Understanding the Employment Outcomes of Trainees in the Trade Adjustment Assistance (TAA) Program Under the 2002 Amendments

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

December 2012

Jillian Berk

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EXECUTIVE SUMMARY

The Trade Adjustment Assistance (TAA) program, administered at the federal level by the U.S. Department of Labor (USDOL), provides assistance to manufacturing workers certified as having suffered trade-related job losses. First introduced in 1962 to facilitate the passage of free trade legislation, this federal program has undergone several reforms that expanded benefits and eligibility, including those in the TAA Reform Act of 2002, the Trade and Globalization Adjustment Assistance Act (TGAAA) of 2009, and the TAA Extension Act of 2011 (under which the program was operating at the time of this report's release). TAA also represents a substantial investment of federal funds; for example, in fiscal year 2008 alone, almost $260 million in funding for TAA services was distributed, and 42,000 new participants received program services.

In the wake of amendments to the TAA program enacted as part of the Trade Act of 2002, USDOL's Employment and Training Administration (ETA) funded a comprehensive *Evaluation of the TAA Program* designed to document the program's implementation and to assess the ability of the program to achieve its goal of helping participants find rapid and suitable reemployment. The evaluation included a nationally representative impact analysis using a matched comparison group design (Schochet et al. 2012a) in which education, employment, earnings, and other outcomes were examined in the four years following job loss.

In examining TAA's effectiveness as it operated under the Trade Act of 2002 we found that TAA led to increased receipt of reemployment services and that participation in TAA was associated with large increases in the receipt of education and training and the attainment of educational credentials. As we would expect, the labor market outcomes for participants were significantly worse during the first two years after the workers' job loss than they were for their matched comparison group members because more TAA participants were enrolled in training. By the end of the four-year observation period, TAA participants had almost entirely closed the gap in employment and earnings, and by one measure, they had pulled slightly ahead. We also found that estimated impacts on employment and earnings were more favorable for TAA participants who received training than for those who receive income support without TAA-funded training.

The impact findings for TAA trainees raise important questions for policymakers and practitioners, particularly as to what aspects of the training may have affected employment outcomes. The goal of this paper is to address these questions by providing a descriptive analysis of the training experiences of TAA participants and multivariate analysis of the relationship between employment outcomes and training program characteristics. While we are not able to determine causal relationships, the analysis can still identify factors that are potentially important in better employment outcomes and, hence, some limited evidence to help inform policy and programmatic practices as well as the training decisions made by TAA participants, other dislocated workers, and their case managers.

A. Key Research Questions, Data, and Methods

In this report, we focus on the following research questions:

- Are there persistent differences in employment outcomes for trainees who begin training quickly and those who delayed training entry? If so, what factors are associated with delayed entry into training?

- Do certain types of training or training experiences appear to be associated with better labor market outcomes? Areas to explore include: field of training; training provider; length of training; time out of training; and receipt of a certificate or degree.
- Do trainees who find employment in their training field have better employment outcomes? If so, what factors are associated with finding employment in the training field?

To address these questions, this analysis uses telephone survey data from a nationally representative sample of workers from 26 states who were eligible for TAA as it operated under the 2002 amendments. Our sample includes 4,381 TAA-eligible workers who were laid off between September 1, 2004, and October 31, 2008, though most sample members lost their jobs in 2005 and 2006. The telephone surveys cover the 51 month period after job loss and collected information about respondents' experiences with the TAA program and their demographic and labor market backgrounds. Information was also collected on pre- and post-Unemployment Insurance (UI) claim employment and income, demographic characteristics, and mobility. The response rate to the second telephone survey was 63.3 percent.

We use a multivariate regression model to look at the associations between employment outcomes and TAA training experiences. Since this report focuses on the long-term effects of TAA training, we looked at the last year of follow-up data—the fourth year after job loss. The regression models included controls for the TAA trainees' baseline characteristics likely to be correlated with the outcome of interest. The categories of baseline controls included: (1) UI benefit information; (2) local area characteristics; (3) demographic characteristics; (4) characteristics of the UI trigger job; (5) characteristics of other jobs; (6) financial characteristics at the time of job loss; and (7) health at the time of job loss.

The goal of the analysis is to provide suggestive evidence as to whether certain TAA training experiences appear to be associated with better outcomes. Importantly, this analysis is not causal; selection into training was not random, and TAA participants who chose to enroll in one training program may have been fundamentally different from participants who enrolled in other programs. While we can use our detailed survey data to hold constant trainees' baseline characteristics, employment experience, and local area characteristics, we must still be concerned about unobservable factors that may be correlated with the training program choice and employment outcomes. These unobservable factors could lead to biased estimates of the associations between training experiences and longer-term labor market outcomes.

B. Key Findings

- **Early training entry was associated with better labor market outcomes four years after job loss**. One key factor associated with the timing of training entry was the timing of the participant's TAA eligibility. Workers who were eligible for TAA services at the time of job loss entered training significantly earlier than those who became eligible after job loss. Interestingly, the receipt of training counseling did not appear to alter how fast TAA participants entered their education and training programs.
- **For female trainees, the occupational field of training was strongly associated with labor market outcomes.** Training in healthcare practitioner and technical fields was associated with significantly better employment outcomes. Training in office and

administrative support was also associated with significantly more weeks of employment and higher annual earnings.

- **There was no clear relationship between the length of a training program and employment outcomes.** But trainees still enrolled in training during the final year of the follow-up period had fewer weeks of employment and lower annual earnings.
- **Receiving a degree or certificate was associated with more weeks worked for both female and male trainees.** However, we did not find a significant relationship between credential receipt and earnings.
- **Trainees who found employment in their training field had better employment outcomes than trainees employed in other occupations**. The likelihood of finding employment in the field of training varied by occupational field.
- **Trainees who received career assessments were more likely to be employed in their training field**. However, we found no differences for those who received labor market information (LMI) (regarding demand in various occupations) or counseling on the appropriateness of training or provider selection.

C. Conclusions

While our study results are suggestive only, our findings point to several actions policymakers could take to strengthen the TAA program and improve outcomes for TAA trainees. Our study focused on TAA as it operated under the 2002 amendments. In recent years, DOL has taken some steps to facilitate faster entry into training. For instance, President Obama has signed legislation authorizing $2 billion over four years to fund the Trade Adjustment Assistance Community College and Career Training (TAACCCT) program. Through the TAACCCT grants, community colleges have access to funding that will allow them to expand training programs and develop programs that allow for year-round entry into training. DOL's Office of TAA has also worked to reduce the time required to certify TAA petitions. These initiatives could speed up training entry for TAA participants.

Second, our findings highlight the importance of policies that place trainees in training programs that suit their skills and are likely to lead to employment. While our study clearly shows there is no one correct training path for all individuals, we found that employment outcomes for the TAA trainees did vary somewhat by the occupational area of the training, especially for women. Furthermore, we found that trainees who received assessments were more likely to have a successful training outcome as measured by employment in the field of training. Also, though we did not find an association between receipt of LMI and employment in the field of training, it is possible that TAA participants received outdated or non-local LMI -- or may not have understood the implications of the LMI. Thus, policies aimed at improving the quality or use of information about genuine job openings might increase the share of trainees who find employment in the occupation in which they train.

Finally, our results do not provide support for policies that would limit the length of training. In our multivariate regressions, holding constant other factors, the length of training was *not* significantly associated with better or worse labor market outcomes. Being enrolled in training has a large opportunity cost, and we saw clear evidence of this in the impact study and in our finding on delayed entry into training. However, the only occupational trainees who achieved an average wage replacement rate of 100 percent were those in the healthcare practitioner and technical occupation

programs, and these programs are relatively long. Thus, policies that encourage efficient completion of training programs may be more appropriate than policies that limit training to those programs which are shorter in duration.

Overall, the findings appear to suggest the importance not only of getting TAA participants into training quickly, but also of providing assessment and counseling to help participants make informed choices about training options, in light of their skills and interests, average wages and benefits in various occupations, and the likelihood of securing employment in them.

I. INTRODUCTION

The Trade Adjustment Assistance (TAA) program, administered at the federal level by the U.S. Department of Labor (USDOL), provides assistance to help manufacturing workers certified as having suffered trade-related job losses. First introduced in 1962 to facilitate the passage of free trade legislation, this federal program has undergone several reforms that expanded benefits and eligibility, including those in the TAA Reform Act of 2002, the Trade and Globalization Adjustment Assistance Act (TGAAA) of 2009, and the TAA Extension Act of 2011 (under which the program was operating at the time of this report's release). TAA also represents a substantial investment of federal funds; for example, in fiscal year 2008 alone, almost $260 million in funding for TAA services was distributed, and 42,000 new participants received program services.

Under the 2002 TAA program, the focus of this study, TAA participants could access subsidized training and extended Unemployment Insurance (UI) payments called Trade Readjustment Allowances (TRA) for up to 104 weeks (130 weeks if remedial training is needed), coverage of 65 percent of health insurance premiums through the Health Coverage Tax Credit (HCTC), and wage supplements for workers over age 50 who found a full-time job with earnings of $50,000 a year or less through Alternative Trade Adjustment Assistance (ATAA). Other benefits offered by TAA included job search and relocation allowances for workers who seek and find work in another geographical area and supplemental assistance payments for expenses associated with attending training in another area.

In the wake of amendments to the TAA program enacted as part of the Trade Act of 2002, USDOL's Employment and Training Administration (ETA) funded a comprehensive *Evaluation of the TAA Program* designed to document the program's implementation and to assess the ability of the program to achieve its goal of helping participants find rapid and suitable reemployment. The evaluation included a nationally representative impact analysis using a matched comparison group design (Schochet et al. 2012a) in which education, employment, earnings, and other outcomes were examined in the four years following job loss. Key findings regarding the estimated impacts of the 2002 TAA program can be summarized as follows:

- **TAA led to increased receipt of reemployment services**. According to survey data, more than 94 percent of TAA participants received at least one reemployment service while 77 percent of the comparison group reported doing so.
- **Participation in TAA was associated with large increases in the receipt of education and training and the attainment of educational credentials**. Nearly 66 percent of TAA participants received training, compared to 27 percent of those in the comparison group, and the average TAA participant spent about 8 times as many weeks in education and training as the average comparison group member (49 weeks, compared to 6 weeks).
- **In the final year of the follow-up period, TAA participants overall had lower earnings than members of the comparison group but worked about the same number of weeks**. As was hypothesized, during the first two years of the four year follow-up period, when many TAA participants were receiving training, their employment and earnings were significantly worse than those of matched comparison group members who were not eligible for TAA. During the subsequent two years, the gap between the TAA participants and the comparison group narrowed.

- **Impacts on employment and earnings may be more favorable for TAA participants who received training than for those who received income support without training**. In the final quarter of the follow-up period, the impact on the employment rate was not statistically significant for the trainees, but the impact remained negative and significant for those who received income support without training. Furthermore, the impact on earnings was less negative for the trainees than it was for those who received income support without training. Although the impact results for TAA trainees are promising, the results for the service receipt subgroups are only suggestive because of potential sample selection biases that could have led to comparison group matches that are of questionable quality.

The impact findings for TAA trainees raise important questions for policymakers and practitioners, particularly as to what aspects of the training may have affected employment outcomes. The goal of this paper is to address these questions by providing a descriptive analysis of the training experiences of TAA participants and multivariate analysis of the relationship between employment outcomes and training program characteristics. While we are not able to determine causal relationships, the analysis can still identify factors that are potentially important in better employment outcomes and, hence, some limited evidence to help inform policy and programmatic practices as well as the training decisions made by TAA participants, other dislocated workers, and their case managers.

A. Findings from the TAA Impact Evaluation

The 2002 TAA program had a substantial impact on the amount of education and training received by participants. Nearly 66 percent received training of some type (funded through TAA or other sources) compared to 27 percent of members of the comparison group, a statistically significant impact of 39 percentage points. Furthermore, the average TAA participant spent about 8 times as many weeks in education and training as the average comparison group member (49 weeks compared to 6 weeks). While TAA participants were significantly more likely to have received remedial education or non-occupational higher education than the comparisons, the largest impacts were on the receipt of occupational skills training.

Impacts on participation in education and training programs were largest during the first two years of the follow-up period but persisted in the third and fourth years (Figure I.1). Even in quarter 16, TAA participants were still significantly more likely to be enrolled in training than comparison group members (8 percent versus 3 percent).

Because of TAA's impacts on the receipt of reemployment services and time spent in education and training programs, the program could be expected to *decrease* participants' employment and earnings in the short run but *increase* their productivity, marketability, and employability in the longer run, as measured by increases in their eventual labor force participation and earnings. We anticipated that TAA would reduce employment and earnings during the period of training because some of these workers would probably have held jobs if they were not receiving TAA-funded training. However, as trainees left their training programs, their employment and earnings were expected to rise after a period of adjustment.

Expectations were less clear for the TAA participants who only received TRA payments and no TAA-funded training (though a small percentage did receive training funded by sources other than TAA). For these participants, TAA was expected to increase the receipt of reemployment services, which in turn might increase the reemployment rates after job loss; but the offer of TRA benefits

could induce some workers to extend their unemployment spells and exhaust their UI benefits without an increased job search effort, which could lead to short- and, perhaps, long-term earnings reductions.

We examined the impact of TAA on employment and earnings for these two key service subgroups—TAA-funded trainees and TRA-only participants (including those who received non-TAA-funded training). While the results for the service receipt subgroups are only suggestive because of potential sample selection biases that could have led to comparison group matches that are of questionable quality, we found that by the end of the follow-up period, labor market impacts were more favorable for the trainees than for TRA-only participants. The impact on average weeks worked in the fourth year of follow-up was not statistically significant for the trainees but remained negative and significant for the TRA-only participants (Figure I.2). Furthermore, the impact on earnings in the fourth year was less negative for the trainees than for the TRA-only group although it was statistically significant for both groups (Figure I.3).

The main impact study used a matched sample of UI claimants as the comparison group for TAA participants; however, to test the robustness of the study's conclusions, we estimated impacts using alternative samples and model specifications. In particular, as a sensitivity analysis, we estimated impacts using a comparison group of UI exhaustees—that is, individuals who had exhausted their UI benefits. We view this specification as representing an upper-bound estimate of the effects of TAA, because it assumes that the decision to exhaust UI is not influenced by the availability of TAA services. By contrast, the full comparison sample with both exhaustees and non-exhaustees is a more conservative approach, typical of much social science research.[1] Although the true impacts of the TAA program cannot be known, it is plausible that they lie somewhere between the two sets of estimates.

Using the comparison sample of UI exhaustees, we found that TAA had a positive, statistically significant impact on the employment of trainees in the last three quarters of the survey follow-up period with a positive impact of 11.3 percentage points in the 16th (and final) quarter. However, there was no significant effect on earnings in the last five quarters (Tables I.1 and I.2). Using this alternative specification also produced impacts on employment and earnings that were less negative during the earlier period when TAA participants were generally enrolled in training and more positive in the post-training period (Figures I.4 and I.5) than was found with the full comparison group. Impact estimates using both the full comparison group and the alternative comparison sample, employment and earning for TAA trainees appeared to be increasing at the end of the survey follow-up period.

[1] 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, about 80 percent of participants in the survey sample exhausted UI, compared to only about 45 percent of matched comparisons, suggesting that TAA has a large effect on exhaustion rates and that comparison group exhaustees were less "marketable" than the treatment group exhaustees. 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.

Table I.1. Differences in Employment for TAA Trainees (Survey Data)

	Main Impact Sample			UI Exhaustee Comparison Group		
	TAA Trainees	Comparison Group	Difference	TAA Trainees	Comparison Group	Difference
Employed						
Quarter 1	6.5	36.4	-29.9***	5.3	14.7	-9.4***
Quarter 2	7.9	48.8	-40.9***	6.1	26.2	-20.1***
Quarter 3	11.6	62.6	-51.1***	9.8	43.7	-33.9***
Quarter 4	18.2	70.6	-52.5***	17.1	55.2	-38.0***
Quarter 5	23.8	71.8	-48.0***	23.3	56.8	-33.5***
Quarter 6	31.2	75.4	-44.2***	32.5	61.1	-28.6***
Quarter 7	36.9	74.7	-37.8***	38.7	59.9	-21.2***
Quarter 8	43.2	76.3	-33.1***	44.7	64.3	-19.6***
Quarter 9	50.1	74.9	-24.8***	51.7	64.8	-13.1***
Quarter 10	54.2	74.3	-20.1***	55.2	67.0	-11.7***
Quarter 11	59.1	73.2	-14.1***	60.8	62.3	-1.6
Quarter 12	62.6	71.1	-8.6***	64.1	61.9	2.2
Quarter 13	66.9	71.5	-4.6	68.0	63.2	4.8
Quarter 14	68.1	70.8	-2.7	69.4	64.0	5.3*
Quarter 15	71.2	72.0	-0.8	72.1	64.0	8.1**
Quarter 16	73.6	72.5	1.1	73.9	62.6	11.3***
Sample Size	1,210	1,731		996	580	

Source: Mathematica TAA Initial and Follow-up Surveys and UI Claims data.

Notes: Treatment group weights account for sample design and nonresponse, and comparison group weights are constructed using a kernel matching algorithm. Comparison group means and impacts are regression adjusted. Standard errors account for the two-stage sampling design.

*/**/*** Impact of TAA is significantly different from zero at the 0.10/0.05/0.01 level, two-tailed test.

Table I.2. Differences in Earnings for TAA Trainees (Survey Data)

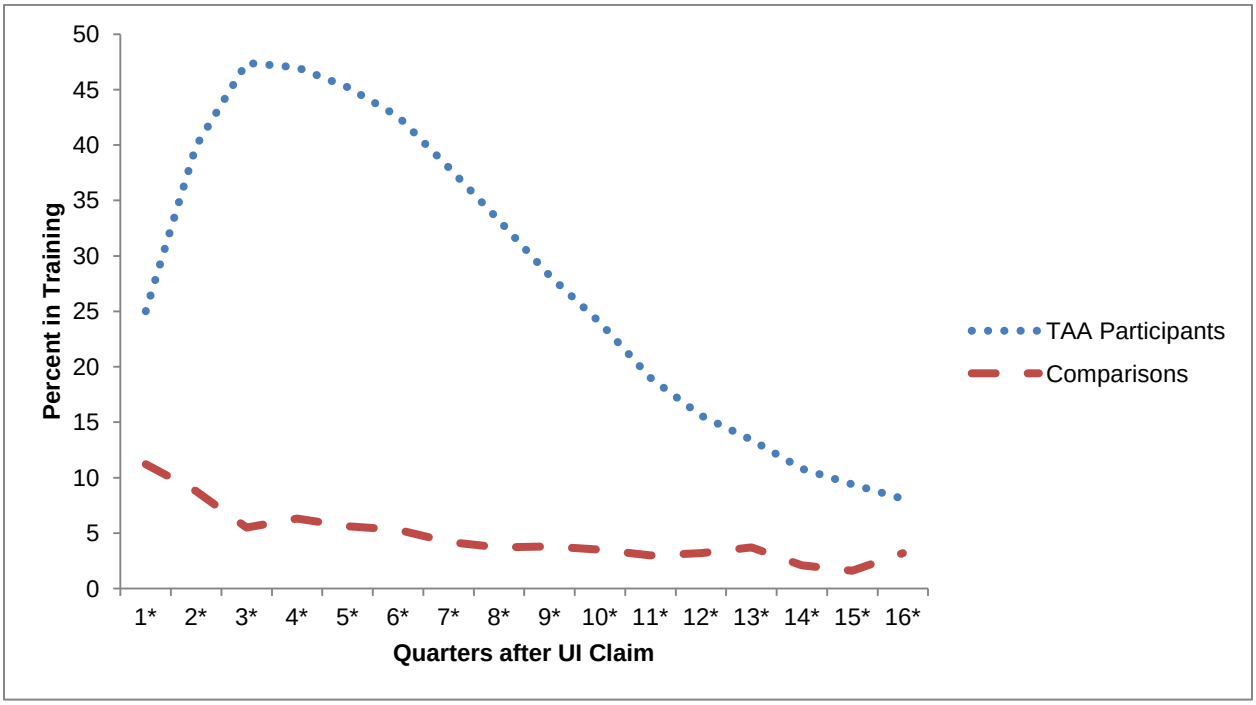
	Main Impact Sample			UI Exhaustee Comparison Group		
	TAA Trainees	Comparison Group	Difference	TAA Trainees	Comparison Group	Difference
Quarterly Earnings (2006$)						
Quarter 1	305	1,924	-1,619***	239	887	-648***
Quarter 2	487	3,781	-3,295***	352	1,839	-1,487***
Quarter 3	616	4,758	-4,142***	477	2,839	-2,362***
Quarter 4	1,019	5,406	-4,388***	937	3,617	-2,680***
Quarter 5	1,489	5,688	-4,199***	1,476	3,969	-2,493***
Quarter 6	1,973	5,845	-3,872***	2,039	4,117	-2,078***
Quarter 7	2,351	5,873	-3,521***	2,490	4,140	-1,651***
Quarter 8	2,690	5,840	-3,150***	2,824	4,182	-1,357***
Quarter 9	3,160	5,827	-2,667***	3,283	4,327	-1,044***
Quarter 10	3,376	5,664	-2,288***	3,475	4,436	-962***
Quarter 11	3,707	5,645	-1,938***	3,802	4,375	-573**
Quarter 12	4,001	5,557	-1,556***	4,078	4,291	-214
Quarter 13	4,220	5,283	-1,063***	4,273	4,260	13
Quarter 14	4,264	5,230	-966***	4,329	4,291	38
Quarter 15	4,461	5,216	-755***	4,506	4,171	335
Quarter 16	4,667	5,236	-569**	4,661	4,305	356
Sample Size	1,210	1,731		996	580	

Source: Mathematica TAA Initial and Follow-up Surveys and UI Claims data.

Notes: Treatment group weights account for sample design and nonresponse, and comparison group weights are constructed using a kernel matching algorithm. Comparison group means and impacts are regression adjusted. Standard errors account for the two-stage sampling design.

*/**/*** Impact of TAA is significantly different from zero at the 0.10/0.05/0.01 level, two-tailed test.

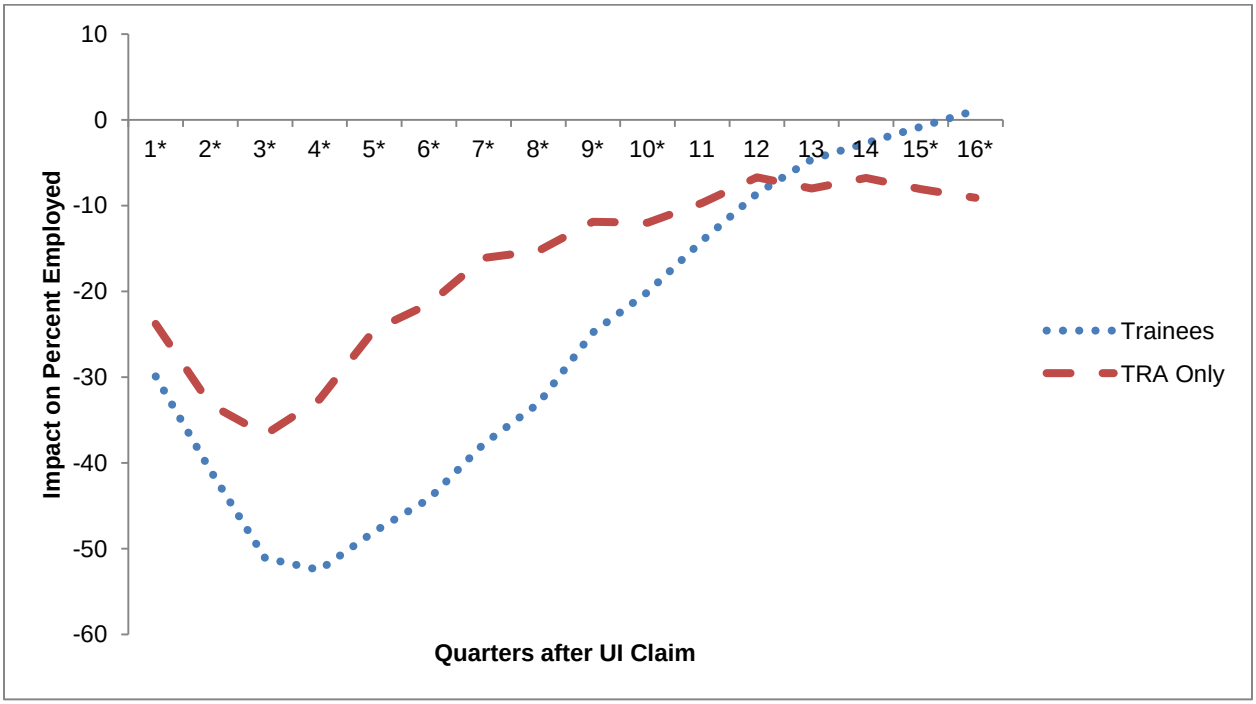
Figure I.1. Participation in Education and Training, by Quarters after UI Claim



Source: TAA Initial and Follow-up Surveys.

*Impact of TAA is significantly different from zero at the 0.05 level, two-tailed test.

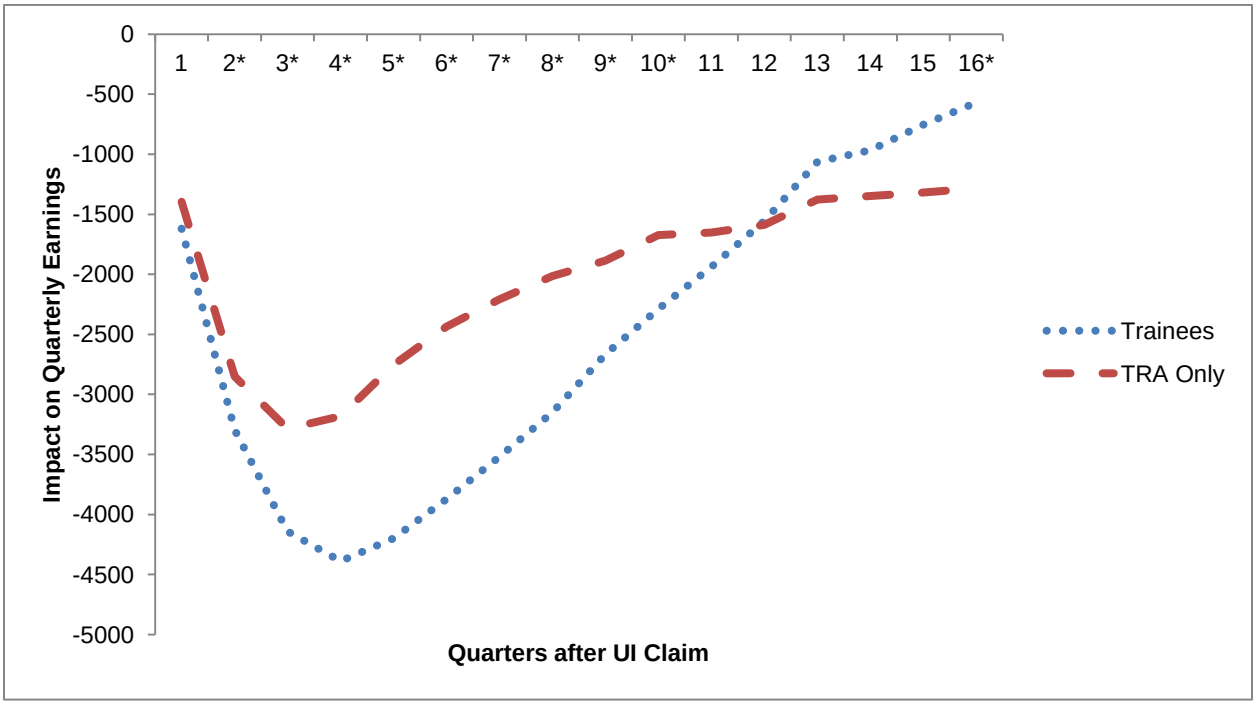
Figure I.2. Impacts on Employment Rates, by TAA Service Receipt



Source: TAA Initial and Follow-up Surveys.

*Impact of TAA is significantly different across subgroups at the 0.05 level, two-tailed test.

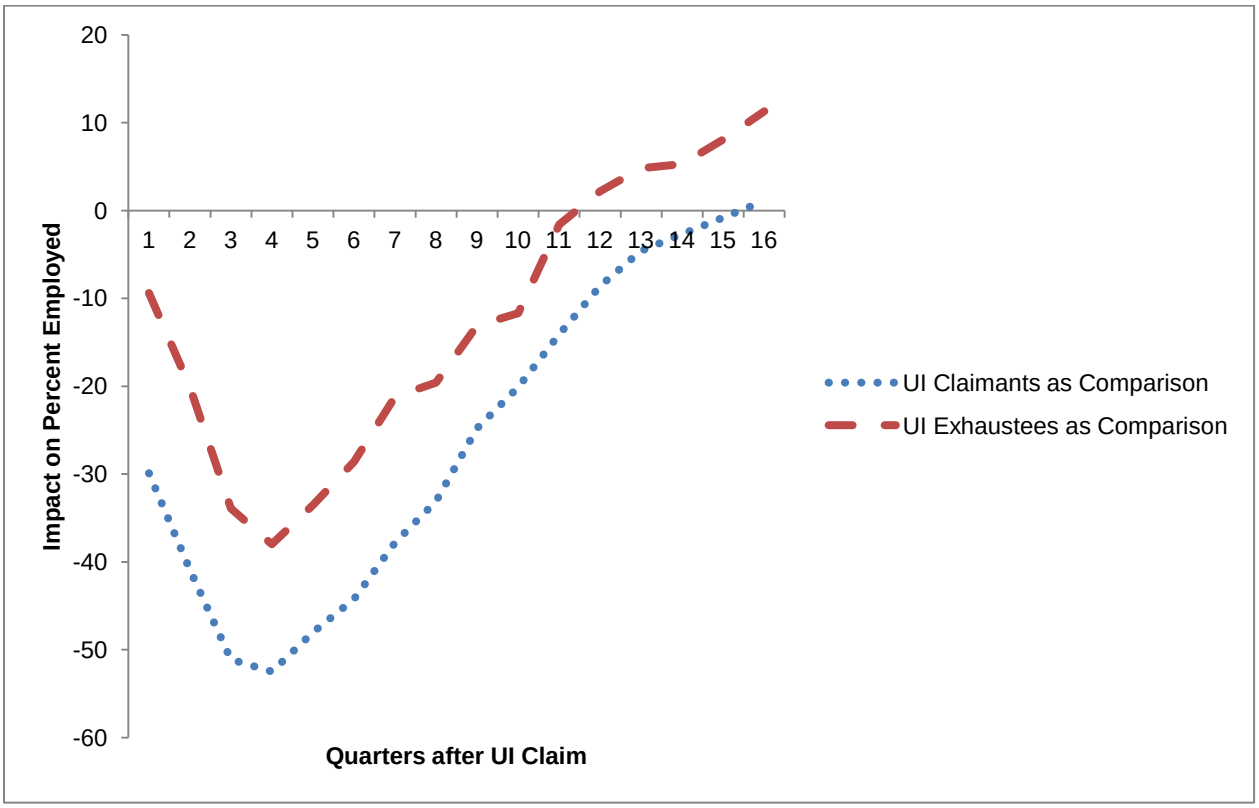
Figure I.3. Impacts on Earnings, by TAA Service Receipt



Source: TAA Initial and Follow-up Surveys.

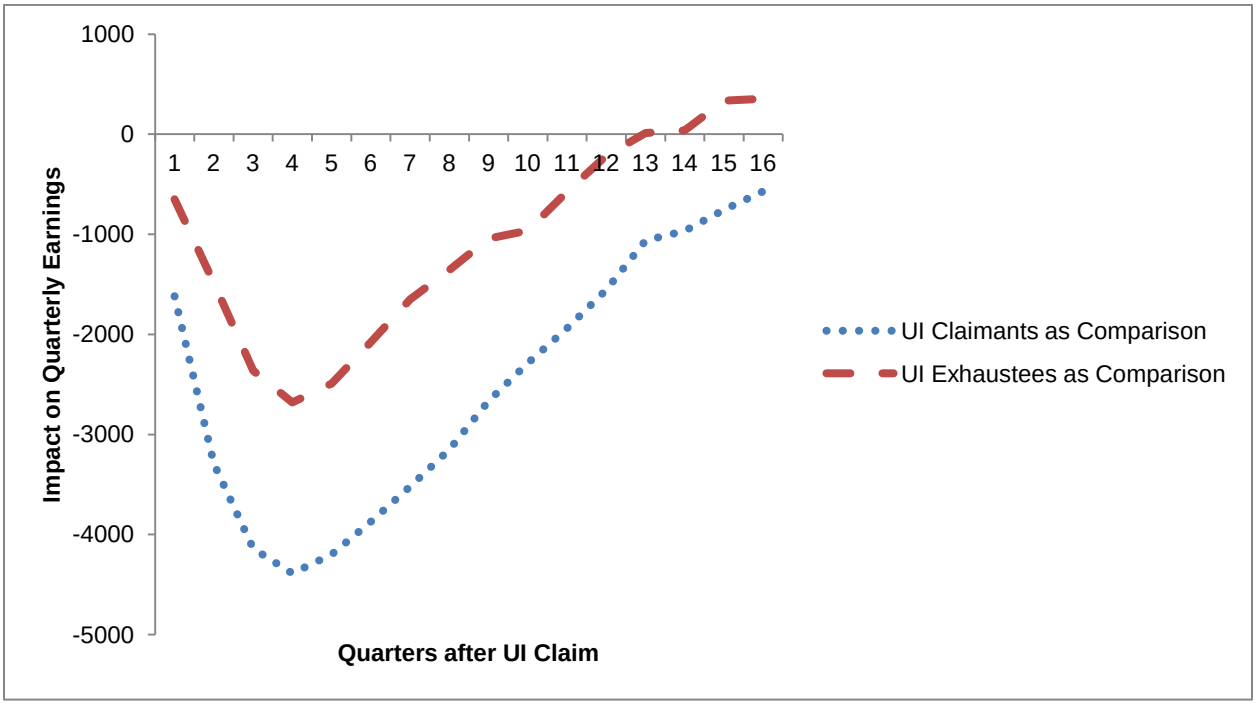
*Impact of TAA is significantly different across subgroups at the 0.05 level, two-tailed test.

Figure I.4. Impacts on Employment Rates for Trainees Using Samples of UI Exhaustees versus UI Claimants



Source: TAA Initial and Follow-up Surveys.

Figure I.5. Impacts on Earnings for Trainees Using Samples of UI Exhaustees versus UI Claimants



Source: TAA Initial and Follow-up Surveys.

B. Key Research Questions

The findings from the impact study suggest that the TAA program is more effective for workers who receive training than for those who only received TRA payments. The findings also suggest that with a longer follow-up period, the employment and earnings outcomes of TAA trainees may surpass the outcomes of their matched comparison. Given these possibilities, we want to examine whether certain aspects of the TAA training experience appear to be associated with better outcomes. While we cannot answer these questions rigorously, this analysis may nevertheless provide some guidance for policymakers and practitioners as well as suggest areas for future rigorous evaluations. In this report, we focus on the following research questions:

- Are there persistent differences in employment outcomes for trainees who begin training quickly and those who delayed training entry? If so, what factors are associated with delayed entry into training?
- Do certain types of training or training experiences appear to be associated with better labor market outcomes? Areas to explore include:
  - **Field of training**. Returns from training may vary by the occupational focus, reflecting demand for workers in particular fields and variations in earnings across occupations.
  - **Training provider.** The quality of training programs may vary by the type of provider. Some providers may be more (or less) effective at providing high quality instructors, maintaining up-to-date course content, ensuring completion of training, and assisting with job placement.
  - **Length of training**. The relationship between the length of training and employment outcomes is uncertain. While a longer training program may provide more opportunity to increase human capital, a shorter training program requires less time out of the labor market.
  - **Time out of training.** There may be a significant transition period after training is completed. It may take time for trainees to find an initial job and advance in the career field.
  - **Receipt of a certificate or degree.** There may be a return to finishing training and acquiring a credential. In some occupations, receipt of the credential may be a prerequisite to finding employment in the field.
- Do trainees who find employment in their training field have better employment outcomes? If so, what factors are associated with finding employment in the training field?

Two key challenges limit our ability to answer these questions conclusively here. First, selection into training in particular fields was not random. Individuals who chose to enroll in a healthcare practitioner program may be very different from those who chose training program in installation, maintenance, and repair. We expect that some of these differences will be correlated with employment outcomes. With our detailed survey data, we can hold constant many baseline characteristics of the individual, trainees' employment experience, and their local area, but we are still concerned about unobservable factors that may be correlated with the training program choice and employment outcomes.

The second key challenge is the potential for strong correlations between different aspects of the training experience. For example, we may be interested in understanding the timing of training entry, the length of the training program, and the time to transition from training back to the labor market, but the interrelations between these three factors may make it difficult to identify them separately. To address this concern, we examined the correlations between different aspects of the training experience before specifying our analysis models.

C. Previous Research on Training Program Characteristics

This paper is related to a large literature on job training programs for dislocated workers and a growing literature on the returns resulting from a community college education. Excellent summaries of this research (Leigh 1990 and 2000; Kodrycki 1997) suggest at best mixed evidence that training is effective for this population. A recent quasi-experimental study of the impacts of training for Workforce Investment Act dislocated workers also failed to offer solid evidence that providing training for dislocated workers had a positive effect on their long-term earnings (Heinrich et al. 2008). Studies examining the overall returns to community college have been more positive, although the evidence suggests substantial variation in returns across field of study and length of program. There is also evidence that the returns to a community college education may vary across students including differences by gender and age.

The most closely related study is Jacobson et al.'s (2005) examination of employment outcomes for displaced workers receiving training in the Washington State Community College system. Similar to TAA trainees, the population in the Jacobson et al study was recently dislocated and older than traditional community college students. The authors of this study found that a year of community college credits increased displaced workers' earnings by about 9 percent for men and 13 percent for women.[2] If limited to technically oriented vocational, math, and science courses, the estimated impact on earnings was 14 percent for men and 29 percent for women, with about a third of this increase due to higher hourly wage rates and the rest due to increased work hours. Jacobson et al. emphasized the importance of a long follow-up period (they had access to up to 5 years of follow-up data) because of a significant transition period following the end of schooling.

Most other studies examining returns from community college coursework have included both mid-career workers and students enrolling immediately after high school. Jepsen et al. (2012) and Dadgar and Weiss (2012) estimated such returns in Kentucky and Washington, respectively. These studies found positive returns resulting from attaining long-term certifications (training programs greater than one year) and associate's degrees. In contrast, they found most short-term certificates had no overall labor market value in terms of higher wages. They also observed large variations across field of study, with higher returns for long-term certificates and associate's degrees earned in health fields. Interestingly, they saw no positive returns from shorter health care programs. For men, there was some evidence of a positive return from short-term programs in transportation and protective services. In addition to changes in earnings, Dadgar and Weiss examined changes in hourly wages and hours worked; like Jacobson et al., they found that changes in the likelihood of employment and the hours worked were important components of the economic return. Although

[2] The Jacobson et al. econometric model also includes a discrete effect of schooling for just showing up and earning at least one credit. They believe that estimating this discrete effect helps to account for the non-random selection into community college. The earnings increases reported above do not include the discrete effect of showing up.

both Jepsen et al. and Dadgar and Weiss are recent studies, they are reporting findings for students who finished their education prior to the recent recession. As Dadgar and Weiss note, their findings may not be relevant for jobseekers in weaker labor markets.

D. Organization of Report

The remainder of this report is organized as follows. In Section II, we describe key features of the 2002 TAA amendments regarding training, including the eligibility process and available benefits. In Section III, we describe the data and methods of the study. In subsequent sections, we present findings from the analysis. We discuss the characteristics of training participants and their training experiences in Section IV. In Section V, we examine entry into training, and in Section VI we examine the relationship between training program characteristics and labor market outcomes. In Section VII, we ask whether TAA trainees found employment in their training fields and the relationship between finding employment in the training field and labor market outcomes.

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II. PROVISIONS IN THE 2002 TAA AMENDMENTS REGARDING TRAINING

The goal of training in the TAA program is to ensure that trade-affected workers develop marketable skills that will enable them to find jobs. While the 2002 amendments emphasized that long-term training, which had been the historical focus of the program, may not be the best route to suitable and rapid reemployment, training continued to be a benefit that attracted eligible workers to participate in the program.

Under the 2002 amendments, TAA could fund occupational skills training, such as classroom training, on-the-job training (OJT), other customized training with an employer, and apprenticeship programs, as well as postsecondary education and remedial education [such as General Educational Development (GED) preparation, literacy training, basic math, or English as a second language (ESL) classes]. TAA participants were eligible to receive funding for one training plan, but the plan could include more than one training or educational program aimed to help an individual meet a specific occupational and employment goal. For example, an individual training plan could include both an educational component, like a GED program, and occupational training.

The goal of training was to enable workers to obtain suitable reemployment at an adequate replacement wage (as defined in the legislation). TAA benefits functioned as an entitlement, and the legislation required state agencies to approve a training plan if all of the following conditions were met:

- The worker could not find suitable employment otherwise.
- The worker would benefit from the training.
- There was a reasonable expectation of employment following the training.
- The training the worker requested was reasonably available.
- The worker was qualified to undertake the training.
- The training was suitable for the worker and available at a reasonable cost.

TRA payments were intended to support workers who enrolled in training in order to facilitate successful completion of their programs. Under the 2002 amendments, basic TRA continued to be available following the exhaustion of UI (which generally occurred after 26 weeks) for a total of 52 weeks of cash assistance. As in prior legislation, the 2002 program required individuals to be enrolled in training in order to receive TRA benefits. However, individuals could be exempted from the training requirement if granted a waiver by the state agency based on any of six possible conditions).[3] Additional TRA, which had a weekly payment amount identical to basic TRA, also continued to be available for additional weeks once basic TRA ended for workers in training.

[3] The six conditions for which waivers could be granted were: (1) the worker was expected to be recalled; (2) the worker was believed to have marketable skills; (3) the worker was within two years of retirement; (4) the worker had a health condition preventing participation in training; (5) suitable training was not available; or (6) the first available enrollment date for the training the worker wanted to undertake fell outside the 8/16 guidelines (for this condition, the training had to be available within 60 days from that cut-off date, unless there were extenuating circumstances).

Previous reports prepared as part of this evaluation examined how states operationalized some of the provisions in the 2002 Amendments (D'Amico et al. 2009). We reported that, as a way of meeting the reasonable cost criterion, states typically imposed caps for the cost of tuition and books and supplies, but that these caps were almost always considerably more generous that what was allowable for WIA-funded training. For example, New York has a cap per person of $15,000 for training plans of up to 130 weeks.[4] Federal regulations prevented the approval of training plans that would have required trade-affected workers to use any personal funds to cover the cost of the training plan. Further, most states, but not all, required the worker to select training from the WIA-eligible training provider list in order to ensure training quality.

One of the major goals of the 2002 amendments was to ensure that TAA participants were able to obtain suitable and long-term employment as quickly as possible. To achieve this goal, the legislation made a number of significant changes to the provision of training-related services:

- New deadlines required entry into training either 8 weeks after certification of a petition or 16 weeks after job separation (called 8/16 deadlines);
- An extension of additional TRA from 26 to 52 weeks, allowing up to 104 weeks of cash payments for workers enrolled in full-time training (and no waivers of the training requirement were allowed);
- The addition of up to 26 more weeks of TRA-supported remedial training, thus permitting a total of 130 weeks of cash payments for workers also enrolled in remedial training, and
- An extension of approved breaks in training from 14 days to 30 days without loss of TRA.

The potential impacts of the 2002 amendments on the training behaviors of TAA participants likely varied by population group. The 8/16 deadlines were designed to encourage faster enrollment in training programs. In addition to attempting to alter the timing of training enrollment, the 2002 amendments may have affected the composition of TAA training participants. By granting waivers to individuals with "marketable skills," the amendments may have discouraged certain individuals from enrolling in training. On the other hand, having an additional 26 weeks of TRA-supported remedial training available may have encouraged participants with academic barriers to enroll in training.

Although this report focuses on workers' employment experiences participating in the TAA program under the 2002 amendments and does not compare workers' experiences with TAA before and after those amendments, it is interesting to note state officials' perspectives on the effect of the changes. An initial implementation study of the 2002 TAA amendments in 12 states found that most state officials had expected the extension of TRA benefits and allowable breaks in training to improve training completion rates (D'Amico et al. 2009). However, they felt that the speed at which TAA eligible workers entered training would not be increased by the imposition of the 8/16 deadlines. Most states granted waivers to TAA eligible workers to ensure their eligibility for HCTC,

[4] http://www.labor.ny.gov/workforcenypartners/TA04-6-4.pdf. Accessed December 20, 2010.

removing the incentive of the deadlines, with the result that workers did not appear to enter training more quickly than before the 2002 amendments.

Recent program entrants have faced a different set of rules. Changes introduced by the 2009 TGAAA expanded eligibility and services for workers covered by petitions filed on or after May 18, 2009. Among its key provisions, TGAAA expanded eligibility (most notably to trade-affected workers in service industries and the public sector), mandated that case management services be made available to TAA participants, and significantly expanded certain program benefits. However, TGAAA included a sunset provision, and the revised TAA program expired on February 12, 2011,[5] reverting back to the provisions established in the Trade Act of 2002. On October 21, 2011, President Obama signed the TAA Extension Act of 2011, which included most of the same provisions as in the 2009 program and extended the TAA program through 2013.

[5] TGAAA was originally set to sunset on December 31, 2010. On December 29, 2010, Congress enacted the Omnibus Trade Act of 2010, extending the sunset date until February 12, 2011.

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III. DATA AND METHODS

This report documents the patterns among participants in TAA-funded training programs and provides information about the associations between their training experiences and labor market outcomes. The analysis uses survey data from a nationally representative sample of workers who were eligible for TAA as it operated under the 2002 amendments. In the remainder of this section, we describe the sample, survey, and analytical methods. More details are available in Schochet et al. (2012b).

A. Sample

The data used in this report were gleaned from interviews of a sample of TAA-eligible workers who were randomly selected using a two-stage, stratified sample design. In the first stage, 26 states were randomly selected in geographic strata with probabilities proportional to the expected number of TAA participants in the state in fiscal years 2005 and 2006. These 26 states, all of which agreed to participate in the study, contained approximately 90 percent of the TAA eligible population (see Schochet et al. 2012b). In the second stage, a sample of TAA-eligible workers was randomly selected from each state's UI claimants who were also found on lists of TAA-covered workers (provided by employers in TAA-certified firms). The sample frame included workers aged 16 to 80 and living in the state at the time of their UI claim.

The sample was restricted to eligible workers from firms whose petitions were certified during the one-year period from November 1, 2005, to October 31, 2006. We specified this one-year certification window to ensure that the sample was eligible for TAA services after the full implementation of all 2002 reforms (which took effect in August 2003) and that the analysis would not be affected by seasonal layoff patterns. The data covered a period one year before the TAA-certified firms' petition filing date and up to two years after the petition approval date.[6]

To be covered by the certification and hence eligible for TAA, workers had to have been laid off during the impact period between one year prior to the petition filing date and two years after the petition certification date. Thus, our sample includes eligible workers who were laid off between September 1, 2004, and October 31, 2008, though most sample members lost their jobs in 2005 and 2006.

While the evaluation covers both TAA participants and nonparticipants, the analysis in this report is restricted to TAA training participants.

[6] While the sample covers the full precertification period, it does not include the full postcertification coverage period. The data on UI claimants was provided by states from 2004 to the most recent quarter that UI records were available. However, because the states provided the data at different times, the most recent data available differed by state. The period covered part of 2007 for 22 of the 26 states. Thus, the sample covers 17 months of the 24-month postcertification period for the average petition and at least 12 months after the petition certification date for three-quarters of the petitions. Using UI claim and petition data, we found that about 90 percent of trade-affected workers filed for UI either before or within 12 months after their certification date. This suggests that our sample is largely representative of trade-affected workers in our certified-worker universe (Schochet et al. 2012b).

B. Surveys

The data in this report are drawn primarily from two telephone surveys[7]. The first survey was administered to the 4,381 TAA-eligible workers in the sample. Using telephone numbers and contact information reported in the UI claims data and certified worker lists, sample members were contacted for interviews between March 2008 and April 2009. To enhance response rates, incentive payments of $25 for TAA participants and $25 or $50 for nonparticipants were offered for completing the survey.[8] It is important to note that the first survey was not conducted at the time of the UI claim but about 28 months afterwards, on average. This lag ranged from about 4.5 months to almost 50 months after the UI claim date, and 67 percent were interviewed more than two years after the claim.

A second survey was conducted with TAA participants between June 2010 and December 2010, about 23 months after the initial interview. The total length of the follow-up period varied among respondents. We found that about 93 percent of treatments in the analysis sample had at least 3 years of follow-up data and 64 percent had at least 4 years of data. Since this report focuses on the long-term employment outcomes of trainees, we limited our analysis to the sample of TAA trainees with at least 4 years of follow-up data.

The combined effective study survey response rate for TAA participants was 63.3 percent. This response rate pertains to the percentage of TAA participants who completed a follow-up interview among the nationally representative sample of participants released for initial interviews. [See Schochet et al. (2012b) for a detailed description of the survey design and administration.] Because survey respondents and nonrespondents differed in some ways, we used sample weights in our analysis to help reduce the potential bias due to nonresponse.

The survey questionnaires included a battery of questions about respondents' experiences with the TAA program and their demographic and labor market backgrounds. Questions covered whether and how workers learned about TAA and other benefits; whether and why they applied or did not apply for benefits; whether they received WIA-related reemployment services, TRA payments, HCTC benefits, ATAA benefits, or training; and the characteristics of the training programs they attended. Information was also collected on pre- and post-UI-claim employment and income, demographic characteristics, and mobility. Appendix A provides tables showing key characteristics of TAA-funded trainees and those participants whose training was funded from other sources.

C. Methods

Survey data from participants in TAA-funded training were used to examine the characteristics of their training and education programs and their labor market outcomes. The statistics presented in this report include means as well as percentiles of the distributions of selected key measures. All statistics are calculated using sample weights so that the estimates can be generalized to the

[7] We also used administrative UI claimant data to construct measures on pre-UI employment.

[8] The incentive payment to TAA nonparticipants was increased from $25 to $50 partway through the survey administration period in an effort to boost response rates for this group, which were lower than response rates among TAA participants.

nationally representative population of individuals in TAA-funded training under the 2002 program. The sample weights account for study design and adjust for survey nonresponse. Construction of the weights is discussed in Schochet et al. (2012b). Any differences discussed are statistically significant unless otherwise indicated. Statistical tests account for design effects due to state-level clustering and weighting.

Subgroup analyses were used to help us understand variations in training patterns. In general, the subgroups analyzed were selected because they were likely to be related to the characteristics of training programs attended by TAA participants or to their training outcomes. For instance, training experiences may be related to a worker's gender, age, or level of education.

We used a multivariate regression model to look at the associations between employment outcomes and TAA training experiences. Since this report focuses on the long-term effects of TAA training, we looked at the last year of follow-up data—the fourth year after job loss. The regression models included controls for the TAA trainees' baseline characteristics likely to be correlated with the outcome of interest. The categories of baseline controls included: (1) UI benefit information; (2) local area characteristics; (3) demographic characteristics; (4) characteristics of the UI trigger job; (5) characteristics of other jobs; (6) financial characteristics at the time of job loss; and (7) health at the time of job loss. Since we had a long list of possible controls to and a relatively small sample of trainees, we used a stepwise regression model to select covariates for inclusion. The full list of controls is available in Appendix B.

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IV. TAA TRAINEES AND TRAINING PROGRAMS

Sixty-six percent of TAA participants enrolled in training during the first four years after job loss. This high rate of participation was consistent with TAA participants' reasons for applying for TAA benefits. For more information on TAA participation and reasons for application, see Dolfin and Berk (2010). In this analysis, however, we focus only on the participants who enroll in TAA-funded training programs, who comprised 49 percent of all participants. Among all TAA trainees, however, 86 percent enrolled in at least one program that was partially or entirely funded by TAA.[9] TAA trainees enrolled in non-TAA funded programs were similar demographically but were more likely to be enrolled in shorter training programs, which were also less likely to have an occupational focus (see Appendix Tables A.1 and A.2).

Examining the characteristics of participants in TAA-funded training and education and their training programs provides important descriptive information, but the analysis also serves as a foundation for the multivariate analysis presented in later sections of this report. For example, determining whether trainees of different educational backgrounds were likely to pursue different occupational training fields can shed light on the importance of holding education constant when examining the relationship between training field and employment outcomes. Additionally, looking at the relationship between different training characteristics—for example, the relationship between training field and training provider—will help us to determine if we can examine these factors separately in a multivariate model. This analysis also updates a previous descriptive report on the characteristics of TAA trainees and their programs that was based on the first survey (Berk 2012) when approximately one-third of trainees were still in training.

A. Profile of TAA- Funded Trainees

Key facts about individuals in TAA-funded training during the study period include the following:

- **About 53 percent of trainees were female, and 62 percent were white (Table IV.1)**. Twenty-three percent of trainees were black, and 9 percent were Hispanic.
- **The average age of trainees was 45.8 years old (Table IV.1)**. More than 70 percent of trainees were 40 or older, so a significant number of years may have elapsed since the trainees were last in a classroom.
- **The majority of trainees had finished high school, but less than one-quarter of trainees had additional education (Table IV.1)**. Fourteen percent of trainees had not completed high school. Only five percent had a bachelor's or graduate degree.
- **Prior to the layoff, trainees had full-time jobs with good employment benefits (Table IV.1)**. More than 90 percent of trainees were covered by health insurance in the

[9] To determine the source of funding, we considered survey responses as well as TAA administrative data on training enrollment. The share of TAA trainees enrolled in TAA-funded training is higher than reported in Berk (2012) because some enrollment occurred after the initial survey and because this analysis uses the TAPR data to supplement participants' self-reports.

year prior to job loss. Trainees had an average of 12 years of job tenure and earned an average of $28,494 in the year prior to job loss.

B. Characteristics of Training Programs

In analyzing training program characteristics, we limited our analysis to TAA-funded training programs. If a trainee enrolled in more than one training course, we examined the characteristics of the longest program.

- **More than 85 percent of TAA-funded trainees enrolled in an occupational training program (Table IV.2).** Nine percent of trainees received only remedial education. The most common forms of remedial education were GED and ESL classes. The remaining four percent of trainees reported enrolling in higher education that was not focused on a particular occupation.

- **While male and female trainees were equally likely to enroll in occupational skills training, they trained for different occupations (Table IV.2)**. For male trainees, the most common occupations were installation, maintenance, and repair; transportation and material moving; and production. For female trainees, the most common occupational training programs were healthcare support; office and administrative support; and healthcare practitioners and technical. There was little overlap in training fields. The three occupational fields most common for male trainees enrolled one percent or fewer of the female trainees.

- **The relative emphasis on occupational skills training varied across age groups (Table IV.3)**. Trainees age 50 and older were approximately twice as likely to have only received remedial education as younger workers. Twelve percent of trainees ages 51 to 60 and 16 percent of trainees age 60 and older only enrolled in remedial education.

- **Training in healthcare practitioner and technical occupations declined with age (Table IV.3)**. While 12 percent of trainees age 40 or younger enrolled in a healthcare practitioner training program, only five percent of the oldest trainees chose that training field.

- **Forty percent of trainees without a high school credential received only remedial education (Table IV.4)**. Many occupational programs have prerequisites that prevent a worker without a high school credential from enrolling. The TAA program allows participants who need remedial education to receive additional weeks of TRA to encourage them to continue on to occupational training after completing their educational program. We found that 36 percent of workers without a high school credential received both remedial education and occupational training (not shown).

- **Few trainees with bachelor's degrees pursued occupational training in healthcare fields (Table IV.4)**. Seven percent of trainees with bachelor's degrees trained in healthcare support, and five percent trained in healthcare practitioner and technical occupations.

- **Training for "other" occupational fields was more common for trainees with postsecondary education (Table IV.4)**. The "other" category included occupational training programs in the field of management; arts, design, entertainment, sports, and media; and protective services.

- **Community colleges were the biggest providers of TAA-funded training (Table IV.5)**. Fifty-three percent of trainees attended a community college or two-year college for their primary training program. Approximately 20 percent attended a vocational training center. Community and two-year colleges were the primary training provider for both males and females. Overall, the distribution of training providers was similar for male and female trainees, but male trainees were more likely to receive training from a vocational training center or private company while more female trainees attended community colleges.

- **Community colleges played an important role for all trainees while other training providers specialized in serving trainees with particular levels of education (Table IV.6)**. Twenty percent of trainees without a high school credential attended an adult education program or night school for their primary training program, compared to four percent of workers with a high school diploma. Four-year colleges, on the other hand, were an important training provider for workers with previous postsecondary education. Although trainees with a bachelor's degree were least likely to attend a community college, more than one-third attended a community college for their primary training program.

- **Community colleges were the most common training provider for almost all occupational training fields (Table IV.7)**. The only exceptions were occupational training programs in personal care and service and construction and extraction, where vocational training centers were the primary providers. There were some other occupations where providers outside of the two-year college system and vocational training centers also had a significant role. Twenty percent of trainees in transportation fields received training from a private company. Four-year colleges and universities were an important provider for trainees in computer and mathematical occupations.

- **TAA participants enrolled in relatively long training programs**. Participants enrolled in TAA-funded training spent an average of 79 weeks enrolled in education or training programs (not shown).

- **The average training duration for women exceeded that for men (Figure IV.1)**. Almost a quarter of male trainees spent 26 or fewer weeks in training compared to 13 percent of female trainees. In contrast, 38 percent of female trainees were enrolled for two or more years compared to 26 percent of male trainees.

- **There was substantial variation in the length of training within most occupational training fields (Table IV.8)**. A notable exception to this pattern was training in transportation and material moving. Short programs, lasting fewer than six months, dominated training in this field. Eighty-three percent of trainees in this field spent 26 or fewer weeks in training compared to 18 percent of all trainees. In other fields, including installation, maintenance, and repair; healthcare practitioner and technical; and personal care and service, approximately 80 percent of training programs exceeded one year in duration.

- **Fifteen percent of trainees spent more than 130 weeks enrolled in training (Table IV.8).** This finding is somewhat surprising since the TAA program will not approve training plans for training that is expected to last more than 104 weeks (or 130 weeks for those who obtain 26 weeks of remedial training). Here, training duration was calculated as the time elapsed from training start to stop, so the discrepancy could be

explained by approved breaks in training or errors in reported dates. TAA trainees may also have pursued training beyond their TAA training plan.

Table IV.1. Personal Characteristics of TAA- Funded Trainees

	TAA Funded Trainees (Percent)
Females	52.8
Males	47.3
Age of Trainees	
Younger than 35	16.1
35 – 39	11.2
40 – 44	16.6
45 – 49	15.8
50 – 54	19.5
55 – 59	11.7
60 or older	9.1
Average Age (years)	45.8
Education Prior to Training	
No High School Credential	14.1
High School Credential	61.9
Some College	19.3
Bachelor's Degree or More	4.7
Reason for Job Loss	
Laid Off Due to Plant Moving/Closing	75.0
Laid Off for Other Reason	23.8
UI Trigger Job Characteristics	
Average Hours Worked	44.9
Average Earnings in Year Prior to Job Loss (2006$)	$28,494
Average Job Tenure (years)	12.3
Percentage with Health Insurance Coverage	91.7
Sample Size	1,235

Source: Mathematica TAA Initial and Follow-up Surveys.

Note: Data pertain to training and education programs of TAA participants who were enrolled in any training after the UI claim date. Sampling weights were used in computing estimates.

Table IV.2. Type of TAA- Funded Training Program

	Share of Trainees (Percent)	Share of Male Trainees (Percent)	Share of Female Trainees (Percent)
Occupational Training Program			
Healthcare Support	17.2	2.7	30.2
Office and Administrative Support	16.4	8.2	23.7
Installation, Maintenance, and Repair	13.0	27.2	0.2
Healthcare Practitioners and Technical	7.6	4.5	10.4
Transportation and Material Moving	5.7	11.5	0.5
Production	5.0	9.2	1.2
Computer and Mathematical	4.8	6.7	3.1
Personal Care and Service	1.9	1.0	2.7
Construction and Extraction	1.7	3.3	0.2
Architecture and Engineering	1.6	2.3	0.9
Education, Training, and Library	1.8	1.7	1.8
Other Occupational Training	10.5	9.4	11.4
Only Remedial Education	8.8	8.4	9.1
Only Other Higher Education	4.3	3.9	4.6
All Trainees	100.0	100.0	100.0
Number of Trainees	1,220	577	643

Source: Mathematica TAA Initial and Follow-up Surveys.

Note: Data pertain to training and education programs of TAA participants who were enrolled in any training paid for by TAA after the UI claim date. Sampling weights were used in computing estimates.

Table IV.3. Type of TAA- Funded Training Program, by Age of Trainee

	Age 40 or Younger (Percent)	Age 41–50 (Percent)	Age 51–60 (Percent)	Age 61 or Older (Percent)
Occupational Training Program				
Healthcare Support	14.7	22.1	16.4	7.9
Office and Administrative Support	13.6	15.7	19.0	21.9
Installation, Maintenance, and Repair	15.2	10.7	12.7	14.7
Healthcare Practitioners and Technical	11.7	7.5	3.7	5.2
Transportation and Material Moving	4.9	6.5	5.4	5.9
Production	4.0	5.7	5.7	3.3
Computer and Mathematical	3.9	5.2	5.4	4.2
Personal Care and Service	3.3	0.9	2.0	0.0
Construction and Extraction	1.3	1.7	1.3	5.0
Architecture and Engineering	1.6	2.5	0.9	0.0
Education, Training, and Library	2.8	0.8	1.7	1.8
Other Occupational Training	11.1	10.6	9.9	9.9
Only Remedial Education	6.7	6.4	12.2	16.0
Only Other Higher Education	5.3	3.6	3.9	4.3
All Occupational Trainees	100.0	100.0	100.0	100.0

Source: Mathematica TAA Initial and Follow-up Surveys and UI Claims data.

Table IV.4. Type of TAA- Funded Training Program, by Trainee's Prior Level of Education

	No HS Credential (Percent)	HS Diploma or GED (Percent)	Some College (Percent)	Bachelor's Degree or More (Percent)
Occupational Training Program				
Healthcare Support	11.7	18.5	19.9	6.5
Office and Administrative Support	7.8	18.6	14.2	25.2
Installation, Maintenance, and Repair	10.7	13.7	12.5	11.4
Healthcare Practitioners and Technical	3.3	7.5	11.8	5.2
Transportation and Material Moving	9.5	5.7	4.5	0.0
Production	2.9	6.3	3.2	2.7
Computer and Mathematical	2.5	3.7	9.3	8.1
Personal Care and Service	1.9	2.4	0.0	0.0
Construction and Extraction	0.6	1.2	2.8	6.9
Architecture and Engineering	0.0	1.9	1.6	2.8
Education, Training, and Library	1.0	2.1	0.6	5.2
Other Occupational Training	7.9	9.4	12.8	19.5
Only Remedial Education	39.6	4.4	1.9	0.8
Only Other Higher Education	0.7	4.6	5.1	5.6
All Occupational Trainees	100.0	100.0	100.0	100.0

Source: Mathematica TAA Initial and Follow-up Surveys and UI Claims data.

Table IV.5. Training Providers for TAA- Funded Training

	Share of Trainees (Percent)	Share of Male Trainees (Percent)	Share of Female Trainees (Percent)
Provider of Primary Training Program			
Community or Two Year College	53.0	49.5	56.1
Vocational Training Center	20.8	22.6	19.3
Adult Education or Night School	5.7	5.8	5.7
Private Company that Provides Training	5.2	6.6	3.9
Four Year College/University	6.3	6.6	6.0
One-Stop Career Center	2.6	2.9	2.3
Business School	2.9	2.5	3.3
Community Based Organization or Other Non-Profit Agency	1.2	1.2	1.3
Other	2.3	2.3	2.3
All Trainees	100.0	100.0	100.0

Source: Mathematica TAA Initial and Follow-up Surveys.

Note: Data pertain to training and education programs of TAA participants who were enrolled in any training paid for by TAA after the UI claim date. Sampling weights were used in computing estimates.

Table IV.6. Training Providers for TAA- Funded Training, by Trainee's Prior Level of Education

	No HS Credential (Percent)	HS Diploma or GED (Percent)	Some College (Percent)	Bachelor's Degree or More (Percent)
Provider of Primary Training Program				
Community or Two Year College	42.8	57.9	47.0	37.8
Vocational Training Center	13.1	21.8	23.7	24.3
Adult Education or Night School	19.7	3.9	2.5	3.4
Private Company that Provides Training	8.2	4.0	5.7	8.3
Four Year College/University	3.0	3.4	14.9	17.6
One-Stop Career Center	4.8	2.7	0.3	3.9
Business School	3.4	3.1	2.8	0.0
Community Based Organization or Other Non-Profit Agency	2.7	1.0	1.0	0.8
Other	2.4	2.2	2.2	3.9
All Trainees	100.0	100.0	100.0	100.0

Source: Mathematica TAA Initial and Follow-up Surveys.

Note: Data pertain to training and education programs of TAA participants who were enrolled in any training paid for by TAA after the UI claim date. Sampling weights were used in computing estimates.

Table IV.7. Training Providers for TAA- Funded Training, by Occupational Training Program

	Provider of Primary Training Program									
	Community College	Vocational Training Center	Adult Education or Night School	Private Company that Provides Training	Four Year College/ University	One-Stop Career Center	Business School	Community Based Organization or Other Non-Profit Agency	Other	Total
Occupational Training Program										
Healthcare Support	52.9	24.5	4.2	4.9	4.1	2.5	2.1	1.7	3.1	100.0
Office and Administration	53.0	22.9	2.4	3.6	8.7	4.1	3.4	0.7	1.2	100.0
Installation	55.8	30.8	2.4	1.4	1.1	2.0	3.9	0.4	2.3	100.0
Healthcare Practitioners	46.3	25.8	5.6	3.4	5.8	0.8	9.9	0.0	2.4	100.0
Transport	45.5	18.0	8.4	20.1	0.0	0.0	0.0	4.9	3.0	100.0
Production	53.9	24.5	3.3	5.5	6.1	1.0	3.0	0.0	2.7	100.0
Computer and Mathematical	54.1	13.9	1.0	4.5	17.1	3.0	3.4	1.0	2.1	100.0
Personal Care and Service	26.6	46.0	0.0	16.9	0.0	0.0	10.5	0.0	0.0	100.0
Construction and Extraction	30.9	43.9	4.6	10.3	5.7	0.0	4.8	0.0	0.0	100.0
Architecture and Engineering	81.2	2.6	0.0	8.1	8.2	0.0	0.0	0.0	0.0	100.0
Education, Training, and Library	47.3	0.0	12.0	0.0	27.3	0.0	6.5	0.0	6.8	100.0
Other Programs	62.5	11.3	2.7	7.6	11.7	0.8	0.0	1.4	2.1	100.0

Source: Mathematica TAA Initial and Follow-up Surveys.

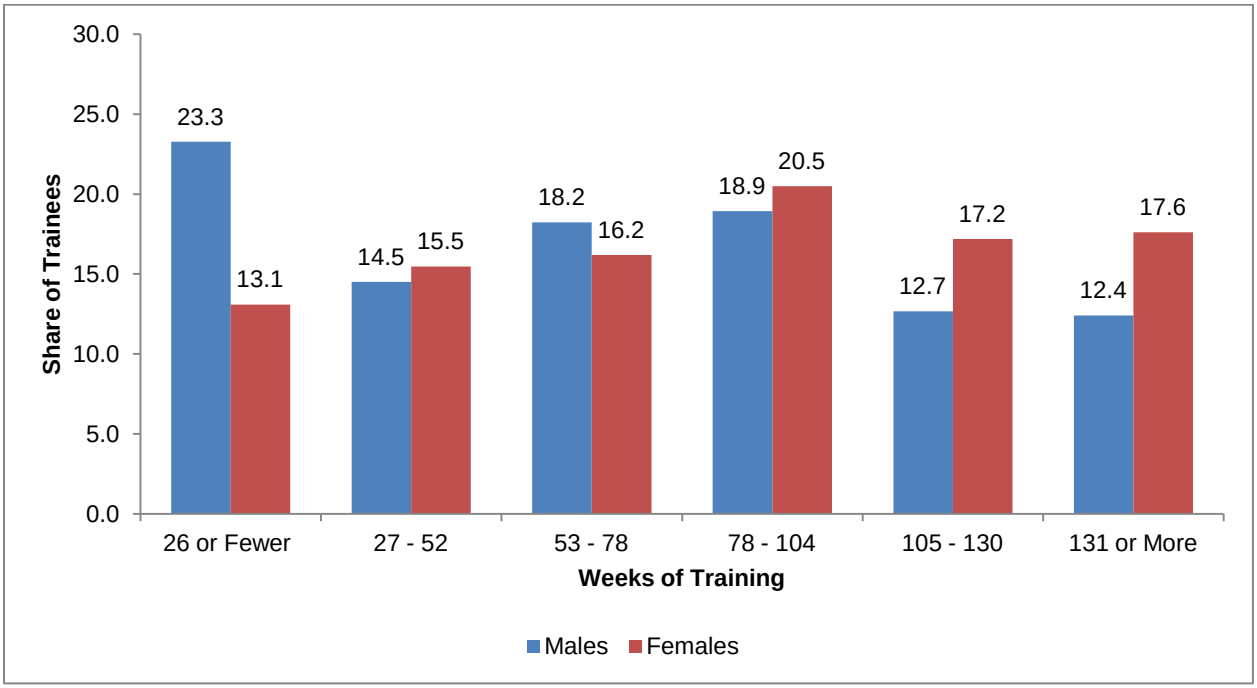
Table IV.8. Distribution of Total Weeks of Training, by Training Program

	26 or Fewer Weeks	27–52 Weeks	53–78 Weeks	79–104 Weeks	104–130 Weeks	131 or More Weeks	Total
Occupational Training Program							
Healthcare Support	18.2	16.9	16.3	19.5	13.6	15.6	100.0
Office and Administrative Support	10.9	20.5	16.2	19.7	15.1	17.7	100.0
Installation, Maintenance, and Repair	5.3	14.0	19.5	27.2	20.4	13.6	100.0
Healthcare Practitioners and Technical	6.5	15.8	21.3	22.2	20.1	14.1	100.0
Transportation and Material Moving	82.8	6.5	6.4	1.5	0.0	2.8	100.0
Production	35.9	12.8	18.8	18.2	7.3	7.0	100.0
Computer and Mathematical	13.4	15.1	10.8	27.8	13.2	19.7	100.0
Personal Care and Service	2.8	13.5	67.9	2.6	4.3	9.0	100.0
Construction and Extraction	20.1	22.6	38.8	10.7	2.0	5.8	100.0
Architecture and Engineering	10.3	7.5	4.7	39.8	9.0	28.7	100.0
Education, Training, and Library	11.8	2.9	7.0	10.6	17.2	50.4	100.0
Other Occupational Training	10.9	9.8	17.4	18.3	23.1	20.5	100.0
Only Remedial Education	21.8	20.9	16.7	21.2	9.6	9.9	100.0
Only Other Higher Education	12.6	9.4	9.7	23.1	26.6	18.7	100.0
All Trainees	18.0	15.0	17.2	19.7	15.0	15.1	100.0

Source: Mathematica TAA Initial and Follow-up Surveys.

Note: Data pertain to training and education programs of TAA participants who were enrolled in any training paid for by TAA after the UI claim date. Sampling weights were used in computing estimates.

Figure IV.1. Distribution of Weeks of Training, by Sex



Source: TAA Initial and Follow-up Surveys.

V. ENTRY INTO TRAINING

One of the goals of the 2002 TAA amendments was to move participants into training more quickly. The timing of training enrollment is affected by at least five factors: (1) the readiness of the worker to commit to training; (2) the training approval process; (3) the scheduling of training programs; (4) the availability of training slots; and (5) the timing of the TAA petition certification. Site visits conducted as part of the TAA evaluation found some shortages of training slots in high-demand occupations. Other sites reported shortages in education slots, particularly for full-time ESL classes. A recent story on a two-year college in Wisconsin found waiting lists of up to two years for required nursing courses (Goldstein 2012). Recently, President Obama signed legislation authorizing $2 billion over four years to fund the Trade Adjustment Assistance Community College and Career Training (TAACCCT) program. TAACCCT provides funds to community colleges to expand and improve training programs that serve TAA participants and other dislocated workers. The impact of these grant efforts will not be evident in the experiences of these TAA trainees who enrolled in earlier years.

While the timing of training entry likely affected labor market outcomes in the short-run, delays in entering training may have had possible long-term (and negative) effects on employment outcomes. Thus, we examined the relationship between the timing of training entry and employment outcomes in the fourth year following job loss. We used a multivariate regression model that allowed us to hold constant the trainee's demographic characteristics, characteristics of the pre-UI job, and local area characteristics (see Appendix B for more information). We also controlled for the trainee's field of training and training provider. Controlling for characteristics of the training program is important because if, for example, trainees need to wait longer to enter training for in-demand occupations, we may find a spurious relationship between a delayed training entry and employment outcomes. In this section, we report the results of the multivariate analysis as regression-adjusted means. The regression results are available in Appendix Table C.1.

- **On average, 32 weeks elapsed between a TAA participant's UI claim and first enrollment in an education or occupational skills training course (Table V.1).** However, the average time to enrollment was affected by a small group of participants who entered training at a much later date. By contrast, the median number of weeks post-claim for all trainees was only 22. Female trainees entered training slightly faster than males with a median of 21 weeks compared to 23 weeks.

- **Four years after job loss, TAA participants who entered training more quickly had better employment outcomes than those who delayed training entry.** The differences were evident in regression-adjusted weeks of employment and annual earnings. Participants who entered training within 13 weeks of the UI claim were working a regression-adjusted average of 41.1 weeks in year four, compared to 32.9 weeks of employment for participants who entered training a year or more after job loss (Figure V.1). This statistically significant difference in employment outcomes was also evident in annual earnings (Figure V.2). Participants who entered training in the first quarter after job loss had regression-adjusted earnings about $5,500 higher than those of participants who entered training a year or more after job loss ($21,044 compared to $15, 653).

- **Twenty-two percent of those who entered training in the first 13 weeks were enrolled in training in year four compared to 31 percent who entered training**

after the first year of job loss. This difference in year four training enrollment may explain the relationship between delayed training entry and year four employment outcomes. Another contributing factor may be that individuals who entered training later were still transitioning back into the labor market. In our initial analysis, we did not control for training enrollment or time since training since this is one of the channels through which delayed entry into training may affect future employment outcomes. If we add these controls to our model, there is still a significant association between the timing of training entry and employment outcomes (Appendix Table C.2).

Although trainees who entered training more quickly had better employment outcomes in the fourth year after job loss, the relationship between the timing of training entry and outcomes may not be causal. Instead, the relationship may be driven by selection. The timing of training entry was not randomly determined. While we can use our detailed survey data to control for observable characteristics of the trainee and their prior employment, there may be important unobservable factors that affect both the timing of training entry and employment outcomes. Motivated and organized TAA participants may have entered training more quickly. If this was the case, we are likely overstating the relationship between the timing of entry and employment outcomes. Alternatively, it may have been that individuals with few employment prospects were the quickest to realize that they needed training. In that case, we may be understating the relationship between training entry and employment outcomes.

If delayed training entry has long-term negative effects on the labor market outcomes of TAA trainees, it is important for policymakers to consider what can be done to speed training entry. DOL has already taken steps to facilitate early training enrollment by using the TAACCCT program to increase the number of training slots and design training programs that allow for year-round entry into training. Timing of training entry may also be affected by other TAA policy factors. Here we explore two factors—the timing of the TAA petition certification and the receipt of intensive counseling on training options. We estimate a multivariate regression with weeks elapsed between a TAA participant's UI claim and first enrollment in training as the outcome. We continue to control for the full set of baseline covariates described above.

Not all TAA participants are eligible for TAA services at the time of job loss; TAA participants may have been unemployed for up to 12 months prior to the date their employer filed a petition and still be eligible for TAA services. We found that the timing of the petition certification was significantly related to the timing of training entry (Appendix Table C.3). Workers who were eligible for TAA services at the time of their job loss entered training an average of 27 weeks after job loss (Figure V.3). In contrast, those who became certified within the first six months after job loss entered training an average of 33 weeks after the UI claim and those whose certification occurred more than six months after job loss entered training an average of 46 weeks after the UI claim. While DOL has no control over the timing of the petition filing, minimizing the wait times for certification may significantly decrease the time that elapses between a worker's job loss and training reentry. Additionally, workers who were eligible for TAA services at the time of their job loss were still entering training well after the 8/16 deadline. This is consistent with findings from implementation research that found widespread use of waivers to circumvent the 8/16 deadline.

We also examined the relationship between the receipt of intensive training counseling and the timing of training entry. In the survey, workers were asked if they had received counseling to determine whether training was appropriate or to select a training program. This counseling could delay training entry as workers wait to meet with counselors and consider all available training options. Counseling could also shorten the wait for training by helping participants make training

decisions and navigate the training application process. In our analysis, we found no significant relationships between the receipt of intensive training counseling and the timing of training entry (Figure V.4)

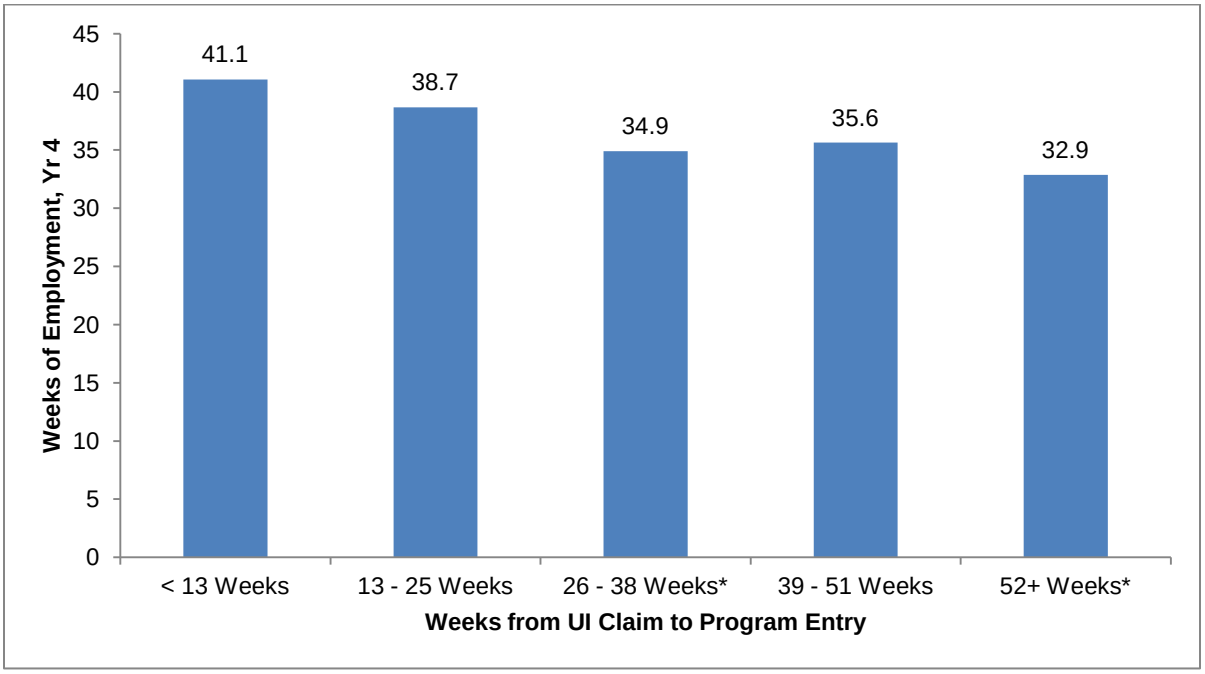
Table V.1. Timing of Training Entry for TAA- Funded Trainees

	Average Number of Weeks from Job Loss to Training Entry	Median Number of Weeks from Job Loss to Training Entry
All Trainees	32.2	22
Females	31.3	21
Males	33.2	23
Age of Trainees		
Age 40 or Younger	32.0	22
Age 41 - 50	31.9	20
Age 51 – 60	32.7	22
Age 61 or Older	32.3	26
Education Prior to Training		
No High School Credential	29.2	19
High School Credential	34.0	24
Some College	26.7	19
Bachelor's Degree or More	35.7	18

Source: Mathematica TAA Initial and Follow-up Surveys.

Note: Data pertain to training and education programs of TAA participants who were enrolled in any training after the UI claim date. Sampling weights were used in computing estimates.

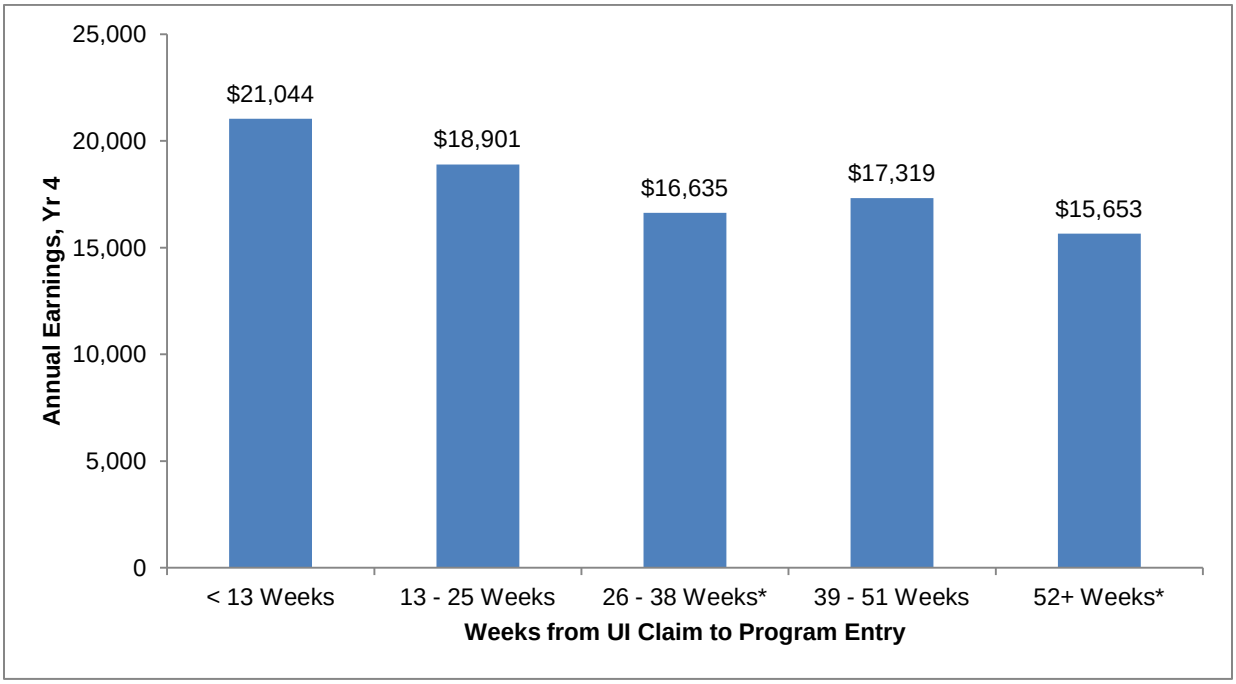
Figure V.1. Regression- Adjusted Weeks of Employment, by Timing of Training Entry



Source: TAA Initial and Follow-up Surveys.

Note: Regression estimates in Appendix Table C.1. The reference category is < 13 weeks. * indicates that the regression coefficient is significantly different from zero at the .05 level, two-tailed test.

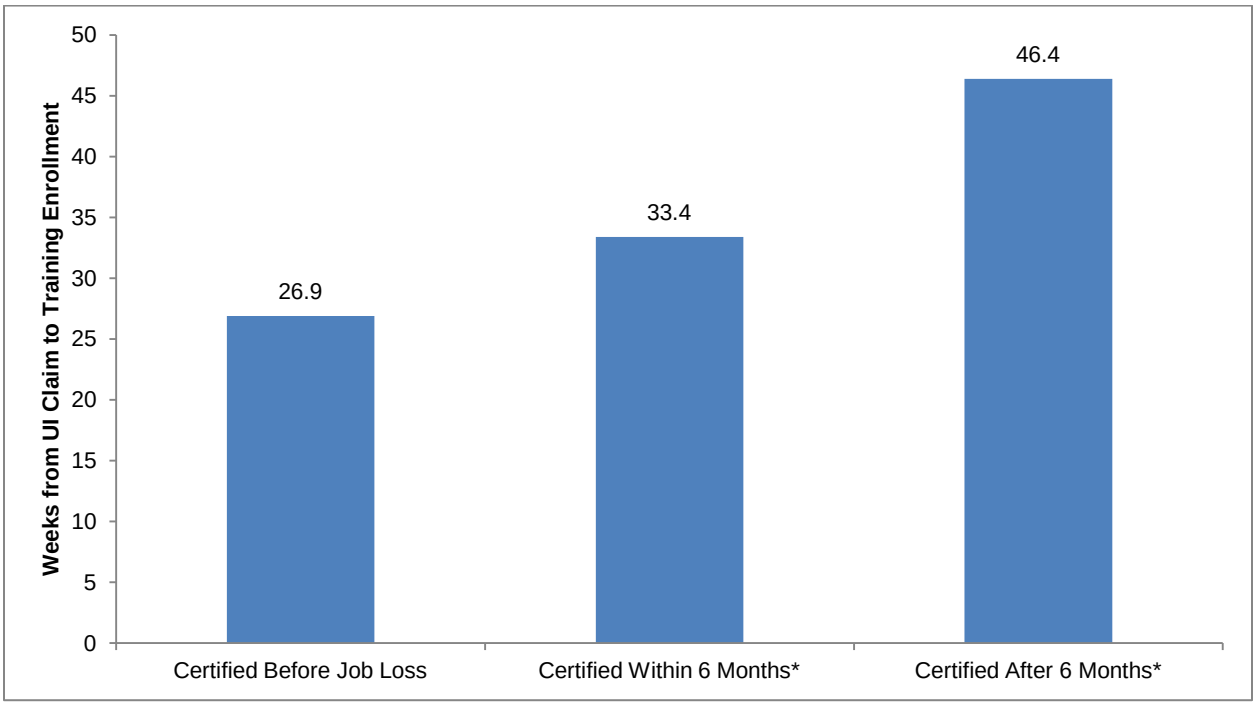
Figure V.2. Regression- Adjusted Annual Earnings, by Timing of Training Entry



Source: TAA Initial and Follow-up Surveys.

Note: Regression estimates in Appendix Table C.1. The reference category is < 13 weeks. * indicates that the regression coefficient is significantly different from zero at the .05 level, two-tailed test.

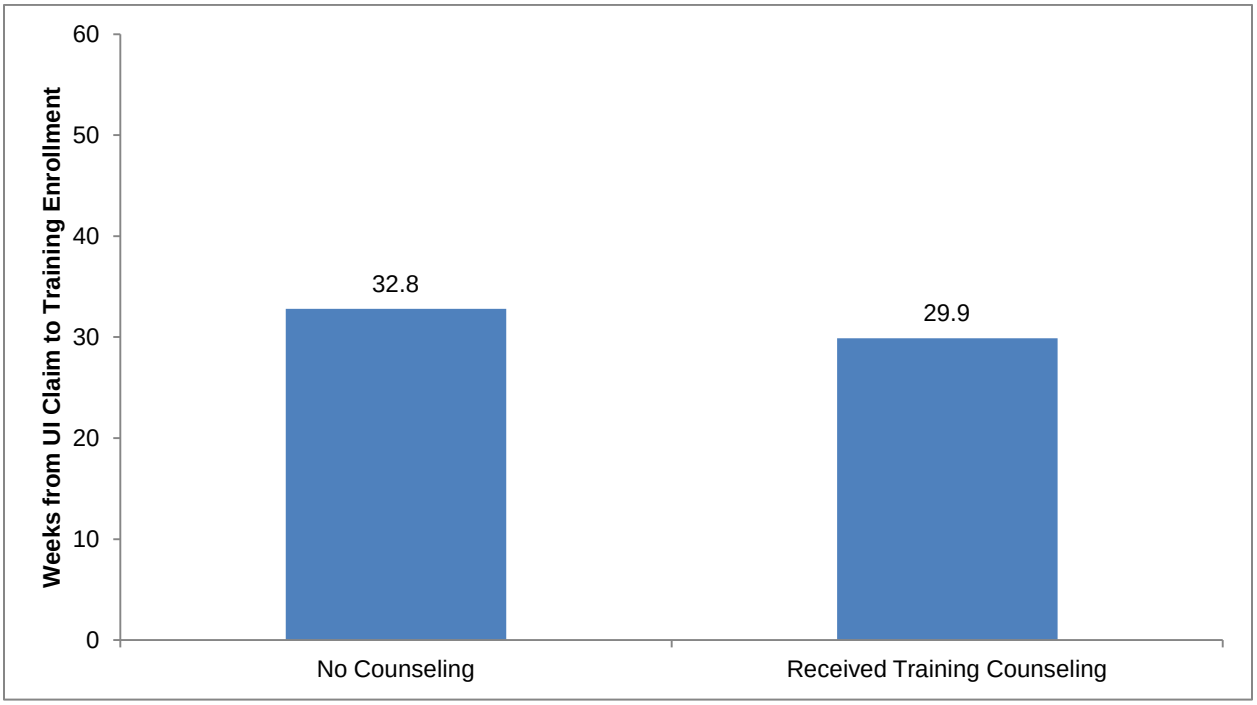
Figure V.3. Regression- Adjusted Weeks until Training Entry, by Timing of TAA Petition Certification



Source: TAA Initial and Follow-up Surveys.

Note: Regression estimates in Appendix Table C.3. The reference category is certified before job loss. * indicates that the regression coefficient is significantly different from zero at the .05 level, two-tailed test.

Figure V.4. Regression- Adjusted Weeks until Training Entry, by Receipt of Training Counseling



Source: TAA Initial and Follow-up Surveys.

Note: Regression estimates in Appendix Table C.3. The reference category is no counseling. * indicates that the regression coefficient is significantly different from zero at the .05 level, two-tailed test.

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VI. TRAINING PROGRAMS AND EMPLOYMENT OUTCOMES

The descriptive analysis of training experiences in Section IV highlighted that male and female trainees enter different occupational training programs. Since that is the case, we chose to examine the relationship between training program characteristics and employment outcomes separately by gender. The two models are identical except that the model for female trainees includes indicators for female-dominated occupational fields while the model for male trainees includes indicators for male-dominated occupational fields.

For both female and male trainees, we included the type of training, the training provider, the duration of training, the time since training was completed, and an indicator for the receipt of a credential or degree in the model. We also included the full set of baseline controls listed in Appendix B. In this section, we report the results of the multivariate analysis as regression-adjusted means.

- **For female trainees, training in healthcare practitioner and technical occupations was associated with significantly better employment outcomes (Figure VI.1).** Female healthcare practitioner trainees were employed for a regression-adjusted average of 40.4 weeks, seven weeks more than women training in other occupational areas. This group of trainees also earned more than $6,000 more than other occupational trainees ($19,487 compared to $13,116). The findings for TAA trainees are consistent with previous research that has found high returns from health care training for women (Dadgar and Weiss 2012; Jepsen et al. 2012).

- **Training in office and administrative support was also associated with significantly more weeks of employment and higher annual earnings for female trainees (Tables VI.1 and VI.2)**. Although the relative advantage compared to other fields was not as large as training in healthcare practitioner fields, training in office and administrative support was associated with seven additional weeks of employment and $3,500 more in annual earnings.

- **Employment outcomes of male trainees were not significantly related to the field of training (Tables VI.1 and VI.2)**. For males, after controlling for other factors, there was no significant relationship between the occupational field of training and weeks worked or annual earnings.

- **For both female and male trainees, the only trainee group with a regression-adjusted wage replacement rate of 100 percent was healthcare practitioner trainees (Figure VI.2)**. Female healthcare practitioner trainees achieved a wage replacement rate of 100 percent, and male healthcare practitioner trainees had a wage replacement rate of 102 percent.

- **Female trainees who enrolled at a two-year college for their primary training program worked significantly more weeks than female trainees enrolled with other providers (Tables VI.1 and VI.2)**. Four years after job loss, female trainees who attended a two-year college worked for a regression-adjusted 38 weeks compared to 33 weeks for those enrolled at a vocational training center or other provider. Training location was not significantly related to annual earnings or wage replacement. For males, there was no significant association between training provider and employment outcomes.

- **Not surprisingly, female and male trainees still enrolled in training during the final year of the follow-up period had fewer weeks of employment and lower annual earnings than other trainees (Figures VI.3 and VI.4)**. However, for those still in training in the final year who did find employment, there was no significant difference in their wage replacement rate compared to trainees who completed their training in previous years.
- **We did not find a relationship between time out of training and employment outcomes (Tables VI.1 and VI.2)**. For both female and male trainees, the difference in employment outcomes between those trainees who had finished training more than a year earlier and those who had finished in the last year was not significant.
- **There was no clear relationship between the length of a training program and employment outcomes (Tables VI.1 and VI.2)**. The only significant association between training length and outcomes was the finding that, for female trainees, shorter programs were associated with significantly higher wage replacement rates. Large returns from short training programs are not consistent with the existing literature (Dadgar and Weiss 2012; Jepsen et al. 2012), but in this case, two female trainees with short training programs and high earnings drove this unexpected finding.
- **Receiving a degree or certificate was associated with more weeks worked for both female and male trainees (Figure VI.5)**. Female trainees with a certificate or degree worked five more weeks on average than other female trainees; male trainees with a certificate or degree worked nine more weeks in year four than male trainees who lacked a certificate. Although both female and male trainees with credentials earned more than their un-credentialed peers, the difference was not significant. It is important to note that our information on certificate and degree receipt was self-reported, and we cannot distinguish between a course certificate of completion and an industry-recognized certificate. As a result, we may be underestimating the returns to more formal credentials.

Table VI.1. Regression Adjusted Employment Outcomes, Female Trainees

	Weeks Worked in Year 4	Annual Earnings in Year 4	Wage Replacement in Year 4
All Female Trainees (unadjusted)	35.6	14,595	84.9
Training for Health Support Occupation	34.8	13,435	78.9
Training for Office and Administration Occupation	36.8*	15,360*	86.2
Training for Health Practitioner Occupation	40.4*	19,487*	100.2*
Training for Computer Occupation	31.7	9,666	76.6
Training for Other Occupation (reference)	30.3	11,821	78.5
Received Remedial and Occupational Training	35.7	16,114	82.3
Received Only Occupational Training (reference)	30.2	11,564	78.7
Received Only Remedial Education	38.7	17,746	84.1
Received Only Other Higher Education	38.9	17,320	85.4
Enrolled in Training < 26 Weeks (reference)	33.5	18,123	98.1
Enrolled in Training 26 – 51 Weeks	40.7	16,100	94.7
Enrolled in Training 52 – 103 Weeks	36.5	15,368	77.4*
Enrolled in Training 104+ Weeks	33.4	12,944	83.8*
Still Enrolled in Training in Year 4	28.6*	11,268*	87.5
Out of Training Less than 1 Year	38.9	15,870	83.5
Out of Training for 1 Year or More (reference)	38.6	17,166	84.2
Did Not Receive a Degree or Certificate (reference)	32.6	13,833	83.7
Received a Degree or Certificate	37.8*	15,833	85.4
Received Training at a Community College	38.2*	16,014	84.4
Received Training at a Vocational Center	32.5	14,803	89.3
Received Training at Other Location (reference)	33.2	13,333	83.0
Number of Trainees	398	398	348

Source: Mathematica TAA Initial and Follow-up Surveys.

Note: Data pertain to training and education programs of TAA participants who were enrolled in any training paid for by TAA after the UI claim date. Sampling weights were used in computing estimates. All models include baseline covariate controls for age, education level, health status, UI benefit amount, wage at job prior to job loss, occupation at job prior to job loss, health insurance coverage at job prior to job loss, job tenure, company size, reason for job loss, an indicator for spouse employment, total household earnings, unemployment in the local area, and the percent employment in manufacturing. Regression results in Appendix Table C.4. * indicates that the regression coefficient is significantly different from zero at the .05 level, two-tailed test.

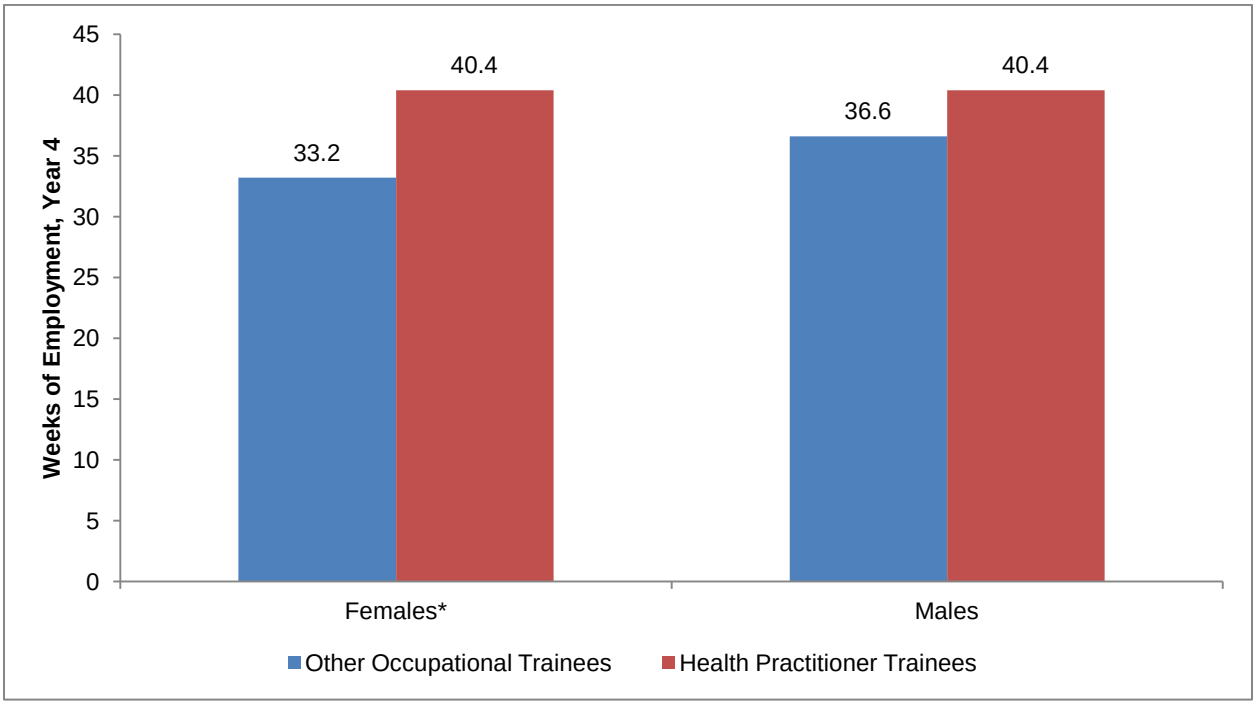
Table VI.2. Regression Adjusted Employment Outcomes, Male Trainees

	Weeks Worked in Year 4	Annual Earnings in Year 4	Wage Replacement in Year 4
All Male Trainees (unadjusted)	36.6	21,200	88.1
Training for Office and Administration Occupation	34.9	20,926	92.1
Training for Installation, Maintenance, and Repair Occupation	36.5	19,916	85.5
Training for Health Practitioner Occupation	39.9	30,497	103.0*
Training for Transportation and Material Moving Occupation	31.4	17,897	73.7
Training for a Production Occupation	33.4	23,398	92.7
Training for a Computer Occupation	35.2	16,207	79.1
Training for Other Occupation (reference)	38.5	22,308	85.6
Received Remedial and Occupational Training	35.4	19,770	91.2*
Received Only Occupational Training (reference)	39.1	21,112	84.9
Received Only Remedial Education	33.1	20,442	85.4
Received Only Other Higher Education	39.9	26,187	87.0
Enrolled in Training < 26 Weeks (reference)	35.1	19,955	90.2
Enrolled in Training 26 – 51 Weeks	35.4	21,900	85.0
Enrolled in Training 52 – 103 Weeks	36.2	20,812	82.9*
Enrolled in Training 104+ Weeks	37.6	21,840	85.5*
Still Enrolled in Training in Year 4	31.0*	15,984*	90.3
Out of Training Less than 1 Year	37.5	21,810	85.2
Out of Training for 1 Year or More (reference)	37.5	22,649	84.5
Did Not Receive a Degree or Certificate (reference)	30.0	19,002	85.2
Received a Degree or Certificate	39.0*	21,972	86.0
Received Training at a Community College	35.5	19,743	84.3
Received Training at a Vocational Center	37.1	23,405	87.3
Received Training at Other Location (reference)	36.7	21,564	86.7
Number of Trainees	366	366	318

Source: Mathematica TAA Initial and Follow-up Surveys.

Note: Data pertain to training and education programs of TAA participants who were enrolled in any training paid for by TAA after the UI claim date. Sampling weights were used in computing estimates. All models include baseline covariate controls for age, education level, health status, UI benefit amount, wage at job prior to job loss, occupation at job prior to job loss, health insurance coverage at job prior to job loss, job tenure, company size, reason for job loss, an indicator for spouse employment, total household earnings, unemployment in the local area, and the percent employment in manufacturing. Regression results in Appendix Table C.5. * indicates that the regression coefficient is significantly different from zero at the .05 level, two-tailed test.

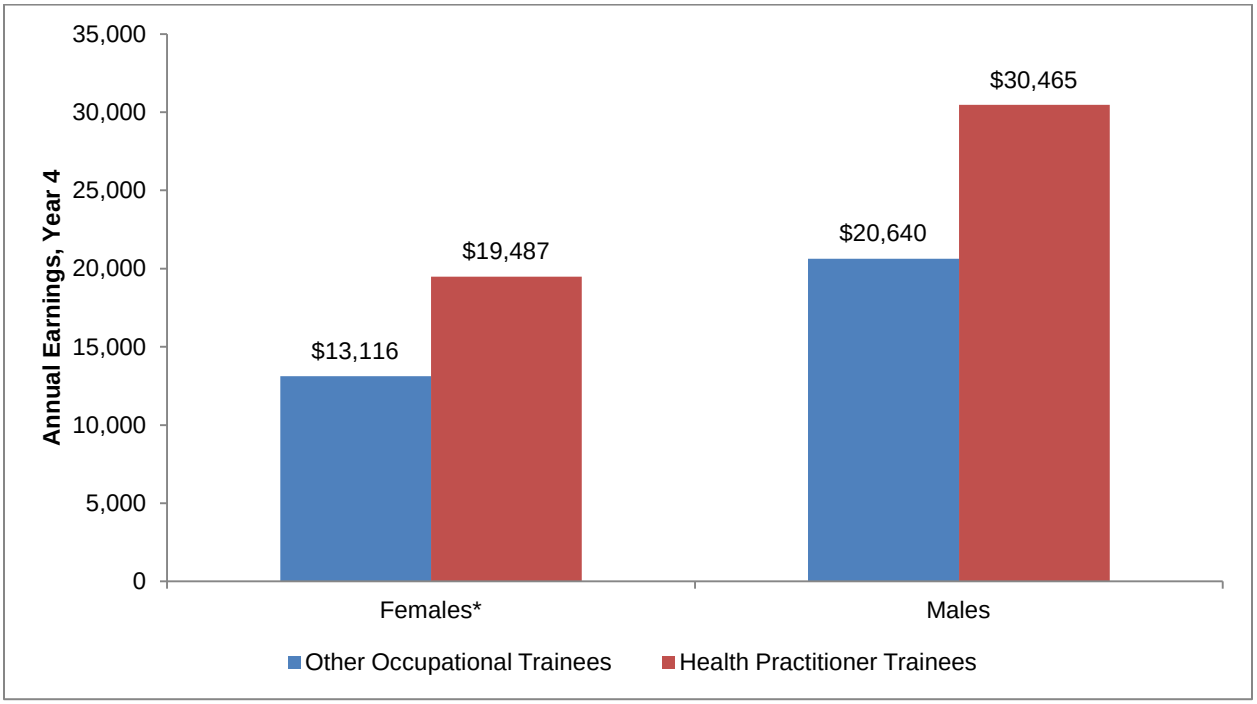
Figure VI.1. Regression- Adjusted Weeks of Employment for Healthcare Practitioner Trainees



Source: TAA Initial and Follow-up Surveys.

Note: Regression estimates in Appendix Tables C.4 and C.5. * indicates that the regression coefficient on healthcare practitioner training is significantly different from zero at the .05 level, two-tailed test.

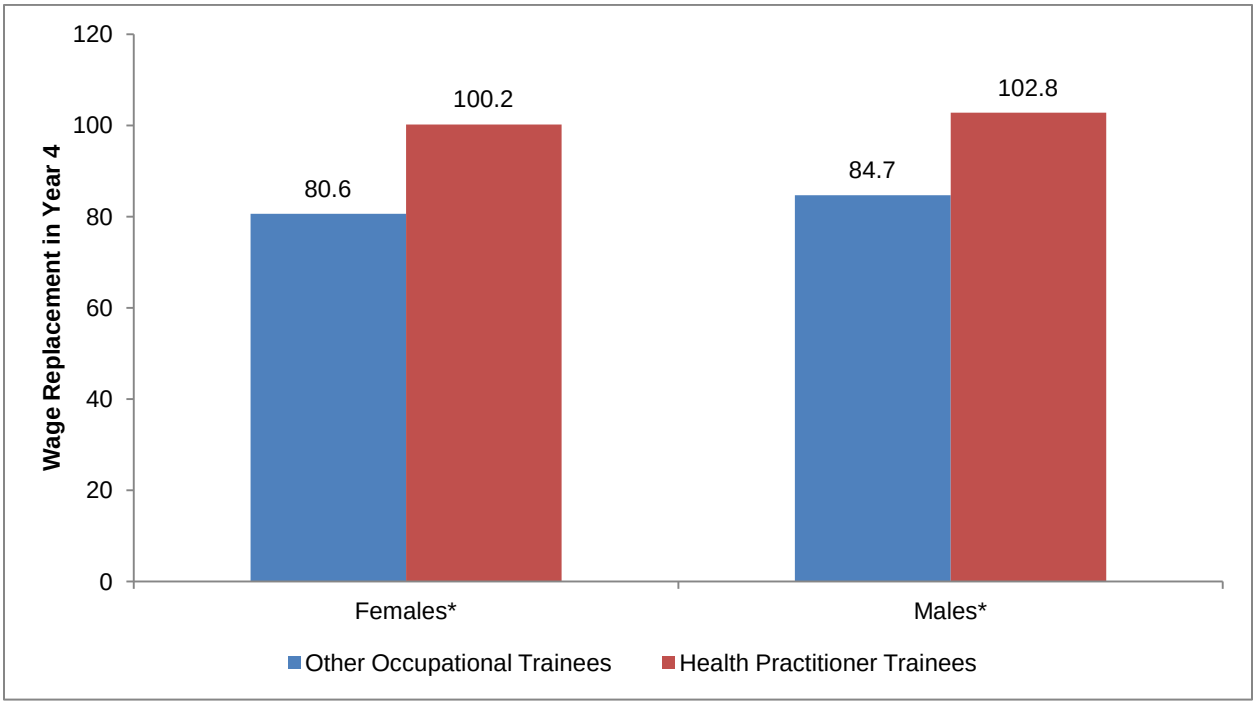
Figure VI.2. Regression- Adjusted Annual Earnings for Healthcare Practitioner Trainees



Source: TAA Initial and Follow-up Surveys.

Note: Regression estimates in Appendix Tables C.4 and C.5. * indicates that the regression coefficient on healthcare practitioner training is significantly different from zero at the .05 level, two-tailed test.

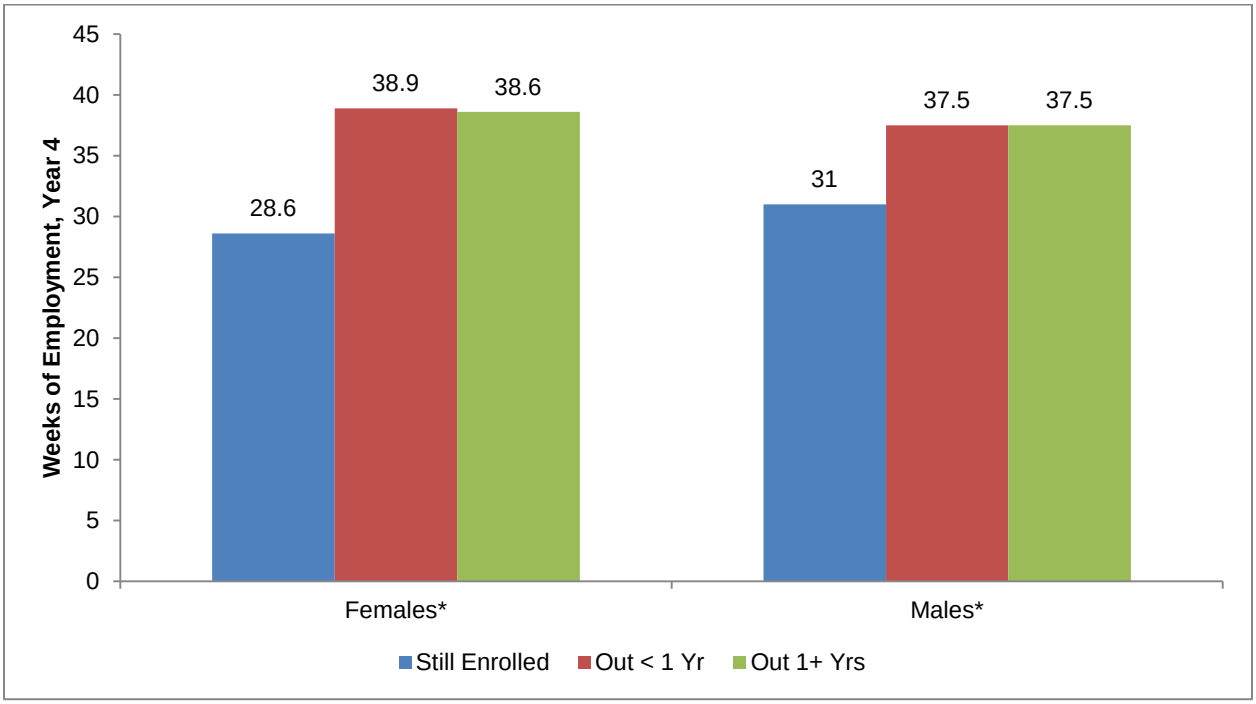
Figure VI.3. Regression- Adjusted Wage Replacement Rate for Healthcare Practitioner Trainees



Source: TAA Initial and Follow-up Surveys.

Note: Regression estimates in Appendix Tables C.4 and C.5. * indicates that the regression coefficient on healthcare practitioner training is significantly different from zero at the .05 level, two-tailed test.

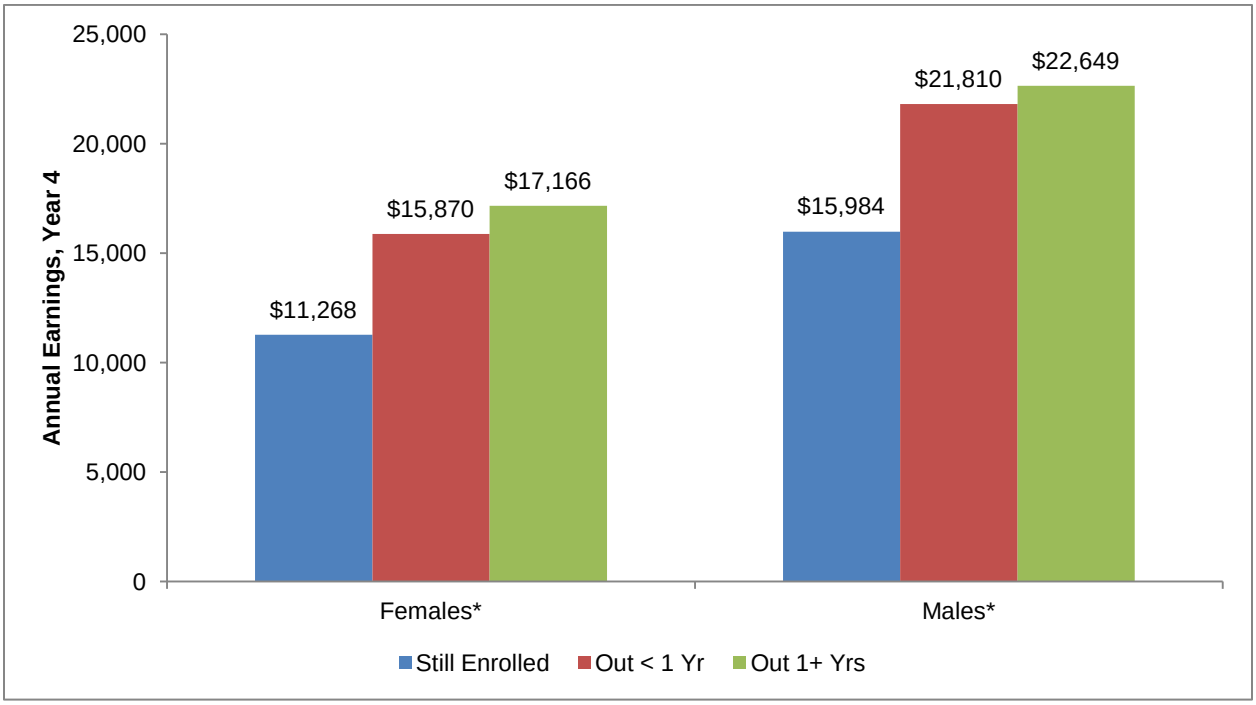
Figure VI.4. Regression- Adjusted Weeks of Employment, by Time Since Training



Source: TAA Initial and Follow-up Surveys.

Note: Regression estimates in Appendix Tables C.4 and C.5. * indicates that the regression coefficient on still enrolled is significantly different from zero at the .05 level, two-tailed test.

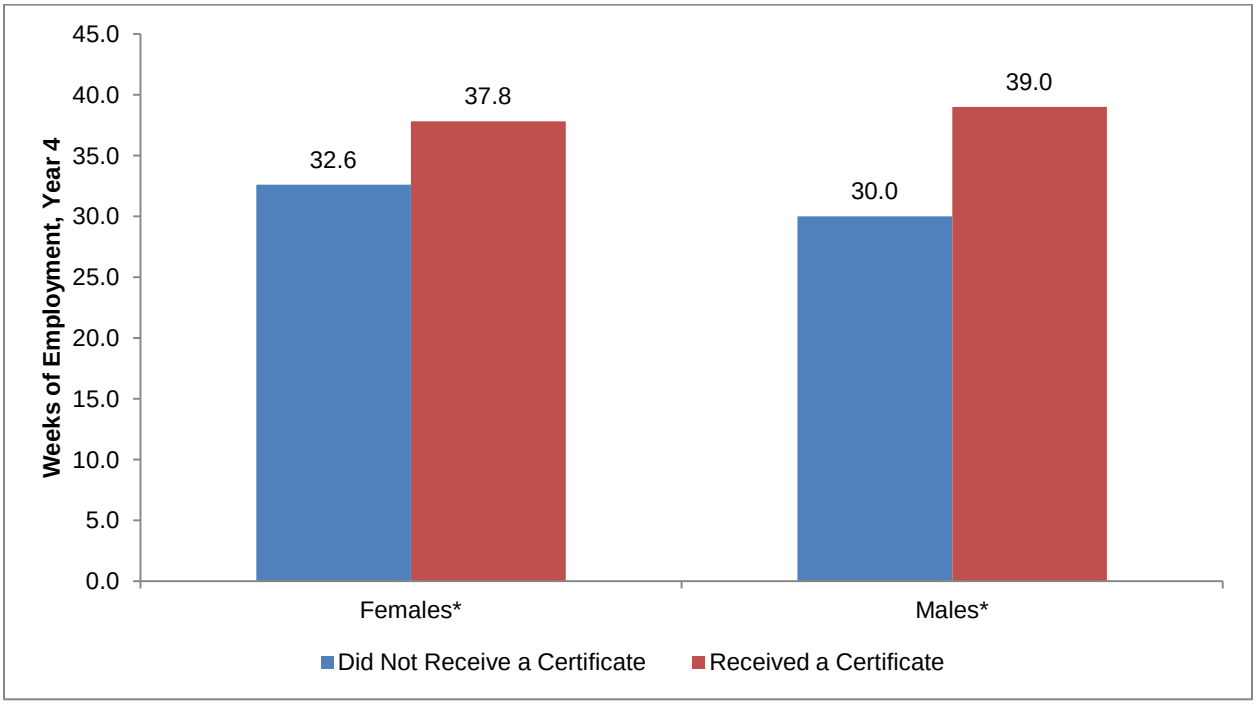
Figure VI.5. Regression- Adjusted Annual Earnings, by Time Since Training



Source: TAA Initial and Follow-up Surveys.

Note: Regression estimates in Appendix Tables C.4 and C.5. * indicates that the regression coefficient on still enrolled is significantly different from zero at the .05 level, two-tailed test.

Figure VI.6. Regression- Adjusted Weeks of Employment, by Certificate/Degree Receipt



Source: TAA Initial and Follow-up Surveys.

Note: Regression estimates in Appendix Tables C.4 and C.5. * indicates that the regression coefficient on received a certificate is significantly different from zero at the .05 level, two-tailed test.

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VII. EMPLOYMENT IN TRAINING FIELD

An important policy issue is the extent to which workers who enrolled in occupational skills training were able to find employment in their intended occupations. Employment in the field of occupational training is our best proxy that the human capital acquired in training is being used. We define an individual as employed in their training field if there is a match at the two-digit occupational code level between the training field and the trainees' employment in the last year of follow-up. Among TAA trainees who were working in the final year of follow-up, 37 percent were employed in the occupations for which they trained.[10]

This 37 percent result may overstate or understate the true extent to which TAA trainees are employed in fields connected to their training. A participant who received training for a healthcare practitioner or technical support occupation and is working in a healthcare support field may have a job that is closely related to her training, but we would not classify this as a match. Conversely, since we are only considering two-digit occupations, a participant may have received training in a new production field and returned to employment in his or her old field. We would consider this employment in the training field, but that may not be an accurate characterization.

- **The likelihood that an occupational trainee was employed in his or her training field varied by the occupational focus of the training program (Table VII.1).** Approximately one-quarter to one-third of trainees who enrolled in programs for office and administrative support; healthcare support; or installation, maintenance, and repair found employment in their training fields. In contrast, more than 50 percent of trainees in the other three most common programs—healthcare practitioners, production, and transportation and material moving—were employed in their training field.

- **Trainees who found employment in their training field had better employment outcomes than trainees employed in other occupations**. This analysis is limited to trainees who enrolled in occupational training programs and were employed at some point during the final year of the follow-up period. Controlling for personal and training program characteristics, workers employed in their training field had significantly more weeks of employment and significantly higher earnings (Figure VII.1; Appendix Tables C.6 and C.7). For female trainees, those employed in their training field worked a regression-adjusted 41.7 weeks in the final year of follow-up compared to 36.2 weeks for those employed in other occupations. Their regression-adjusted earnings were also $5,000 higher ($19,872 compared to $14,719). The outcomes were similar for male trainees. Those employed in their training field had almost two months more of employment (43.2 weeks compared to 35.8 weeks) and $6,000 more in annual earnings ($24,242 compared to $18,250).

[10] In a recent analysis of Trade Act Participant Report (TAPR) data, Park (2012) found that 37.5 percent of TAA trainees had a match between the occupation of training and of employment. Park's analysis used a different data source, used a different definition of an occupational match, and considered employment at a different point in time (employment entered after training rather than employment in the last year of the follow-up), but, remarkably, the estimates of employment in the training field are very similar.

The goal of an occupational training program is to provide workers with training that will have economic returns in the labor market. While measuring the share of workers employed in their field of training does not capture the full extent of workers using their training human capital, it is the best measure that we have available. Although we do see that trainees in certain career fields were more likely to be employed in their training fields, it is not necessarily appropriate to conclude that all TAA trainees should enter one specific training field. Employment in the field of training requires job openings in the field of training, and occupational labor demand will vary across local areas.

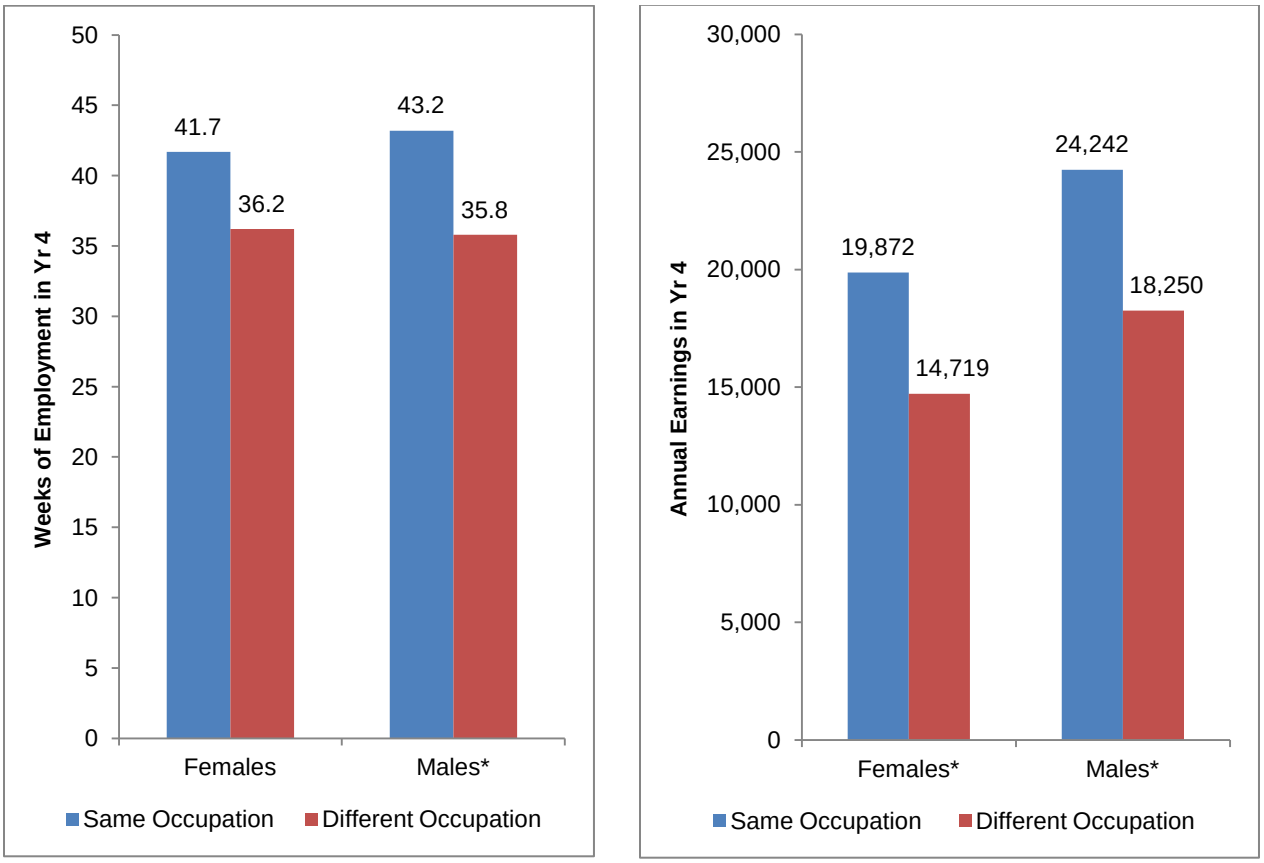
Instead, we examine the relationship between certain TAA program services and the likelihood that a trainee finds employment in their training field. In the survey, TAA participants were asked whether they took tests to see what jobs they were qualified or suited for and whether they received labor market information (LMI) about what occupations were in demand in their local area. As described previously, participants were also asked if they received counseling to determine if training was appropriate or to select a training provider or program. Trainees who completed assessments, received LMI, and spoke with counselors may have made better training decisions that increased their likelihood of a successful training outcome. We estimated a multivariate logistic regression with an indicator for employment in the training occupation as the outcome. As before, we controlled for the full set of baseline characteristics shown in Appendix Table C.8. We found that trainees who received a career assessment to see what jobs they were qualified or suited for were significantly more likely to find employment in their training field (Figure VII.2). We saw no significant differences in outcomes based on receipt of LMI or intensive counseling.

Table VII.1. Distribution of Occupation of Recent Job, by Type of Occupational Training Program

	Occupation of Most Recent Job																	
	Healthcare Support	Office and Admin	Installation	Healthcare Practitioner	Transport	Production	Personal Care and Service	Construction and Extraction	Architecture and Engineering	Education, Training, and Library	Business & Financial	Protective Services	Food Ser vices	Building Cleaning	Sales	Management	Other Occupations	TOTAL
Healthcare Support	**26.2**	15.7	0.3	12.0	2.4	16.8	3.6			3.2	2.3	0.4	4.4	2.9	8.2	0.2	1.4	100
Office and Admin	1.9	**28.2**	0.8	5.3	7.2	16.9	4.2	1.5	0.4	1.8	6.4	0.8	4.9	2.5	9.1	2.5	5.5	100
Installation		3.8	**33.3**		9.7	24.2		6.0	3.2	0.7	3.1	1.2	2.9	7.5	2.1		2.2	100
Healthcare Practitioners	8.7	11.0	0.5	**50.5**	5.6	13.6	3.1	2.1					2.1		1.5		1.5	100
Transport		2.4	3.0		**53.2**	20.1		4.5		0.9		2.0	0.7	5.4		3.4	4.3	100
Production		2.7	2.9		18.0	**57.4**		2.7			2.0		1.3	6.6			6.3	100
Computer and Mathematical		30.0	7.3		7.3	10.7		6.1	3.5	6.3				0.9	7.8	0.9	19.1	100
Personal Care and Service	19.2	3.9			4.7	27.6	**35.3**						9.3					100
Construction and Extraction			10.3			10.4		**41.3**		2.9			5.4	7.3	4.9		17.4	100
Architecture and Engineering				7.7		49.3		19.7	**11.6**			3.0		8.7				100
Education, Training, and Library				.	7.4					**45.7**	5.9			11.8	10.9		18.4	100
Other Programs	0.2	17.3	4.4	5.0	6.1	14.4	5.1	1.8	1.4	2.0	2.7	6.0	7.5	2.2	10.2	1.2	12.6	100

Source: Mathematica TAA Initial and Follow-up Surveys and UI Claims data.

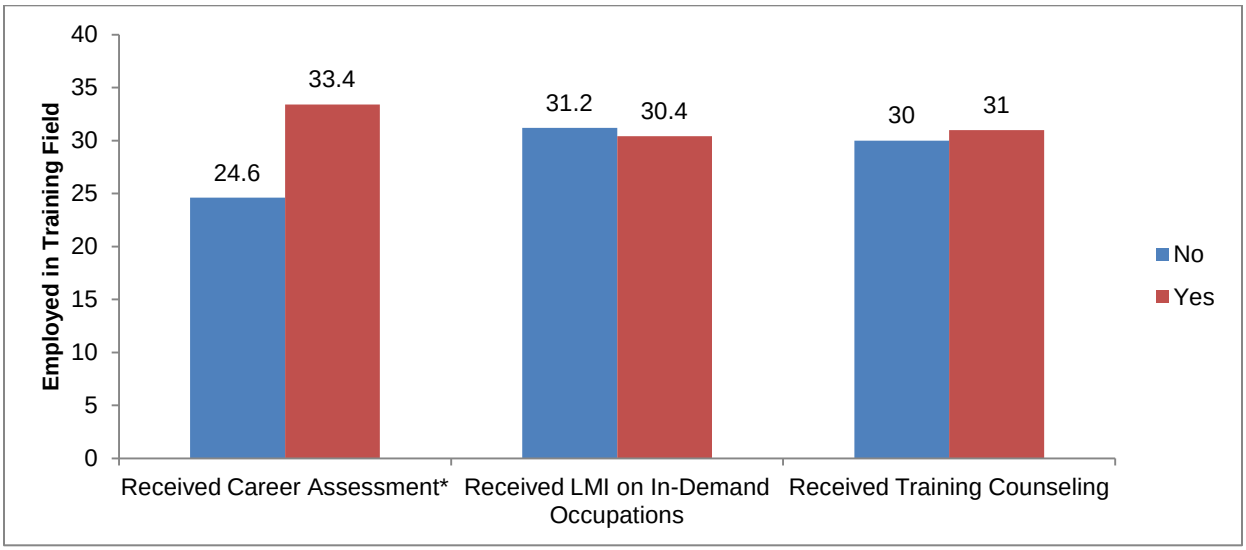
Figure VII.1. Regression- Adjusted Weeks of Employment and Annual Earnings, by Employment in Training Field



Source: TAA Initial and Follow-up Surveys.

Note: Regression estimates in Appendix Tables C.6 and C.7. * indicates that the regression coefficient on same occupation is significantly different from zero at the .05 level, two-tailed test.

Figure VII.2. Regression- Adjusted Likelihood of Employment in Training Field, by Service Receipt



Source: TAA Initial and Follow-up Surveys.

Note: Regression estimates in Appendix Tables C.8. * indicates that the regression coefficient on reemployment service is significantly different from zero at the .10 level, two-tailed test.

VIII. CONCLUSION

The impact estimates from the *Evaluation of the TAA Program* suggest that the 2002 TAA program was more effective for workers who received TAA-funded training than for those who received TRA payments (Schochet et al. 2012a) without TAA-funded training. Given these findings, we examined whether certain TAA training experiences appear to be associated with better outcomes. This analysis is not causal; we do not have a rigorous design with a comparison group. Selection into training was not random, and TAA participants who chose to enroll in one training program may have been fundamentally different from participants who enrolled in other programs. While we can use our detailed survey data to hold constant trainees' baseline characteristics, employment experience, and local area characteristics, we are still concerned about unobservable factors that may be correlated with the training program choice and employment outcomes. With this important caveat in mind, we summarize the key findings from this analysis.

- **Early training entry was associated with better labor market outcomes four years after job loss**. One key factor associated with the timing of training entry was the timing of the participant's TAA eligibility. Workers who were eligible for TAA services at the time of job loss entered training significantly earlier than those who became eligible after job loss. Interestingly, the receipt of training counseling did not appear to alter how fast TAA participants entered their education and training programs.

- **For female trainees, the occupational field of training was strongly associated with labor market outcomes.** Training in healthcare practitioner and technical fields was associated with significantly better employment outcomes. Training in office and administrative support was also associated with significantly more weeks of employment and higher annual earnings.

- **There was no clear relationship between the length of a training program and employment outcomes.** But trainees still enrolled in training during the final year of the follow-up period had fewer weeks of employment and lower annual earnings.

- **Receiving a degree or certificate was associated with more weeks worked for both female and male trainees.** We did not find a significant relationship between credential receipt and earnings.

- **Trainees who found employment in their training field had better employment outcomes than trainees employed in other occupations**. The likelihood of finding employment in the field of training varied by occupational field.

- **Trainees who received career assessments were more likely to be employed in their training field**. However, we found no differences for those who received labor market information (LMI) (regarding occupations in demand) or counseling on the appropriateness of training or provider selection.

While our study results are suggestive only, our findings point to several actions policymakers could take to strengthen the TAA program and improve the outcomes for TAA trainees. Our study focused on TAA as it operated under the 2002 amendments. In recent years, DOL has taken some steps to facilitate faster entry into training. For instance, President Obama has signed legislation authorizing $2 billion over four years to fund the Trade Adjustment Assistance Community College and Career Training (TAACCCT) program. Through the TAACCCT grants, community colleges

have access to funding that will allow them to expand training programs and develop programs that allow for year-round entry into training. DOL's Office of TAA has also worked to reduce the time required to certify TAA petitions. These initiatives could speed up training entry for TAA participants.

Second, our findings highlight the importance of policies that place trainees in training programs that suit their skills and are likely to lead to employment. While our study clearly shows there is no one correct training path for all individuals, we found that employment outcomes for the TAA trainees did vary somewhat by the occupational area of the training, especially for women. Furthermore, we found that trainees who received assessments were more likely to have a successful training outcome as measured by employment in the field of training. Also, though we did not find an association between receipt of LMI and employment in the field of training, it is possible that TAA participants received outdated or non-local LMI -- or may not have understood the implications of the LMI. Thus, policies aimed at improving the quality or use of information about genuine job openings might increase the share of trainees who find employment in the occupation in which they train.

Finally, our results do not provide support for policies that would limit the length of training. In our multivariate regressions, holding constant other factors, the length of training was not significantly associated with better or worse labor market outcomes. Being enrolled in training has a large opportunity cost, and we saw clear evidence of this in the impact study and in our finding on delayed entry into training. However, the only occupational trainees who achieved an average wage replacement rate of 100 percent were those in the healthcare practitioner and technical occupation programs, and these programs are relatively long. Thus, policies that encourage efficient completion of training programs may be more appropriate than policies that limit training to those programs which are shorter in duration.

Overall, the findings appear to suggest the importance not only of getting TAA participants into training quickly, but also of providing assessment and counseling to help participants make informed choices about training options, in light of their skills and interests, average wages and benefits in various occupations, and the likelihood of securing employment in them..

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APPENDIX A

Table A.1. Personal Characteristics of TAA- Funded Trainees and Other Participant Trainees

	TAA Funded Trainees (Percent)	Non TAA Funded Trainees (Percent)
Females	52.8	53.3
Males	47.3	46.7
Age of Trainees		
Younger than 35	16.1	10.8
35 – 39	11.2	8.3
40 – 44	16.6	6.3
45 – 49	15.8	25.4
50 – 54	19.5	19.0
55 – 59	11.7	13.8
60 or older	9.1	16.4
Education Prior to Training		
No High School Credential	14.1	20.3
High School Credential	61.9	53.9
Some College	19.3	12.3
Bachelor's Degree or More	4.7	13.5
Reason for Job Loss		
Laid Off Due to Plant Moving/Closing	75.0	76.1
Laid Off for Other Reason	23.8	22.9
USDOL Region		
Region 1 (Boston)	7.4	10.2
Region 2 (Philadelphia)	13.3	2.8
Region 3 (Atlanta)	42.3	49.0
Region 4 (Dallas)	10.9	2.9
Region 5 (Chicago)	20.5	29.4
Region 6 (San Francisco)	5.6	5.7
Sample Size	1,235	195

Source: Mathematica TAA Baseline and Follow-up Surveys.

Note: Data pertain to training and education programs of TAA participants who were enrolled in any training after the UI claim date. Sampling weights were used in computing estimates.

Table A.2. Training Characteristics of TAA- Funded Trainees and Other Participant Trainees

	TAA Funded Trainees	Non TAA Funded Trainees
Average Time Elapsed Between UI Claim and Training Start Date (Weeks)	32.2	49.6
Type of Training (Percent)		
General Education Only	10.7	32.8
Occupational Skills Only	77.1	60.4
General Education and Occupational Skills	12.2	6.8
Average Number of Weeks of Training or Education	79.1	27.5
Average Cost of Training ($)	9,449	5,926
Completed a Training Program (Percent)	65.9	73.4
Received a Training Certificate or Degree (Percent)	61.3	55.7
Sample Size	1,235	195

Source: Mathematica TAA Baseline and Follow-up Surveys.

Note: Data pertain to training and education programs of TAA participants who were enrolled in any training after the UI claim date. Sampling weights were used in computing estimates.

APPENDIX B

Table B.1. Baseline Characteristics Included as Controls in Regression Models

Individual Characteristics from the UI Claims Data
Benefit Year Start Date
Before 12/11/05
12/11/05 to 5/28/06
5/28/06 to 10/29/06
Later than 10/29/06 (omitted)
Maximum Benefit
Less than $4,524
$4,524 to $6,048
$6,048 to $7,878
$7,878 to $9,412
$9,412 to $11,700 (omitted)
Total Base Period Earnings
Less than $14,625
$14,625 to $20,921
$20,921 to $29,520
$29,520 to $42,437
$42,437 to $57,394
$57,394 or more (omitted)
Local Area Characteristics
Unemployment Rate in Year of Job Loss
Less than 3.7
3.7 to 4.4
4.4 to 5.1
5.1 to 6.0
6.0 to 7.3
7.3 or higher (omitted)
Percentage of Workers in Manufacturing in 2005
Less than 5.3
5.3 to 7.9
7.9 to 11.2
11.2 to 15.8
15.8 to 21.8
21.8 or higher (omitted)
Demographic Characteristics from the Survey Data
Male
Age at Baseline Interview
16 to 40
41 to 50
51 to 60
61 or over (omitted)
Highest Education Completed
Less Than High School
High School Diploma or GED
Some College
Bachelors or More (omitted)
Self-Reported Health
Excellent
Good
Fair
Poor (omitted)
Had Health Insurance

Table B.1 *(continued)*

Income Sources At Time of Job Loss from the Survey Data
Spouse Employed
Total Earnings In Year Prior to UI Claim Less than $10,000 $10,000 to $20,000 $20,000 to $30,000 $30,000 to $50,000 $50,000 or more (omitted)
Reason for Job Loss Laid Off Due to Plant Moving/Closing Laid Off For Other Reason Not Laid Off (omitted)
Occupation Manufacturing Engineering, Business, or Management Administrative Support Other (omitted)
Number of Employees 25 or fewer 26-100 101-500 More than 500 (omitted)
Job Tenure (Years) 0 to 2 2 to 5 5 to 10 10 to 20 More than 20 (omitted)

APPENDIX C

Table C.1. Associations between Timing of Training Enrollment and Year 4 Employment Outcomes

	Weeks of Employment in Year 4		Annual Earnings in Year 4	
	Coefficient	Standard Error	Coefficient	Standard Error
Weeks from UI Claim to Training Enrollment				
< 13 Weeks (omitted)				
13–25 Weeks	-2.50	2.25	-2,012	1,583
26–38 Weeks	-6.54***	2.33	-4,530***	1,639
39–51 Weeks	-5.59	3.43	-3,740	2,406
52 or More Weeks	-8.30***	2.07	-5,358***	1,455
Sample Size	755		755	

Source: Mathematica TAA Initial and Follow-up Surveys.

Note: Data pertain to training and education programs of TAA participants who were enrolled in any training paid for by TAA after the UI claim date. Sampling weights were used in computing estimates. All models include baseline covariate controls for age, education level, health status, UI benefit amount, wage at job prior to job loss, occupation at job prior to job loss, health insurance coverage at job prior to job loss, job tenure, company size, reason for job loss, an indicator for spouse employment, total household earnings, unemployment in the local area, and the percent employment in manufacturing. Model also includes controls for type of training program and training provider.

*/**/*** Coefficient is significantly different from zero at the 0.10/0.05/0.01 level, two-tailed test.

Table C.2. Associations between Timing of Training Enrollment and Year 4 Employment Outcomes, Controlling for Current Training Enrollment

	Weeks of Employment in Year 4		Annual Earnings in Year 4	
	Coefficient	Standard Error	Coefficient	Standard Error
Weeks from UI Claim to Training Enrollment				
< 13 Weeks (omitted)				
13 – 25 Weeks	-3.21	2.22	-2,437	1,563
26 – 38 Weeks	-5.50**	2.31	-3,834**	1,621
39 – 51 Weeks	-4.89	3.38	-3,100	2,378
52 or More Weeks	-7.19***	2.06	-4,508**	1,446
Out of Training More than One Year (omitted)				
Out of Training Less than One Year	-0.50	1.80	-1,744	1,265
Still in Training	-8.96	1.98	-6,499	1,390
Sample Size	755		755	

Source: Mathematica TAA Initial and Follow-up Surveys.

Note: Data pertain to training and education programs of TAA participants who were enrolled in any training paid for by TAA after the UI claim date. Sampling weights were used in computing estimates. All models include baseline covariate controls for age, education level, health status, UI benefit amount, wage at job prior to job loss, occupation at job prior to job loss, health insurance coverage at job prior to job loss, job tenure, company size, reason for job loss, an indicator for spouse employment, total household earnings, unemployment in the local area, and the percent employment in manufacturing. Model also includes controls for type of training program and training provider.

*/**/*** Coefficient is significantly different from zero at the 0.10/0.05/0.01 level, two-tailed test.

Table C.3. Associations Between TAA Experience and Weeks from UI Claim to Training Enrollment

	Weeks from UI Claim to Training Enrollment	
	Coefficient	Standard Error
TAA Petition Certified Before Job Loss (omitted)		
TAA Petition Certified Within Six Months after Job Loss	6.37**	2.77
TAA Petition Certified More than Six Months after Job Loss	19.44***	4.42
Did not Receive Training Counseling (omitted)		
Received Training Counseling	-2.82	2.09
Sample Size	1,041	

Source: Mathematica TAA Initial and Follow-up Surveys.

Note: Data pertain to training and education programs of TAA participants who were enrolled in any training paid for by TAA after the UI claim date. Sampling weights were used in computing estimates. All models include baseline covariate controls for age, education level, health status, UI benefit amount, wage at job prior to job loss, occupation at job prior to job loss, health insurance coverage at job prior to job loss, job tenure, company size, reason for job loss, an indicator for spouse employment, total household earnings, unemployment in the local area, and the percent employment in manufacturing.

*/**/*** Coefficient is significantly different from zero at the 0.10/0.05/0.01 level, two-tailed test.

Table C.4. Associations between Training Program Characteristics and Year 4 Employment Outcomes, Females

	Weeks of Employment in Year 4		Annual Earnings in Year 4		Ratio of Year 4 Wage to Pre-UI Wage	
	Coefficient	Standard Error	Coefficient	Standard Error	Coefficient	Standard Error
Healthcare Support	4.53	2.92	1,614	1,836	0.41	5.39
Office and Administrative Support	6.47**	2.93	3,539**	1,843	7.71	5.55
Healthcare Practitioners and Technical	10.04***	3.43	7,666***	2,159	21.72***	6.27
Computer and Mathematical	1.35	7.57	-2,155	4,759	-1.84	14.83
Other Occupation (omitted)						
Remedial and Occupational	1.19	3.88	2,176	2,442	-1.80	7.45
Only Remedial	8.56*	5.01	6,183*	3,155	5.38	9.69
Only Higher Education	8.77*	4.85	5,756*	3,050	6.70	9.03
Out of Training More than 1 Yr (omitted)						
Out of Training Less than 1 Yr	0.34	2.86	-1,295	1,796	-0.70	5.32
Still Enrolled in Training	-10.03***	3.09	-5,897***	1,941	3.35	5.81
Trained at Community College	5.00**	2.87	2,681	1,807	1.33	5.45
Trained at Vocational Center	-0.63	3.58	1,470	2,252	6.23	6.68
Other Provider (omitted)						
< 26 Weeks (omitted)						
26–51 Weeks of Training	7.33*	4.33	-2,220	2,723	-3.57	7.88
52–103 Weeks of Training	2.21	3.81	-3,269	2,397	-20.51***	6.94
104+ Weeks of Training	2.08	3.94	-3,943	2,480	-15.02***	7.26
Received a Certificate or Degree	5.25**	2.35	2,000	1,477	1.63	4.53
Sample Size	398		398		348	

Source: Mathematica TAA Initial and Follow-up Surveys.

Note: Data pertain to training and education programs of TAA participants who were enrolled in any training paid for by TAA after the UI claim date. Sampling weights were used in computing estimates. All models include baseline covariate controls for age, education level, health status, UI benefit amount, wage at job prior to job loss, occupation at job prior to job loss, health insurance coverage at job prior to job loss, job tenure, company size, reason for job loss, an indicator for spouse employment, total household earnings, unemployment in the local area, and the percent employment in manufacturing.

*/**/*** Coefficient is significantly different from zero at the 0.10/0.05/0.01 level, two-tailed test.

Table C.5. Associations between Training Program Characteristics and Year 4 Employment Outcomes, Males

	Weeks of Employment in Year 4		Annual Earnings in Year 4		Ratio of Year 4 Wage to Pre-UI Wage	
	Coefficient	Standard Error	Coefficient	Standard Error	Coefficient	Standard Error
Office and Administrative Support	-3.64	4.51	-1,382	3,643	13.00	9.49
Installation, Maintenance, and Repair	-2.02	2.99	-2,392	2,411	-3.88	5.84
Healthcare Practitioners and Technical	1.41	5.52	8,189*	4,458	28.01***	10.35
Transportation and Material Moving	-7.14	4.36	-4,411	3,517	-9.46	8.57
Production	-5.18	3.85	1,090	3,109	11.51	7.65
Computer and Mathematical	-3.30	4.96	-6,101	4,002	-4.64	9.71
Other Occupation (omitted)						
Remedial and Occupational	-1.39	4.63	-1,342	3,738	20.43**	8.93
Only Remedial	-6.07	4.84	-1,947	3,911	8.73	10.15
Only Higher Education	0.73	5.41	3,798	4,364	1.18	11.09
Out of Training More than 1 Yr (omitted)						
Out of Training Less than 1 Yr	-0.08	2.75	-839	2,224	-4.06	5.40
Still Enrolled in Training	-6.56**	3.36	-6,665**	2,711	-0.38	6.83
Trained at Community College	-1.17	2.73	-1,821	2,201	3.23	5.30
Trained at Vocational Center	0.40	3.23	1,841	2,605	3.04	6.37
Other Provider (omitted)						
<26 Weeks of Training (omitted)						
26–51 Weeks of Training	0.25	3.98	1,945	3,215	-2.83	7.98
52–103 Weeks of Training	1.05	3.44	857	2,780	3.71	6.84
104+ Weeks of Training	2.47	3.96	1,884	3,200	2.85	7.95
Received a Certificate or Degree	9.00***	2.48	2,970	2,006	-0.88	4.99
Sample Size	366		366		318	

Source: Mathematica TAA Initial and Follow-up Surveys.

Note: Data pertain to training and education programs of TAA participants who were enrolled in any training paid for by TAA after the UI claim date. Sampling weights were used in computing estimates. All models include baseline covariate controls for age, education level, health status, UI benefit amount, wage at job prior to job loss, occupation at job prior to job loss, health insurance coverage at job prior to job loss, job tenure, company size, reason for job loss, an indicator for spouse employment, total household earnings, unemployment in the local area, and the percent employment in manufacturing.

*/**/*** Coefficient is significantly different from zero at the 0.10/0.05/0.01 level, two-tailed test.

Table C.6. Association between Employment in Training Field and Year 4 Employment Outcomes, Females

	Weeks of Employment in Year 4		Annual Earnings in Year 4		Ratio of Year 4 Wage to Pre-UI Wage	
	Coefficient	Standard Error	Coefficient	Standard Error	Coefficient	Standard Error
Employed in Occupational Training Field	5.53*	3.16	5,152**	2,055	15.30**	6.20
Healthcare Support	1.32	3.60	181	2,338	3.43	7.19
Office and Administrative Support	2.18	3.52	31	2,287	3.42	7.03
Healthcare Practitioners and Technical	6.57*	3.81	5,439**	2,479	19.72**	7.42
Other Occupation (omitted)						
Remedial and Occupational	-1.09	5.96	-677	3,873	-10.31	12.72
Out of Training Less than 1 Yr	0.45	3.40	-1,328	2,212	-1.97	6.75
Still Enrolled in Training	-6.64	3.75	-3,555	2,439	5.22	7.54
Trained at Community College	8.83**	4.05	7,813***	2,629	12.24	8.54
Trained at Vocational Center	4.59	4.48	6,574***	2,911	11.51	9.15
Other Provider (omitted)						
< 26 Weeks of Training (omitted)						
26–51 Weeks of Training	5.27	5.65	-4,319	3,672	-13.48	10.75
52–103 Weeks of Training	3.36	4.56	-5,805	2,962	-32.19**	8.63
104+ Weeks of Training	2.02	4.80	-6,137	3,118	-21.26**	9.32
Received a Certificate or Degree	7.46**	3.00	4,625***	1,947	1.94	6.11
Sample Size	259		259		232	

Source: Mathematica TAA Initial and Follow-up Surveys.

Note: Data pertain to training and education programs of TAA participants who were enrolled in any training paid for by TAA after the UI claim date. Sampling weights were used in computing estimates. All models include baseline covariate controls for age, education level, health status, UI benefit amount, wage at job prior to job loss, occupation at job prior to job loss, health insurance coverage at job prior to job loss, job tenure, company size, reason for job loss, an indicator for spouse employment, total household earnings, unemployment in the local area, and the percent employment in manufacturing.

*/**/*** Coefficient is significantly different from zero at the 0.10/0.05/0.01 level, two-tailed test.

Table C.7. Association between Employment in Training Field and Year 4 Employment Outcomes, Males

	Weeks of Employment in Year 4		Annual Earnings in Year 4		Ratio of Year 4 Wage to Pre-UI Wage	
	Coefficient	Standard Error	Coefficient	Standard Error	Coefficient	Standard Error
Employed in Training Field	7.41**	3.02	5,992**	2,402	6.09	6.42
Office and Administrative Support	-2.88	5.47	1,878	4,347	3.49	12.29
Installation, Maintenance, and Repair	-1.04	3.84	531	3,050	-9.48	8.32
Healthcare Practitioners and Technical	-1.58	5.82	7,667**	4,628	29.95**	12.12
Transportation and Material Moving	-4.11	5.35	-308	4,252	-17.88	11.67
Production	-8.16	4.60	1,624	3,655	7.51	10.00
Other Occupation (omitted)						
Remedial and Occupational	4.78	7.91	5,322	6,285	30.58*	16.75
Out of Training More than 1 Yr (omitted)						
Out of Training Less than 1 Yr	1.48	3.60	148	2,862	2.55	7.72
Still Enrolled in Training	-1.84	4.34	-3,833	3,448	-8.81	9.68
Trained at Community College	-6.80	3.55	-3,624	2,819	2.99	7.49
Trained at Vocational Center	-4.45	4.01	810	3,186	4.91	8.45
Other Provider (omitted)						
< 26 Weeks of Training (omitted)						
26–51 Weeks of Training	6.34	5.39	7,945*	4,284	3.83	11.98
52–103 Weeks of Training	4.22	4.39	3,720	3,491	-5.58	9.71
104+ Weeks of Training	2.10	5.06	3,534	4,021	2.72	11.32
Received a Certificate or Degree	6.74**	3.29	3,042	2,614	-3.53	7.28
Sample Size	242		242		216	

Source: Mathematica TAA Initial and Follow-up Surveys.

Note: Data pertain to training and education programs of TAA participants who were enrolled in any training paid for by TAA after the UI claim date. Sampling weights were used in computing estimates. All models include baseline covariate controls for age, education level, health status, UI benefit amount, wage at job prior to job loss, occupation at job prior to job loss, health insurance coverage at job prior to job loss, job tenure, company size, reason for job loss, an indicator for spouse employment, total household earnings, unemployment in the local area, and the percent employment in manufacturing.

*/**/*** Coefficient is significantly different from zero at the 0.10/0.05/0.01 level, two-tailed test.

Table C.8. Associations between TAA Experience and Employment in Training Field

	Employed in Training Field	
	Coefficient	Standard Error
Received Career Assessment	0.43*	0.23
Received Labor Market Information on In-demand Occupations	-0.03	0.24
Received Training Counseling	0.04	0.19
Sample Size	713	

Source: Mathematica TAA Initial and Follow-up Surveys.

Note: Data pertain to training and education programs of TAA participants who were enrolled in any training paid for by TAA after the UI claim date. Sampling weights were used in computing estimates. All logistic models include baseline covariate controls for age, education level, health status, UI benefit amount, wage at job prior to job loss, occupation at job prior to job loss, health insurance coverage at job prior to job loss, job tenure, company size, reason for job loss, an indicator for spouse employment, total household earnings, unemployment in the local area, and the percent employment in manufacturing.

*/**/*** Coefficient is significantly different from zero at the 0.10/0.05/0.01 level, two-tailed test.

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