	8.4
7.8 to 9.8	11.6	12.2	12.1	11.1
9.8 to 12.8	24.3	26.3	22.7	24.9
12.8 to 15.4	26.6	28.0	28.3	28.2
15.4 to 18.0	19.8	16.9	18.8	16.7
18.0 or higher	11.0	8.9	10.8	10.6
(Average poverty rate)	13.6	13.3	13.6	13.5
Average Earnings per Job in 2005		*		*
Less than $28,058	12.7	7.5*	11.9	10.5
$28,058 to $31,760	20.4	19.9	21.7	20.3
$31,760 to $38,026	29.6	25.7	29.7	27.3
$38,026 to $44,925	22.4	26.5*	20.7	22.0
$44,925 to $55,716	9.6	10.9	9.7	11.1
$55,716 or higher	5.3	9.5*	6.3	8.8*
(Average earnings)	$36,809.8	$39,072.6*	$37,059.2	$38,265.0*
Percentage of Workers in Manufacturing				*
Less than 5.3	8.0	9.1	7.5	9.7*
5.3 to 7.9	13.0	12.2	12.7	13.4
7.9 to 11.2	19.2	20.3	19.5	20.4
11.2 to 15.8	24.9	26.3	25.7	25.7
15.8 to 21.8	20.2	19.9	20.6	18.3
21.8 or higher	14.7	12.1	14.0	12.5
(Average percentage)	14.0	13.7	14.0	13.4*
Percentage Population Growth Between 2000 and 2005				
Less than -1.9	10.2	9.4	10.8	9.8
-1.9 to 0.2	17.6	19.9	17.7	16.8
0.2 to 2.8	29.1	25.1*	25.7	26.9
2.8 to 5.9	20.2	22.2	23.6	23.0
5.9 to 12.3	13.5	14.4	14.2	13.5
12.3 or higher	9.4	8.9	8.0	10.0
(Average growth)	3.7	3.7	3.6	3.9

Characteristic (Based on UI Claims Data)	TAA Participants[a]		Comparisons to TAA Participants	
	Respondents	Nonrespondents[b]	Respondents	Nonrespondents[b]
ERS Urban-Rural Continuum Rating		*		*
Metropolitan area with at least 1million persons	28.7	34.2*	28.1	32.8*
Metropolitan areas with fewer than 1 million persons	31.7	32.2	31.9	33.3
Small area adjacent to a metropolitan area	32.5	26.3*	32.0	27.1*
Small area not adjacent to a metropolitan area	7.2	7.3	8.0	6.8
Sample Size	**1,974**	**901**	**3,394**	**2,366**

Source: Baseline interview data, UI claims data, and the local area characteristics.

Note: All figures are calculated using sample weights and significance tests account for design effects due to weighting and clustering.

[a] Participation status was defined using TRA benefit receipt information in the UI claims files.

[b] Significance levels pertains to tests of differences between respondents and nonrespondents in the treatment or comparison group.

*Difference is statistically significant at the .05 level based on a chi-square test (for categorical variables) or t-tests (for binary or continuous variables).

Table III.13. Characteristics of Baseline Survey Respondents and Nonrespondents for TAA Nonparticipants and Their Comparisons (Percentages)

Characteristic (Based on UI Claims Data)	TAA Nonparticipants[a]		Comparisons to TAA Nonparticipants	
	Respondents	Nonrespondents[b]	Respondents	Nonrespondents[b]
Demographic and Pre-UI Job Characteristics				
Age at UI Claim Date		*		*
16 to 40	31.0	36.9*	30.7	39.3*
41 to 50	30.0	34.2	33.0	32.4
51 to 60	30.5	22.9*	29.0	23.0*
Older than 60	8.5	6.0	7.3	5.3*
(Average age)	48.1	43.6	47.7	43.3*
Female	42.2	37.8*	42.2	35.8*
Race/Ethnicity		*		*
White	68.7	56.2*	68.0	60.2*
Black	15.0	16.6	13.1	14.4
Hispanic	8.1	12.2*	8.0	11.9*
Other	8.2	14.9*	10.9	13.4
UI Benefit Year Start Date		*		*
Before 12/11/05	19.9	23.4	23.6	31.9*
12/11/05 to 5/28/06	28.8	29.6	23.9	23.5
5/28/06 to 10/29/06	26.3	30.0	26.2	20.6*
Later than 10/29/06	25.0	17.0*	26.3	24.1
UI Maximum Benefit Amount				
Less than $ 4,524	11.1	12.0	12.0	14.2
$4, 524 to $6,048	13.3	14.4	14.0	13.2
$6,048 to $7,878	21.2	24.5	21.4	24.2
$7,878 to $9,412	33.3	27.7	32.0	27.3*
$9,412 to $11,700	15.5	14.9	14.2	14.2
$11,700 or more	5.7	6.6	6.3	7.0
(Average benefit amount)	$3,081.2	$3,262.1	$2,960.8	$3,523.4
Total Base Period Earnings				
Less than $14,625	11.9	12.2	12.2	15.2*
$14, 625 to $20,921	12.5	13.6	14.5	14.5
$20,921 to $29,520	19.8	24.5	21.2	20.9
$29,520 to $42,437	24.1	21.5	22.8	24.0
$42,437 to $57,394	16.3	15.7	15.9	13.6
$57,395 or more	15.3	12.5	13.4	11.8
(Average Wage)	$27,891.2	$22,581.0	$23,148.1	$28,510.7
Local Labor Market Characteristics				
USDOL Region		*		*
1	6.0	7.2	5.9	7.4
2	14.1	14.7	14.0	14.8
3	31.2	27.6	29.0	30.8
4	9.4	11.7	10.8	9.7
5	31.9	26.3	32.0	26.1*
6	7.4	12.5*	8.3	11.2*

Characteristic (Based on UI Claims Data)	TAA Nonparticipants[a]		Comparisons to TAA Nonparticipants	
	Respondents	Nonrespondents[b]	Respondents	Nonrespondents[b]
Unemployment Rate (Percents)		*		
Less than 3.7	8.6	12.9*	9.5	11.3
3.7 to 4.4	13.9	16.8	16.4	16.0
4.4 to 5.1	26.8	29.3	27.4	28.3
5.1 to 6.0	27.3	23.2	25.0	23.0
6.0 to 7.3	14.8	12.2	13.7	13.9
7.3 or higher	8.6	5.6*	7.9	7.5
(Average unemployment rate)	5.4	5.1*	5.3	5.2
2004 Poverty Rate (Percents)				
Less than 7.8	9.4	11.3	9.1	11.4
7.8 to 9.8	15.7	17.4	16.6	15.6
9.8 to 12.8	25.4	27.7	27.5	25.3
12.8 to 15.4	25.4	25.4	24.4	25.8
15.4 to 18.0	12.4	11.5	12.3	12.2
18.0 or higher	11.8	6.8*	10.1	9.7
(Average poverty rate)	13.0	12.4*	12.8	12.7
Average Earnings per Job in 2005		*		*
Less than $28,058	12.5	8.9	12.0	8.7*
$28,058 to $31,760	16.7	13.1	16.7	15.4
$31,760 to $38,026	26.7	22.7	23.9	24.6
$38,026 to $44,925	25.0	31.4*	27.6	27.1
$44,925 to $55,716	13.6	13.7	13.6	14.8
$55,716 or higher	5.5	10.2*	6.2	9.4*
(Average earnings)	$38,016.9	$40,853.2*	$38,680.7	$40,174.2*
Percentage of Workers in Manufacturing				*
Less than 5.3	9.2	10.9	8.1	11.9*
5.3 to 7.9	12.7	13.6	13.6	13.1
7.9 to 11.2	20.1	20.3	21.7	20.2
11.2 to 15.8	26.0	25.5	24.9	27.2
15.8 to 21.8	18.9	18.4	19.0	16.1
21.8 or higher	13.0	11.4	12.7	11.5
(Average percentage)	13.6	13.1	13.6	13.0
Percentage Population Growth Between 2000 and 2005				*
Less than -1.9	12.5	12.1	14.7	10.6*
-1.9 to 0.2	15.5	12.8	14.2	13.1
0.2 to 2.8	24.0	21.3	21.1	22.0
2.8 to 5.9	25.5	26.6	25.0	29.8*
5.9 to 12.3	13.8	14.4	15.3	14.1
12.3 or higher	8.8	12.8*	9.6	10.4
(Average growth)	3.8	4.5	4.0	4.4

Characteristic (Based on UI Claims Data)	TAA Nonparticipants[a]		Comparisons to TAA Nonparticipants	
	Respondents	Nonrespondents[b]	Respondents	Nonrespondents[b]
ERS Urban-Rural Continuum Rating		*		*
Metropolitan area with at least 1million persons	29.7	38.2*	32.2	37.6*
Metropolitan areas with fewer than 1 million persons	35.6	34.8	34.8	34.2
Small area adjacent to a metropolitan area	23.9	20.7	25.0	20.1*
Small area not adjacent to a metropolitan area	10.9	6.3*	8.0	8.1
Sample Size	**886**	**620**	**1,772**	**1,343**

Source: Baseline interview data, UI claims data, and the local area characteristics.

Note: All figures are calculated using sample weights and significance tests account for design effects due to weighting and clustering.

[a] Participation status was defined using TRA benefit receipt information in the UI claims files.

[b] Significance levels pertains to tests of differences between respondents and nonrespondents in the treatment or comparison group.

*Difference is statistically significant at the .05 level based on a chi-square test (for categorical variables) or t-tests (for binary or continuous variables).

CHAPTER IV

THE FOLLOW-UP SURVEY

A. INTRODUCTION

This chapter discusses the design and implementation of the follow-up interview. First, we discuss the follow-up interview design, and then discuss response rates to the follow-up interview.

B. DESIGN OF THE FOLLOW-UP INTERVIEW

Follow-up interviews were conducted with TAA *participants* in the certified-worker survey sample and their matched comparisons, but not with TAA nonparticipants and their matched comparisons. Follow-up interviewing took place by telephone between June 21, 2010 and December 23, 2010. Across the 26 study states, 3,000 treatments and 3,000 of their matched comparisons were released for follow-up interviews (Table IV.1). Follow-up interviews were typically conducted about 23 months after the baseline interviews.

1. Sample Released for Follow-Up Interviewing

The 3,000 TAA participants who were released for follow-up interviews consist of two groups. The first group included all 2,228 participants who completed the baseline survey, including 1,974 initially-defined participants and 254 initially-defined nonparticipants who were redefined as participants using baseline survey information on TAA service receipt. These 254 switchers were identified as those who reported in the baseline interview as having received any core TAA services: TRA, TAA-funded training, health coverage through the Health Coverage Tax Credit (HCTC), and, for workers over age 50, wage subsidies through the Alternative TAA (ATAA) program.

The second group of workers who were released for follow-up interviews included a random sample of 772 of 872 initially-defined participants who did not complete the baseline interview (excluding 29 nonrespondents who were adamant interview refusers, were deceased, or had physical or cognitive barriers). The 772 subsample was selected using systematic sampling procedures, where the data were ordered by state, gender, local labor market area, race/ethnicity, and age. We included these workers in the follow-up interview sample to increase the overall survey response rate and to help account for survey nonresponse bias.

A critical design issue for the evaluation was how to select the comparison sample for follow-up interviewing. Our initial plan was to rematch using the baseline data to identify and release for follow-up interviews the best match for each TAA participant among the two original matches. However, there were several key factors that complicated this analysis. First, only about half of treatments who completed baselines had at least two matched comparisons who also completed baselines (see Table III.9 from above). Second, as discussed in Chapter III, we found some differences in key survey-based job characteristics between treatments and comparisons that were *not* used for matching—such as expected recall status, reasons for job loss, union membership, the availability of fringe benefits, company size, and job tenure—that could have limited the pool of potential comparisons if these measures were used in the rematching process. Finally, baseline survey data were not available for workers who did not complete the baseline interview.

Table IV.1. Follow-up Survey Samples for the Treatment and Comparison Groups, by Completion Status to the Baseline Interview

	Baseline Interview Respondents		Baseline Interview Nonrespondents		Total	
Study State	TAA Participants[a]	Comparisons	TAA Participants	Comparisons	TAA Participants[a]	Comparisons
Alabama	67	67	26	17	93	84
Arkansas	71	71	16	19	87	90
California	158	158	81	80	239	238
Colorado	63	63	27	31	90	94
Florida	54	54	31	21	85	75
Georgia	94	94	34	34	128	128
Illinois	85	85	43	33	128	118
Indiana	73	73	27	22	100	95
Kentucky	73	73	26	24	99	97
Maryland	62	62	26	19	88	81
Michigan	115	115	30	31	145	146
Minnesota	82	82	10	12	92	94
Missouri	77	77	19	19	96	96
New Hampshire	54	54	28	24	82	78
New Jersey	60	60	31	36	91	96
New York	71	71	23	22	94	93
North Carolina	201	201	54	70	255	271
Ohio	90	90	24	29	114	119
Pennsylvania	111	111	37	39	148	150
Rhode Island	69	69	18	31	87	100
South Carolina	108	108	24	29	132	137
Tennessee	97	97	26	24	123	121
Texas	70	70	53	39	123	109
Virginia	84	84	23	26	107	110
Washington	65	65	22	28	87	93
Wisconsin	74	74	13	13	87	87
Total	**2,228**	**2,228**	**772**	**772**	**3,000**	**3,000**

Source: Baseline and follow-up survey data.

[a] Initial participation status designations using the UI/TRA claims data were updated for baseline completers using baseline survey information on TAA service receipt.

To help sort out these complex issues, we solicited advice in May 2010 from our expert project consultants: Dr. Jeff Smith at the University of Michigan and Dr. Carolyn Heinrich at the University of Texas at Austin. On the basis of these discussions, the comparison group follow-up survey sample was selected using the following design that differed for those who completed the baseline interview and those who did not:

Using baseline interview completers in both the treatment and comparison groups, we estimated a new propensity score model for each state, and rematched each TAA participant to that comparison group member in the same state with the closest estimated propensity score. Nearest neighbor matching was performed *without replacement* to maximize the size of the comparison group sample (our budget allowed for equal numbers of treatments and comparisons to be released for follow-up interviews). This process yielded a comparison sample that was exactly the same size as the treatment sample in each state (because more comparisons than treatments completed baseline interviews in each state). Rematching was conducted using all comparisons in the same state rather than using the original treatment-comparison triads, because as discussed, many treatments did not have two comparisons in the baseline sample, and key job characteristics from the baseline survey differed somewhat across the research samples, suggesting that the original matches may not necessarily have been optimal.

Matching was conducted using (1) the original matching variables in the UI/TRA claims data (where all models included the local area characteristics variables)[16] and (2) the following key variables from the baseline survey data pertaining to the demographic and pre-UI job characteristics of workers at the time that they filed their baseline UI claim:

Demographic Characteristics

- Indicator for whether the worker speaks another language at home
- Categorical variables for household size
- Indicator for the presence of financially-dependent children younger than 18
- Indicator for fair or poor health
- Indicator for being married
- Indicator for the receipt of public assistance
- Categorical variables for household income
- Indicator for owning a home
- Indicator for having health insurance coverage during the year before UI job loss

[16] The race/ethnicity variables in the UI data, however, were updated using the baseline survey data.

Characteristics of the Pre-UI Job

- Categorical variables for employer size
- Categorical variables for job tenure
- Categorical variables for hours worked at the pre-UI job
- Indicator for employer-provided benefits
- Indicator for having been laid-off as a reason for job loss
- Indicator for expected recall status[17]

Importantly, we found that matching without replacement was insensitive to the ordering in which the matching was performed; in repeated random reorderings of the data, there was substantial overlap in the selected comparison group samples.

For baseline survey noncompleters, we first created a pool of all comparison group noncompleters who were first best matches to treatment group completers and noncompleters. From this pool of 1,087 comparison group noncompleters, we randomly subsampled 772 comparisons for the follow-up sample. The subsample of 772 workers was selected using systematic sampling methods, where the workers were ordered by state, gender, local labor market area, race/ethnicity, and age. This process yielded follow-up samples that contained identical numbers of treatment and comparison individuals who did not complete baseline interviews.

Combining these samples, the follow-up sample contains 6,000 workers split evenly between the treatment and comparison groups treatments (Table III.1). This sample includes 4,456 baseline survey completers (2,228 treatments and 2,228 comparisons) and 1,544 baseline survey noncompleters (772 treatments and 772 comparisons).

The samples were released for follow-up interviews in four randomly-selected batches of 1,500 workers each (750 treatments and 750 comparisons). The batches were released on June 21, 2010, July 13, 2010, July 26, 2010, and August 16, 2010. The same numbers of workers in each state were included in each of the four batches. We released the sample in batches for survey operational reasons.

2. Survey Procedures

The baseline interview collected tracking information on each interview respondent, including their own telephone numbers and addresses, and contact information on two other people who would know how to reach the respondent. This contact information was used to help locate baseline interview respondents for the follow-up interviews. The contact information collected from the UI/TRA claims data and certified worker lists provided the contact information for those who did not complete baseline interviews. UI data on Social Security Numbers (SSNs), names, and

[17] We excluded some job characteristics (such as union status) that were collinear with some of the other the included job characteristics due to small state sample sizes.

dates of birth were used for searching national databases (such as Lexis-Nexis) to help locate sample members who could not be initially reached using the available contact information. OMB approved the use of an incentive fee of $25 for treatments and $50 for comparisons for completing the survey.

For those who did not complete the baseline interview, the follow-up survey questionnaire was identical to the baseline survey questionnaire, and the coverage period started with the UI claim date associated with the trade-related job separation. For those who completed the baseline interview, the follow-up survey questionnaire was very similar to the baseline questionnaire except that it excluded questions about the characteristics of the pre-UI job, background characteristics at the time of job loss, the receipt of rapid response services, notification of TAA eligibility, and knowledge of TAA services. For baseline interview respondents, the survey covered the period since the baseline interview completion date. For these workers, the employment and training sections of the follow-up survey first obtained information on jobs and training programs that were ongoing at the time of the previous interview (to help trigger the respondent's memory and minimize recall error) and then obtained information on new jobs and training programs. Data item nonresponse was rare.

C. RESPONSE RATES TO THE FOLLOW-UP INTERVIEW

The (unweighted) response rate to the follow-up interview for those who completed the baseline interview was 80.9 percent for treatments and 81.7 percent for comparisons (Table IV.2). As expected, the response rate for those who did not complete the baseline interview was considerably lower, but not trivial: 32.5 percent for treatments and 26.7 percent for comparisons. Overall, interviews were completed with 1,803 of 2,228 treatments and 1,820 of 2,228 comparisons who completed baselines, and 251 of 772 treatments and 206 of 772 comparisons who did not complete baselines (Table IV.2).

It is not surprising that response rates were considerably higher for baseline interview respondents than nonrespondents, because recent contact information from the baseline survey could be used to help locate the baseline respondents, and these workers had previously agreed to participate in the study. By way of contrast, the contact information in the UI claims data was dated for many baseline nonrespondents, and these workers had not previously agreed to participate in the study.

The *effective* study survey response rate for TAA participants was 63.3 percent. This response rate pertains to the percentage of TAA participants who completed follow-up interviews among the nationally representative sample of *participants who were released for baseline interviews*. This figure was calculated by dividing the 2,054 participants who completed follow-up interviews by the estimated 3,245 TAA participants who were released for baseline interviews (including the 2,875 initially-defined participants and the estimated 370 switchers [about 13 percent of initially-defined participants]).

Table IV.2. Number of Completions and Releases for the Follow-Up Survey, by Baseline Interview Completion Status and Research Status

Number of Completions or Releases	Baseline Interview Respondents		Baseline Interview Nonrespondents	
	TAA Participants[a]	Comparisons to Participants	TAA Participants[a]	Comparisons to Participants
Number Released for Interviews	2,228	2,228	772	772
Number of Completed Interviews	1,803	1,820	251	206
Response Rate (Percentages)	80.9	81.7	32.5	26.7

Source: Baseline and follow-up survey data.

[a] Initial participation status designations using the UI/TRA claims data were updated for baseline completers using baseline survey information on TAA service receipt.

The *effective* response rates for TAA participants differed somewhat across key population subgroups (Table IV.3). These subgroups pertain to the time that the sample members were laid off from their pre-UI jobs, and were defined using UI/TRA data and local labor market variables that were available for both interview respondents and nonrespondents.

Effective response rates for TAA participants were similar for males and females but increased with age (70 percent for those older than 60, compared to 57 percent for those between the ages of 16 and 40; Table IV.3). Effective response rates were higher for whites (68 percent) and blacks (64 percent) than for Hispanics and other race/ethnicity groups (about 51 percent). Response rates were also noticeably higher in areas with high unemployment and poverty rates and in nonmetropolitan areas. Effective response rates were lower in USDOL region 6 than in other regions and increased slightly with the worker's base wage rate. A more formal nonresponse analysis is discussed later in this chapter.

It is notable that we do not present effective survey response rates for the comparison group, because of differences between the characteristics of treatment and comparison group members that were found using the baseline survey data, and the complex process that was used to select the comparison group for follow-up surveys. As discussed in Chapter VII, we used a follow-up interview sample for the impact analysis where comparisons were *rematched* to treatments using kernel matching methods and matching variables from the UI claims and baseline survey data. Thus, nonresponse issues for the rematched comparison sample are largely similar to those for the TAA participants presented above; nonresponse issues for the unmatched comparison sample are not germane for the evaluation.

Table IV.3. Effective Response Rates to the Follow-Up Interview for TAA Participants, by Key Subgroup (Percentages)

Subgroup	Effective Survey Response Rate for TAA Participants [a]
Full Sample of TAA Participants	63.3
Demographic Characteristics	
Age at UI Claim Date	
16 to 40	56.9
41 to 50	64.8
51 to 60	66.4
Older than 60	70.4
Gender	
Male	63.8
Female	62.9
Race/Ethnicity	
White	68.0
Black	64.0
Hispanic	51.6
Other	51.2
Benefit Year Start Date	
Before 12/11/05	59.9
12/11/05 to 5/28/06	61.4
5/28/06 to 10/29/06	63.1
Later than 10/29/06	71.2
UI Maximum Benefit Amount	
Less than $ 4,524	60.7
$4, 524 to $6,048	61.2
$6,048 to $7,878	65.1
$7,878 to $9,412	64.9
$9,412 to $11,700	61.8
$11,700 or more	62.6
Total Base Period Earnings	
Less than $ 14,625	58.9
$14, 625 to $20,921	62.1
$20,921 to $29,520	62.9
$29,520 to $42,437	65.1
$42,437 to $57,394	62.7
$57,395 or more	66.3
Local Labor Market Characteristics	
USDOL Region	
1	59.8
2	65.5
3	66.2
4	58.0
5	68.3
6	50.9

Subgroup	Effective Survey Response Rate for TAA Participants [a]
Annual Unemployment Rate (Percentages)	
Less than 3.7	54.5
3.7 to 4.4	61.8
4.4 to 5.1	60.2
5.1 to 6.0	65.5
6.0 to 7.3	67.9
7.3 or higher	69.8
2004 Poverty Rate (Percentages)	
Less than 7.8	58.7
7.8 to 9.8	63.6
9.8 to 12.8	61.7
12.8 to 15.4	64.4
15.4 to 18.0	64.8
18.0 or higher	66.7
Average Earnings per Job in 2005	
Less than $28,058	73.1
$28,058 to $31,760	71.8
$31,760 to $38,026	68.0
$38,026 to $44,925	60.9
$44,925 to $55,716	56.0
$55,716 or higher	44.0
Percentage of Workers in Manufacturing	
Less than 5.3	56.4
5.3 to 7.9	59.1
7.9 to 11.2	62.6
11.2 to 15.8	65.2
15.8 to 21.8	66.7
21.8 or higher	68.5
Percentage Population Growth Between 2000 and 2005	
Less than -1.9	65.4
-1.9 to 0.2	62.2
0.2 to 2.8	63.8
2.8 to 5.9	64.8
5.9 to 12.3	61.5
12.3 or higher	60.8
Economic Research Service Urban-Rural Continuum Rating	
Metropolitan area with at least 1 million persons	55.5
Metropolitan areas with fewer than 1 million persons	63.6
Small area adjacent to a metropolitan area	70.6
Small area not adjacent to a metropolitan area	75.0
Sample Size	**3,245**

Source: Baseline interview data, UI/TRA claims data, and local area characteristics.

Notes: All figures are unweighted. The *effective* study survey response rate is the percentage of TAA participants who completed follow-up interviews among the nationally representative sample of participants who were *released for baseline interviews*.

[a] Initial participation status designations using the UI/TRA claims data were updated for baseline completers using baseline survey information on TAA service receipt.

D. TIME UNTIL INTERVIEW COMPLETION AND THE INTERVIEW COVERAGE PERIOD

About 70 percent of baseline interview respondents completed interviews within one month after being released for interviewing; the corresponding figure is about 45 to 50 percent for baseline interview nonrespondents (Table IV.4). On average, it took about 1 month to complete interviews with baseline respondents and 1.6 months to complete interviews with baseline nonrespondents. It is not surprising that it took longer to complete interviews with baseline noncompleters.

Table IV.4. Distribution of the Number of Months Between the Follow-Up Interview Release Date and Completion of the Interview, by Baseline Interview Completion Status and Research Status (Percentages)

	Baseline Interview Respondents		Baseline Interview Nonrespondents	
Number of Months	TAA Participants[a]	Comparisons for Participants	TAA Participants[a]	Comparisons for Participants
Less than .5	51.8	51.8	23.9	29.1
.5 to 1	20.9	21.3	21.1	20.9
1 to 2	13.3	11.8	20.7	13.6
2 to 3	5.7	7.2	12.4	14.6
3 or more	8.3	7.8	21.9	21.8
(Average Months)	0.95	0.94	1.7	1.6
Sample Size	**1,803**	**1,820**	**251**	**206**

Source: Baseline and follow-up survey data.

[a] Initial participation status designations using the UI/TRA claims data were updated for baseline completers using baseline survey information on TAA service receipt.

For baseline completers, the average number of months between completion of the baseline and follow-up interviews was 22.8 months for treatments and 21.9 months for comparisons (Table IV.5). Thus, in the main impact report, we refer to the follow-up interview as the "23-month follow-up interview." The period between the baseline and follow-up interviews was less than 18 months for about 11 percent of the sample and was more than 26 months for about 22 percent of the sample (Table IV.5). For baseline noncompleters, the average number of months between the UI claim date and the completion of the follow-up interview was about 52 months for both treatments and comparisons (not shown).

Table IV.5. Distribution of the Number of Months Between the Baseline and Follow-Up Interview Completion Dates for Baseline Interview Completers, by Research Status (Percentages)

	Baseline Interview Respondents	
Number of Months Between the Baseline and Follow-Up Interviews	TAA Participants[a]	Comparisons for Participants
Less than 18	9.6	13.0
18 to 22	35.6	42.1
22 to 26	33.0	30.4
26 or more	21.8	14.5
(Average Months)	22.8	21.9
Sample Size	**1,803**	**1,820**

Source: Baseline and follow-up survey data.

[a] Initial participation status designations using the UI/TRA claims data were updated for baseline completers using baseline survey information on TAA service receipt.

The main analysis sample for the impact analysis included those who completed follow-up interviews (see Chapter VII). Thus, for this sample, it is important to assess the total length of the follow-up period between the UI claim date and the follow-up interview date. We find that about 93 percent of treatments and 99 percent of comparisons in the analysis sample had at least three years of follow-up data, and 64 percent of treatments and 69 percent of comparisons had at least 4 years of data (Table IV.6). The mean value is about 51 months for both research groups. The survey coverage period tended to be longer for comparisons than treatments, because it typically took longer to complete follow-up interviews with comparisons than treatments. As discussed further in Chapter VII, the main analysis sample for the employment-related and training outcomes during years 1 to 3 included the approximately 95 percent of sample members whose data covered this period, whereas the year 4 analysis was conducted using the approximately 65 percent of sample members with available data that covered this period.

E. REASONS FOR INTERVIEW NONRESPONSE

The main reasons for nonresponse to the follow-up interview were very similar to those for the baseline interview (Table IV.7). Specifically, the main reasons were that (1) the case was located but refused to complete the survey through the employment and earnings section (about 30 percent of nonrespondents), (2) the case did not answer the telephone (about 26 percent of baseline completers and 20 percent of baseline noncompleters), and (3) the case could not be located (about 30 percent of baseline completers and 43 percent of baseline noncompleters). About 4 percent of nonrespondents had a language barrier, 1 percent had physical or cognitive barrier, and 4 percent of baseline completers and 2 percent of baseline noncompleters died.

Table IV.6. Distribution of the Number of Months Between the UI Claim Date and the Follow-Up Interview Completion Date, by Research Status (Percentages)

Number of Months Covered by the Survey Data	TAA Participants[a]	Comparisons for Participants
Less than 36	6.8	1.1
36 to 42	9.3	5.9
42 to 45	7.7	10.5
45 to 48	12.3	14.0
48 to 51	15.1	17.5
51 to 54	11.9	15.4
54 to 57	13.1	15.7
57 to 60	6.7	8.9
60 or more	17.1	11.0
(Average Months)	51.1	51.4
(Minimum / Maximum Months)	26.7 / 80.9	30.1 / 75.2
Sample Size	**2,054**	**2,026**

Source: Baseline and follow-up survey data.

[a] Initial participation status designations using the UI/TRA claims data were updated for baseline completers using baseline survey information on TAA service receipt.

F. COMPARING INTERVIEW RESPONDENTS AND NONRESPONDENTS

Table IV.8 compares the baseline characteristics of TAA participants who completed follow-up interviews to TAA participants who were *released for baseline interviews* but who did not complete follow-up interviews. This analysis was conducted using data items from the UI claims data.

There are some differences in the characteristics of the respondents and nonrespondents that parallel the subgroup differences in effective response rates that were discussed above in Table IV.3. For example, whites, older workers, and those in more rural areas were significantly more likely than their counterparts to complete an interview. Furthermore, the explanatory variables in the logit models are jointly statistically significant at the 1 percent level for all research groups.

For the impact analysis, we addressed these respondent-nonrespondent differences in several ways. First, we adjusted the follow-up weights for the survey respondents in the treatment group to help adjust for survey nonresponse bias (see Chapter VIII). This approach helps ensure that the weighted treatment respondent sample generalizes to the full certified-worker population. Second, we rematched comparison group respondents to treatment group respondents using the detailed baseline survey data to help minimize potential biases due to treatment-comparison differences in survey response rates (see Chapter VI). Third, the survey nonresponse weights developed for the treatment sample were also applied to the rematched comparison samples so that both samples pertain to the same national TAA worker universe (see chapter VI). Finally, we used administrative UI wage records data to estimate impacts on key employment and earnings outcomes so that we could assess the presence of potential survey nonresponse bias and the robustness of the survey-based impact findings.

Table IV.7. Reasons for Nonresponse to the Follow-Up Interview (Percentages)

	Baseline Interview Respondents		Baseline Interview Nonrespondents	
Reasons for Nonresponse	TAA Participants[a]	Comparisons for Participants	TAA Participants[a]	Comparisons for Participants
Located				
Full refusal	31.3	33.8	25.3	30.0
Partial refusal (started but did not complete the interview)	0.9	1.5	2.5	1.6
Maximum number of calls reached, case retired, could only get answering machine	27.3	24.5	20.3	19.8
Language barrier	3.1	3.9	4.8	4.2
Physical or cognitive barrier	1.2	1.5	1.0	0.2
Incarcerated	0.7	1.0	0.2	0.5
Active military service	0.0	0.0	0.2	0.2
Deceased	3.8	3.7	1.5	1.8
Did Not Locate	31.8	30.1	44.1	41.7
Sample Size	**425**	**408**	**521**	**566**

Source: Baseline and follow-up survey data.

[a] Initial participation status designations using the UI/TRA claims data were updated for baseline completers using baseline survey information on TAA service receipt.

Table IV.8. Characteristics of Follow-Up Survey Respondents and Nonrespondents for TAA Participants (Percentages)

Characteristic (Based on UI Claims Data)	TAA Participants[a]	
	Respondents	Nonrespondents[b]
Demographic and Pre-UI Job Characteristics		
Age at UI Claim Date		*
16 to 40	28.7	39.1*
41 to 50	32.3	30.5
51 to 60	29.0	23.6*
Older than 60	10.0	6.9*
(Average age)	48.6	44.6*
Female	53.2	52.2
Race/Ethnicity		*
White	65.1	58.1*
Black	21.5	20.0
Hispanic	5.6	9.9*
Other	7.8	12.0*
UI Benefit Year Start Date		
Before 12/11/05	21.5	20.0
12/11/05 to 5/28/06	30.2	31.9
5/28/06 to 10/29/06	30.6	28.6
Later than 10/29/06	17.6	19.5
UI Maximum Benefit Amount		
Less than $ 4,524	7.7	9.4
$4, 524 to $6,048	20.4	20.3
$6,048 to $7,878	24.7	22.4
$7,878 to $9,412	22.8	24.0
$9,412 to $11,700	17.4	16.9
$11,700 or more	6.9	7.0
(Average benefit amount)	7,682.9	8,617.0
Total Base Period Earnings		
Less than $14,625	7.2	9.1
$14, 625 to $20,921	17.7	17.0
$20,921 to $29,520	28.6	27.6
$29,520 to $42,437	25.2	25.1
$42,437 to $57,394	13.8	14.3
$57,395 or more	7.4	6.7
(Average Wage)	47,952.2	47,432.3
Local Labor Market Characteristics		
USDOL Region		*
1	9.4	10.9
2	14.4	14.5
3	44.6	38.6*
4	9.6	9.5
5	18.2	19.6
6	3.9	6.8*

Characteristic (Based on UI Claims Data)	TAA Participants[a]	
	Respondents	Nonrespondents[b]
Unemployment Rate (Percents)		
Less than 3.7	7.3	9.6
3.7 to 4.4	16.0	18.0
4.4 to 5.1	24.7	24.5
5.1 to 6.0	26.7	26.4
6.0 to 7.3	16.6	14.1
7.3 or higher	8.8	7.3
(Average unemployment rate)	5.4	5.3*
2004 Poverty Rate (Percents)		
Less than 7.8	6.9	7.7
7.8 to 9.8	11.9	11.2
9.8 to 12.8	24.4	26.0
12.8 to 15.4	26.4	27.6
15.4 to 18.0	19.6	18.1
18.0 or higher	10.8	9.4
(Average poverty rate)	13.6	13.4
Average Earnings per Job in 2005		*
Less than $28,058	11.8	10.5
$28,058 to $31,760	21.4	18.1
$31,760 to $38,026	29.6	26.2
$38,026 to $44,925	22.7	24.2
$44,925 to $55,716	9.3	11.5
$55,716 or higher	5.3	9.5*
(Average earnings)	36,743.2	39,039.2*
Percentage of Workers in Manufacturing		
Less than 5.3	8.1	9.1
5.3 to 7.9	12.1	14.2
7.9 to 11.2	19.4	20.6
11.2 to 15.8	25.5	24.2
15.8 to 21.8	20.7	18.8
21.8 or higher	14.3	13.0
(Average percentage)	14.1	13.5
Percentage Population Growth Between 2000 and 2005		
Less than -1.9	9.9	10.1
-1.9 to 0.2	17.8	18.3
0.2 to 2.8	28.1	28.0
2.8 to 5.9	20.9	20.5
5.9 to 12.3	13.9	14.0
12.3 or higher	9.4	9.2
(Average growth)	3.8	3.6
ERS Urban-Rural Continuum Rating		*
Metropolitan area with at least 1million persons	28.6	34.2*
Metropolitan areas with fewer than 1 million persons	31.5	32.2
Small area adjacent to a metropolitan area	32.9	25.8*
Small area not adjacent to a metropolitan area	7.0	7.7
Sample Size	**1,850**	**896**

Source: Baseline and follow-up interview data, UI claims data, and the local area characteristics.
Note: All figures are calculated using sample weights and significance tests account for design effects due to weighting and clustering.

[a] Initial participation status designations using the UI/TRA claims data were updated for baseline completers using baseline survey information on TAA service receipt.

[b] Significance levels pertains to tests of differences between respondents and nonrespondents in the treatment group.

*Difference is statistically significant at the .05 level based on a chi-square test (for categorical variables) or t-tests (for binary or continuous variables).

CHAPTER V

THE COLLECTION OF ADMINISTRATIVE RECORDS DATA

A. INTRODUCTION

Chapter I discussed the study team's acquisition of the certified-worker lists and the initial UI/TRA claimant files that were needed to draw the initial treatment and comparison group samples. That chapter discussed the extent to which the 26 study states were able to provide certified-worker lists for all petitions certified by USDOL during the relevant time interval of November 1, 2005, through October, 31, 2006, and it compared the numbers of workers listed on each worker list the states provided with the estimated number of affected workers listed on the petitions by the petition filers. It further discussed how the certified-worker lists and claimant files were used to draw the treatment and comparison groups for both the certified-worker and TRA beneficiary samples.

After these data were in hand and the survey and administrative data samples were selected, the evaluation team collected additional administrative data from the study states to: (a) document the TAA and WIA services that TAA participants received, (b) measure the employment and earnings of treatment and comparison group members in the several years before and after the claim begin date for the UI claim associated with the each worker's trade-related job separation or comparison claim for comparison group members (which we refer to as the trigger claim), and (c) measure UI/TRA benefit receipt for the several years after the trigger claim. Data sources we requested of states for these purposes included:

- UI/TRA claimant data for the period subsequent to the one covered by the initial UI/TRA claimant files the states had already provided;
- UI wage record data;
- TAPR data describing the services received by TAA participants (or data from the Workforce Investment Streamlined Performance Reporting System, or WISPR, for those two states—Pennsylvania and Texas—that maintain TAA participant data in a WISPR, rather than a TAPR, format); and
- WIASRD data for WIA participants (or data from the WISPR for states using this format);

The acquisition of these data and their use in developing measures of service receipt and employment outcomes are discussed in this chapter. A summary of which states supplied these data is shown in Table V.1.

Table V.1. Administrative Data that Each State Contributed

	UI/TRA Claimant Data	UI Wages	TAPR Data	WIASRD Data
Alabama	X	X	--	X
Arkansas	X	X	X	X
California	X	X	X	X
Colorado	X	X	X	X
Florida	X	X	X	X
Georgia	X	X	X	X
Illinois	X	X	X	X
Indiana	X	X	X	X
Kentucky	X	X	X	X
Maryland	X	X	X	X
Michigan	X	X	X	X
Minnesota	X	X	X	X
Missouri	X	X	X	X
North Carolina	X	X	X	--
New Hampshire	X	X	X	X
New Jersey	X	X	X	X
New York	X	X	X	X
Ohio	X	X	X	X
Pennsylvania[a]	X	X	X	X
Rhode Island	X	X	X	X
South Carolina	X	X	X	X
Tennessee	X	X	X	X
Texas[a]	X	X	X	X
Virginia	X	X	X	X
Washington	--	--	X	X
Wisconsin	X	X	X	X
N of States	**25**	**25**	**25**	**25**

[a] TAA and WIA data provided in WISPR format.

Note: The UI/TRA claimant file referred to here represents an extract covering the period through June 30, 2010. All 26 states additionally supplied an initial UI/TRA claimant extract, as well as certified worker lists, which were used for drawing the initial sample.

B. SUBSEQUENT UI/TRA CLAIMANT DATA

The initial UI/TRA claimant files we requested of states were to cover all workers who received a first payment of any type from April 1, 2004, up to the most recent period for which data were available at the time the state prepared its data extract for us. Because some states provided the data promptly following our request, while others took well over one year, the initial claimant files the states provided cover considerably different date ranges. Table I.4 (presented in Chapter I) presented these ranges.

1. Additional UI/TRA Claimant Data Requested

We requested updated claimant data for sample members for two purposes:

- So that we could complete a claims history for sample members for the several years after the trigger claim.
- So that we could identify spells of TRA benefit receipt not in evidence in the initial claimant extract the states provided, which would cause some persons initially classified as TAA nonparticipants to be reclassified as TAA participants.

Working backward from the due date for the draft impact report (June 2011), and allowing time for data cleaning and analysis, we anticipated that we could reasonably hope to obtain claimant data covering the period up through June 30, 2010. Since some states' initial extracts covered the period only up through December 2006 (see Table I.4), the additional data being requested would cover a subsequent 3.5-year period for some states. We were concerned that some states would archive their data before the extract was prepared for us, and therefore requested the additional data in two separate phases. First, we requested data in the fall of 2009 to cover the period ending with the state's initial extract (see Table I.4) up to the time this second extract was prepared, and, second, we requested data in the fall of 2010 to cover the period ending with the second extract up through June 2010. We were particularly aggressive in pursuing the intermediate extract with states whose initial extracts covered only a very early period. Operationally, we prepared files with Social Security Numbers (SSNs) of sample members in each state, and requested the state to provide updated claimant data for these sample members (in California, pseudo-IDs were used). Note that each state was given the SSNs only for the sample members drawn within that state; in other words, we did not look for evidence of claim receipt for sample members in one state who might have moved to another state and drawn a claim there. All data transmissions occurred after file encryption and using secure file transfer protocols (FTPs).

Some states complied with our request and delivered these two additional extracts (three extracts in total, including the initial extract), while others assured us that archiving was not a problem and elected to submit only a single additional extract to cover the entire period subsequent to the initial extract, up through June 30, 2010. Table V.2 shows which states provided the various phases of data (with Phase I representing the initial UI/TRA extract that states provided, from which we drew the sample). Note from the exhibit that Washington was not able to provide any UI/TRA data subsequent to the initial extract, but that each of the remaining states provided data that covered the full period we requested. In fact, 21 states provided data for a month or more beyond June 30, 2010, since data for these additional months were available at the time the state prepared its extract for us.

Table V.2. Phases of UI/TRA Claimant Data Provided by the Study States

	Phase I	Phase 2	Phase 3
Alabama	X		X
Arkansas	X		X
California	X		X
Colorado	X		X
Florida	X	X	X
Georgia	X		X
Illinois	X		X
Indiana	X	X	X
Kentucky	X	X	X
Maryland	X	X	X
Michigan	X	X	X
Minnesota	X	X	X
Missouri	X	X	X
North Carolina	X	X	X
New Hampshire	X	X	X
New Jersey	X	X	X
New York	X		X
Ohio	X	X	X
Pennsylvania	X	X	X
Rhode Island	X	X	X
South Carolina	X		X
Tennessee	X	X	X
Texas	X	X	X
Virginia	X	X	X
Washington	X		
Wisconsin	X		X

2. Assembling the Analysis File

In formulating the data requests, the initial UI/TRA extract was to include data on all claims on which a *first* payment was made anytime from September 2004, up to the date the extract was prepared. Each subsequent data extract was to include data for claims against which *any* payment was made (whether a first payment or not). In this way, claims on which payments were still being made at the time the prior extract was provided would be included in the subsequent extract, so that updated data on that claim would be included. Data items we requested for each claim included:

claim type (e.g., UI or TRA), claim begin date, first payment date, last payment date, maximum benefit amount, and account balance.

An implication of asking states to provide data on any claim on which a payment was made for each subsequent extract is that information on the same claim (that is, a claim with the same benefit-year begin date for the same individual) could be included in each of several extracts the states provided. When we concatenated the files across the various extracts within each state, we always selected the instance of the claim that occurred in the later extract. In this way we ensured that we were including in the final analysis file the instance of the claim that was most complete, and discarding the instance while the claim was still in process.

UI and TRA claims data were processed separately. The final analysis file for UI claims included 187,943 records, with a record corresponding to a unique claim (that is, a claim with a unique claim begin date) for each of the 86,660 unique sample members (that is, treatments or controls in any of the certified-worker administrative or survey samples, or the TRA-beneficiary sample, exclusive of those in Washington). Every sample member appeared at least once in the file, since receipt of UI was a condition for sample selection. Of the unique sample members, 36,010 appeared only once, 23,939 appeared twice, 13,597 appeared three times, 7,181 appeared four times, and 5,933 appeared five or more times.

We created a similar file for TRA claims. This file included 22,789 unique claims. These represented claims for 21,289 unique sample members who received at least one TRA payment. Of these individuals, 93.9 percent had just a single TRA claim associated with them.

We next created timelines of both the UI and TRA claims histories. For each sample member, quarter 0 (qtr0) represented the calendar quarter in which the trigger claim occurred, and information on claim receipt and payment amounts was calculated for up to 25 quarters after the trigger claim. Note that the same individual could be represented as a sample member with more than one trigger claim; for example, an individual who established multiple UI claims over the time period covered by the data could have been selected as a comparison group member with one trigger claim for one treatment group member and as a separate comparison group member with a different trigger claim for a different treatment group member. Therefore, separate histories were calculated whenever an individual appeared with a separate trigger claim; however, this occurred rarely.[18]

In creating each timeline, the following two variables were created for each quarter after the trigger claim, for both UI and TRA payments:

- Number of weeks in which a payment was made during the quarter
- Amount paid in the quarter.

[18] As was described in Chapter II, because matching was performed with replacement, an individual in the comparison group was commonly matched to more than one treatment group member. However, almost always these individuals were matched based on the *same* trigger claim. Only rarely was an individual matched as a comparison with different trigger claims to different treatment group members.

In calculating the number of weeks paid during a quarter, it was assumed that payments were made during each week between each claim's first payment date and last payment date.[19] Weeks of payments were then apportioned to calendar quarters according to the quarter in which the weeks fell. Amounts paid by quarter were calculated by defining an amount paid against the claim (defined as maximum benefit amount minus account balance), straight-lining this amount over the weeks paid, and then similarly apportioning across calendar quarters based on when the weeks occurred. As was discussed above, many individuals had established more than one claim during the time period covered by the study. In these cases, information from the individuals' multiple claims was used in combination to create the weeks and amounts paid over time.

For 18.3 percent of the UI timelines that were created, the first/last payment interval for one component claim overlapped with the first/last payment interval for a second component claim, such that the sum of the weeks paid exceeded 13 weeks in at least one calendar quarter. In these cases, weeks paid was capped at 13 weeks. Further, six percent of claims records had missing data on one or more key elements necessary for them to be used in creating the timelines—such as first or last payment dates, maximum benefit amounts, or account balances. These records were excluded from the calculations of the timelines.

Figure V.1 shows the proportion of timelines with non-missing data in each of the calendar quarters following the trigger claim. For purposes of this tabulation, an individual that did not collect UI during a given quarter is treated as non-missing, so long as that quarter falls within the period of observation covered by the data. The maximum number of quarters of observation for treatment group members is 25, which corresponds to quarters of observation up through June 20, 2010, for individuals whose trigger quarter was in the first quarter of 2004. The minimum number of quarters of observation is seven, for individuals whose trigger quarter was in the third quarter of 2008.

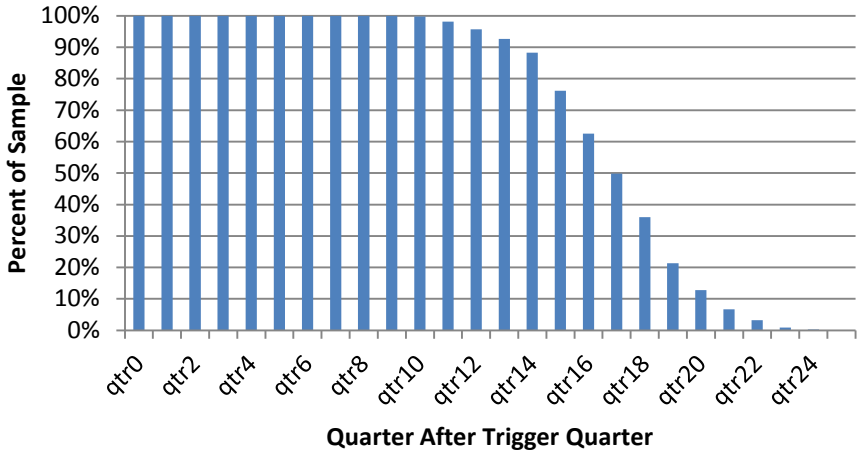
C. UI WAGE RECORDS

As was discussed in Chapters III and IV, the baseline and follow-up surveys include information about jobs held by sample members, including hours worked per week and earnings for jobs held before and after the job that was associated with the trigger claim. However, UI wage records provide an alternative source for measuring employment and earnings.

Each source offers advantages and disadvantages. Survey data provide rich information about each job held beyond hours worked and earnings, including job duties and receipt of fringe benefits, and this source provides coverage of informal jobs and employment not covered by the UI system or in a state different from the state in which the sample member was drawn. On the other hand, UI wage data are not subject to the potential recall and non-response bias of survey data. Moreover, this source can be used to measure employment and earnings for the large administrative data sample, while survey data are available for only the smaller sample administered the surveys.

[19] We realize this assumption will not always be accurate, since payments on claims can be suspended for various reasons, such as when a worker falls out of compliance with the work-search requirements.

Figure V.1. Percent of the Sample (Treatments and Comparisons) with Nonmissing Observations for Quarters Following the UI Trigger Quarter



Source: UI claimant data supplied by 25 states.

Note: For purposes of this exhibit, a sample member is defined as a unique individual with a unique trigger claim; thus, the exhibit properly speaking represents the percentage of timelines with valid data for quarters after the trigger claim (qtr0). The figure treats as nonmissing a quarter in which a sample member did not receive a UI payment, so long as that quarter is within the date range covered by the data.

1. UI Wage Record Data Requested

We requested UI wage data for two purposes:

- To characterize the pre-trigger claim work history for all treatments and comparisons, covering at least a one-year period. These characterizations could then be used to further test the adequacy of the matching between treatment and comparison group members, and could serve as covariates in a regression model to further improve the precision of the impact estimates.
- To measure the post-trigger employment and earnings for the administrative records sample in a comprehensive and comparable way.

Accordingly, we requested states to provide UI wage data for all sample members to cover all quarters of employment from July 1, 2003 up through December 21, 2009. Since the trigger claim for some treatment group members could be as early as September 2004, having wage data as far back as July 2003 ensured that we would have at least one year of work history data for each treatment group member. The December 2009 end date for the data extract was specified in recognition that it normally takes two full quarters after a quarter ends for state UI agencies to obtain and post wage data to their systems. Thus, data requests made in the fall of 2010 could cover both the final UI/TRA claimant extract specified above, as well as the UI wage extract, and each set of extracts could be readied for analysis in time for meeting the project's deadlines.

As with the request for the claimant data, however, we recognized that some states archive UI data and hence began requesting the data in the summer of 2009, covering data up through December 2008, and we then made a subsequent request in the fall of 2010, to cover the period through December 2009. As with the claimant files, some states provided the data in two extracts, while others waited and provided a single extract in fall 2010/early 2011 covering the full period. If a state provided two files, we concatenated the files, so that each state file would cover all quarters of earnings.

Operationally, we transmitted the files of SSNs (or a pseudo-ID common across administrative data sources, in California) to each state using secure FTP transmission. Each state received only the SSNs for sample members drawn within its state. Although transmitting the SSNs of *all* sample members to each state would have enabled us to capture sample members' cross-state earnings (at least earnings found in the UI wage systems of any of the states in the sample), the confidentiality agreements we negotiated with states precluded our doing this.

For various reasons, not all states were able to provide data for all quarters. Table V.3 shows gaps in coverage, by state. Note that, due to their having archived older data, Alabama was not able to provide quarterly earnings records prior to 2006, nor was Virginia able to provide data prior to 2005. Texas included some data for all quarters, but the number of sample members with earnings from 2003Q3 through 2004Q3 was so few as to lead us to conclude that data for these quarters were incomplete; two other states had single-quarter gaps in coverage. Washington was not able to provide data for any quarter.

As part of our review of data quality, we examined the percentage of sample members who did not appear in the quarterly earnings files with earnings for even a single quarter. We reasoned that every sample member should have at least one quarter of earnings, because all were UI claimants who needed to establish a base period for their claims. In most states, every sample member from that state did indeed appear with earnings for at least one quarter; the small number of exceptions is shown in the final column of Table V.3.[20]

2. Assembling the Analysis File

In specifying our request, we asked states to provide quarterly earnings, by employer and calendar quarter, and weeks and hours worked if these additional items were available. Thus, individuals would appear for as many quarters as they had earnings, and those with earnings from two (or more) jobs in a quarter would have two (or more) records of earnings data for the quarter. We summed across the records for multiple employers, by quarter, to develop a measure of total quarterly earnings for each sample member. Absence of an earnings record in a quarter for a given sample member was taken to indicate zero earnings during that quarter, so long as the quarter was within the date range covered by the data the state provided.

[20] Texas has an unusually high rate (17 percent) of sample members without records in the UI wage file the state provided; as noted, this is due to the states providing very few wage records for the 2003Q3 through 2004Q3 period.

Table V.3. Quarters of Coverage of UI Wage Data, and Percent Sample Members without a Quarter of Earnings

	Earliest Quarter	Latest Quarter	Missing Quarters	Percent in Sample with no Earnings
Alabama	2006Q1	2009Q4	Prior to 2006Q1	2.0%
Arkansas	2003Q3	2009Q4	None	0.0%
California	2003Q3	2009Q4	None	0.0%
Colorado	2003Q4	2009Q4	2003Q3	0.0%
Florida	2003Q3	2009Q4	None	0.0%
Georgia	2003Q3	2009Q4	None	0.0%
Illinois	2003Q3	2009Q4	None	0.0%
Indiana	2003Q3	2009Q4	None	0.0%
Kentucky	2003Q4	2009Q4	2003Q3	1.4%
Maryland	2003Q3	2009Q4	None	2.2%
Michigan	2003Q3	2009Q4	None	0.0%
Minnesota	2003Q3	2009Q4	None	0.0%
Missouri	2003Q3	2009Q4	None	0.0%
North Carolina	2003Q3	2009Q4	None	1.8%
New Hampshire	2003Q3	2009Q4	None	0.0%
New Jersey	2003Q3	2009Q4	None	0.0%
New York	2003Q3	2009Q4	None	0.0%
Ohio	2003Q3	2009Q4	None	0.0%
Pennsylvania	2003Q3	2009Q4	None	0.0%
Rhode Island	2003Q3	2009Q4	None	0.6%
South Carolina	2003Q3	2009Q4	None	0.0%
Tennessee	2003Q3	2009Q4	None	0.0%
Texas	2003Q3	2009Q3	Partial for some quarters	17.0%
Virginia	2005Q1	2009Q4	Prior to 2005Q1	0.1%
Washington	NA	NA	NA	NA
Wisconsin	2003Q3	2009Q4	None	0.0%

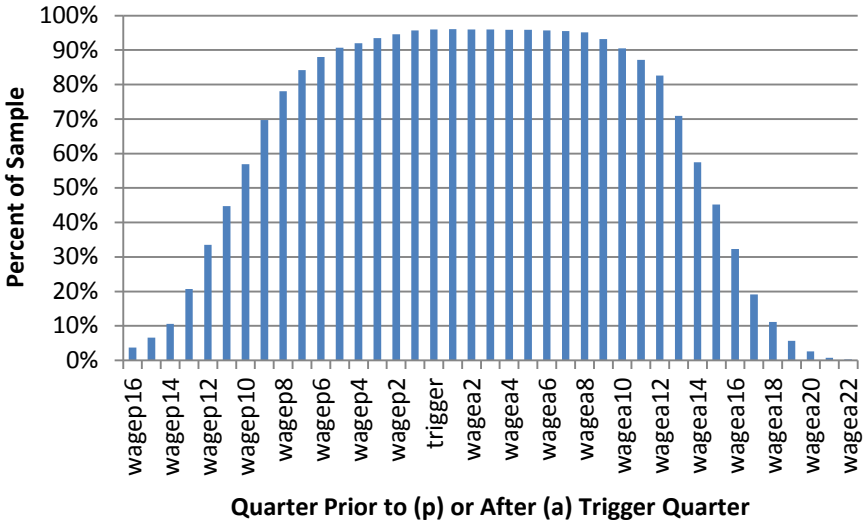
We next created timelines of pre-trigger claim and post-trigger claim earnings histories. As with the timeline we created for the claimant file, quarter 0 represented the calendar quarter in which the trigger claim occurred for each sample member. Depending on when the trigger claim occurred, a sample member could have an earnings history timeline that covered 16 quarters prior to the trigger claim (p1 to p16) and up to 23 quarters after the trigger claim (a1 to a23). As with the timelines we created for the claimant file, separate earnings histories were calculated whenever an individual appeared with a separate trigger claim. The percent of sample members with valid observations in each of these quarters is shown in Figure V.2. Note that zero earnings is counted as a valid observation and implies that no earnings were found for an individual for that quarter, but that the quarter was within the date range of data supplied by the state. Individuals not appearing with earnings for at least one quarter would be counted as having missing data for all quarters, and quarters falling outside the date range of the data provided would also be counted as missing

In creating each timeline, the following two variables were created for each sample member for each quarter:

- Earnings in the quarter
- Number of employers in the quarter.

We additionally had requested that states provide data on quarterly weeks worked. However, too few states had this data item available to make the creation of a timeline for quarterly weeks worked worthwhile.

Figure V.2. Percent of the Sample with Nonmissing Observations of UI Wage Data, by Quarters Prior to and After the UI Trigger Quarter



Source: UI wage data supplied by 25 states.

Note: For purposes of this exhibit, a sample member is defined as a unique individual with a unique trigger claim; thus, the exhibit properly speaking represents the percentage of timelines with valid data for quarters before and after the trigger claim. Zero earnings are counted as a valid observation.

D. TAPR DATA

We also requested that states supply us with TAPR data. These data were to serve two functions:

- To measure the services received by TAA participants
- To determine whether some individuals initially classified as TAA nonparticipants (see Chapter I) should be reclassified as TAA participants because of their subsequent receipt of TAA services.

1. TAPR Data Requested

As with the UI wage files, we requested that states provide us with TAPR data in two phases, once in the summer of 2009 and again in the fall of 2010. The first extract was to cover anyone who participated in TAA anytime from April 1, 2004, up to the date the extract file was prepared, and whether or not the individual had yet completed services and exited; April 1, 2004, was chosen because this represented the earliest date that someone covered by a petition between November 1, 2005, and October 31, 2006 (the petition date range used in this study) would have been likely to have participated in TAA. The second extract was to cover anyone who participated anytime since the period covered by the first extract, up through June 30, 2010. Since a worker becomes eligible for TAA when he or she experiences a separation anytime from one year before the petition filing date up through two years after the petition certification date, persons covered by the certified petitions used as the sample frame for this study must have experienced their separation by October 31, 2008, which would give them eight subsequent months to enroll in TAA and still be covered by the data extracts the states provided. As with the wage files, 16 states sent data in two phases, while 9 elected to send a single extract covering the entire period; the states that supplied one versus two TAPR extracts are nearly the same as shown in Table V.2. One state, Alabama, was not able to provide TAPR data at all.

To allow states flexibility in preparing the data extracts, we allowed them the option of sending a file for *all* TAA participants who participated anytime in the date range specified above, or for just those sample members that participated in TAA. In the latter case, we transmitted the file of sample members' SSNs to states, with each state getting a file of SSNs for only those sample members drawn from its state. Also to ease states' burden, we asked them to send the file with just those data items that are a part of their official TAPR transmission to USDOL, as part of the states' normal reporting requirements, but with SSNs appended (the files states submit to USDOL use pseudo-ID numbers).

2. Assembling the Analysis File

A complication was that the TAPR reporting instructions changed several times during the time period that the TAPR was to cover, with the most radical change occurring as part of USDOL's Training and Employment Guidance Letter (TEGL) 6-09, issued September 2009. Thus, not all states submitted data in the same format. Specifically, five states submitted data that conformed to TEGL 6-09 requirements, nine states submitted data with mixed formats (some data items were submitted using the pre-TEGL 6-09 format and others were submitted using the later format), and two states submitted using the Workforce Investment Streamlined Performance Reporting (WISPR)

format. The remaining states submitted according to the earlier TAPR reporting requirements. Regardless of the format the state used, we created a core of essential data items regarding participant services that adhered to a common coding format, and concatenated the state files to create a combined analysis file.

Also as part of assembling the analysis file, we needed to distinguish between duplicate records and different spells of participation for the same individual. Duplicate records are defined to be records within a state with the same SSN and date of participation (i.e., the date the individual began receiving services). By contrast, different spells occur because an individual can participate in TAA multiple times, as when an individual begins participating in TAA, exits from the program, and then returns for additional services and begins a new spell of participation.[21] Duplicate records—that is, records with the same SSN and date of participation within a state—might come about when states sent data in two phases. In this case, an individual might have begun a spell of participation but not yet exited when the first extract was prepared, and then would appear again in the second extract, with potentially additional services added to the record. However, we also found that, within a given extract, some states submitted many duplicate records, although not all data fields would necessarily be the same across the duplicates. Regardless of the reason the duplicate occurred, we handled duplicates by always selecting the record with the non-missing or later date of exit. Even so, an individual will appear multiple times in the combined analysis file if he or she had multiple spells of participation (that is, spells with different dates of participation). There were 21,755 sample members that appeared at least once in the TAPR files the states submitted; of these, 92.1 percent appeared only once, 7.6 percent appeared twice (that is, with two different dates of participation), and .3 percent appeared three or four times.[22]

3. Using the File to Identify TAA Services

TAPR data are known to be incomplete and the extent of coverage varies from state to state (USGAO 2006). For example, not all services are captured and not all states include those who receive only a waiver. We examined the TAPRs for evidence of anomalies by tabulating the percentage of those appearing in the TAPR with various services, by state. These results are shown in Table V.4. The table also shows the percentage of those in the TAPR appearing with only a waiver.

Previous reports produced by the evaluation team have already drawn attention to state differences in the extent to which waivers are issued to those not accessing other TAA services, and the extent to which waivers are recorded in the TAPRs even when they are issued (D'Amico et al. 2009). The final two columns of the table lends confirming evidence that the recording of waivers is highly variable. Thus, some states (e.g., Illinois, Kentucky, and others) show a widespread issuance—in Illinois and Indiana, nearly everyone has received a waiver—while in other states waivers are used (or at least recorded in the TAPRs) infrequently. Even more telling, in some states

[21] According to TAPR (and WISPR) specifications, an individual must be exited if he or she has not had a program service for 90 consecutive days. So, when a gap in service appears, the individual must be exited, and, if he or she returns for additional services, the individual must be re-enrolled and a new spell of participation is started.

[22] A sample member is defined to be anyone who was selected for either the treatment or comparison groups for any of the certified-worker or TRA-beneficiary samples.

Table V.4. Percent of Those Appearing in the TAPR with Various Services, by State

	Training	TRA	ATAA	Allowance	Waiver	Waiver-Only
Alabama	NA	NA	NA	NA	NA	NA
Arkansas	80.4	13.8	0.3	52.3	47.7	11.6
California	71.8	0.0	0.0	1.7	71.4	11.1
Colorado	54.9	62.5	2.5	2.5	0.3	0.0
Florida	91.3	0.0	0.0	5.2	8.7	6.1
Georgia	62.9	76.5	0.1	7.5	68.1	12.9
Illinois	53.7	28.5	0.2	6.1	96.6	41.9
Indiana	35.6	50.5	2.9	13.4	96.0	26.7
Kentucky	23.3	14.5	0.1	0.5	70.5	53.4
Maryland	61.8	52.9	7.2	0.3	38.4	0.0
Michigan	38.9	29.4	1.6	2.1	70.3	28.5
Minnesota	62.0	32.1	0.0	3.9	83.9	36.1
Missouri	79.7	3.6	0.0	0.0	1.0	1.0
North Carolina	57.0	71.3	3.2	0.2	72.2	9.2
New Hampshire	38.8	38.0	13.6	15.9	57.4	18.2
New Jersey	67.5	28.3	0.0	0.5	33.4	20.4
New York	26.5	66.6	1.7	0.2	88.1	21.1
Ohio	34.7	27.9	0.0	1.2	43.2	15.2
Pennsylvania	82.4	43.6	0.0	66.1	36.2	1.8
Rhode Island	68.6	88.4	2.7	3.2	98.6	3.8
South Carolina	31.2	0.0	0.0	7.0	99.1	68.8
Tennessee	28.2	94.2	2.9	0.0	98.3	0.3
Texas	49.0	75.5	1.0	51.6	91.6	18.0
Virginia	99.6	100.0	0.0	41.9	0.6	0.0
Washington	NA	NA	NA	NA	NA	NA
Wisconsin	38.9	62.9	5.8	18.9	0.0	0.0

Source: TAPR supplied by states for sample members.

Note: Allowances represent job search, relocation, subsistence or travel allowances.

(e.g., Kentucky, South Carolina, and others) 40 percent or more of their TAPR records represent persons who have *only* received a waiver, while the percentages are zero in other states (e.g., Colorado).

Based on qualitative data collected as part of the evaluation, we believe that it is very likely that these differences largely reflect differences across states in the extent to which waivers are being recorded in the TAPR rather than in the extent to which waivers are issued. Largely because of this fact, the evaluation team decided to exclude waiver-only participants from the definition of what it means to be a participant, and thereby lend more consistency in the definition of TAA participation across states. Further, because of states' inconsistent use of waivers, the percentages with any other service are misleading as indicators of the extent to which states emphasize one service rather than another. For example, Kentucky and South Carolina seem to have a low incidence of training relative to other states, but this occurs only because so many persons who receive only a waiver are included in the base of the calculation in these states but not in others. Again, excluding waiver-only participants from the base yields more meaningful comparisons of service usage.

Another important anomaly across states is that California, Florida, and South Carolina appear not to include TRA recipients in the TAPRs they provided us, and the incidence of TRA receipt seems implausibly low in some other states (e.g., Missouri). Fortunately, we have the UI/TRA claimant files as another source of data for evidence of the receipt of this service. Results of a mapping of evidence of receipt of TRA from these two sources is shown in Table V.5. With the base restricted to those who show evidence of TRA from either source, this table shows the percentage shown as having received TRA from the UI/TRA claimant file but not the TAPR, from the TAPR but not the UI/TRA claimant file, or from both sources.

This tabulation suggests that, overall, only about one-half of those with evidence of TRA are consistently recorded as such in both data sources. Further, where evidence is inconsistent between the sources, TRA receipt is much more commonly indicated in the UI/TRA claimant file than in the TAPRs the states provided us; in fact, an individual's appearing in the TAPR as a TRA recipient without our having obtained a TRA claimant record for that individual is quite uncommon.

Further, degree of consistency (or lack of consistency) is quite variable across states. For example, as has already been discussed, in some states no evidence of TRA receipt appears in the TAPR (e.g., California, Florida, South Carolina). In other states, the TAPR and UI/TRA sources are in almost complete accord (e.g., Colorado, Georgia, North Carolina, New Hampshire, Rhode Island, Tennessee, and Virginia).

We treat evidence of TRA receipt from either of these data sources in defining receipt of TRA using administrative data for the impact analysis.

Table V.5. Percent of Those with Evidence of TRA in the TAPR and UI/TRA Claimant Files, by State

	Shown as Receiving TRA in UI/TRA File But Not TAPR File	Shown as Receiving TRA in TAPR File But Not UI/TRA File	Shown as Receiving TRA in Both Sources
Alabama	NA	NA	NA
Arkansas	77.7	0.2	22.1
California	100.0	0.0	0.0
Colorado	0.2	4.4	95.4
Florida	100.0	0.0	0.0
Georgia	2.5	6.5	91.0
Illinois	61.1	6.1	32.8
Indiana	18.7	4.3	77.1
Kentucky	78.7	6.3	15.0
Maryland	32.2	13.0	54.8
Michigan	58.1	1.1	40.8
Minnesota	60.3	3.5	36.2
Missouri	95.1	0.0	5.0
North Carolina	1.2	0.6	98.2
New Hampshire	1.0	0.0	99.0
New Jersey	60.8	0.0	39.2
New York	15.6	1.8	82.7
Ohio	35.9	5.1	59.0
Pennsylvania	50.4	0.4	49.2
Rhode Island	6.6	2.6	90.9
South Carolina	100.0	0.0	0.0
Tennessee	0.3	5.3	94.4
Texas	5.7	11.8	82.6
Virginia	0.0	7.2	92.8
Washington	NA	NA	NA
Wisconsin	22.9	5.1	72.0
OVERALL	48.2	2.8	49.0

Source: TAPR and UI/TRA data supplied by states for sample members.

Note: Persons with evidence of TRA receipt from either the UI/TRA claimant files or the TAPR files are included in the base in the calculation of these percentages.
NA = Alabama did not supply TAPR data, so evidence of TRA receipt comes only from the UI/TRA claimant file. Washington did not supply full UI/TRA claimant data, so evidence of TRA receipt comes only from the TAPR.

4. Using the File to Verify Petition Number

For the certified-worker sample, workers appeared on a certified worker list the states provided to us, and the lists identified the petition under which the workers were covered. The TAPR also includes the petition number as one of the standard reporting fields, so we can compare the petition number from the certified worker list with the petition number for the same individual when we merged data from the two sources.

The petition numbers match exactly for 92 percent of the 8,243 certified-worker TAA participants who appear at least once in the TAPR. In at least one quarter of the remaining cases, the petition number included in the TAPR is clearly wrong, because the number has too few digits to be a valid petition number. Thus, we have substantial confirmation that our method of identifying certified workers by drawing from the states' certified worker lists does indeed yield a pool of correctly identified TAA eligibles.

E. WIASRD DATA

The Trade Act of 2002 emphasizes that persons covered under a petition filed for TAA should have access to One-Stop core and intensive services even before a petition determination is made. Moreover, USDOL's guidance for the TAA program emphasizes the importance of linkages and coordination with WIA, so that TAA participants can have access to case management and other services (such as supportive services) that the TAA program cannot readily provide. Accordingly, we requested that states provide us with WIASRD data so that we could have a fuller picture of the employment and training services that TAA participants accessed. We requested these data only once, in the fall of 2010, to cover anyone who participated in WIA anytime from April 1, 2004, up to June 30, 2010, and regardless of whether the worker had yet exited. As with the TAPR, the April 2004 start date was chosen because it represents the earliest date that a worker would likely be co-enrolled in WIA if the individual was also being served under a petition certified during the study's petition-certification date range. As Table V.1 showed, every state but one (North Carolina) was able to provide WIASRD data.

Merging information from the WIASRD for TAA participants in the certified-worker sample enabled the research team to directly measure the co-enrollment rate of TAA participants in WIA. Further, the TAPR has an indicator as to whether a TAA participant is co-enrolled in WIA, so we have these two data sources to measure the WIA co-enrollment rate. Of the 3,716 certified-worker TAA participants indicated as being co-enrolled in WIA from one or the other source, both sources agree only 23.4 percent of the time (Table V.6).[23] In almost all of the remaining cases, the TAA participant appears in the WIASRD, but the TAPR provides no evidence that the individual was co-enrolled.[24]

[23] Alabama and North Carolina were excluded from this tabulation, because they submitted either a TAPR or a WIASRD, but not both. Pennsylvania and Texas were also excluded, because they use WISPR reporting system and, hence, submitted single extracts covering both WIA and TAA enrollments. Finally, Washington is not included, because it did not provide all administrative data necessary to define the certified-worker sample.

[24] The lack of correspondence is overstated to some degree, because an individual could have been enrolled in WIA completely apart from his or her spell as a TAA participant.

Table V.6. Percent of Co-enrolled TAA Participants with Evidence of WIA Enrollment in the TAPR and WIASRD, Overall and by State

	Evidence of WIA Enrollment from TAPR but not the WIASRD	Evidence of WIA Enrollment from TAPR but not the WIASRD	Evidence of WIA Enrollment from both Sources
Alabama	NA	NA	NA
Arkansas	21.7	77.3	1.0
California	5.2	53.0	41.7
Colorado	0.0	100.0	0.0
Florida	0.0	41.4	58.6
Georgia	0.5	76.8	22.7
Illinois	0.0	100.0	0.0
Indiana	0.0	100.0	0.0
Kentucky	0.3	74.7	25.0
Maryland	15.5	45.3	39.2
Michigan	3.2	24.1	72.7
Minnesota	0.0	100.0	0.0
Missouri	0.0	100.0	0.0
North Carolina	NA	NA	NA
New Hampshire	0.0	100.0	0.0
New Jersey	2.1	77.1	20.8
New York	0.6	36.7	62.7
Ohio	0.0	100.0	0.0
Pennsylvania	NA	NA	NA
Rhode Island	0.0	100.0	0.0
South Carolina	0.0	100.0	0.0
Tennessee	0.0	28.5	71.5
Texas	NA	NA	NA
Virginia	0.0	100.0	0.0
Washington	NA	NA	NA
Wisconsin	0.0	100.0	0.0
OVERALL	2.2	74.4	23.4

Source: TAPR and WIASRD data supplied by states.

Note: The base includes those TAA participants identified as enrolled in WIA in the TAPR or who appear in the WIASRD, or both.

An additional problem in using the WIASRD is that states use different thresholds as the level of service required for recording individuals as WIA participants. Although USDOL's guidance on this has grown clearer of late (see TEGL 17-09, issued March 2010), not all states have consistently included self-service WIA customers in their WIASRDs during much of the period covered by this study's data collection. Accordingly, for purposes of defining WIA enrollment in the evaluation, we require the individual to have received a staff-assisted service of some type. This criterion was operationalized by requiring a nonmissing value for the dates of either the individual's first staff-assisted core service, first intensive service, or first training service. About nine percent of certified workers and their comparison group counterparts who were listed in the WIASRD did not receive a WIA staff-assisted service by this definition.

CHAPTER VI

THE FOLLOW-UP SURVEY SAMPLE FOR THE IMPACT ANALYSIS

A. INTRODUCTION

The primary sample used for the impact analysis included those in the certified-worker sample who completed follow-up interviews (2,054 TAA participants and 1,796 comparisons). As discussed in Chapter II, we found that initially-matched TAA participants and comparisons had similar characteristics as measured using the original UI claims and local area matching variables. However, as discussed in Chapters III and IV, based on the baseline survey data, we found some important treatment-comparison differences in job characteristics that were not used for the initial matching—such as expected recall status, reasons for job loss, union membership, the availability of fringe benefits, company size, and job tenure. Furthermore, because of survey nonresponse, many of the originally matched treatment-comparison triads were "broken."

To account for these issues, we *rematched* the treatment and comparison groups in the follow-up survey sample using the full set of matching variables from the UI claims, local area, and baseline survey data. This process yielded a comparison sample that was as similar as possible to the treatment sample at the time of job loss on a large number of observable variables that were likely to be correlated with key study outcomes. The outcomes for this comparison sample served as the counterfactual for the impact study: the outcomes that the TAA participant sample would have experienced had they not received TAA benefits.

The remainder of this chapter discusses this rematching process to yield our final survey sample for the impact analysis. Section B provides an overview of the kernel matching algorithm that was used to assign weights to comparison group members, and Section C discusses this weighting algorithm in more detail. Section D discusses the matching variables, Section E discusses our approach for selecting an appropriate model specification, and Section F discusses the matching results. In Section G, we discuss alternative matching methods that were used for the sensitivity analysis. Section H discusses weights that were constructed to account for differences in the length of the follow-up period across sample members. Finally, Section I discusses weights that were used for the subgroup analysis.

B. OVERVIEW OF THE KERNEL MATCHING APPROACH

The kernel matching algorithm that we used in the rematching process assigned weights to each comparison group member based on how similar that worker's baseline characteristics were to those of the TAA participants. Similar to the initial, nearest neighbor matching process, we used the propensity score, developed by Rosenbaum and Rubin (1983), to measure the similarity of the samples. The propensity score, the estimated probability that a worker in the combined sample was a TAA participant, was estimated using baseline characteristics and reduced the problem of matching on a multidimensional space of characteristics to a single dimension. Matching on the propensity score was particularly useful in our case, because we had a rich set of baseline characteristics but a limited sample size, so that many "cells" defined by values of each characteristic would likely have had few or no observations (Heckman et al. 1998).

Estimated propensity scores were obtained as predicted probabilities from a logit model where a binary indicator of treatment or comparison group status was regressed on a large number of matching variables from the UI claims, baseline survey, and local area data. The estimated propensity score for each TAA participant was then compared to the propensity score for each comparison group member, who was assigned a weight based on the difference between the two

propensity scores. The weights were selected so that the weighted average of comparison group propensity scores—and therefore the weighted average of each comparison group characteristic—could be as similar as possible to those for each TAA participant. After comparison group weights were constructed for each TAA participant, the weights were summed for each comparison group member across all matches. Application of these follow-up weights to the comparison group therefore made the group mimic the characteristics of the TAA participant sample as a whole.

Under kernel matching, each TAA participant was compared to *all* comparison group members in the follow-up sample, regardless of the initially-matched triads. In addition, due to small state sample sizes, we estimated a single logit model by pooling observations across states and including state indicator variables as matching variables, rather than estimating separate models by state as was done in the initial matching process.

We adopted the kernel matching approach for several reasons. First, this approach generated balanced treatment and matched comparison group samples on all the matching variables. Second, appropriate matches were found for nearly all treatment group members. Finally, this approach generated an analysis sample that included nearly all comparison group members in the follow-up sample, thereby increasing the precision of the impact estimates.

We also considered and rejected other matching approaches. For example, we rejected nearest neighbor matching *with* replacement, because we found that many comparisons did not match to treatments using this approach, and thus, a large percentage of comparisons would be excluded from the analysis. This occurred primarily because the follow-up survey sample contained roughly equal numbers of treatments and comparisons, and, as discussed, there were important treatment-comparison differences in their baseline characteristics; thus, a small number of comparisons were repeatedly matched to TAA participants. We also considered performing nearest neighbor matching *without* replacement. However, this matching would have resulted in every follow-up sample comparison group member being matched to a treatment group member with equal weight, which would have led to poor quality matches. This is consistent with the finding of Deheija and Wahba (2002) that matching without replacement performs poorly when the treatment and comparison samples do not have substantial overlap in the propensity score distributions.

We did, however, construct comparison samples using nearest neighbor matching methods, and used these samples in the sensitivity analysis to assess the robustness of our study findings (see Section G below and Chapter VIII).

C. CONSTRUCTION OF WEIGHTS FOR THE COMPARISON SAMPLE

The kernel matching algorithm constructed a set of follow-up sample weights W^{FU} for the comparison group so that the weighted average of their outcomes could serve as a defensible counterfactual for the experiences of the TAA participant sample. The first step in the construction of these weights involved the estimation of a logit regression model, where the dependent variable TAA_i, indicating whether worker i was a member of the TAA participant sample, was regressed on a $1xk$ vector of baseline characteristics $\mathbf{X}_i$:

$$(1) \quad \Pr(TAA_i = 1) = \Lambda(\mathbf{X}_i\boldsymbol{\gamma}) = \frac{\exp(\mathbf{X}_i\boldsymbol{\gamma})}{1+\exp(\mathbf{X}_i\boldsymbol{\gamma})},$$

where $\boldsymbol{\gamma}$ is a kx1 parameter vector.

To estimate (1), we weighted each TAA participant by the sample weight W_i as described in Chapter VII below. Because comparison group members were not selected from a probability sample, there is no theoretical basis for choosing comparison group weights W_i for the propensity score estimation. Thus, we initially set W_i equal to a constant for each comparison member such that the sum of the weights across all comparisons equaled the sum of the weights across the TAA participant sample within each state.

From the estimation results, we obtained each worker's estimated propensity score as the predicted probability, $\hat{q}_i = \Lambda(\mathbf{X}_i\hat{\boldsymbol{\gamma}})$, of belonging to the TAA participant sample. This propensity score $\hat{q}_i$ was used to perform the kernel matching and to construct the comparison group weights. To describe this process, define T to be the set of TAA participants and C to be the set of comparison group members. Similar to Heckman et al. (1998), each comparison group member i was assigned a follow-up sample weight using the following formula:

$$(2) \quad W_i^{FU} = \sum_{j \in T} W_i^{KM}(j),$$

where $W_i^{KM}(j)$ is a weight based on the kernel matching given by

$$(3) \quad W_i^{KM}(j) = \frac{W_j W_i K\left(\hat{q}_j - \hat{q}_i\right)}{\sum_{k \in C} W_k K\left(\hat{q}_j - \hat{q}_k\right)},$$

and $K(\cdot)$ is a symmetric kernel function (that is defined below).

Intuitively, when matching to TAA participant j, equation (3) assigned a weight $W_i^{KM}(j)$ to comparison i that decreased in the difference in propensity scores $\left|\hat{q}_j - \hat{q}_i\right|$ due to the shape of the kernel. As can be seen in equation (3), $\sum_{i \in C} W_i^{KM}(j) = W_j$. Using equation (2), we summed these comparison weights across all TAA participants, and the resulting W_i^{FU} comparison group weights were used for the impact analysis. Because the kernel matching process did not change the TAA participant weights, we defined $W_j^{FU} = W_j$ for each TAA participant.

We followed Epanechnikov (1969) in defining the kernel function as:

$$(4) \quad K(u) = \begin{cases} \frac{3}{4}\left(1 - \left(\frac{u}{h}\right)^2\right), & |u| < h \\ 0, & |u| \geq h \end{cases}$$

where *h*, the bandwidth, is positive. Because the kernel function is zero whenever the argument exceeds the bandwidth, a comparison group member whose propensity score differed from that of a TAA participant by more than that amount was assigned a zero weight.

The selection of an appropriate bandwidth *h* involved a tradeoff between the number of comparison sample members who were matched to a TAA participant and the similarity of the matches. When using the Epanechnikov kernel (or any kernel with a finite tail), the weights $W_i^{KM}(j)$ in equation (3) were not defined for TAA participant *j* if there were no sufficiently similar comparisons for whom $\left|\hat{q}_j - \hat{q}_i\right| < h$. These TAA participants therefore would need to be excluded from the impact analysis because they lack a counterfactual. Furthermore, dropping these participants, analogous to "trimming" the sample as in Heckman et al. (1998), would potentially make the TAA participant sample less representative of the full participant population. Increasing the bandwidth would help alleviate this problem, but potentially at the expense of match quality.

We selected the bandwidth to balance match quality and the number of dropped observations. A primary objective of the analysis was to produce nationally representative impact estimates, so the cost of dropping TAA participants from the sample was high. As discussed below in Section E, we found that the kernel matching algorithm applied with a bandwidth of h=0.07 yielded matched participant and comparison samples with similar baseline characteristics and that included nearly all treatment and comparison workers.

D. BASELINE CHARACTERISTICS INCLUDED IN THE KERNEL MATCHING

We selected baseline characteristics for the rematching process that were deemed likely to be correlated with the outcomes of interest, and where there were treatment-comparison differences. The matching variables could be categorized as follows:

- ***UI benefit information:*** Maximum benefit amount, base period earnings, benefit year start date, days between UI benefit year start date and first payment.
- ***Local area characteristics:*** unemployment rate in year of job loss, poverty rate in 2004, average earnings per job in 2005, percent of workers in manufacturing in 2005, percentage population growth from 2000 to 2005, urban-rural continuum rating
- ***Location:*** State in which UI claim was filed
- ***Demographic characteristics:*** Gender, age, race/ethnicity, education, marital status, household size, number of children, language spoken at home
- ***Characteristics of the UI trigger job:*** Occupation, firm size, tenure, weekly hours worked, hourly earnings, total earnings, reason for leaving, expected recall status, union status, severance package, fringe benefits. We did not match on actual recall status, because actual recall status could be an outcome of the TAA program, if for instance, TAA-certified firms were less likely to recall their workers if they have access to generous TAA benefits. However, in the impact analysis, we conducted sensitivity analyses excluding sample members who were recalled to their jobs (see Chapter VII of the main impact report).

- ***Characteristics of other jobs:*** Number of jobs before the UI trigger job, total earnings in the year before job loss
- ***Financial characteristics at the time of job loss:*** Whether spouse/partner was working, homeownership, receipt of public assistance, total income
- ***Health at the time of job loss:*** Self-reported health status, health insurance status

For the rematching, we did not initially use information on the industry of the worker's pre-UI job. This was because the use of the three-digit North American Industry Classification System (NAICS) codes resulted in many industry categories that contained only a small number of sample members, and the use of the two-digit NAICS codes produced only a small number of categories that had no predictive power in the matching models. However, late in the project, ETA obtained state-level data from the Quarterly Census of Employment and Wages (QCEW) on the percent change in private industry employment between 2004 and 2009 (by three-digit NAICS code). We used these data to construct an *industry growth rate* measure between 2004 (the period just before most sample members lost their jobs) and 2009 (which is a reasonable follow-up period for assessing which industries were growing and declining).[25] Four categorical industry growth variables were then included in the matching models to ensure that the treatment and matched comparisons came from industries with similar medium-term growth rates, and new kernel weights were calculated. These revised kernel weights were used in sensitivity analyses to examine the robustness of the employment and earnings impacts. The new weights produced very similar impact results to those based on the original kernel weights (the correlation was greater than .9 between the two sets of weights).

E. SELECTING THE APPROPRIATE MODEL

A critical methodological challenge for any propensity score analysis is the criteria for selecting an appropriate propensity score model. There is typically no theoretical basis for choosing a particular model specification, which may include baseline characteristics in any functional form. Furthermore, kernel matching can assign follow-up weights to any comparison sample, so that the selection of *initial* weights for the comparison group is somewhat arbitrary.

We specified the model to satisfy two analysis goals. The first criterion was that the baseline characteristics in the above list should not differ between the participant and comparison groups when the follow-up weights were applied. The second criterion was that as few treatment and comparisons observations as possible should be excluded from the analysis. Using fewer observations could result in lower statistical power, and excluding TAA participants could make the sample less representative of the participant population.

[25] For 8 percent of the sample, we could not use the QCEW data to calculate changes in employment between 2004 and 2009 because the QCEW state-industry cell was masked for confidentiality reasons or the survey respondent reported a non-manufacturing industry. For these cases, we imputed changes in employment using a state-level regression imputation procedure where the regression models included age, gender, race, education, and pre-UI wages.

We identified the final specification through an iterative process. First, we estimated the logit model in equation (1) using the entire follow-up sample of TAA participants and comparisons from all states.[26] The vector of covariates $\mathbf{X}_i$ included categorical variables for each of the characteristics listed above and state indicators.[27] We then estimated the predicted propensity score $\hat{q}_i$ and calculated follow-up weights W_i^{FU} using equations (2) and (3). After applying these weights to the sample, we compared the weighted means of each baseline characteristic to that of the TAA participant sample and conducted statistical tests for significant differences. We conducted *t*-tests for each variable and also conducted an *F*-test on the overall set of matching variables. Any significant differences indicated that the model specification was not successful in creating a matched comparison sample.

We experimented with several model specifications to improve the initial matches. First, we included interactions of multiple variables, especially those that did not match in the first attempt. However, this procedure was not successful in eliminating remaining differences between the treatment and comparison groups. Instead, we were more successful using an iterative weighing process, where the $W_i^{FU}(t)$ kernel weights from iteration t were used as the comparison group weights W_i for iteration $(t+1)$, which were then used to construct a new set of kernel weights $W_i^{FU}(t+1)$, and so on. The intuition behind this approach is that after each iteration, the comparison group should more closely resemble the TAA participant sample.

The third iteration of this procedure satisfied our criteria for identifying satisfactory weights. As discussed below in Section F, there were no statistically significant differences between the participant and comparison samples for any of the matching characteristics after the follow-up weights were applied. Furthermore, all participants were matched to at least one comparison group member, and no comparisons had a zero weight and were excluded from the analysis. Additional iterations did not noticeably improve the matching, and led to some participants having no matches.

Finally, we experimented with different bandwidths, but found that the selected bandwidth value of $h = .07$ best balanced our matching criteria.

F. ASSESSING MATCH QUALITY

Table VI.1 compares the distribution of each baseline characteristic for the TAA participant and comparison samples. The TAA participant sample is weighted by the sampling weights W_i so that it represents the TAA participant population as a whole. The comparison sample distribution is shown using the following sets of weights:

[26] We determined that matching within each state was infeasible due to the large number of covariates and the small sample sizes within each state. However, state dummies were included in the propensity score estimation to minimize differences in the weighted size of the treatment and comparison groups within each state.

[27] We excluded the number of children variable due to its high correlation with the household size measure.

- ***The follow-up weights W_i^{FU} that were constructed using the procedure described in the previous section.*** These were the primary weights used in the impact analysis.
- ***Follow-up weights that were constructed from a propensity score model that included matching variables from the UI and local area data but not the survey data.*** These weights are important, because the certified-worker and TRA beneficiary administrative records samples were matched to comparison group members using models that included the UI and local area data only. Thus, to assess the credibility of these matches, it is important to use the survey sample to compare results using the primary weights to those based on the UI and local area data only.
- ***Constant weights within each state.*** Under this approach, each comparison group member in the follow-up sample was assigned a state-specific constant weight such that the sum of the weights across all comparisons equaled that of the TAA participant sample within each state. The kernel weights were not used for this analysis.

We find that the primary weights were successful in matching participants and comparisons. As shown in Columns 2 and 3 in Table VI.1, the TAA participant sample does not differ significantly from the comparison sample on any baseline characteristic across the three data sources. In contrast, using the constant state-specific weights, the TAA participant population differs significantly from the comparison sample on several survey-related measures, which is consistent with the analyses presented in Chapters III and IV. Similar differences apply to the weights that were constructed using only the UI and local area data (Table VI.1); this was expected because the comparison sample was initially selected to match participants using these data. Finally, the primary weights yielded similar industry growth categories across the two research samples (Table VI.2).

G. ASSESSING ALTERNATIVE WEIGHTING APPROACHES

In order to test the sensitivity of our analysis to the details of the matching algorithm, we constructed a series of alternate follow-up weights and, for each one, conducted statistical tests to examine the joint significance of treatment-comparison differences for key groups of matching variables. Each set of weights was constructed in the same way as the preferred weights, except for the following details:

- **Using UI and local area data only.** As discussed, we also created weights using the kernel matching procedure based on a propensity score model that was estimated using only characteristics that were available in the UI and local area data. These weights were critical for assessing the credibility of the matched comparison samples for the administrative records samples.
- **Adopting a small bandwidth.** The bandwidth was set to h=0.02.
- **Adopting a large bandwidth.** The bandwidth was set to h=0.10.
- **Using a uniform kernel function.** A uniform kernel with bandwidth h=0.07 was used. This kernel function assigns the same weight to each comparison group member whose estimated propensity score lies within the specified bandwidth.

Table VI.1. Baseline Characteristics of TAA Participants and Comparisons in the Follow-Up Survey Sample, by Weighting Scheme

Variable (Percent)	TAA Participants	Comparison Sample		
		Primary Weights (all covariates)	UI Only Weights	Initial Weights
Individual Characteristics from the UI Claims Data				
Benefit Year Start Date				**
Before 12/11/05	22.0	22.6	21.7	26.2**
12/11/05 to 5/28/06	29.4	30.0	29.3	25.2*
5/28/06 to 10/29/06	29.5	28.6	29.6	23.5**
Later than 10/29/06	19.1	18.7	19.4	25.1**
Days Between Benefit Year Start Date and First Payment				
Less than 7	29.7	29.5	29.9	30.7
7 to 15	30.0	31.9	30.1	29.1
16 to 20	17.8	18.5	17.4	19.5
More than 20	22.5	20.0	22.6	20.7
(Average days)	22.0	23.9	26.0*	24.8
Maximum Benefit				
Less than $4,524	8.0	7.3	8.2	8.9
$4,524 to $6,048	18.8	17.7	18.7	17.7
$6,048 to $7,878	24.7	25.7	24.6	24.2
$7,878 to $9,412	26.0	26.8	25.7	25.1
$9,412 to $11,700	16.5	16.2	16.7	16.5
Total Base Period Earnings				
Less than $14,625	7.5	6.7	7.8	7.6
$14,625 to $20,921	16.8	16.5	16.7	16.9
$20,921 to $29,520	27.4	27.0	27.7	25.8
$29,520 to $42,437	25.2	26.8	24.9	26.7
$42,437 to $57,394	15.4	15.5	15.3	15.0
$57,394 or more	7.7	7.5	7.6	8.0
(Average wage)	$32,965	$32,981	$32,827	$33,163
Local Area Characteristics				
Unemployment Rate in Year of Job Loss				
Less than 3.7	6.5	6.5	6.4	7.1
3.7 to 4.4	14.3	13.2	14.0	15.1
4.4 to 5.1	25.2	25.7	25.2	23.3
5.1 to 6.0	27.9	28.6	27.7	28.7
6.0 to 7.3	15.9	15.0	16.4	15.4

Variable (Percent)	TAA Participants	Comparison Sample		
		Primary Weights (all covariates)	UI Only Weights	Initial Weights
7.3 or higher	10.2	10.9	10.3	10.5
(Average rate)	5.4	5.5	5.4	5.4
Poverty Rate in 2004				
Less than 7.8	7.7	7.8	7.4	8.8
7.8 to 9.8	12.6	13.4	12.1	13.6
9.8 to 12.8	25.0	23.9	25.3	23.1
12.8 to 15.4	26.7	26.2	27.2	24.6
15.4 to 18.0	17.7	18.3	17.7	19.1
18.0 or higher	10.3	10.3	10.4	10.8
(Average rate)	13.4	13.3	13.5	13.4
Average Earnings per Job in 2005				
Less than $28,058	11.7	13.2	12.0	12.4
$28,058 to $31,760	20.2	19.6	20.0	21.5
$31,760 to $38,026	27.8	26.5	27.9	26.6
$38,026 to $44,925	23.8	24.2	23.8	21.6
$44,925 to $55,716	9.7	9.1	9.4	10.8
$55,716 or higher	6.9	7.4	6.9	7.2
(Average earnings)	$37,470	$37,246	$37,451	$37,533
Percentage of Workers in Manufacturing in 2005				
Less than 5.3	7.3	7.2	7.1	7.5
5.3 to 7.9	12.1	12.2	11.4	13.2
7.9 to 11.2	20.1	19.0	21.0	20.4
11.2 to 15.8	26.1	26.7	25.9	24.3
15.8 to 21.8	19.7	20.8	19.6	20.8
21.8 or higher	14.7	14.2	14.9	13.7
(Average percentage)	14.0	14.2	14.1	13.8
Percentage Population Growth Between 2000-2005				
Less than -1.9	9.9	9.4	9.9	10.0
-1.9 to 0.2	17.5	16.5	18.1	16.5
0.2 to 2.8	27.9	27.3	28.7	28.0
2.8 to 5.9	22.6	23.5	23.4	24.3
5.9 to 12.3	13.4	15.1	11.7	13.7
12.3 or higher	8.6	8.3	8.3	7.5
(Average rate)	3.6	3.6	3.5	3.5

Variable (Percent)	TAA Participants	Comparison Sample		
		Primary Weights (all covariates)	UI Only Weights	Initial Weights
ERS Urban-Rural Continuum Rating in 2003				
Metropolitan area with at least 1 million persons	29.0	29.1	28.7	30.3
Metropolitan area with fewer than 1 million persons	33.2	32.4	33.2	32.1
Small area adjacent to a metropolitan area	30.5	30.7	30.5	29.5
Small area not adjacent to a metropolitan area	7.3	7.8	7.7	8.1
Location				
State of UI Claim				
Arkansas	5.1	4.0	5.1	5.1
California	3.4	3.4	3.6	3.4
Colorado	2.1	1.7	2.0	2.1
Florida	1.1	1.2	1.2	1.1
Georgia	6.6	6.5	6.6	6.6
Illinois	5.8	5.6	6.1	5.8
Indiana	4.0	3.4	4.4	4.0
Kentucky	1.7	1.5	1.8	1.7
Maryland	2.2	2.4	2.1	2.2
Michigan	3.8	3.7	3.8	3.8
Minnesota	0.8	0.8	0.7	0.8
Missouri	1.1	1.1	1.2	1.1
New Hampshire	1.2	1.2	1.2	1.2
New Jersey	2.7	2.7	2.6	2.7
New York	2.7	2.5	2.8	2.7
North Carolina	16.9	18.1	16.5	16.9
Ohio	4.2	3.4	4.4	4.2
Pennsylvania	6.1	6.0	6.0	6.1
Rhode Island	1.9	1.7	1.9	1.9
South Carolina	2.3	2.3	2.0	2.3
Tennessee	7.0	8.1	7.1	7.0
Texas	1.7	1.7	1.7	1.7
Virginia	5.5	4.9	5.3	5.5
Washington	1.9	2.0	1.7	1.9
Wisconsin	3.6	4.8	3.5	3.6

Variable (Percent)	TAA Participants	Comparison Sample		
		Primary Weights (all covariates)	UI Only Weights	Initial Weights
Demographic Characteristics from the Survey Data				
Male	48.1	47.6	48.1	46.9
Race and Ethnicity				
White, Non-Hispanic	65.3	64.8	65.9	65.3
Black, Non-Hispanic	20.3	19.9	19.9	21.7
Hispanic	8.2	9.1	8.3	7.3
Other	6.2	6.1	5.9	5.8
Age at Baseline Interview				
16 to 40	24.1	23.7	24.2	22.2
41 to 50	30.3	28.6	30.5	28.8
51 to 60	30.2	31.1	30.2	33.6
61 or over	15.3	16.6	15.1	15.5
(Average age)	48.6	49.4	48.6	49.3
Highest Education Completed			**	**
Less Than High School	16.1	17.1	15.5	15.3
High School Diploma or GED	60.5	60.9	57.6	57.6
Some College	17.6	16.3	17.5	17.5
Bachelors or More	5.9	5.7	9.4**	9.6**
Marital Status				
Married	59.5	58.9	59.2	58.5
Divorced	22.2	23.1	24.2	24.6
Never Married	18.2	18.0	16.6	16.9
Number in Household				*
1	19.7	19.9	19.4	19.8
2	33.8	34.6	35.1	36.1
3	20.6	19.4	22.8	22.7
4 or more	25.8	26.1	22.7	21.4**
(Average number)	2.7	2.6	2.6	2.6*
Number of Children				
None	54.2	56.8	52.4	54.4
1	20.5	18.2	22.8	22.0

Variable (Percent)	TAA Participants	Comparison Sample: Primary Weights (all covariates)	Comparison Sample: UI Only Weights	Comparison Sample: Initial Weights
2	17.0	17.3	16.6	15.9
3 or more	8.3	7.6	8.2	7.7
(Average number)	0.8	0.8	0.9	0.8
Type of Housing			*	*
Owns Home	72.5	72.5	68.2*	68.4*
Rents	22.2	21.7	26.5**	26.3**
Other Arrangement	5.3	5.7	5.1	5.1
Self-Reported Health				
Excellent	24.1	24.0	24.5	25.0
Good	55.7	54.6	54.2	54.2
Fair	16.6	17.7	16.3	16.3
Poor	3.6	3.7	5.0	4.5
Had Health Insurance	90.9	90.4	88.4*	88.6*
Income Sources At Time of Job Loss from the Survey Data				
Spouse Employed	42.0	39.7	40.1	40.0
Number of Jobs In Three Years Before UI Claim			**	**
1	80.7	81.0	70.5**	71.7**
2	13.0	12.8	18.9**	18.2**
3 or more	6.3	6.2	10.6**	10.1**
(Average number)	1.3	1.3	1.4**	1.4**
Total Earnings In Year Prior to UI Claim				
Less than $10,000	13.4	14.0	13.0	13.8
$10,000 to $20,000	23.8	22.8	21.7	21.0
$20,000 to $30,000	28.2	27.3	27.1	26.8
$30,000 to $50,000	25.4	26.3	27.7	27.5
$50,000 or more	9.2	9.6	10.4	10.9
(Average earnings)	$28,023	$27,992	$29,001	$28,945
Household Income				
Less than $14,625	10.7	10.3	12.1	12.7
$14,625 to $20,921	10.1	10.0	10.1	9.5
$20,921 to $29,520	13.4	14.7	13.7	13.4
$29,520 to $42,437	27.0	26.8	22.5**	22.5**

Variable (Percent)	TAA Participants	Comparison Sample: Primary Weights (all covariates)	Comparison Sample: UI Only Weights	Comparison Sample: Initial Weights
$42,437 to $57,394	16.1	15.6	17.3	17.5
$57,394 or more	22.7	22.5	24.4	24.4
(Average income)	$42,722	$41,866	$42,987	$42,878
Received Food Stamps	3.3	2.7	4.9	5.0*
Received Cash Assistance	10.6	10.8	10.9	11.1
Characteristics of the Job Leading to the UI Claim from the Survey Data				
Reason for Job Loss			**	**
Laid Off Due to Plant Moving/Closing	74.9	74.7	22.6**	22.5**
Laid Off For Other Reason	23.3	23.3	59.6**	60.4**
Not Laid Off	1.8	2.0	17.8**	17.2**
Expected to Be Recalled	10.6	10.7	32.3**	32.2**
Belonged to Union	30.7	30.6	19.4**	19.6**
Received Severance Pay	59.3	60.1	29.6**	30.2**
Offered Health Insurance	95.3	95.4	88.6**	88.9**
Offered Paid Vacation	95.5	94.4	88.1**	88.4**
Offered Paid Holidays	97.7	97.5	92.1**	92.5**
Offered Paid Sick Leave	55.2	53.9	48.8**	49.3**
Offered Retirement or Pension Benefits	83.9	81.9	70.3**	70.4**
Occupation			**	**
Manufacturing	72.0	72.3	60.5**	60.2**
Engineering, Business, or Management	6.3	6.1	9.2**	9.3**
Administrative Support	8.6	8.7	13.4**	14.0**
Other	13.1	12.9	16.8**	16.5**

Variable (Percent)	TAA Participants	Comparison Sample		
		Primary Weights (all covariates)	UI Only Weights	Initial Weights
Number of Employees			**	**
25 or fewer	10.0	10.2	20.9**	20.7**
26-100	22.1	22.6	27.6**	27.1**
101-500	46.4	46.2	36.5**	37.8**
More than 500	21.5	21.0	15.0**	14.5**
(Average number)	486	450	353**	355**
Job Tenure (Years)			**	**
0 to 2	10.1	9.6	21.5**	21.2**
2 to 5	12.0	11.7	18.4**	18.5**
5 to 10	25.2	25.2	21.3*	21.0**
10 to 20	29.7	29.2	20.4**	20.3**
More than 20	23.0	24.3	18.4**	18.9**
(Average tenure)	13.4	13.4	10.5**	10.6**
Hours Worked Per Week				
Less than 40	4.2	4.4	4.7	4.9
40	49.0	47.7	51.0	50.9
41 to 50	34.1	36.1	32.7	32.6
More than 50	12.7	11.8	11.7	11.6
(Average hours)	44.6	45.0	44.3	44.2
Hourly Earnings				
Less than $8.20	9.1	8.2	9.5	9.5
$8.21 to $10.20	15.2	15.3	17.3	17.1
$10.21 to $13.60	29.2	30.4	26.3	25.5*
$13.61 to $18.50	26.1	25.3	25.5	26.3
$18.51 to $25.00	14.4	14.7	14.6	14.4
More than $25.00	6.0	6.0	6.9	7.3
(Average earnings)	$14.77	$14.87	$14.91	$14.99

Notes: * represents a significant difference from the TAA participant population with $p<0.05$ and ** represents a significant difference with $p<0.01$. A * or ** in the same line as the name of a categorical variable indicates the result of an F test of the joint significance of all categorical variables in predicting membership in the TAA participant sample.

Table VI.2. Treatment-Comparison Differences in Industry Growth Category at Job Loss, for Original and New Kernel Weights

	TAA Participants	Comparison Group	Difference	Standard Error
Original Kernel Weight				
Average Percent Change in Employment in Job Loss Industry				
-100 to -43.5	25.9	14.5	11.4**	2.6
-43.5 to -29.7	24.5	18.6	5.9*	2.6
-29.7 to -17.7	24.8	28.5	-3.7	2.8
-17.7 to 19.5	24.8	38.4	-13.6**	3.0
(Average Percent Change in Employment)	-31.0	-24.7	-6.3**	1.0
New Kernel Weight Adjusting for Industry Decline				
Average Percent Change in Employment in Job Loss Industry				
-100 to -43.5	25.9	25.9	0.0	2.9
-43.5 to -29.7	24.5	23.1	1.4	2.9
-29.7 to -17.7	24.8	24.6	0.2	2.9
-17.7 to 19.5	24.8	26.5	-1.6	2.9
(Average Percent Change in Employment)	-31.0	-30.3	-0.7	1.1
Sample Size	2,054	1,796		

Source: Mathematica TAA Baseline and Follow-up Surveys.

Notes: Treatment group weights account for sample design and nonresponse, and comparison group weights are constructed using a kernel matching algorithm. Standard errors account for the two-stage sampling design. State-level industry employment measures from the Quarterly Census of Employment and Wages, 2004 and 2009. Industry employment is measured at the 3-digit industry level.

*/** Difference between TAA participants and comparisons is significantly different from zero at the 0.05/0.01 level, two-tailed test.

TAA = Trade Adjustment Assistance.

- **Using a single iteration for the weights.** The kernel matching algorithm was performed only once, without updating the kernel weights using the iteration method described above.

- **Using nearest neighbor matching with replacement.** Comparisons were matched to their nearest neighbor in the participant sample using the estimated propensity scores.

Table VI.3 compares the success of each of these weighting schemes. As expected, the UI-only weights produced a comparison sample that matched the treatment sample on the UI data characteristics, but not on survey data characteristics. Interestingly, the quality of the matches was not especially sensitive to the choice of kernel or bandwidth. In addition, we found that the comparison sample did not match as well after a single iteration of the kernel matching algorithm, as also noted in the previous section. Finally, the nearest neighbor matching procedure did not produce a well-matched comparison group.

Table VI.4 presents further sensitivity analyses for the different weighting schemes on the percentages of treatments and comparisons who would be dropped for analysis. We find that most specifications generated samples that included most of the participant and comparison samples. The preferred specification used the full participant and comparison samples. Some of the alternate specifications dropped a small number of participants and comparisons. The key exception, however, is the nearest neighbor algorithm, which dropped more than half of all comparisons (nearly 1,200 comparisons).

Table VI.3. Comparison of Alternative Matching Algorithms

Matching Model	Percentage of *t*-tests That Are Statistically Significant at the 5 Percent Level			*p*-Value from *F*-test on All Matching Variables
	All Matching Variables	UI / Local Area Data Only	Survey Data Only	
Preferred	0.0	0.0	0.0	1.00
UI only	19.5	0.0	38.1	0.00
Small bandwidth	0.0	0.0	0.0	1.00
Large bandwidth	0.0	0.0	0.0	1.00
Uniform kernel	0.0	0.0	0.0	1.00
Single iteration	3.7	3.8	3.6	0.25
Nearest neighbor	15.9	23.8	8.3	0.00

Notes: Each of the categorical variables corresponding to the list of baseline characteristics in section D were regressed separately on a dummy for TAA participant status, with each set of weights. The percentage of variables for which the coefficient was significant is indicated in the third, fourth, and fifth columns after the model name. The same TAA participant dummy was regressed on all variables, and the final column shows the *p*-value on an *F*-test of the joint significance of those variables.

Table VI.4. Dropped Sample Members and Design Effects Using Weights from Alternative Matching Algorithms

Weighting Scheme	Dropped Participants	Dropped Comparisons	Comparison Group Design Effect
Preferred	0	0	6.1
UI only	0	0	1.6
Small bandwidth	1	1	6.4
Large bandwidth	0	0	5.8
Uniform kernel	0	0	5.9
Single iteration	0	0	5.6
Nearest neighbor	0	1,199	7.5

Notes: The comparison group design effect is defined as the mean of the square of the comparison weights divided by the square of the mean.

Rematching introduced substantial variation into the comparison group weights. This variation, summarized by the comparison group design effect, arises because the same comparison individuals often served as good matches for many TAA participants, leading to large kernel weights for those comparisons. Table VI.4 shows that the preferred kernel matching algorithm produced weights with a design effect of 6.1. Altering the bandwidth, kernel function, or number of iterations had only a small impact on the design effect. Nearest neighbor matching produced a larger 7.5 design effect, likely because some comparison members were left unused despite being relatively close matches to one or more participants. The smaller design effect for weights based on the UI and local area data only reflects the fact that the participant and comparison groups were already well-matched on those characteristics.

H. KERNEL WEIGHTS FOR ESTIMATING IMPACTS IN YEARS 1 TO 3 AND IN YEAR 4

As discussed in Chapter IV, the length of the follow-up period differed across sample members. About 93 percent of treatments and 99 percent of comparisons in the analysis sample had at least three years of follow-up data, and 64 percent of treatments and 69 percent of comparisons had at least 4 years of data. The mean value is about 51 months for both research groups. The survey coverage period tended to be longer for comparisons than treatments, because it typically took longer to complete follow-up interviews with comparisons than treatments.

The impact analysis for the employment-related and training outcomes covered the four years (16 quarters) after the UI claim date. For these analyses, the year 1 to 3 samples included the approximately 95 percent of sample members whose data covered this period, whereas the year 4 samples included the approximately 65 percent of sample members with available data that covered this period. Accordingly, we constructed separate sets of follow-up weights for these two samples using the same kernel matching algorithm that was described above, and using separate sets of TAA participant weights W_j that are described in Chapter VII.

We also applied the same procedure to create weights for comparison samples for TAA participants and TAA nonparticipants who completed the baseline survey. These weights were used for analyses of outcomes measured in the baseline survey.

I. KERNEL WEIGHTS FOR SUBGROUP ANALYSES

The main impact report presents impact results not just for the full sample but also for two types of population subgroups: (1) subgroups defined by workers' baseline demographic and job characteristics, and (2) subgroups defined by participants' receipt of TAA-funded training, TRA, and ATAA services.

To estimate subgroup impacts for workers with a particular baseline demographic or job characteristic (for example, females or low earners), we used the weights defined above using the subsample of treatment and comparison group workers with that characteristic. For the service receipt subgroups, we constructed a new set of comparison group weights in two stages. First, we selected only those comparisons who matched to TAA participants who received the service of interest. Second, we assigned a weight to each comparison sample member *i* as follows:

$$(5) \quad W_i^{SS} = \sum_{j \in T^{SS}} W_i^{KM}(j)$$

where T^{SS} represents the set of TAA participants in the service subgroup of interest, and $W_i^{KM}(j)$ is defined as in equation (3). The estimated kernel weights from the full-sample model from above were then used to calculate (5). We did not estimate a separate propensity score model and rematch the comparison group members for each service subgroup.

CHAPTER VII

THE CONSTRUCTION OF SAMPLE WEIGHTS

A. INTRODUCTION

This chapter discusses the construction of weights for the TAA evaluation that adjust for the sample and survey designs, so that the impact estimates can be generalized to the certified-worker and TRA beneficiary sample universes. Section B discusses the construction of the treatment group weights for the baseline and follow-up survey samples (including corrections for potential survey nonresponse bias), and Section C discusses the construction of treatment and comparison sample weights for the administrative records samples. Finally, Section D provides notes on the regression models that were used to estimate program impacts.

B. CONSTRUCTION OF TREATMENT GROUP WEIGHTS FOR THE SURVEY SAMPLES

The main analysis sample for the impact analysis included TAA participants in the certified-worker survey sample and their matched comparisons who completed 23-month follow-up interviews. Some analyses also used samples of TAA participants and nonparticipants and their matched comparisons who completed baseline surveys.

This section discusses the construction of weights for treatment group workers in these survey samples. Weights for the corresponding comparison samples were constructed using the kernel matching methods discussed in Chapter VI. We used a similar approach for constructing treatment group weights for the baseline and follow-up interview samples. Thus, for simplicity, we discuss our approach for the follow-up survey sample only.

1. Overall Approach

The follow-up interview weights for the TAA participants were obtained by first calculating the following selection probability for each follow-up survey respondent:

$$(1)\quad p_{is} = q_s * r_{is} * c_{is},$$

where p_{is} is probability that worker i in state s completed a follow-up interview; q_s is the probability that state s was selected for the study; r_{is} is the probability that a worker was selected for follow-up interviewing among those in the sample universe in state s; and c_{is} is the probability that a worker completed the interview among those released for interviews. The weight for a worker, w_{is}, was then computed to be proportional to the inverse of the worker's selection probability p_{is}.

Next, we discuss in turn how we computed each probability in the right-hand-side in (1), and then discuss the construction of the weights and their properties.

2. Computing q_s

The probability that a state was selected for the study was computed using the probabilities displayed in Column 5 of Table I.1 in Chapter I above. These probabilities assume a 26-state design, and are 1 for the 17 certainty states.

As discussed in Chapter I, we randomly selected 25 primary states for the study, and all 25 states ultimately agreed to participate in the study. However, due to the initial reluctance of some states to participate, we contacted several replacement states to increase the chances that we would achieve our target state sample sizes. This process yielded 1 replacement state that agreed to participate in the study, and USDOL decided to include this state in the evaluation. Thus, the final sample includes 26 states.

As shown in Table I.1, the sampling probabilities are very similar using a 25- or 26-state design, and in particular, the two designs yield the same certainty states. Thus, for simplicity, the weights were constructed "assuming" the 26-state design. An alternative approach would have been to assign the primary states and the replacement state to different strata and to have obtained overall estimates by weighting estimates from each stratum. However, calculating standard errors using this approach would be difficult, because the stratum with the replacement state would have only one state.

3. Computing r_{is}

The probability that a worker in a particular state was selected for the follow-up survey sample was computed by dividing the number of workers released for follow-up interviewing in that state by the number of workers in the sample universe for that state. These calculations were conducted using the TAA participant counts in Tables I.7 that were adjusted for about 25 percent of workers who were initially defined as TAA nonparticipants but who were subsequently redefined as TAA participants using the baseline survey data. As discussed in Chapter I, the switching rates ranged from 5 to 49 percent across the 24 states that provided the TAPR and updated TRA data; we assumed a 25 percent switching rate for the two states that did not provide these data (AL and WA).

4. Computing c_{is}

Sample members in the study population who did not complete a follow-up interview may differ from more cooperative sample members who completed the survey in ways that are potentially related to worker outcomes. If not corrected, the effects of interview nonresponse could lead to estimates that might not be generalizable to the study population of TAA participants.

To correct for potential nonresponse bias in the estimates presented in the companion impact report, we adjusted the sample weights so that the weighted observable baseline (pre-UI claim) characteristics of respondents are similar to the baseline characteristics of the full sample of those released for baseline interviews (which was a random sample of the study population). These adjustments were performed using the following three steps:

1. ***We estimated a logit model predicting interview response.*** A binary variable—equal to 1 for a worker who was a respondent to the follow-up survey and zero for those in the baseline sample who did not complete the follow-up survey—was regressed on state indicators, baseline demographic variables constructed using UI claims data, and local labor market area characteristics (see Chapters I and II for a list of these data items).
2. ***We calculated a propensity score for each worker in the full sample.*** This score is the predicted probability that a worker was a respondent, and was constructed using the parameter estimates from the logit regression model and the worker's covariate values.

Workers with large propensity scores were likely to be respondents, whereas workers with small propensity scores were likely to be nonrespondents.

3. ***We constructed response probabilities (the c_{is} probabilities) using the estimated propensity scores.*** Workers were ranked by the size of their propensity scores, and divided into five groups of equal size. The response probability for a worker was the mean propensity score of the group to which the worker was assigned.

It is important to note that we did not include in the logit model an indicator of whether or not the worker completed a baseline interview, because follow-up interview response rates were about 80 percent for those who completed a baseline interview and 33 percent for those who did not. Thus, the baseline completion indicator would swamp all other covariates in the logit model and lead to very large follow-up survey weights for the small sample of 251 baseline noncompleters. Furthermore, the pre-UI claim characteristics of the baseline completers and noncompleters are much more similar to each other than to the follow-up survey noncompleters (not shown). Thus, our nonresponse adjustments do not distinguish between the baseline completers and noncompleters; consequently, the weights were constructed assuming that the follow-up survey noncompleters were proportionately allocated to the two baseline completer samples.

Finally, it is important to note that the propensity score procedure adjusts only for *observable* differences between survey respondents and nonrespondents. The procedure does not adjust for potential unobservable differences between the two groups. Thus, our procedure only partially adjusts for potential nonresponse bias.

5. Computing w_{is}

The selection probabilities, p_{is}, were calculated by multiplying estimates of q_s, r_{is}, and c_{is}. In addition, for the reasons discussed below, we also computed another set of selection probabilities, p^*_{is}, using c^*_{is} probabilities that were based on logit models that included state indicators only (but no demographic or local labor market area measures).

The follow-up survey weights for the TAA participants were computed in three stages. First, we calculated initial weights using the relation $w_{is} = 1/p_{is}$. Second, we calculated "scaling" weights using the relation $w^*_{is} = 1/p^*_{is}$. Finally, we scaled the initial weights so that their sum would equal the sum of the w^*_{is} weights within each state. We scaled the weights in this way so that state survey response rates would play a major role in the nonresponse adjustments. Under this scheme, corrections for differential response rates across demographic and local labor market area groups were performed within states, not between states.

The resulting weights sum to 27,918 workers for the 2,054 TAA participants in the analysis sample (Table VIII.1).[28] The weights range from 2.5 to 34.3, the median weight is 11.8, and the interquartile range for the weights is about 10 (Table VII.1). The weights for the comparison sample were constructed using the procedure described in Chapter VI. The comparison sample weights range from 0.1 to 359.7 and the median weight is 2.7 (Table VII.1).

[28] This universe count is slightly different than those discussed in Chapter I (27,565 participants) because the Chapter I figure was calculated under the assumption that states were sampled with replacement.

Using the follow-up survey analysis sample, the design effect due to weighting is about 1.37 for treatment group means and 5.64 for comparison group means.

Table VII.1. Distribution of the Follow-Up Survey Sample Weights for TAA Participants and Their Comparisons (Percentages)

Statistic for Weights	TAA Participants	Comparisons
Sum	27,918	27,918
Maximum	43.9	359.7
75th Quantile	18.4	12.1
Median	11.8	2.7
25th Quantile	7.2	1.0
Minimum	2.6	0.1
Sample Size	**2,054**	**1,796**

6. Adjusting for the Curtailed Two-Year Post-Certification Coverage Period

As discussed in Chapter I, the petition certification period for the study was between November 1, 2005 and October 31, 2006. Workers covered by a certification include those laid off between one year prior to the petition filing date and two years after the petition certification date. Thus, the sample frame for the study includes TAA-eligible workers who received UI benefits between September 1, 2004 and October 31, 2008.

As discussed in Chapter I, the UI claims data provided by the study states typically cover a large percentage of workers who were laid off from their jobs during the petition certification windows. However, UI coverage rates differ somewhat across states due to differences in the dates that the states extracted the data. For example, in states with late start dates (e.g., Alabama) or early end dates (e.g., Kentucky, Michigan, Missouri, Wisconsin), coverage rates are lower than for other states. Thus, we constructed weights to adjust for this unevenness of data coverage across states.

In order to construct these weights, we first examined the distribution of the number of months between each worker's UI claim date and their firm's petition certification date (see Chapter I). About 78 percent of UI claims in the population were filed during the nine months before and the nine months after the certification date. In addition, the main source of underrepresentation in the sample are workers who started their UI spells more than 12 months after the petition certification date; these workers constitute 10 percent of workers in the population, but only 4 percent of workers in the sample.

Accordingly, we constructed weights to adjust for this underrepresentation by multiplying the baseline weights by 10/4 for workers in the sample who started their UI spells more than 12 months after the petition certification date. This weighting scheme assumes that workers in the sample who were laid off late in the certification window are representative of all such workers in the population.

The estimates presented in the companion impact report are very similar using these adjusted weights and the unadjusted baseline weights. Thus, for simplicity, the impact report presents results using the unadjusted weights.

C. CONSTRUCTION OF WEIGHTS FOR THE ADMINISTRATIVE RECORDS SAMPLES

We used a very similar staged approach as described above to construct weights for the certified-worker and TRA-beneficiary administrative records samples and their respective comparison samples. In the first stage, we calculated the following selection probability for each worker in treatment group sample *j*:

$$(2)\ p_{isj} = q_{0s} * r_{0isj},$$

where p_{isj} is probability that worker *i* in state *s* was selected into sample *j*; q_{0s} is the probability that state *s* was selected for the study; and r_{0isj} is the probability that a worker was selected for the sample among those in the sample universe in state *s*. The state of Washington did not provide administrative records data; thus, q_{0s} and r_{0isj} were calculated assuming a 25-state design rather than the actual 26-state design (using the figures in Column 4 in Table I.1).[29]

In the second stage, the weight for a treatment worker in an particular administrative records sample, w_{isj}, was computed as $w_{isj} = (1/p_{isj})$, that is, as the inverse of the worker's selection probability. For the certified-worker samples, we estimated separate weights for TAA participants and nonparticipants after accounting for the workers who were initially defined as TAA nonparticipants but who were subsequently redefined as TAA participants.

In the final stage, we used equation (2) to calculate weights for the comparison group samples (that consisted of the two nearest neighbor matches to the treatment samples). We scaled the comparison group weights so that the comparison group and treatment group weights would sum to the same value. In most cases, this scaling was performed by dividing the comparison group weights by 2. However, as discussed, in Chapter II, about 10 percent of comparisons were found to be TAA participants and were removed from the analysis. Thus, in cases where a treatment group member had only one remaining comparison group match, we did not adjust the matched comparison group member's weight. In cases where a treatment group member had no remaining comparison group matches, we excluded the treatment group member from the analysis. Because some comparisons matched to more than one treatment, we summed the comparison group weights across the matches to obtain a single weight for each comparison group member.

Table VIII.2 displays summary statistics on the weights for each administrative records sample. The design effects due to weighting range from 1.2 to 1.4 for treatment group means and from 2.1 to 2.4 for comparison group means.

[29] For the analyses using the UI wage records, we did not adjust the weights for the TX data which had greater gaps in data coverage than for the other states (see Chapter V). Thus, the TX samples are somewhat underrepresented for these analyses.

Table VII.2. Distribution of the Weights for the Administrative Records Samples (Percentages)

Analysis Sample (Sample Size)	Summary Statistic for Weights						
	Sum	Maximum	75th Quantile	Median	25th Quantile	Minimum	Design Effect
Certified-Worker Administrative Records Sample							
TAA Participants (10,476)	30,910	7.2	4.0	3.0	1.7	1.2	1.2
Comparisons (16,282)	30,910	83.5	2.0	1.5	0.9	0.6	2.1
TAA Nonparticipants (8,913)	30,689	12.2	3.9	3.4	2.1	1.0	1.4
Comparisons (14,786)	30,689	103.9	2.1	1.7	1.2	0.5	2.4
TRA-Beneficiary Sample							
TAA Participants (9,877)	30,973	6.0	4.2	2.7	2.0	1.3	1.2
Comparisons (15,266)	30,973	57.3	2.3	1.5	1.2	0.7	1.9

D. NOTES ON ANALYTIC METHODS FOR ESTIMATING PROGRAM IMPACTS

As discussed in Chapter II.F of the main impact report, we estimated the impacts of TAA on key participant outcomes by comparing the mean outcomes of program participants and their matched comparisons using regression methods, where each study outcome was regressed on a treatment status indicator variable and a fixed set of baseline covariates. Baseline covariates were used in the analysis to improve the precision of the impact estimates, and to adjust for the small pre-existing differences between the treatment and comparison groups that remained after matching.

All estimates were obtained using the commonly-used statistical package SUDAAN, which uses the generalized Taylor series linearization procedures to estimate regression parameters and their variances. All estimates were calculated using sample weights, and estimated standard errors were adjusted for design effects due to unequal weighting and the clustering of workers within the study states.

As discussed in Chapter I of this methodological appendix, the evaluation design used a two-stage stratified design, where states (primary sampling units [PSUs])) were selected within regions (strata) with probabilities proportional to estimated size, and treatment group members were then selected from each study state. Comparisons were then matched to treatments using propensity score matching methods.

To account for this design, we estimated impacts using the with-replacement (WR) design option in SUDAAN, where workers in "certainty" and "noncertainty" states were treated differently. As discussed in Chapter I of this report, 17 states were selected with certainty (because these states had state selection probabilities greater than 1). The worker samples in each of these states were treated as a simple random sample from each state. This is because the certainty states were not "sampled," and hence, each certainty state is effectively its own stratum. Consequently, the variances of the estimated impacts in the certainty states do not need to account for between-state variability but only within-state variability. To adopt this procedure in SUDAAN, we assigned each certainty state to its own stratum and assigned each sample member in the certainty states to his or her own PSU (using a unique sample member ID).

The variances of the estimated impacts in the nine noncertainty states, however, needed to account for clustering due to the sampling of states (see Chapter I of the MN report). Thus, for these states, the regions were the strata, and the states were the PSUs. In practice, however, four regions had only one noncertainty state, making it difficult to estimate a between-state variance within these regions. Thus, we assigned all noncertainty states to the same stratum.

It is important to note that matching methods may introduce statistical uncertainty into the impact estimates. Intuitively, redrawing the treatment samples from the TAA population and rematching to the comparison sample might affect the weights constructed through the kernel matching algorithm, which in turn could affect the impact estimates. Heckman, Ichimura, and Todd (1998) derive the asymptotic properties of the kernel matching estimator for a model-based estimation of impacts. However, these methods do not account for multi-stage sampling designs such as the one used for the TAA evaluation. Adabie and Imbens (2002) discuss asymptotic variance formulas for simple matching estimators (such as nearest neighbor matching), but do not consider kernel matching estimators or methods to adjust the variance formulas for design effects under complex sampling designs. We conducted some empirical analyses using bootstrapping methods to reselect the treatment samples and to rematch treatments to comparisons, and found that design effects due to weighting and clustering appear to contribute substantially more uncertainty to our impact estimates than the matching procedure (not shown); thus, our standard errors assume that the weights of the matched comparison sample are not measured with error (that is, they are treated as fixed).

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