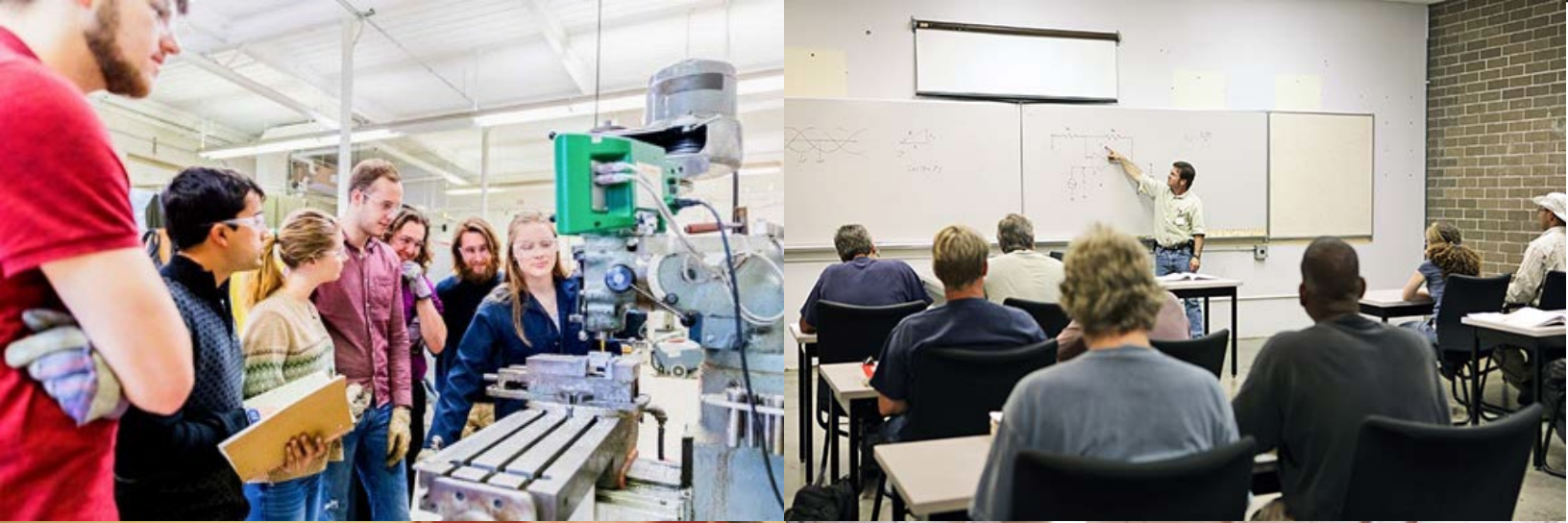


CAAL–Skills: Study of Workforce Training Programs in California – Appendices



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APPENDIX A. | Method details

This section presents further details on the methods used in the study.

Research Design

This study attempts to measure the effectiveness of CAAL–Skills programs using a non–experimental research design. Specifically, the design relies on administrative data available from CAAL–Skills and an assumption referred to as “selection on observables” to provide causal impact estimates for each program (Rosenbaum and Rubin, 1983; Imbens, 2004). The intuition behind this assumption is straightforward: if two individuals – in the same place and time – are observationally equivalent before either participates in a program, but only one of them participates in that program, then any difference in outcomes after enrollment can be attributed to program participation. The credibility of this assumption relies on whether we believe that non–participants actually are a relevant and similar population, which is helped by the context from which these programs are administered and the richness of the available data that can be used to determine observational equivalence.

Entropy balancing. To choose comparison groups that best match the characteristics of program participants, this study relies on a strategy called “entropy balancing” (Hainmueller, 2012). The strategy works as follows: Given two groups – a program group and a non–program group – and a set of characteristics that are available for both, entropy balancing will produce design weights that make the non–program group resemble the program group. For example, if 80% of the program group and 75% of the non–program group were employed in the 4th quarter before program entry, applying entropy–balancing weights would result in both groups being employed at 80% in the 4th quarter before program entry. In other words, to the extent the data allow, entropy balancing creates design weights that make the pre–enrollment characteristics across groups the same, or “balanced.” Intuitively, this works by creating larger weights for those in the non–program group that are observationally similar to those in the program group, and smaller weights (sometimes zero weights) for those in the non–program that are different from program participants. Throughout, those in the program group receive a weight of one (that is, the weight of one individual). However, for the non–program group, the sum of the entropy weights will exactly equal the number of individuals in the program group. One of the

strengths of entropy balancing is that it can create weights in a way that simultaneously balances many pre-enrollment characteristics.¹

Entropy balancing is a form of propensity-score weighting – a common strategy for implementing the selection on observables strategy. Although entropy balancing is not designed to model the probability of program participation, which is the goal of propensity score modeling, it is effective at achieving that goal (Zhao and Percival, 2016). The distinct advantage of entropy balancing is that, unlike direct estimation of propensity scores, it instead directly addresses the problem of covariate balance. Because of the similarities with direct propensity-score estimation, this study implements entropy balancing using best practices for using the propensity score (Busso et al. 2014; Huber et al. 2013; Imbens 2015). This includes corrections for estimates of statistical precision that incorporate the fact that entropy weights are themselves estimates, which we discuss below.

Design challenges and solutions

There are a few challenges across programs that this study addressed when implementing the research design. These include: (1) inability to identify comparison groups within local labor markets, (2) estimating statistical precision using weights that are themselves estimates; and (3) multiple comparisons.

Excluding local labor markets with poor comparison groups. This study explicitly excludes labor markets where a similar comparison group could not be identified for each program. A benefit of this study’s approach is that comparison groups are created within many different local labor markets. Because of that, the design allows for an assessment of baseline equivalence within each labor market and the study can exclude those labor markets where no adequate comparison group could be empirically identified. To implement this restriction, the study team assessed the comparability of groups by focusing on the full set of 8 pre-program earnings covariates that were used to create the entropy weights. Specifically, the study team first excluded any labor market where any of the 8 pre-program earnings measures

¹ We implement this strategy using the “ebalance” command in the Stata software package created by Hainmueller and Xu (2013).

had an effect size difference greater than 0.05.² If less than 10% of the program sample was excluded on this ground, all remaining labor markets were used to estimate impacts. However, if more than 10% were excluded, we allowed labor markets with effect size differences greater than 0.05 but less than 0.25 to be included. Markets with effect size differences greater than 0.25 were always excluded. Ideally, the percent of excluded participants would remain low so that available impacts would be available for the entire program, but this study made no attempts to include labor markets that could not meet these requirements. Note, when the percent of excluded program participants is high, this does not mean that the design has failed. In fact, this is exactly what the design should be doing: identifying situations where making comparisons is difficult and should not be done. Before starting this study, it was expected that identifying comparison groups would be difficult for some programs. This strategy of assessing how many program participants were attempted and eventually included in the analysis is an important way that this study empirically documents this.

Correcting for statistical precision that uses estimated weights. As mentioned above, statistical tests should correct for estimated impacts that rely on estimated design weights. A valid strategy for this is using the bootstrap method (Efron and Tibshirani 1986; Huber et al. 2013). This is generally implemented by resampling the population with replacement to create alternative samples and then re-estimating the impacts each time so that confidence intervals can be established. However, computational limitations did not allow for this for all impacts given the size of the samples and the number of impacts estimated in this study. For that reason, this study only performs the bootstrap for impacts when average quarterly wages or average quarterly employment are the outcomes – not when estimating impacts for each individual quarter. For these average quarterly outcomes, confidence intervals were created by randomly drawing 1,000 samples of local labor markets for each comparison with replacement. Impacts were then estimated for each draw and the 2.5th centile and 97.5th centile of the resulting impacts are used to create 95% confidence intervals on the impact estimate from the full sample. If this confidence interval does not contain zero, this study considers that impact statistically significant. Again, although we do

² “Effect size” is the standardized difference between two means, so it represents the difference in pooled standard deviation units.

not perform this correction for impacts that are estimated for each quarter (that is, in each of the earnings–trajectory figures), we continue to present a sense of statistical precision for those impacts since they generally appear conservative (based on results from analyses not presented in this report).

Limiting multiple comparisons with “main comparison.” For each program, we define a main comparison and two outcomes to identify summative findings. This is done for two primary reasons. First, as a first attempt to provide impact estimates for many of these programs, this study attempts to identify a single set of estimates to highlight as a benchmark: one for employment and one for earnings. Additional impacts are included to provide additional context across various subgroups. Second, given the richness of the data, the authors avoided identifying impacts based on broad searches for statistically significant impacts. A longstanding concern for credible evaluations is that statistically significant findings can always be identified if enough comparisons are made, even when true effects are zero. For that reason, this study focuses on a pre-specified main comparison with two outcomes for each program to assess whether the programs were generally effective for their target populations, without risk of overstating statistical significance. Additional impacts are considered exploratory.

APPENDIX B.1. | Chapter 4.1 WIOA Title I:
Adults
Supplemental tables and figures

B.1.1. Baseline tables

TABLE B.1.1.1: Baseline comparisons between T1A trainees from FYs 2014–15 and 2015–16 with a similar WP comparison group

	Treatment Group	Comparison Group	Difference	Effect-size Difference ^a
Demographics				
Age	33.7	33.8	-0.1	0.00
Male	48.9%	49.0%	-0.1	n.a.
Hispanic	42.7%	42.6%	0.1	n.a.
Black	22.1%	22.0%	0.1	n.a.
White	42.2%	42.1%	0.1	n.a.
Declined to state race/ethnicity	6.7%	6.9%	-0.2	n.a.
Disability (self-identified)	5.2%	5.2%	0.0	n.a.
Pre-entry labor market				
Industry: construction/manufacturing	7.9%	8.0%	-0.1	n.a.
Industry: trade/transportation	18.9%	18.9%	0.0	n.a.
Industry: professional service	20.5%	20.6%	-0.1	n.a.
Industry: other service	29.0%	28.9%	0.1	n.a.
Industry: other	3.7%	3.8%	-0.1	n.a.
Tenure of last job in quarters	6.5	6.5	0.0	0.00
Earnings in quarter of entry	\$2,415	\$2,450	-35	-0.01
Earnings 1st quarter before entry	\$2,834	\$2,892	-58	-0.01
Earnings 2nd quarter before entry	\$3,111	\$3,171	-59	-0.01
Earnings 3rd quarter before entry	\$3,191	\$3,245	-53	-0.01
Earnings 4th quarter before entry	\$3,201	\$3,251	-49	-0.01
Quarterly earnings 2nd year before entry	\$3,205	\$3,248	-44	-0.01
Quarterly earnings 3rd year before entry	\$3,106	\$3,145	-39	-0.01
Quarterly earnings 4th year before entry	\$2,997	\$3,034	-37	-0.01
Quarterly employment 2nd year before entry	14.4%	14.5%	-0.1	0.00
Quarterly employment 3rd year before entry	13.4%	13.4%	0.0	0.00
Quarterly employment 4th year before entry	12.4%	12.4%	0.0	0.00
Design Statistics				
Local labor markets	298	298		
Observations (weighted)	14,755	14,755		
Observations (unweighted)	14,755	672,339		
Excluded due to poor comparison	1.7%	n.a.		

Notes: Means reflect design-weighted means from each group. Differences reflect design-weighted differences from within-local labor market comparisons that are then averaged across labor markets with market weights equal to the treatment group from each market. The percent excluded due to poor comparisons is based on the treatment sample in labor markets where effect sizes on pre-enrollment earnings were above 0.25 standard deviations.

a -- effect size difference is the mean difference divided by the pooled standard deviation for continuous variables only.

TABLE B.1.1.2: Baseline comparisons between T1A trainees who completed at least one training program from FYs 2014–15 and 2015–16 with a similar WP comparison group

	Treatment Group	Comparison Group	Difference	Effect-size Difference ^a
Demographics				
Age	33.6	33.6	0.0	0.00
Male	49.3%	49.4%	-0.1	n.a.
Hispanic	43.1%	43.1%	0.0	n.a.
Black	21.7%	21.6%	0.1	n.a.
White	41.6%	41.6%	0.0	n.a.
Declined to state race/ethnicity	6.8%	7.0%	-0.2	n.a.
Disability (self-identified)	5.2%	5.2%	0.0	n.a.
Pre-entry labor market				
Industry: construction/manufacturing	7.4%	7.5%	-0.1	n.a.
Industry: trade/transportation	19.0%	18.9%	0.1	n.a.
Industry: professional service	20.5%	20.6%	-0.1	n.a.
Industry: other service	29.5%	29.4%	0.1	n.a.
Industry: other	3.8%	3.9%	-0.1	n.a.
Tenure of last job in quarters	6.6	6.6	0.0	0.00
Earnings in quarter of entry	\$2,457	\$2,488	-31	-0.01
Earnings 1st quarter before entry	\$2,852	\$2,902	-50	-0.01
Earnings 2nd quarter before entry	\$3,115	\$3,166	-51	-0.01
Earnings 3rd quarter before entry	\$3,176	\$3,223	-47	-0.01
Earnings 4th quarter before entry	\$3,198	\$3,241	-43	-0.01
Quarterly earnings 2nd year before entry	\$3,211	\$3,252	-41	-0.01
Quarterly earnings 3rd year before entry	\$3,111	\$3,148	-37	-0.01
Quarterly earnings 4th year before entry	\$3,017	\$3,052	-35	-0.01
Quarterly employment 2nd year before entry	14.5%	14.5%	0.0	0.00
Quarterly employment 3rd year before entry	13.5%	13.5%	0.0	0.00
Quarterly employment 4th year before entry	12.5%	12.5%	0.0	0.00
Design Statistics				
Local labor markets	274	274		
Observations (weighted)	11,461	11,461		
Observations (unweighted)	11,461	658,961		
Excluded due to poor comparison	2.9%	n.a.		

Notes: Means reflect design-weighted means from each group. Differences reflect design-weighted differences from within-local labor market comparisons that are then averaged across labor markets with market weights equal to the treatment group from each market. The percent excluded due to poor comparisons is based on the treatment sample in labor markets where effect sizes on pre-enrollment earnings were above 0.25 standard deviations.

^a -- effect size difference is the mean difference divided by the pooled standard deviation for continuous variables only.

TABLE B.1.1.3: Baseline comparisons between male T1A trainees from FYs 2014–15 and 2015–16 with a similar WP comparison group

	Treatment Group	Comparison Group	Difference	Effect-size Difference ^a
Demographics				
Age	34.3	34.4	-0.1	-0.01
Male	100.0%	100.0%	0.0	n.a.
Hispanic	42.2%	42.0%	0.2	n.a.
Black	21.2%	21.0%	0.2	n.a.
White	42.4%	42.2%	0.2	n.a.
Declined to state race/ethnicity	7.2%	7.5%	-0.3	n.a.
Disability (self-identified)	7.1%	7.0%	0.1	n.a.
Pre-entry labor market				
Industry: construction/manufacturing	12.2%	12.4%	-0.2	n.a.
Industry: trade/transportation	19.5%	19.4%	0.1	n.a.
Industry: professional service	13.5%	13.7%	-0.2	n.a.
Industry: other service	30.7%	30.6%	0.1	n.a.
Industry: other	4.3%	4.4%	-0.1	n.a.
Tenure of last job in quarters	6.3	6.3	0.0	-0.01
Earnings in quarter of entry	\$2,648	\$2,711	-63	-0.02
Earnings 1st quarter before entry	\$3,120	\$3,238	-118	-0.02
Earnings 2nd quarter before entry	\$3,384	\$3,501	-118	-0.02
Earnings 3rd quarter before entry	\$3,475	\$3,579	-104	-0.02
Earnings 4th quarter before entry	\$3,457	\$3,553	-96	-0.02
Quarterly earnings 2nd year before entry	\$3,465	\$3,551	-86	-0.02
Quarterly earnings 3rd year before entry	\$3,353	\$3,429	-75	-0.01
Quarterly earnings 4th year before entry	\$3,235	\$3,308	-73	-0.01
Quarterly employment 2nd year before entry	14.3%	14.4%	-0.1	-0.01
Quarterly employment 3rd year before entry	13.3%	13.4%	-0.1	-0.01
Quarterly employment 4th year before entry	12.2%	12.3%	-0.1	-0.01
Design Statistics				
Local labor markets	222	222		
Observations (weighted)	7,042	7,042		
Observations (unweighted)	7,042	338,621		
Excluded due to poor comparison	4.0%	n.a.		

Notes: Means reflect design-weighted means from each group. Differences reflect design-weighted differences from within-local labor market comparisons that are then averaged across labor markets with market weights equal to the treatment group from each market. The percent excluded due to poor comparisons is based on the treatment sample in labor markets where effect sizes on pre-enrollment earnings were above 0.25 standard deviations.

^a -- effect size difference is the mean difference divided by the pooled standard deviation for continuous variables only.

TABLE B.1.1.4: Baseline comparisons between female TIA trainees from FYs 2014–15 and 2015–16 with a similar WP comparison group

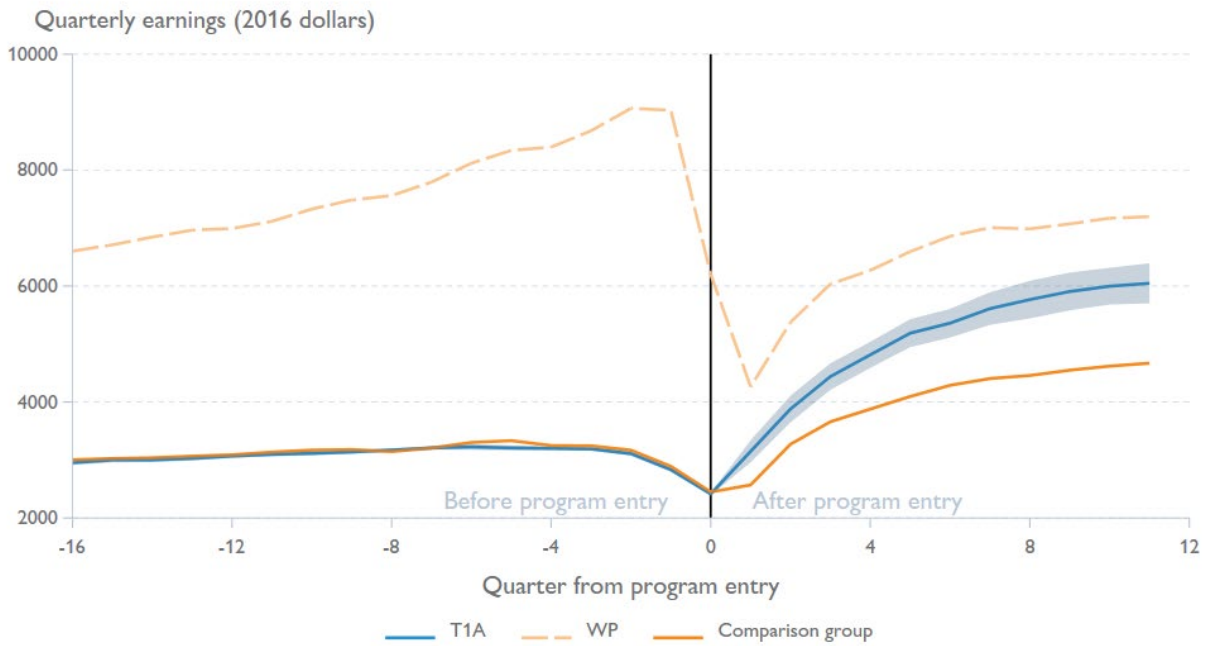
	Treatment Group	Comparison Group	Difference	Effect-size Difference ^a
Demographics				
Age	33.2	33.3	-0.1	-0.01
Male	0.0%	0.0%	0.0	n.a.
Hispanic	43.8%	43.6%	0.2	n.a.
Black	23.3%	23.1%	0.2	n.a.
White	41.3%	41.1%	0.2	n.a.
Declined to state race/ethnicity	6.1%	6.6%	-0.5	n.a.
Disability (self-identified)	3.5%	3.5%	0.0	n.a.
Pre-entry labor market				
Industry: construction/manufacturing	3.6%	3.7%	-0.1	n.a.
Industry: trade/transportation	18.3%	18.3%	0.0	n.a.
Industry: professional service	27.2%	27.3%	-0.1	n.a.
Industry: other service	27.2%	27.1%	0.1	n.a.
Industry: other	3.4%	3.4%	0.0	n.a.
Tenure of last job in quarters	6.6	6.7	-0.1	-0.01
Earnings in quarter of entry	\$2,170	\$2,249	-78	-0.02
Earnings 1st quarter before entry	\$2,553	\$2,669	-116	-0.03
Earnings 2nd quarter before entry	\$2,839	\$2,956	-116	-0.03
Earnings 3rd quarter before entry	\$2,888	\$3,000	-113	-0.03
Earnings 4th quarter before entry	\$2,916	\$3,020	-104	-0.02
Quarterly earnings 2nd year before entry	\$2,925	\$3,019	-94	-0.02
Quarterly earnings 3rd year before entry	\$2,849	\$2,934	-85	-0.02
Quarterly earnings 4th year before entry	\$2,764	\$2,841	-76	-0.02
Quarterly employment 2nd year before entry	14.5%	14.6%	-0.1	-0.01
Quarterly employment 3rd year before entry	13.4%	13.5%	-0.1	-0.01
Quarterly employment 4th year before entry	12.5%	12.6%	-0.1	-0.01
Design Statistics				
Local labor markets	231	231		
Observations (weighted)	7,385	7,385		
Observations (unweighted)	7,385	311,079		
Excluded due to poor comparison	3.8%	n.a.		

Notes: Means reflect design-weighted means from each group. Differences reflect design-weighted differences from within-local labor market comparisons that are then averaged across labor markets with market weights equal to the treatment group from each market. The percent excluded due to poor comparisons is based on the treatment sample in labor markets where effect sizes on pre-enrollment earnings were above 0.25 standard deviations.

^a -- effect size difference is the mean difference divided by the pooled standard deviation for continuous variables only.

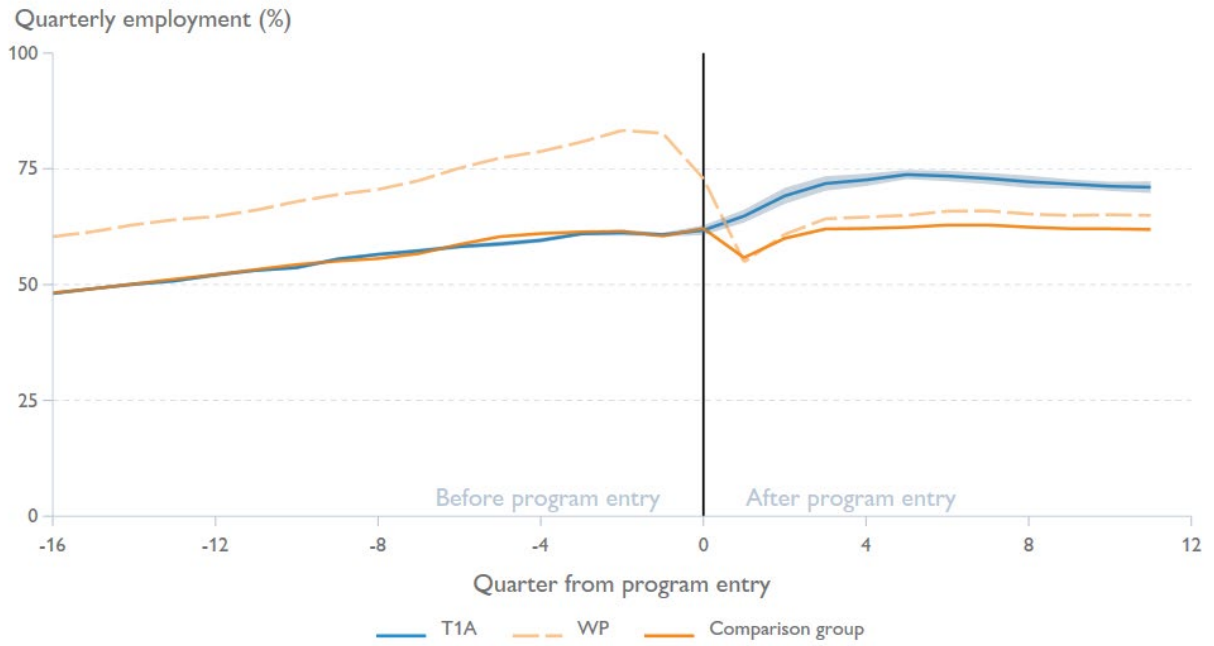
B.1.2. Impact figures for Primary Comparisons with unweighted sample

FIGURE B.1.2.1: Quarterly earnings comparisons between T1A trainees from FYs 2014–15 and 2015–16 with a similar WP comparison group



Notes: The light-blue shaded region around the Treated trend line represents a 95% confidence band for weighted group differences from within-local labor market comparisons that do not control for covariates and takes the weights as given. This shaded region is also present in the pre-enrollment quarters but is not visually apparent due to precise estimates.

FIGURE B.1.2.2: Quarterly employment comparisons between T1A trainees from FYs 2014–15 and 2015–16 with a similar WP comparison group



Notes: The light-blue shaded region around the Treated trend line represents a 95% confidence band for weighted group differences from within-local labor market comparisons that do not control for covariates and takes the weights as given. This shaded region is also present in the pre-enrollment quarters but is not visually apparent due to precise estimates.

B.1.3. Impact tables with design components

TABLE B.1.3.1: Labor market impacts for groups of T1A trainees from FYs 2014–15 and 2015–16, including design statistics

	Main group: T1A trainees vs. WP (1)	T1A completed training vs. WP (2)	T1A male trainees vs. WP Males (3)	T1A female trainees vs. WP Females (4)
Quarterly employment: Q=-8 to Q=-5				
Treatment group mean	57.7%	57.9%	57.1%	58.1%
Comparison group mean	57.9%	58.1%	57.4%	58.4%
Impact in percentage points	-0.1*	-0.1*	-0.3*	-0.3*
	(-0.2, -0.1)	(-0.2, -0.1)	(-0.4, -0.2)	(-0.4, -0.2)
Quarterly employment: Q7 to Q11				
Treatment group mean	71.8%	73.7%	70.0%	73.7%
Comparison group mean	62.3%	62.6%	61.3%	63.7%
Impact in percentage points	9.6*	11.1*	8.8*	10.0*
	(8.9, 10.3)	(10.3, 11.9)	(7.7, 9.9)	(9, 11)
Quarterly earnings: Q=-8 to Q=-5				
Treatment group mean	\$3,205	\$3,211	\$3,465	\$2,925
Comparison group mean	\$3,248	\$3,252	\$3,551	\$3,019
Impact in 2016 dollars	-44*	-41*	-86*	-94*
	(-59, -31)	(-58, -29)	(-116, -61)	(-127, -66)
Impact as percent	-1.4%*	-1.3%*	-2.4%*	-3.1%*
	(-1.8%, -1.0%)	(-1.8%, -0.9%)	(-3.3%, -1.7%)	(-4.2%, -2.2%)
Quarterly earnings: Q7 to Q11				
Treatment group mean	\$5,867	\$6,173	\$6,127	\$5,577
Comparison group mean	\$4,541	\$4,567	\$4,888	\$4,302
Impact in 2016 dollars	1,351*	1,628*	1,285*	1,326*
	(1207, 1522)	(1471, 1808)	(1130, 1440)	(1102, 1567)
Impact as percent	29.8%*	35.6%*	26.3%*	30.8%*
	(26.6%, 33.5%)	(32.2%, 39.6%)	(23.1%, 29.5%)	(25.6%, 36.4%)
Design Statistics				
Local labor markets	298	274	222	231
Participants in full sample	15,009	11,805	7,333	7,676
Participants included in analysis	14,755	11,461	7,042	7,385
Excluded due to poor comparison	1.7%	2.9%	4.0%	3.8%

Notes: Results are from impact estimates that include covariates used for weighting. For that reason, impact estimates may not always equal the differences in means between treatment and comparison groups. The weighted sample size of

the comparison group equals the treated group included in the analysis exactly. Ninety-five percent confidence intervals are given below each impact estimate in parentheses and were created using 1,000 bootstrap draws on local labor markets. The percent of the treated group excluded in the analysis reflects those in local labor markets where no sufficient comparison sample could be identified.

APPENDIX B.2. | Chapter 4.2 WIOA Title I:
Dislocated Workers
Supplemental tables and figures

B.2.1. Baseline tables

TABLE B.2.1.1: Baseline comparisons between T1DW trainees from FYs 2014–15 and 2015–16 with a similar WP comparison group

	Treatment Group	Comparison Group	Difference	Effect-size Difference ^a
Demographics				
Age	41.5	41.4	0.0	0.00
Male	53.9%	53.8%	0.1	n.a.
Hispanic	42.0%	41.9%	0.1	n.a.
Black	12.0%	12.0%	0.0	n.a.
White	45.3%	45.1%	0.2	n.a.
Declined to state race/ethnicity	10.2%	10.4%	-0.2	n.a.
Disability (self-identified)	3.9%	3.9%	0.0	n.a.
Pre-entry labor market				
Industry: construction/manufacturing	18.7%	18.6%	0.1	n.a.
Industry: trade/transportation	15.2%	15.4%	-0.2	n.a.
Industry: professional service	30.7%	30.6%	0.1	n.a.
Industry: other service	19.4%	19.3%	0.1	n.a.
Industry: other	7.2%	7.2%	0.0	n.a.
Tenure of last job in quarters	9.8	9.8	0.0	0.01
Earnings in quarter of entry	\$3,193	\$3,234	-41	-0.01
Earnings 1st quarter before entry	\$6,792	\$6,827	-35	0.00
Earnings 2nd quarter before entry	\$8,707	\$8,676	31	0.00
Earnings 3rd quarter before entry	\$8,887	\$8,852	36	0.00
Earnings 4th quarter before entry	\$8,834	\$8,792	42	0.01
Quarterly earnings 2nd year before entry	\$8,864	\$8,822	43	0.01
Quarterly earnings 3rd year before entry	\$8,431	\$8,386	45	0.01
Quarterly earnings 4th year before entry	\$8,079	\$8,036	43	0.01
Quarterly employment 2nd year before entry	20.3%	20.3%	0.0	0.01
Quarterly employment 3rd year before entry	19.2%	19.1%	0.1	0.01
Quarterly employment 4th year before entry	18.0%	18.0%	0.0	0.01
Design Statistics				
Local labor markets	263	263		
Observations (weighted)	9,318	9,318		
Observations (unweighted)	9,318	675,605		
Excluded due to poor comparison	2.2%	n.a.		

Notes: Means reflect design-weighted means from each group. Differences reflect design-weighted differences from within-local labor market comparisons that are then averaged across labor markets with market weights equal to the treatment group from each market. The percent excluded due to poor comparisons is based on the treatment sample in labor markets where effect sizes on pre-enrollment earnings were above 0.25 standard deviations.

a -- effect size difference is the mean difference divided by the pooled standard deviation for continuous variables only.

TABLE B.2.1.2: Baseline comparisons between T1DW trainees from FYs 2014–15 and 2015–16 who completed at least one training program with a similar WP comparison group

	Treatment Group	Comparison Group	Difference	Effect-size Difference ^a
Demographics				
Age	41.5	41.5	0.1	0.01
Male	54.3%	54.1%	0.2	n.a.
Hispanic	41.5%	41.3%	0.2	n.a.
Black	11.9%	11.8%	0.1	n.a.
White	45.3%	45.1%	0.2	n.a.
Declined to state race/ethnicity	10.6%	10.8%	-0.2	n.a.
Disability (self-identified)	3.7%	3.7%	0.0	n.a.
Pre-entry labor market				
Industry: construction/manufacturing	18.5%	18.2%	0.3	n.a.
Industry: trade/transportation	15.6%	15.6%	0.0	n.a.
Industry: professional service	31.0%	31.0%	0.0	n.a.
Industry: other service	19.6%	19.6%	0.0	n.a.
Industry: other	6.3%	6.4%	-0.1	n.a.
Tenure of last job in quarters	9.9	9.9	0.0	0.01
Earnings in quarter of entry	\$3,333	\$3,363	-30	0.00
Earnings 1st quarter before entry	\$6,867	\$6,898	-31	0.00
Earnings 2nd quarter before entry	\$8,709	\$8,704	5	0.00
Earnings 3rd quarter before entry	\$8,936	\$8,911	26	0.00
Earnings 4th quarter before entry	\$8,887	\$8,867	20	0.00
Quarterly earnings 2nd year before entry	\$8,915	\$8,892	24	0.00
Quarterly earnings 3rd year before entry	\$8,496	\$8,457	39	0.00
Quarterly earnings 4th year before entry	\$8,151	\$8,119	32	0.00
Quarterly employment 2nd year before entry	20.4%	20.4%	0.0	0.01
Quarterly employment 3rd year before entry	19.3%	19.2%	0.1	0.01
Quarterly employment 4th year before entry	18.2%	18.1%	0.1	0.01
Design Statistics				
Local labor markets	255	255		
Observations (weighted)	7,439	7,439		
Observations (unweighted)	7,439	663,683		
Excluded due to poor comparison	3.8%	n.a.		

Notes: Means reflect design-weighted means from each group. Differences reflect design-weighted differences from within-local labor market comparisons that are then averaged across labor markets with market weights equal to the treatment group from each market. The percent excluded due to poor comparisons is based on the treatment sample in labor markets where effect sizes on pre-enrollment earnings were above 0.25 standard deviations.

a -- effect size difference is the mean difference divided by the pooled standard deviation for continuous variables only.

TABLE B.2.1.3: Baseline comparisons between male T1DW trainees from FYs 2014–15 and 2015–16 with a similar WP comparison group

	Treatment Group	Comparison Group	Difference	Effect-size Difference ^a
Demographics				
Age	40.0	39.9	0.1	0.01
Male	100.0%	100.0%	0.0	n.a.
Hispanic	44.7%	44.4%	0.3	n.a.
Black	11.4%	11.3%	0.1	n.a.
White	44.9%	44.5%	0.4	n.a.
Declined to state race/ethnicity	9.5%	9.9%	-0.4	n.a.
Disability (self-identified)	5.0%	5.1%	-0.1	n.a.
Pre-entry labor market				
Industry: construction/manufacturing	25.1%	24.5%	0.6	n.a.
Industry: trade/transportation	15.7%	16.1%	-0.4	n.a.
Industry: professional service	20.0%	20.1%	-0.1	n.a.
Industry: other service	19.2%	19.2%	0.0	n.a.
Industry: other	19.3%	19.2%	0.1	n.a.
Tenure of last job in quarters	9.2	9.1	0.1	0.01
Earnings in quarter of entry	\$3,285	\$3,401	-116	-0.02
Earnings 1st quarter before entry	\$6,803	\$6,919	-116	-0.01
Earnings 2nd quarter before entry	\$8,797	\$8,795	2	0.00
Earnings 3rd quarter before entry	\$8,996	\$8,934	63	0.01
Earnings 4th quarter before entry	\$8,854	\$8,800	53	0.01
Quarterly earnings 2nd year before entry	\$8,849	\$8,779	71	0.01
Quarterly earnings 3rd year before entry	\$8,391	\$8,311	80	0.01
Quarterly earnings 4th year before entry	\$7,999	\$7,919	79	0.01
Quarterly employment 2nd year before entry	19.6%	19.5%	0.1	0.01
Quarterly employment 3rd year before entry	18.3%	18.2%	0.1	0.02
Quarterly employment 4th year before entry	17.1%	16.9%	0.2	0.01
Design Statistics				
Local labor markets	234	234		
Observations (weighted)	4,802	4,802		
Observations (unweighted)	4,802	337,011		
Excluded due to poor comparison	6.2%	n.a.		

Notes: Means reflect design-weighted means from each group. Differences reflect design-weighted differences from within-local labor market comparisons that are then averaged across labor markets with market weights equal to the treatment group from each market. The percent excluded due to poor comparisons is based on the treatment sample in labor markets where effect sizes on pre-enrollment earnings were above 0.25 standard deviations.

a -- effect size difference is the mean difference divided by the pooled standard deviation for continuous variables only.

TABLE B.2.1.4: Baseline comparisons between female T1DW trainees from FYs 2014–15 and 2015–16 with a similar WP comparison group

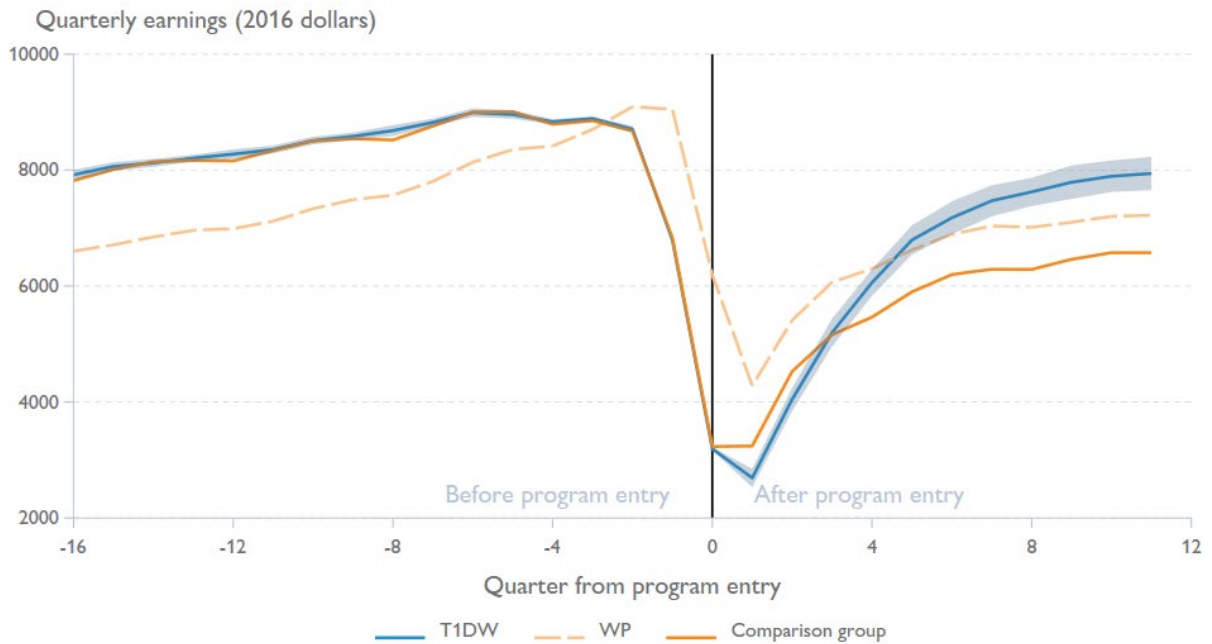
	Treatment Group	Comparison Group	Difference	Effect-size Difference ^a
Demographics				
Age	43.4	43.3	0.2	0.01
Male	0.0%	0.0%	0.0	n.a.
Hispanic	38.2%	38.1%	0.1	n.a.
Black	12.9%	12.7%	0.2	n.a.
White	44.9%	44.2%	0.7	n.a.
Declined to state race/ethnicity	11.4%	12.2%	-0.8	n.a.
Disability (self-identified)	2.6%	2.6%	0.0	n.a.
Pre-entry labor market				
Industry: construction/manufacturing	11.4%	11.1%	0.3	n.a.
Industry: trade/transportation	14.5%	14.7%	-0.2	n.a.
Industry: professional service	42.4%	42.1%	0.3	n.a.
Industry: other service	20.1%	20.5%	0.4	n.a.
Industry: other	4.2%	4.2%	0.0	n.a.
Tenure of last job in quarters	10.6	10.5	0.1	0.02
Earnings in quarter of entry	\$3,239	\$3,366	-128	-0.02
Earnings 1st quarter before entry	\$6,869	\$6,960	-91	-0.01
Earnings 2nd quarter before entry	\$8,613	\$8,605	8	0.00
Earnings 3rd quarter before entry	\$8,833	\$8,775	58	0.01
Earnings 4th quarter before entry	\$8,896	\$8,846	51	0.01
Quarterly earnings 2nd year before entry	\$8,984	\$8,902	82	0.01
Quarterly earnings 3rd year before entry	\$8,613	\$8,503	110	0.01
Quarterly earnings 4th year before entry	\$8,307	\$8,176	131	0.02
Quarterly employment 2nd year before entry	21.1%	21.0%	0.1	0.02
Quarterly employment 3rd year before entry	20.2%	20.0%	0.2	0.02
Quarterly employment 4th year before entry	19.3%	19.0%	0.3	0.02
Design Statistics				
Local labor markets	215	215		
Observations (weighted)	4,143	4,143		
Observations (unweighted)	4,143	314,849		
Excluded due to poor comparison	6.0%	n.a.		

Notes: Means reflect design-weighted means from each group. Differences reflect design-weighted differences from within-local labor market comparisons that are then averaged across labor markets with market weights equal to the treatment group from each market. The percent excluded due to poor comparisons is based on the treatment sample in labor markets where effect sizes on pre-enrollment earnings were above 0.25 standard deviations.

^a -- effect size difference is the mean difference divided by the pooled standard deviation for continuous variables only.

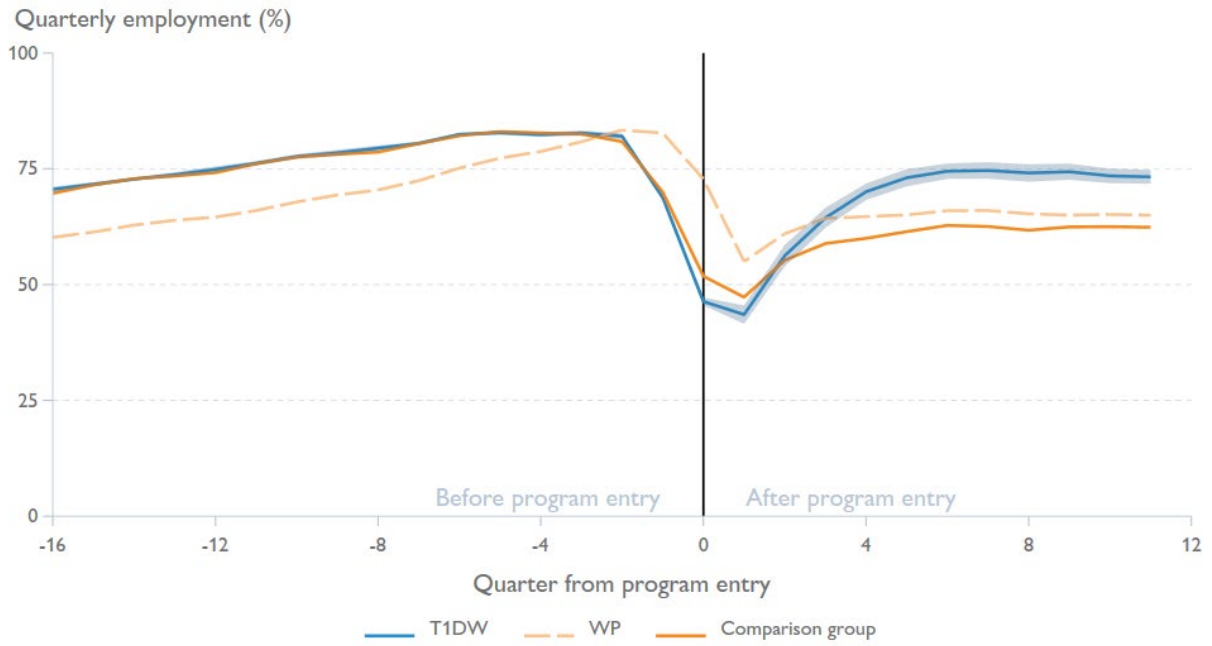
B.2.2. Impact figures for Primary Comparisons with unweighted sample

FIGURE B.2.2.1: Quarterly earnings comparisons between T1DW trainees from FYs 2014–15 and 2015–16 with a similar WP comparison group



Notes: The light-blue shaded region around the Treated trend line represents a 95% confidence band for weighted group differences from within-local labor market comparisons that do not control for covariates and takes the weights as given. This shaded region is also present in the pre-enrollment quarters but is not visually apparent due to precise estimates.

FIGURE B.2.2.2: Quarterly employment comparisons between T1DW trainees from FYs 2014–15 and 2015–16 with a similar WP comparison group



Notes: The light-blue shaded region around the Treated trend line represents a 95% confidence band for weighted group differences from within-local labor market comparisons that do not control for covariates and takes the weights as given. This shaded region is also present in the pre-enrollment quarters but is not visually apparent due to precise estimates.

B.2.3. Impact tables with design components

TABLE B.2.3.1: Labor market impacts for groups of T1DW trainees from FYs 2014–15 and 2015–16, including design statistics

	Main group: T1DW trainees	T1DW completed training	T1DW male trainees	T1DW female trainees
	vs. WP	vs. WP	vs. WP Males	vs. WP Females
	(1)	(2)	(3)	(4)
Quarterly employment: Q=-8 to Q=-5				
Treatment group mean	81.3%	81.6%	78.4%	84.6%
Comparison group mean	81.1%	81.5%	77.9%	84.0%
Impact in percentage points	0.2*	0.2*	0.5*	0.6*
	(0.1, 0.4)	(0.1, 0.3)	(0.3, 0.7)	(0.3, 0.9)
Quarterly employment: Q7 to Q11				
Treatment group mean	74.0%	74.9%	72.4%	75.2%
Comparison group mean	62.3%	62.9%	62.1%	62.5%
Impact in percentage points	11.6*	12.0*	10.3*	12.7*
	(10.6, 12.7)	(10.9, 13.2)	(9.2, 11.5)	(11.2, 14.2)
Quarterly earnings: Q=-8 to Q=-5				
Treatment group mean	\$8,864	\$8,916	\$8,850	\$8,984
Comparison group mean	\$8,822	\$8,892	\$8,779	\$8,902
Impact in 2016 dollars	43*	24*	71*	82*
	(15, 79)	(5, 44)	(21, 130)	(41, 132)
Impact as percent	0.5%*	0.3%*	0.8%*	0.9%*
	(0.2%, 0.9%)	(0.1%, 0.5%)	(0.2%, 1.5%)	(0.5%, 1.5%)
Quarterly earnings: Q7 to Q11				
Treatment group mean	\$7,745	\$7,897	\$8,122	\$7,379
Comparison group mean	\$6,438	\$6,526	\$6,773	\$6,107
Impact in 2016 dollars	1,302*	1,372*	1,347*	1,278*
	(1139, 1477)	(1175, 1567)	(1130, 1559)	(1046, 1495)
Impact as percent	20.2%*	21.0%*	19.9%*	20.9%*
	(17.7%, 22.9%)	(18.0%, 24.0%)	(16.7%, 23.0%)	(17.1%, 24.5%)
Design Statistics				
Local labor markets	263	255	234	215
Participants in full sample	9,525	7,729	5,117	4,408
Participants included in analysis	9,318	7,439	4,802	4,143
Excluded due to poor comparison	2.2%	3.8%	6.2%	6.0%

Notes: Results are from impact estimates that include covariates used for weighting. For that reason, impact estimates may not always equal the differences in means between treatment and comparison groups. The weighted sample size of the comparison group equals the treated group included in the analysis exactly. Ninety-five percent confidence

intervals are given below each impact estimate in parentheses and were created using 1,000 bootstrap draws on local labor markets. The percent of the treated group excluded in the analysis reflects those in local labor markets where no sufficient comparison sample could be identified.

APPENDIX B.3. | Chapter 4.3 WIOA Title I:
Youth
Supplemental tables and figures

B.3.1. Baseline tables

TABLE B.3.1.1: Baseline comparisons between TIY participants from FYs 2014–15 and 2015–16 who received Training Services with a similar TIY comparison group who received Career Services

	Treatment Group	Comparison Group	Difference	Effect-size Difference ^a
Demographics				
Age	19.8	19.5	0.3	0.15
Male	44.9%	47.4%	-2.5	n.a.
Hispanic	65.2%	55.5%	9.7	n.a.
Black	17.3%	24.3%	-7.0	n.a.
White	40.2%	38.0%	2.2	n.a.
Declined to state race/ethnicity	3.7%	3.6%	0.1	n.a.
Disability (self-identified)	6.4%	8.0%	-1.6	n.a.
Pre-entry labor market				
Industry: construction/manufacturing	4.4%	3.8%	0.6	n.a.
Industry: trade/transportation	20.0%	16.4%	3.6	n.a.
Industry: professional service	15.1%	13.7%	1.4	n.a.
Industry: other service	37.0%	37.3%	-0.3	n.a.
Industry: other	6.8%	8.1%	-1.3	n.a.
Tenure of last job in quarters	3.4	3.0	0.4	0.14
Earnings in quarter of entry	\$1,105	\$917	189	0.09
Earnings 1st quarter before entry	\$1,301	\$988	312	0.16
Earnings 2nd quarter before entry	\$1,234	\$955	279	0.14
Earnings 3rd quarter before entry	\$1,172	\$882	289	0.15
Earnings 4th quarter before entry	\$1,072	\$860	212	0.11
Quarterly earnings 2nd year before entry	\$843	\$647	197	0.14
Quarterly earnings 3rd year before entry	\$563	\$397	166	0.13
Quarterly earnings 4th year before entry	\$394	\$287	108	0.09
Quarterly employment 2nd year before entry	8.4%	7.6%	0.8	0.09
Quarterly employment 3rd year before entry	5.4%	4.1%	1.3	0.17
Quarterly employment 4th year before entry	3.3%	2.7%	0.6	0.09
Design Statistics				
Local labor markets	160	160		
Observations (weighted)	5,055	5,055		
Observations (unweighted)	5,055	3,610		
Excluded due to poor comparison	61.5%	n.a.		

Notes: Means reflect design-weighted means from each group. Differences reflect design-weighted differences from within-local labor market comparisons that are then averaged across labor markets with market weights equal to the treatment group from each market. The percent excluded due to poor comparisons is based on the treatment sample in labor markets where effect sizes on pre-enrollment earnings were above 0.25 standard deviations.

a -- effect size difference is the mean difference divided by the pooled standard deviation for continuous variables only.

TABLE B.3.1.2: Baseline comparisons between TIY participants from FYs 2014–15 and 2015–16 who received Basic skills training with a similar TIY comparison group who received Career Services only

	Treatment Group	Comparison Group	Difference	Effect-size Difference ^a
Demographics				
Age	19.6	19.5	0.1	0.03
Male	46.2%	48.0%	-1.8	n.a.
Hispanic	65.3%	54.6%	10.7	n.a.
Black	17.9%	27.2%	-9.3	n.a.
White	37.3%	35.5%	1.8	n.a.
Declined to state race/ethnicity	3.9%	3.5%	0.4	n.a.
Disability (self-identified)	5.4%	5.3%	0.1	n.a.
Pre-entry labor market				
Industry: construction/manufacturing	4.0%	3.7%	0.3	n.a.
Industry: trade/transportation	19.4%	14.5%	4.9	n.a.
Industry: professional service	15.6%	15.6%	0.0	n.a.
Industry: other service	34.3%	36.0%	-1.7	n.a.
Industry: other	7.6%	8.9%	-1.3	n.a.
Tenure of last job in quarters	3.2	2.9	0.2	0.08
Earnings in quarter of entry	\$1,032	\$983	49	0.02
Earnings 1st quarter before entry	\$1,151	\$1,006	145	0.07
Earnings 2nd quarter before entry	\$1,100	\$948	152	0.07
Earnings 3rd quarter before entry	\$1,004	\$865	138	0.07
Earnings 4th quarter before entry	\$904	\$849	54	0.02
Quarterly earnings 2nd year before entry	\$728	\$631	97	0.06
Quarterly earnings 3rd year before entry	\$514	\$428	87	0.06
Quarterly earnings 4th year before entry	\$378	\$325	53	0.04
Quarterly employment 2nd year before entry	7.6%	7.1%	0.5	0.06
Quarterly employment 3rd year before entry	4.8%	4.2%	0.6	0.09
Quarterly employment 4th year before entry	3.0%	2.8%	0.2	0.04
Design Statistics				
Local labor markets	105	105		
Observations (weighted)	2,797	2,797		
Observations (unweighted)	2,797	3,190		
Excluded due to poor comparison	63.3%	n.a.		

Notes: Means reflect design-weighted means from each group. Differences reflect design-weighted differences from within-local labor market comparisons that are then averaged across labor markets with market weights equal to the treatment group from each market. The percent excluded due to poor comparisons is based on the treatment sample in labor markets where effect sizes on pre-enrollment earnings were above 0.25 standard deviations.

a -- effect size difference is the mean difference divided by the pooled standard deviation for continuous variables only.

TABLE B.3.1.3: Baseline comparisons between T1Y participants from FYs 2014–15 and 2015–16 who received Occupational skills training with a similar T1Y comparison group who received Career Services only

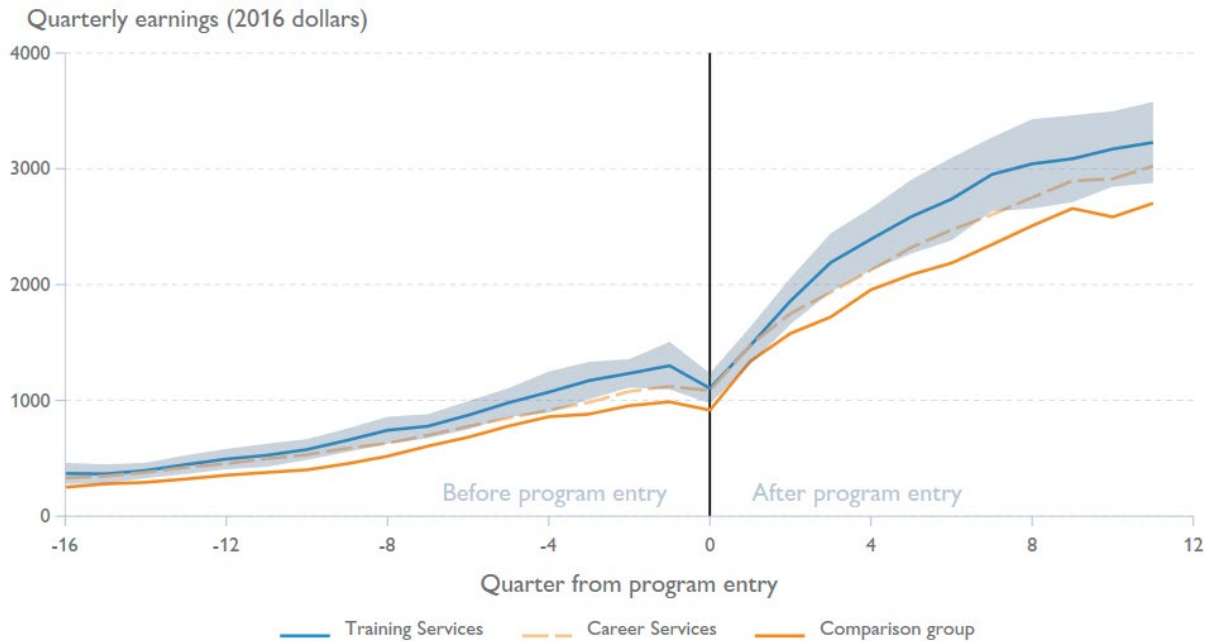
	Treatment Group	Comparison Group	Difference	Effect-size Difference ^a
Demographics				
Age	20.1	19.5	0.5	0.29
Male	41.9%	48.1%	-6.2	n.a.
Hispanic	63.0%	54.9%	8.1	n.a.
Black	18.7%	21.1%	-2.4	n.a.
White	37.9%	40.3%	-2.4	n.a.
Declined to state race/ethnicity	3.3%	4.1%	-0.8	n.a.
Disability (self-identified)	6.3%	8.3%	-2.0	n.a.
Pre-entry labor market				
Industry: construction/manufacturing	4.3%	3.6%	0.7	n.a.
Industry: trade/transportation	18.5%	14.6%	3.9	n.a.
Industry: professional service	13.1%	12.1%	1.0	n.a.
Industry: other service	41.5%	42.8%	-1.3	n.a.
Industry: other	6.5%	7.9%	-1.4	n.a.
Tenure of last job in quarters	3.6	3.1	0.5	0.18
Earnings in quarter of entry	\$1,130	\$823	306	0.18
Earnings 1st quarter before entry	\$1,374	\$936	438	0.25
Earnings 2nd quarter before entry	\$1,299	\$921	377	0.22
Earnings 3rd quarter before entry	\$1,268	\$837	431	0.25
Earnings 4th quarter before entry	\$1,169	\$854	315	0.19
Quarterly earnings 2nd year before entry	\$925	\$653	272	0.18
Quarterly earnings 3rd year before entry	\$600	\$395	204	0.15
Quarterly earnings 4th year before entry	\$391	\$303	88	0.07
Quarterly employment 2nd year before entry	9.3%	7.9%	1.4	0.15
Quarterly employment 3rd year before entry	5.9%	3.9%	2.0	0.27
Quarterly employment 4th year before entry	3.4%	2.8%	0.6	0.09
Design Statistics				
Local labor markets	103	103		
Observations (weighted)	2,150	2,150		
Observations (unweighted)	2,150	3,023		
Excluded due to poor comparison	61.0%	n.a.		

Notes: Means reflect design-weighted means from each group. Differences reflect design-weighted differences from within-local labor market comparisons that are then averaged across labor markets with market weights equal to the treatment group from each market. The percent excluded due to poor comparisons is based on the treatment sample in labor markets where effect sizes on pre-enrollment earnings were above 0.25 standard deviations.

a -- effect size difference is the mean difference divided by the pooled standard deviation for continuous variables only.

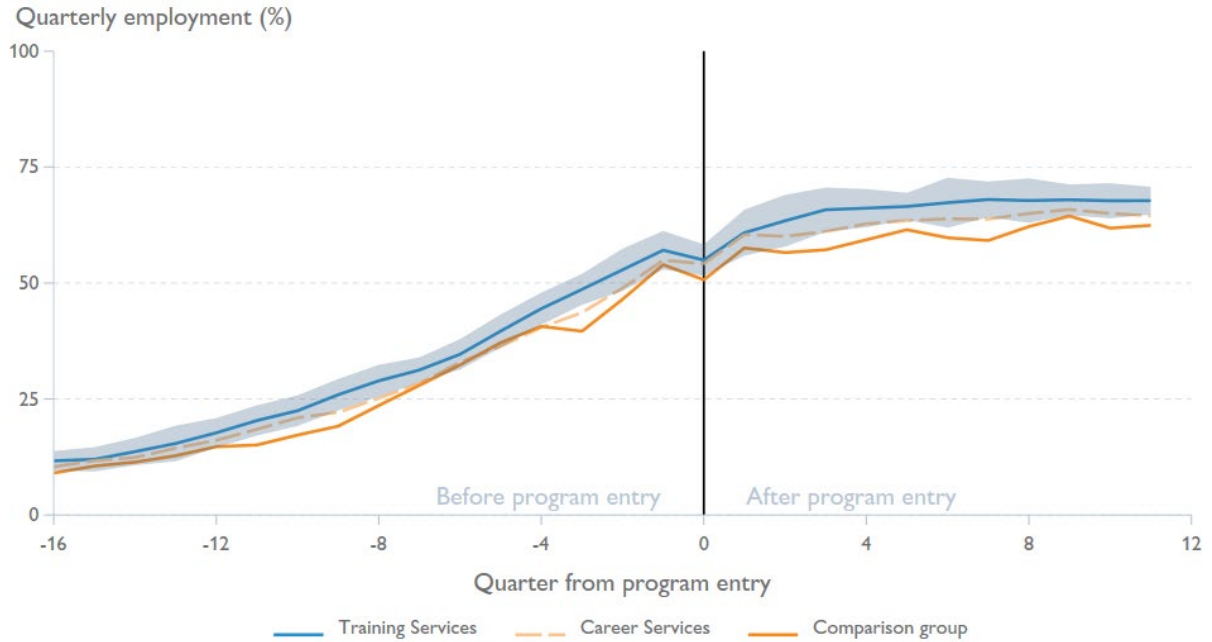
B.3.2. Impact figures for Primary Comparisons with unweighted sample

FIGURE B.3.2.1: Quarterly earnings comparisons between T1Y participants in training services from FYs 2014–15 and 2015–16 with T1Y participants in career or supportive services



Notes: The light-blue shaded region around the Treated trend line represents a 95% confidence band for weighted group differences from within-local labor market comparisons that do not control for covariates and takes the weights as given. This shaded region is also present in the pre-enrollment quarters but is not visually apparent due to precise estimates.

FIGURE B.3.2.2: Quarterly employment comparisons between TIY participants in training services from FYs 2014–15 and 2015–16 with TIY participants in career or supportive services



Notes: The light-blue shaded region around the Treated trend line represents a 95% confidence band for weighted group differences from within-local labor market comparisons that do not control for covariates and takes the weights as given. This shaded region is also present in the pre-enrollment quarters but is not visually apparent due to precise estimates.

B.3.3. Impact tables with design components

TABLE B.3.3.1: Labor market impacts for groups of TIY participants from FYs 2014–15 and 2015–16, including design statistics

	T1Y trainees vs. T1Y career service (1)	T1Y receiving basic skills training vs. T1Y career service (2)	T1Y receiving occupational training vs. T1Y career service (3)
Quarterly employment: Q=-8 to Q=-5			
Treatment group mean	33.6%	30.5%	37.0%
Comparison group mean	30.3%	28.5%	31.6%
Impact in percentage points	3.4*	2.0	5.5
	(0.1, 6.2)	(-1.1, 4.8)	(-0.8, 10.2)
Quarterly employment: Q7 to Q11			
Treatment group mean	67.9%	66.8%	69.0%
Comparison group mean	62.0%	62.4%	60.5%
Impact in percentage points	3.8*	2.9	6.2*
	(0.9, 6.4)	(-0.1, 5.8)	(2.5, 9.9)
Quarterly earnings: Q=-8 to Q=-5			
Treatment group mean	\$843	\$728	\$925
Comparison group mean	\$647	\$631	\$654
Impact in 2016 dollars	197*	97	272*
	(99, 287)	(-22, 205)	(155, 369)
Impact as percent	30.5%*	15.4%	41.6%*
	(15.3%, 44.4%)	(-3.5%, 32.5%)	(23.7%, 56.5%)
Quarterly earnings: Q7 to Q11			
Treatment group mean	\$3,097	\$2,859	\$3,249
Comparison group mean	\$2,560	\$2,673	\$2,246
Impact in 2016 dollars	295*	91	675*
	(117, 487)	(-90, 273)	(450, 916)
Impact as percent	11.5%*	3.4%	30.1%*
	(4.6%, 19.0%)	(-3.4%, 10.2%)	(20.0%, 40.8%)
Design Statistics			
Local labor markets	160	105	103
Participants in full sample	13,143	7,627	5,516
Participants included in analysis	5,055	2,797	2,150
Excluded due to poor comparison	61.5%	63.3%	61.0%

Notes: Results are from impact estimates that include covariates used for weighting. For that reason, impact estimates may not always equal the difference in means between treatment and comparison groups. The weighted sample size of the comparison group equals the treated group included in the analysis exactly. Ninety-five percent confidence

intervals are given below each impact estimate in parentheses and were created using 1,000 bootstrap draws on local labor markets. The percent of the treated group excluded in the analysis reflects those in local labor markets where no sufficient comparison sample could be identified.

APPENDIX B.4. | Chapter 4.4 WIOA Title II:
Adult Education
Supplemental tables and figures

B.4.1. Baseline tables

TABLE B.4.1.1: Baseline comparisons between T2AE participants from FYs 2014–15 and 2015–16 who are aged 20–55 with a similar WP comparison group

	Treatment Group	Comparison Group	Difference	Effect-size Difference ^a
Demographics				
Age	32.1	32.2	0.0	0.00
Male	43.8%	43.8%	0.0	n.a.
Hispanic	65.5%	65.4%	0.1	n.a.
Black	7.6%	7.6%	0.0	n.a.
White	13.8%	13.9%	-0.1	n.a.
Declined to state race/ethnicity	1.4%	1.6%	-0.2	n.a.
Disability (self-identified)	1.0%	1.0%	0.0	n.a.
Pre-entry labor market				
Industry: construction/manufacturing	9.9%	9.9%	0.0	n.a.
Industry: trade/transportation	18.0%	18.1%	-0.1	n.a.
Industry: professional service	17.4%	17.4%	0.0	n.a.
Industry: other service	27.9%	27.8%	0.1	n.a.
Industry: other	5.9%	5.8%	0.1	n.a.
Tenure of last job in quarters	6.9	6.9	0.0	0.00
Earnings in quarter of entry	\$3,324	\$3,336	-12	0.00
Earnings 1st quarter before entry	\$3,438	\$3,461	-23	0.00
Earnings 2nd quarter before entry	\$3,414	\$3,438	-24	0.00
Earnings 3rd quarter before entry	\$3,510	\$3,531	-21	0.00
Earnings 4th quarter before entry	\$3,425	\$3,445	-19	0.00
Quarterly earnings 2nd year before entry	\$3,257	\$3,275	-18	0.00
Quarterly earnings 3rd year before entry	\$3,025	\$3,041	-16	0.00
Quarterly earnings 4th year before entry	\$2,818	\$2,832	-14	0.00
Quarterly employment 2nd year before entry	14.8%	14.8%	0.0	0.00
Quarterly employment 3rd year before entry	13.5%	13.5%	0.0	0.00
Quarterly employment 4th year before entry	12.3%	12.3%	0.0	0.00
Design Statistics				
Local labor markets	331	331		
Observations (weighted)	82,294	82,294		
Observations (unweighted)	82,294	549,768		
Excluded due to poor comparison	1.6%	n.a.		

Notes: Means reflect design-weighted means from each group. Differences reflect design-weighted differences from within-local labor market comparisons that are then averaged across labor markets with market weights equal to the treatment group from each market. The percent excluded due to poor comparisons is based on the treatment sample in labor markets where effect sizes on pre-enrollment earnings were above 0.25 standard deviations.

a -- effect size difference is the mean difference divided by the pooled standard deviation for continuous variables only.

TABLE B.4.1.2: Baseline comparisons between male T2AE participants from FYs 2014–15 and 2015–16 who are aged 20–55 with a similar WP comparison group

	Treatment Group	Comparison Group	Difference	Effect-size Difference ^a
Demographics				
Age	31.0	31.1	-0.1	-0.01
Male	100.0%	100.0%	0.0	n.a.
Hispanic	63.4%	63.0%	0.4	n.a.
Black	8.1%	8.0%	0.1	n.a.
White	16.3%	16.6%	-0.3	n.a.
Declined to state race/ethnicity	1.6%	1.9%	-0.3	n.a.
Disability (self-identified)	1.1%	1.2%	-0.1	n.a.
Pre-entry labor market				
Industry: construction/manufacturing	14.5%	14.6%	-0.1	n.a.
Industry: trade/transportation	17.9%	18.0%	-0.1	n.a.
Industry: professional service	11.0%	11.1%	-0.1	n.a.
Industry: other service	28.6%	28.5%	0.1	n.a.
Industry: other	6.3%	6.3%	0.0	n.a.
Tenure of last job in quarters	6.5	6.5	0.0	-0.01
Earnings in quarter of entry	\$3,607	\$3,631	-24	0.00
Earnings 1st quarter before entry	\$3,722	\$3,783	-62	-0.01
Earnings 2nd quarter before entry	\$3,688	\$3,750	-62	-0.01
Earnings 3rd quarter before entry	\$3,804	\$3,857	-53	-0.01
Earnings 4th quarter before entry	\$3,731	\$3,783	-51	-0.01
Quarterly earnings 2nd year before entry	\$3,531	\$3,578	-47	-0.01
Quarterly earnings 3rd year before entry	\$3,264	\$3,303	-39	-0.01
Quarterly earnings 4th year before entry	\$3,000	\$3,034	-34	-0.01
Quarterly employment 2nd year before entry	14.5%	14.5%	0.0	-0.01
Quarterly employment 3rd year before entry	13.2%	13.3%	-0.1	0.00
Quarterly employment 4th year before entry	11.9%	11.9%	0.0	0.00
Design Statistics				
Local labor markets	288	288		
Observations (weighted)	35,944	35,944		
Observations (unweighted)	35,944	277,809		
Excluded due to poor comparison	2.2%	n.a.		

Notes: Means reflect design-weighted means from each group. Differences reflect design-weighted differences from within-local labor market comparisons that are then averaged across labor markets with market weights equal to the treatment group from each market. The percent excluded due to poor comparisons is based on the treatment sample in labor markets where effect sizes on pre-enrollment earnings were above 0.25 standard deviations.

a -- effect size difference is the mean difference divided by the pooled standard deviation for continuous variables only.

TABLE B.4.1.3: Baseline comparisons between female T2AE participants from FYs 2014–15 and 2015–16 who are aged 20–55 with a similar WP comparison group

	Treatment Group	Comparison Group	Difference	Effect-size Difference ^a
Demographics				
Age	33.0	33.0	0.0	0.00
Male	0.0%	0.0%	0.0	n.a.
Hispanic	67.1%	66.7%	0.4	n.a.
Black	7.1%	7.1%	0.0	n.a.
White	11.9%	12.2%	-0.3	n.a.
Declined to state race/ethnicity	1.3%	1.6%	-0.3	n.a.
Disability (self-identified)	0.9%	1.0%	-0.1	n.a.
Pre-entry labor market				
Industry: construction/manufacturing	6.3%	6.3%	0.0	n.a.
Industry: trade/transportation	18.1%	18.1%	0.0	n.a.
Industry: professional service	22.2%	22.4%	-0.2	n.a.
Industry: other service	27.2%	27.1%	0.1	n.a.
Industry: other	5.5%	5.5%	0.0	n.a.
Tenure of last job in quarters	7.1	7.2	0.0	0.00
Earnings in quarter of entry	\$3,083	\$3,099	-16	0.00
Earnings 1st quarter before entry	\$3,199	\$3,238	-39	-0.01
Earnings 2nd quarter before entry	\$3,182	\$3,223	-41	-0.01
Earnings 3rd quarter before entry	\$3,261	\$3,299	-38	-0.01
Earnings 4th quarter before entry	\$3,166	\$3,200	-35	-0.01
Quarterly earnings 2nd year before entry	\$3,030	\$3,063	-33	-0.01
Quarterly earnings 3rd year before entry	\$2,828	\$2,856	-29	-0.01
Quarterly earnings 4th year before entry	\$2,670	\$2,697	-27	-0.01
Quarterly employment 2nd year before entry	14.9%	15.0%	-0.1	0.00
Quarterly employment 3rd year before entry	13.8%	13.8%	0.0	0.00
Quarterly employment 4th year before entry	12.6%	12.7%	-0.1	0.00
Design Statistics				
Local labor markets	291	291		
Observations (weighted)	45,966	45,966		
Observations (unweighted)	45,966	256,221		
Excluded due to poor comparison	2.0%	n.a.		

Notes: Means reflect design-weighted means from each group. Differences reflect design-weighted differences from within-local labor market comparisons that are then averaged across labor markets with market weights equal to the treatment group from each market. The percent excluded due to poor comparisons is based on the treatment sample in labor markets where effect sizes on pre-enrollment earnings were above 0.25 standard deviations.

^a -- effect size difference is the mean difference divided by the pooled standard deviation for continuous variables only.

TABLE B.4.1.4: Baseline comparisons between cross-enrolled T2AE participants from FYs 2014–15 and 2015–16 who are aged 20–55 with a similar WP comparison group

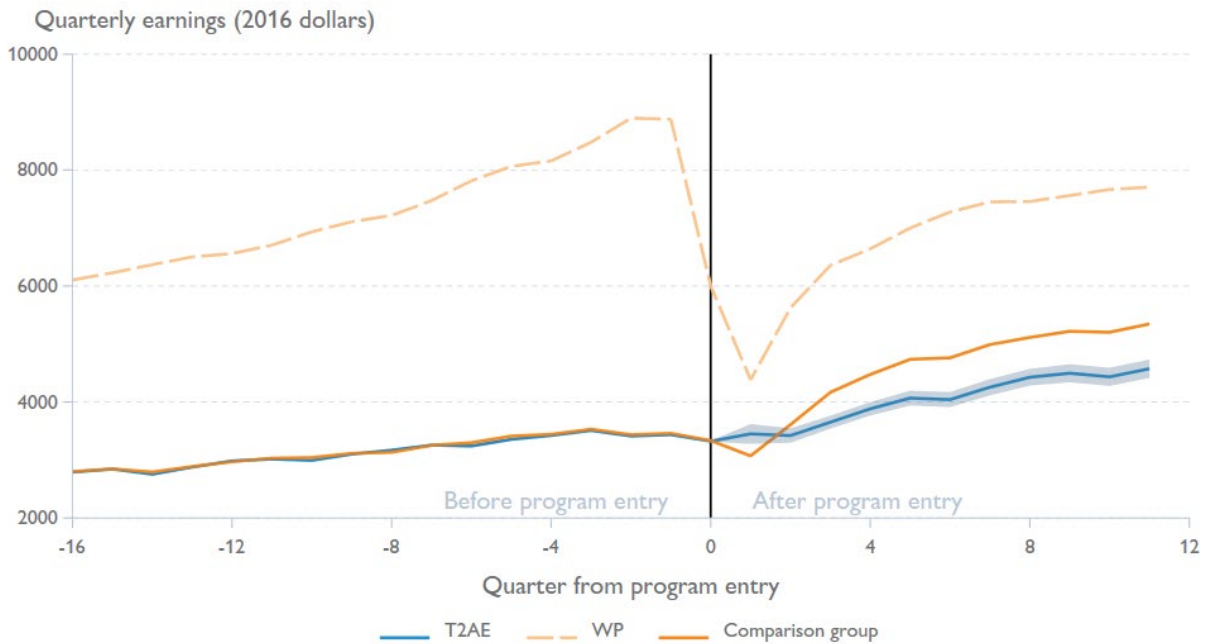
	Treatment Group	Comparison Group	Difference	Effect-size Difference ^a
Demographics				
Age	33.0	33.0	0.0	0.00
Male	0.0%	0.0%	0.0	n.a.
Hispanic	67.1%	66.7%	0.4	n.a.
Black	7.1%	7.1%	0.0	n.a.
White	11.9%	12.2%	-0.3	n.a.
Declined to state race/ethnicity	1.3%	1.6%	-0.3	n.a.
Disability (self-identified)	0.9%	1.0%	-0.1	n.a.
Pre-entry labor market				
Industry: construction/manufacturing	6.3%	6.3%	0.0	n.a.
Industry: trade/transportation	18.1%	18.1%	0.0	n.a.
Industry: professional service	22.2%	22.4%	-0.2	n.a.
Industry: other service	27.2%	27.1%	0.1	n.a.
Industry: other	5.5%	5.5%	0.0	n.a.
Tenure of last job in quarters	7.1	7.2	0.0	0.00
Earnings in quarter of entry	\$3,083	\$3,099	-16	0.00
Earnings 1st quarter before entry	\$3,199	\$3,238	-39	-0.01
Earnings 2nd quarter before entry	\$3,182	\$3,223	-41	-0.01
Earnings 3rd quarter before entry	\$3,261	\$3,299	-38	-0.01
Earnings 4th quarter before entry	\$3,166	\$3,200	-35	-0.01
Quarterly earnings 2nd year before entry	\$3,030	\$3,063	-33	-0.01
Quarterly earnings 3rd year before entry	\$2,828	\$2,856	-29	-0.01
Quarterly earnings 4th year before entry	\$2,670	\$2,697	-27	-0.01
Quarterly employment 2nd year before entry	14.9%	15.0%	-0.1	0.00
Quarterly employment 3rd year before entry	13.8%	13.8%	0.0	0.00
Quarterly employment 4th year before entry	12.6%	12.7%	-0.1	0.00
Design Statistics				
Local labor markets	291	291		
Observations (weighted)	45,966	45,966		
Observations (unweighted)	45,966	256,221		
Excluded due to poor comparison	2.0%	n.a.		

Notes: Means reflect design-weighted means from each group. Differences reflect design-weighted differences from within-local labor market comparisons that are then averaged across labor markets with market weights equal to the treatment group from each market. The percent excluded due to poor comparisons is based on the treatment sample in labor markets where effect sizes on pre-enrollment earnings were above 0.25 standard deviations.

^a -- effect size difference is the mean difference divided by the pooled standard deviation for continuous variables only.

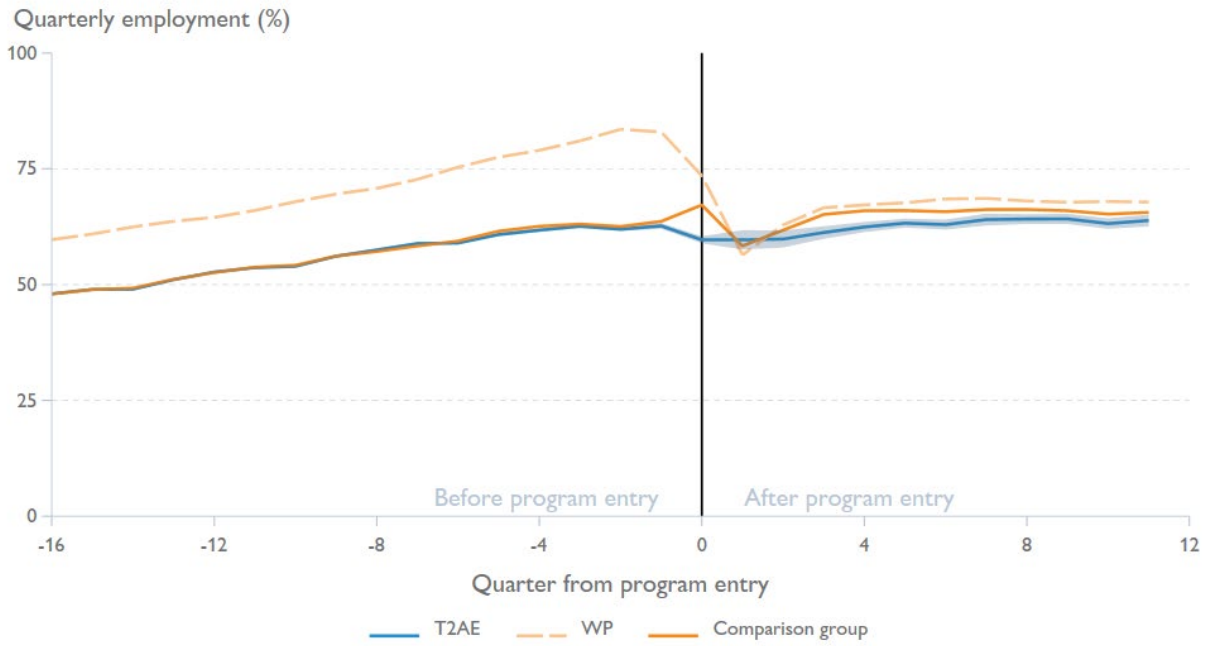
B.4.2. Impact figures for Primary Comparisons with unweighted sample

FIGURE B.4.2.1: Quarterly earnings comparisons between T2AE participants from FYs 2014–15 and 2015–16 who are aged 20–55 with a similar WP comparison group



Notes: The light-blue shaded region around the Treated trend line represents a 95% confidence band for weighted group differences from within-local labor market comparisons that do not control for covariates and takes the weights as given. This shaded region is also present in the pre-enrollment quarters but is not visually apparent due to precise estimates.

FIGURE B.4.2.2: Quarterly employment comparisons between T2AE participants from FYs 2014–15 and 2015–16 who are aged 20–55 with a similar WP comparison group



Notes: The light-blue shaded region around the Treated trend line represents a 95% confidence band for weighted group differences from within-local labor market comparisons that do not control for covariates and takes the weights as given. This shaded region is also present in the pre-enrollment quarters but is not visually apparent due to precise estimates.

B.4.3. Impact tables with design components

TABLE B.4.3.1: Labor market impacts for groups of T2AE participants from FYs 2014–15 and 2015–16 who were aged 20–55, including design statistics

	T2AE vs. WP (1)	T2AE males vs. WP Males (2)	T2AE females vs. WP Females (3)	T2AE co-enrolled vs. WP (4)
Quarterly employment: Q=-8 to Q=-5				
Treatment group mean	59.0%	58.0%	59.8%	61.0%
Comparison group mean	59.1%	58.2%	59.9%	61.0%
Impact in percentage points	-0.1 (-0.1, 0)	-0.2* (-0.3, -0.1)	-0.1* (-0.2, -0.1)	-0.1 (-0.1, 0)
Quarterly employment: Q7 to Q11				
Treatment group mean	63.9%	62.3%	65.1%	65.3%
Comparison group mean	65.9%	64.8%	66.8%	66.2%
Impact in percentage points	-1.9* (-2.6, -1.2)	-2.5* (-3.6, -1.5)	-1.7* (-2.4, -1)	-0.9* (-1.7, -0.1)
Quarterly earnings: Q=-8 to Q=-5				
Treatment group mean	\$3,257	\$3,531	\$3,030	\$3,621
Comparison group mean	\$3,275	\$3,578	\$3,063	\$3,644
Impact in 2016 dollars	-18* (-26, -12)	-47* (-65, -34)	-33* (-45, -22)	-23* (-35, -14)
Impact as percent	-0.5%* (-0.8%, -0.4%)	-1.3%* (-1.8%, -1.0%)	-1.1%* (-1.5%, -0.7%)	-0.6%* (-1.0%, -0.4%)
Quarterly earnings: Q7 to Q11				
Treatment group mean	\$4,439	\$4,819	\$4,122	\$4,388
Comparison group mean	\$5,175	\$5,557	\$4,874	\$5,242
Impact in 2016 dollars	-725* (-816, -641)	-712* (-822, -596)	-734* (-818, -650)	-840* (-953, -729)
Impact as percent	-14.0%* (-15.8%, -12.4%)	-12.8%* (-14.8%, -10.7%)	-15.1%* (-16.8%, -13.3%)	-16.0%* (-18.2%, -13.9%)
Design Statistics				
Local labor markets	331	288	291	212
Participants in full sample	83,658	36,758	46,884	11,412
Participants included in analysis	82,294	35,944	45,966	11,073
Excluded due to poor comparison	1.6%	2.2%	2.0%	3.0%

Notes: Results are from impact estimates that include covariates used for weighting. For that reason, impact estimates may not always equal the differences in means between treatment and comparison groups. The weighted sample size of the comparison group equals the treated group included in the analysis exactly. Ninety-five percent confidence

intervals are given below each impact estimate in parentheses and were created using 1,000 bootstrap draws on local labor markets. The percent of the treated group excluded in the analysis reflects those in local labor markets where no sufficient comparison sample could be identified.

**APPENDIX B.5. | Chapter 4.5 WIOA Title IV:
Vocational Rehabilitation
Supplemental tables and figures**

B.5.1. Baseline tables

TABLE B.5.1.1: Baseline comparisons between T4VR participants from FYs 2014–15 and 2015–16 who received Training Services with a T4VR comparison group who did not receive those services

	Treatment Group	Comparison Group	Difference	Effect-size Difference ^a
Demographics				
Age	31.3	35.6	-4.3	-0.30
Male	56.5%	56.8%	-0.3	n.a.
Hispanic	35.7%	31.0%	4.7	n.a.
Black	17.3%	18.1%	-0.8	n.a.
White	37.6%	41.4%	-3.8	n.a.
Declined to state race/ethnicity	0.0%	0.0%	0.0	n.a.
Disability (self-identified)	100.0%	100.0%	0.0	n.a.
Pre-entry labor market				
Industry: construction/manufacturing	3.5%	3.4%	0.1	n.a.
Industry: trade/transportation	15.0%	14.3%	0.7	n.a.
Industry: professional service	24.9%	24.4%	0.5	n.a.
Industry: other service	22.9%	21.0%	1.9	n.a.
Industry: other	3.9%	2.7%	1.2	n.a.
Tenure of last job in quarters	5.1	5.2	-0.1	-0.03
Earnings in quarter of entry	\$1,239	\$1,273	-34	-0.01
Earnings 1st quarter before entry	\$1,218	\$1,240	-22	-0.01
Earnings 2nd quarter before entry	\$1,300	\$1,323	-23	-0.01
Earnings 3rd quarter before entry	\$1,358	\$1,429	-71	-0.02
Earnings 4th quarter before entry	\$1,392	\$1,556	-164	-0.04
Quarterly earnings 2nd year before entry	\$1,544	\$1,750	-206	-0.06
Quarterly earnings 3rd year before entry	\$1,691	\$2,003	-312	-0.08
Quarterly earnings 4th year before entry	\$1,784	\$2,131	-347	-0.08
Quarterly employment 2nd year before entry	9.8%	10.0%	-0.2	-0.02
Quarterly employment 3rd year before entry	9.3%	10.2%	-0.9	-0.08
Quarterly employment 4th year before entry	9.0%	10.1%	-1.1	-0.10
Design Statistics				
Local labor markets	213	213		
Observations (weighted)	6,882	6,882		
Observations (unweighted)	6,882	9,906		
Excluded due to poor comparison	21.7%	n.a.		

Notes: Means reflect design-weighted means from each group. Differences reflect design-weighted differences from within-local labor market comparisons that are then averaged across labor markets with market weights equal to the treatment group from each market. The percent excluded due to poor comparisons is based on the treatment sample in labor markets where effect sizes on pre-enrollment earnings were above 0.25 standard deviations.

a -- effect size difference is the mean difference divided by the pooled standard deviation for continuous variables only.

TABLE B.5.1.2: Baseline comparisons between T4VR participants from FYs 2014–15 and 2015–16 who received Career Services with a T4VR comparison group who did not receive those services

	Treatment Group	Comparison Group	Difference	Effect-size Difference ^a
Demographics				
Age	38.1	32.7	5.4	0.39
Male	58.2%	55.2%	3.0	n.a.
Hispanic	31.2%	36.0%	-4.8	n.a.
Black	18.6%	18.0%	0.6	n.a.
White	41.6%	37.4%	4.2	n.a.
Declined to state race/ethnicity	0.0%	0.0%	0.0	n.a.
Disability (self-identified)	100.0%	100.0%	0.0	n.a.
Pre-entry labor market				
Industry: construction/manufacturing	4.3%	4.0%	0.3	n.a.
Industry: trade/transportation	14.0%	14.1%	-0.1	n.a.
Industry: professional service	24.3%	20.6%	3.7	n.a.
Industry: other service	19.2%	24.1%	-4.9	n.a.
Industry: other	3.0%	3.4%	-0.4	n.a.
Tenure of last job in quarters	5.7	4.7	1.0	0.24
Earnings in quarter of entry	\$1,371	\$1,252	119	0.04
Earnings 1st quarter before entry	\$1,375	\$1,128	247	0.09
Earnings 2nd quarter before entry	\$1,506	\$1,203	303	0.11
Earnings 3rd quarter before entry	\$1,672	\$1,250	423	0.14
Earnings 4th quarter before entry	\$1,838	\$1,314	524	0.17
Quarterly earnings 2nd year before entry	\$2,101	\$1,497	604	0.20
Quarterly earnings 3rd year before entry	\$2,372	\$1,705	667	0.19
Quarterly earnings 4th year before entry	\$2,610	\$1,845	765	0.21
Quarterly employment 2nd year before entry	10.9%	9.4%	1.5	0.15
Quarterly employment 3rd year before entry	11.2%	9.1%	2.1	0.21
Quarterly employment 4th year before entry	11.4%	8.9%	2.5	0.24
Design Statistics				
Local labor markets	207	207		
Observations (weighted)	10,622	10,622		
Observations (unweighted)	10,622	5,786		
Excluded due to poor comparison	23.4%	n.a.		

Notes: Means reflect design-weighted means from each group. Differences reflect design-weighted differences from within-local labor market comparisons that are then averaged across labor markets with market weights equal to the treatment group from each market. The percent excluded due to poor comparisons is based on the treatment sample in labor markets where effect sizes on pre-enrollment earnings were above 0.25 standard deviations.

a -- effect size difference is the mean difference divided by the pooled standard deviation for continuous variables only.

TABLE B.5.1.3: Baseline comparisons between T4VR participants from FYs 2014–15 and 2015–16 who received Support Services with a T4VR comparison group who did not receive those services

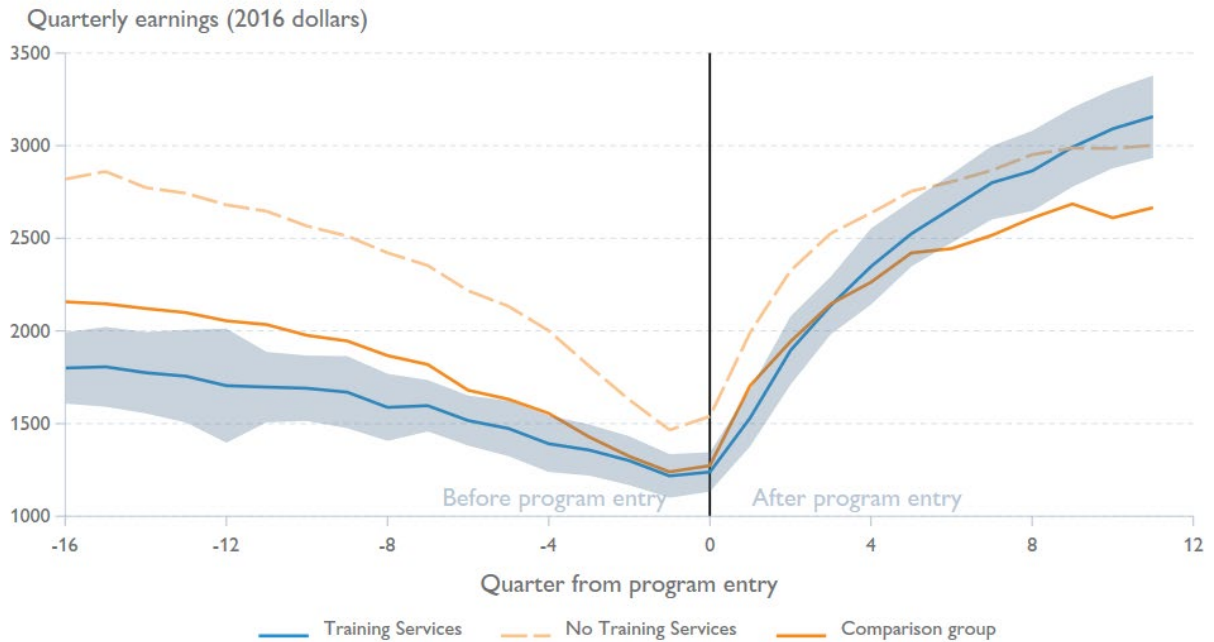
	Treatment Group	Comparison Group	Difference	Effect-size Difference ^a
Demographics				
Age	36.4	35.6	0.8	0.05
Male	53.9%	56.9%	-3.0	n.a.
Hispanic	33.4%	34.5%	-1.1	n.a.
Black	19.8%	18.7%	1.1	n.a.
White	38.1%	38.7%	-0.6	n.a.
Declined to state race/ethnicity	0.0%	0.0%	0.0	n.a.
Disability (self-identified)	100.0%	100.0%	0.0	n.a.
Pre-entry labor market				
Industry: construction/manufacturing	4.6%	4.3%	0.3	n.a.
Industry: trade/transportation	14.0%	14.5%	-0.5	n.a.
Industry: professional service	20.0%	22.6%	-2.6	n.a.
Industry: other service	22.5%	22.0%	0.5	n.a.
Industry: other	3.5%	3.1%	0.4	n.a.
Tenure of last job in quarters	5.3	5.3	0.0	-0.01
Earnings in quarter of entry	\$1,350	\$1,305	45	0.02
Earnings 1st quarter before entry	\$1,333	\$1,217	115	0.04
Earnings 2nd quarter before entry	\$1,471	\$1,319	151	0.05
Earnings 3rd quarter before entry	\$1,607	\$1,452	155	0.05
Earnings 4th quarter before entry	\$1,783	\$1,552	231	0.07
Quarterly earnings 2nd year before entry	\$2,081	\$1,784	297	0.09
Quarterly earnings 3rd year before entry	\$2,342	\$1,996	347	0.09
Quarterly earnings 4th year before entry	\$2,527	\$2,138	389	0.10
Quarterly employment 2nd year before entry	10.4%	10.3%	0.1	0.01
Quarterly employment 3rd year before entry	10.6%	10.2%	0.4	0.03
Quarterly employment 4th year before entry	10.6%	10.3%	0.3	0.03
Design Statistics				
Local labor markets	183	183		
Observations (weighted)	5,811	5,811		
Observations (unweighted)	5,811	9,633		
Excluded due to poor comparison	28.2%	n.a.		

Notes: Means reflect design-weighted means from each group. Differences reflect design-weighted differences from within-local labor market comparisons that are then averaged across labor markets with market weights equal to the treatment group from each market. The percent excluded due to poor comparisons is based on the treatment sample in labor markets where effect sizes on pre-enrollment earnings were above 0.25 standard deviations.

a -- effect size difference is the mean difference divided by the pooled standard deviation for continuous variables only.

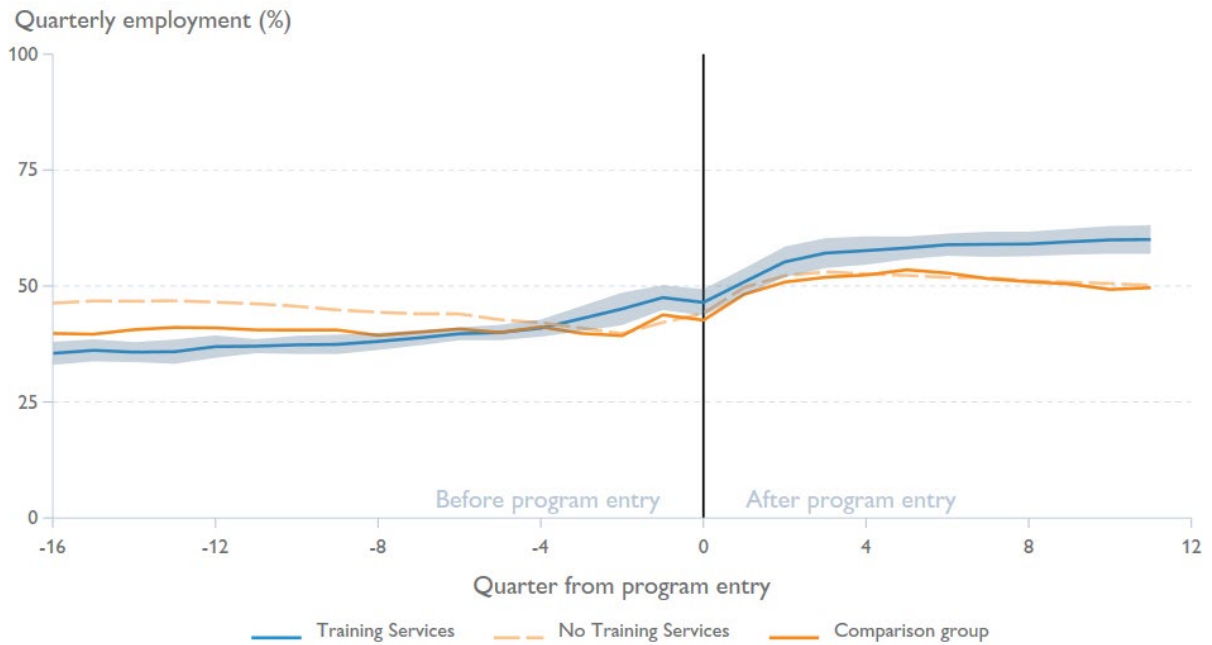
B.5.2. Impact figures for Primary Comparisons with unweighted sample

FIGURE B.5.2.1: Quarterly earnings comparisons between T4VR participants from FYs 2014–15 and 2015–16 who received Training Services with a similar T4VR comparison group who did not receive those services



Notes: The light-blue shaded region around the Treated trend line represents a 95% confidence band for weighted group differences from within-local labor market comparisons that do not control for covariates and takes the weights as given. This shaded region is also present in the pre-enrollment quarters but is not visually apparent due to precise estimates.

FIGURE B.5.2.2: Quarterly employment comparisons between T4VR participants from FYs 2014–15 and 2015–16 who received Training Services with a similar T4VR comparison group who did not receive those services



Notes: The light-blue shaded region around the Treated trend line represents a 95% confidence band for weighted group differences from within-local labor market comparisons that do not control for covariates and takes the weights as given. This shaded region is also present in the pre-enrollment quarters but is not visually apparent due to precise estimates.

B.5.3. Impact tables with design components

TABLE B.5.3.1: Labor market impacts for groups of T4VR participants from FYs 2014–15 and 2015–16, including design statistics

	T4VR trainees vs. T4VR no training (1)	T4VR career service recipients vs. T4VR no career services (2)	T4VR supportive service recipients vs. T4VR no supportive services (3)
Quarterly employment: Q=-8 to Q=-5			
Treatment group mean	39.2%	43.6%	41.5%
Comparison group mean	40.1%	37.6%	41.0%
Impact in percentage points	-0.9 (-2.1, 0.3)	6.0* (4.5, 7.7)	0.5 (-0.8, 1.8)
Quarterly employment: Q7 to Q11			
Treatment group mean	59.5%	52.5%	51.5%
Comparison group mean	50.4%	54.0%	54.2%
Impact in percentage points	6.9* (4.7, 9)	0.4 (-1.8, 2.7)	-2.0 (-3.9, 0)
Quarterly earnings: Q=-8 to Q=-5			
Treatment group mean	\$1,544	\$2,101	\$2,082
Comparison group mean	\$1,750	\$1,497	\$1,784
Impact in 2016 dollars	-206* (-324, -95)	604* (482, 725)	297* (188, 426)
Impact as percent	-11.8%* (-18.5%, -5.4%)	40.3%* (32.2%, 48.4%)	16.6%* (10.5%, 23.9%)
Quarterly earnings: Q7 to Q11			
Treatment group mean	\$2,981	\$2,798	\$3,006
Comparison group mean	\$2,618	\$3,013	\$2,814
Impact in 2016 dollars	376* (216, 532)	-342* (-530, -138)	74 (-96, 237)
Impact as percent	14.4%* (8.3%, 20.3%)	-11.4%* (-17.6%, -4.6%)	2.6% (-3.4%, 8.4%)
Design Statistics			
Local labor markets	213	207	183
Participants in full sample	8,786	13,861	8,088
Participants included in analysis	6,882	10,622	5,811
Excluded due to poor comparison	21.7%	23.4%	28.2%

Notes: Results are from impact estimates that include covariates used for weighting. For that reason, impact estimates may not always equal the differences in means between treatment and comparison groups. The weighted sample size of the comparison group equals the treated group included in the analysis exactly. Ninety-five percent confidence

intervals are given below each impact estimate in parentheses and were created using 1,000 bootstrap draws on local labor markets. The percent of the treated group excluded in the analysis reflects those in local labor markets where no sufficient comparison sample could be identified.

APPENDIX B.6. | Chapter 4.6 Career and
Technical Education
Supplemental tables and figures

B.6.1. Baseline tables

TABLE B.6.1.1: Baseline comparisons between CTE Adult participants from FYs 2014–15 and 2015–16 with a similar WP comparison group

	Treatment Group	Comparison Group	Difference	Effect-size Difference ^a
Demographics				
Age	33.2	33.3	-7.1%	-0.01
Male	52.0%	51.7%	0.3%	n.a.
Hispanic	37.2%	37.0%	0.2%	n.a.
Black	10.2%	10.1%	0.1%	n.a.
White	44.7%	44.9%	-0.2%	n.a.
Declined to state race/ethnicity	3.3%	3.7%	-0.4%	n.a.
Disability (self-identified)	3.8%	3.7%	0.1%	n.a.
Pre-entry labor market				
Industry: construction/manufacturing	9.3%	9.4%	-0.1%	n.a.
Industry: trade/transportation	15.6%	15.8%	-0.2%	n.a.
Industry: professional service	27.2%	27.3%	-0.1%	n.a.
Industry: other service	18.3%	18.3%	0.0%	n.a.
Industry: other	14.4%	14.1%	0.3%	n.a.
Tenure of last job in quarters	9.6	9.5	0.1	0.01
Earnings in quarter of entry	\$8,836	\$8,722	115	0.01
Earnings 1st quarter before entry	\$8,887	\$8,767	120	0.01
Earnings 2nd quarter before entry	\$8,696	\$8,579	117	0.01
Earnings 3rd quarter before entry	\$8,584	\$8,438	146	0.02
Earnings 4th quarter before entry	\$8,352	\$8,210	142	0.02
Quarterly earnings 2nd year before entry	\$8,009	\$7,906	102	0.01
Quarterly earnings 3rd year before entry	\$7,482	\$7,409	73	0.01
Quarterly earnings 4th year before entry	\$7,027	\$6,960	67	0.01
Quarterly employment 2nd year before entry	18.7%	18.7%	0.0%	0.01
Quarterly employment 3rd year before entry	18.1%	18.0%	0.1%	0.00
Quarterly employment 4th year before entry	17.4%	17.4%	0.0%	0.00
Design Statistics				
Local labor markets	291	291		
Observations (weighted)	276,937	276,937		
Observations (unweighted)	276,937	452,678		
Excluded due to poor comparison	3.6%	n.a.		

Notes: Means reflect design-weighted means from each group. Differences reflect design-weighted differences from within-local labor market comparisons that are then averaged across labor markets with market weights equal to the

treatment group from each market. The percent excluded due to poor comparisons is based on the treatment sample in labor markets where effect sizes on pre-enrollment earnings were above 0.25 standard deviations.

a -- effect size difference is the mean difference divided by the pooled standard deviation for continuous variables only.

TABLE B.6.1.2: Baseline comparisons between CTE Adult Advanced participants from FYs 2014–15 and 2015–16 with a similar WP comparison group

	Treatment Group	Comparison Group	Difference	Effect-size Difference ^a
Demographics				
Age	34.0	34.0	-3.3%	0.00
Male	55.9%	55.1%	0.8%	n.a.
Hispanic	34.4%	34.8%	-0.4%	n.a.
Black	8.9%	8.7%	0.2%	n.a.
White	45.5%	45.3%	0.2%	n.a.
Declined to state race/ethnicity	4.4%	5.0%	-0.6%	n.a.
Disability (self-identified)	3.4%	3.4%	0.0%	n.a.
Pre-entry labor market				
Industry: construction/manufacturing	5.8%	6.3%	-0.5%	-0.02
Industry: trade/transportation	13.2%	13.6%	-0.4%	-0.01
Industry: professional service	25.4%	25.7%	-0.3%	-0.01
Industry: other service	16.3%	16.7%	-0.4%	-0.01
Industry: other	24.7%	22.8%	1.9%	0.04
Tenure of last job in quarters	10.5	10.2	0.2	0.05
Earnings in quarter of entry	\$11,364	\$10,722	642	0.06
Earnings 1st quarter before entry	\$11,403	\$10,742	661	0.06
Earnings 2nd quarter before entry	\$11,194	\$10,542	652	0.06
Earnings 3rd quarter before entry	\$11,058	\$10,362	697	0.06
Earnings 4th quarter before entry	\$10,844	\$10,198	646	0.06
Quarterly earnings 2nd year before entry	\$10,469	\$9,884	585	0.06
Quarterly earnings 3rd year before entry	\$9,913	\$9,416	497	0.05
Quarterly earnings 4th year before entry	\$9,363	\$8,893	469	0.05
Quarterly employment 2nd year before entry	19.5%	19.3%	0.2%	0.02
Quarterly employment 3rd year before entry	19.0%	18.8%	0.2%	0.02
Quarterly employment 4th year before entry	18.4%	18.2%	0.2%	0.02
Design Statistics				
Local labor markets	268	268		
Observations (weighted)	65,720	65,720		
Observations (unweighted)	65,720	410,367		
Excluded due to poor comparison	6.6%	n.a.		

Notes: Means reflect design-weighted means from each group. Differences reflect design-weighted differences from within-local labor market comparisons that are then averaged across labor markets with market weights equal to the treatment group from each market. The percent excluded due to poor comparisons is based on the treatment sample in labor markets where effect sizes on pre-enrollment earnings were above 0.25 standard deviations.

a -- effect size difference is the mean difference divided by the pooled standard deviation for continuous variables only.

TABLE B.6.1.3: Baseline comparisons between CTE Youth participants from FYs 2014–15 and 2015–16 with a similar WP comparison group

	Treatment Group	Comparison Group	Difference	Effect-size Difference ^a
Demographics				
Age	20.6	20.9	-34.4%	-0.16
Male	51.2%	51.7%	-0.5%	n.a.
Hispanic	49.2%	47.7%	1.5%	n.a.
Black	8.0%	8.9%	-0.9%	n.a.
White	44.1%	44.4%	-0.3%	n.a.
Declined to state race/ethnicity	1.2%	3.4%	-2.2%	n.a.
Disability (self-identified)	3.5%	2.9%	0.6%	n.a.
Pre-entry labor market				
Industry: construction/manufacturing	5.9%	6.0%	-0.1%	n.a.
Industry: trade/transportation	26.6%	26.4%	0.2%	n.a.
Industry: professional service	15.0%	15.3%	-0.3%	n.a.
Industry: other service	36.1%	35.2%	0.9%	n.a.
Industry: other	5.5%	5.0%	0.5%	n.a.
Tenure of last job in quarters	5.4	5.4	0.1	0.02
Earnings in quarter of entry	\$3,052	\$3,108	-55	-0.02
Earnings 1st quarter before entry	\$2,849	\$2,909	-60	-0.02
Earnings 2nd quarter before entry	\$2,578	\$2,606	-28	-0.01
Earnings 3rd quarter before entry	\$2,402	\$2,374	27	0.01
Earnings 4th quarter before entry	\$2,175	\$2,121	54	0.02
Quarterly earnings 2nd year before entry	\$1,683	\$1,767	-84	-0.03
Quarterly earnings 3rd year before entry	\$1,145	\$1,255	-111	-0.05
Quarterly earnings 4th year before entry	\$778	\$838	-60	-0.03
Quarterly employment 2nd year before entry	12.7%	13.2%	-0.5%	-0.05
Quarterly employment 3rd year before entry	9.2%	10.0%	-0.8%	-0.07
Quarterly employment 4th year before entry	6.5%	7.2%	-0.7%	-0.07
Design Statistics				
Local labor markets	269	269		
Observations (weighted)	249,532	249,532		
Observations (unweighted)	249,532	76,215		
Excluded due to poor comparison	39.8%	n.a.		

Notes: Means reflect design-weighted means from each group. Differences reflect design-weighted differences from within-local labor market comparisons that are then averaged across labor markets with market weights equal to the treatment group from each market. The percent excluded due to poor comparisons is based on the treatment sample in labor markets where effect sizes on pre-enrollment earnings were above 0.25 standard deviations.

a -- effect size difference is the mean difference divided by the pooled standard deviation for continuous variables only.

TABLE B.6.1.4: Baseline comparisons between CTE Youth Advanced participants from FYs 2014–15 and 2015–16 with a similar WP comparison group

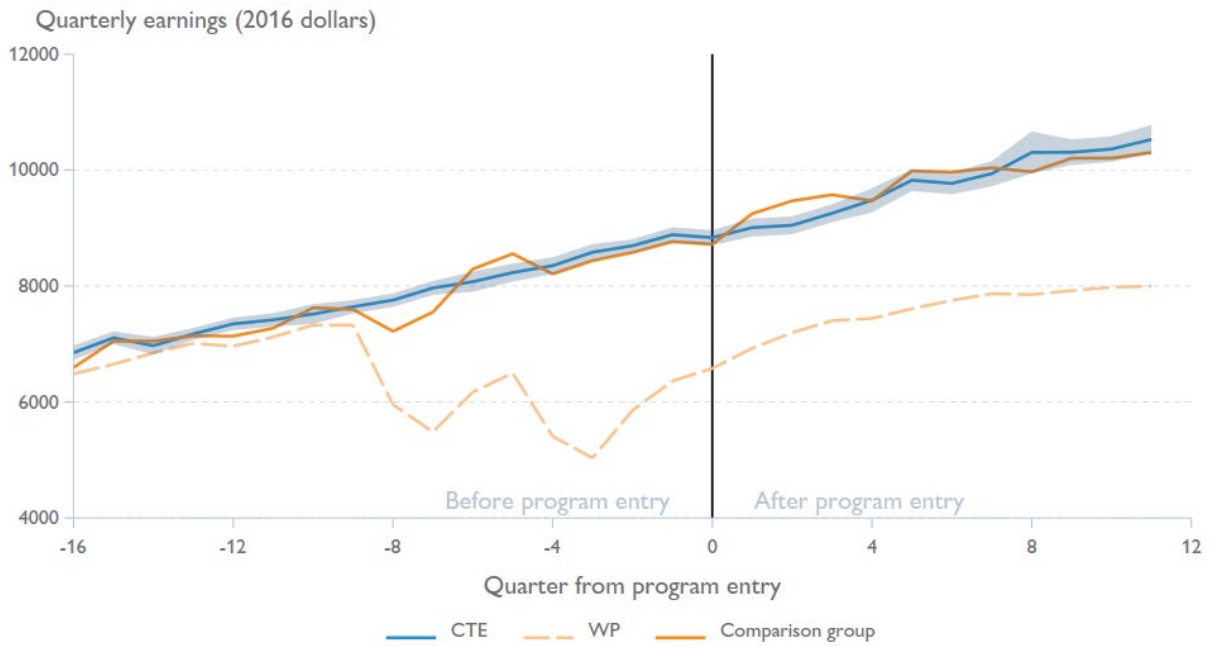
	Treatment Group	Comparison Group	Difference	Effect-size Difference ^a
Demographics				
Age	20.9	21.2	-26.5%	-0.13
Male	53.0%	52.6%	0.4%	n.a.
Hispanic	48.0%	47.3%	0.7%	n.a.
Black	7.1%	8.4%	-1.3%	n.a.
White	44.7%	43.8%	0.9%	n.a.
Declined to state race/ethnicity	1.1%	3.5%	-2.4%	n.a.
Disability (self-identified)	3.7%	2.9%	0.8%	n.a.
Pre-entry labor market				
Industry: construction/manufacturing	4.9%	5.2%	-0.3%	n.a.
Industry: trade/transportation	27.0%	27.2%	-0.2%	n.a.
Industry: professional service	16.1%	16.1%	0.0%	n.a.
Industry: other service	34.6%	34.2%	0.4%	n.a.
Industry: other	5.9%	5.3%	0.6%	n.a.
Tenure of last job in quarters	5.8	5.6	0.1	0.03
Earnings in quarter of entry	\$3,231	\$3,249	-18	0.00
Earnings 1st quarter before entry	\$2,985	\$3,018	-32	-0.01
Earnings 2nd quarter before entry	\$2,686	\$2,691	-5	0.00
Earnings 3rd quarter before entry	\$2,526	\$2,468	58	0.02
Earnings 4th quarter before entry	\$2,345	\$2,248	98	0.03
Quarterly earnings 2nd year before entry	\$1,812	\$1,882	-70	-0.03
Quarterly earnings 3rd year before entry	\$1,245	\$1,329	-83	-0.04
Quarterly earnings 4th year before entry	\$851	\$886	-35	-0.02
Quarterly employment 2nd year before entry	13.4%	13.8%	-0.4%	-0.04
Quarterly employment 3rd year before entry	9.9%	10.6%	-0.7%	-0.06
Quarterly employment 4th year before entry	7.2%	7.6%	-0.4%	-0.04
Design Statistics				
Local labor markets	259	259		
Observations (weighted)	43,939	43,939		
Observations (unweighted)	43,939	75,019		
Excluded due to poor comparison	34.0%	n.a.		

Notes: Means reflect design-weighted means from each group. Differences reflect design-weighted differences from within-local labor market comparisons that are then averaged across labor markets with market weights equal to the treatment group from each market. The percent excluded due to poor comparisons is based on the treatment sample in labor markets where effect sizes on pre-enrollment earnings were above 0.25 standard deviations.

a -- effect size difference is the mean difference divided by the pooled standard deviation for continuous variables only.

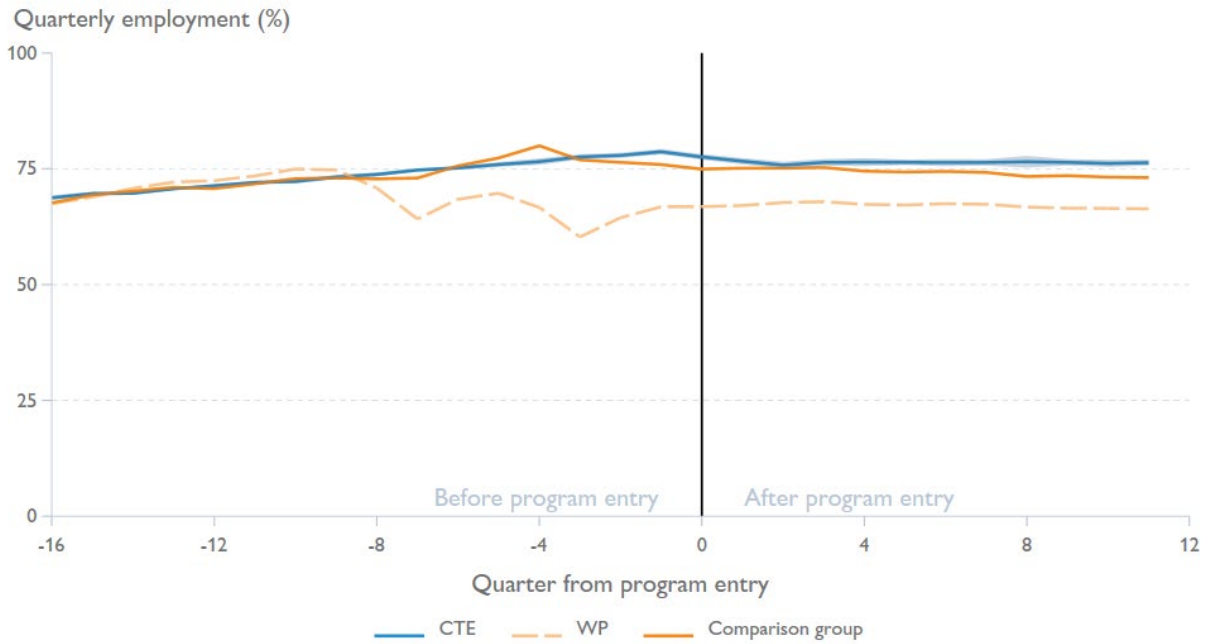
B.6.2. Impact figures for Primary Comparisons with unweighted sample

FIGURE B.6.2.1: Quarterly earnings comparisons between CTE Adult participants from FYs 2014–15 and 2015 with a similar WP comparison group



Notes: The light-blue shaded region around the Treated trend line represents a 95% confidence band for weighted group differences from within-local labor market comparisons that do not control for covariates and takes the weights as given. This shaded region is also present in the pre-enrollment quarters but is not visually apparent due to precise estimates.

FIGURE B.6.2.2: Quarterly employment comparisons between CTE Adult participants from FYs 2014–15 and 2015–16 with a similar WP comparison group



Notes: The light-blue shaded region around the Treated trend line represents a 95% confidence band for weighted group differences from within-local labor market comparisons that do not control for covariates and takes the weights as given. This shaded region is also present in the pre-enrollment quarters but is not visually apparent due to precise estimates.

B.6.3. Impact tables with design components

TABLE B.6.3.1: Labor market impacts for groups of CTE Adult participants from FYs 2014–15 and 2015–16, including design statistics

	Main group: CTE adults vs. WP adults (1)	CTE adults in advanced courses vs. WP adults (2)	CTE youth vs. WP youth (3)	CTE youth in advanced courses vs. WP youth (4)
Quarterly employment: Q=-8 to Q=-5				
Treatment group mean	74.9%	78.0%	50.9%	53.6%
Comparison group mean	74.7%	77.2%	52.8%	55.2%
Impact in percentage points	0.2 (0, 0.5)	0.8* (0.5, 1.3)	-1.9* (-2.8, -1.1)	-1.5* (-2.5, -0.7)
Quarterly employment: Q7 to Q11				
Treatment group mean	76.4%	79.9%	75.7%	76.5%
Comparison group mean	73.5%	74.9%	69.8%	69.7%
Impact in percentage points	2.7* (2.2, 3.2)	4.2* (3.2, 5.1)	5.3* (3.9, 6.7)	6.5* (5.1, 7.8)
Quarterly earnings: Q=-8 to Q=-5				
Treatment group mean	\$8,009	\$10,469	\$1,683	\$1,812
Comparison group mean	\$7,906	\$9,884	\$1,767	\$1,882
Impact in 2016 dollars	102* (41, 190)	585* (348, 910)	-84* (-141, -36)	-70* (-126, -19)
Impact as percent	1.3%* (0.5%, 2.4%)	5.9%* (3.5%, 9.2%)	-4.8%* (-8.0%, -2.0%)	-3.7%* (-6.7%, -1.0%)
Quarterly earnings: Q7 to Q11				
Treatment group mean	\$10,289	\$13,192	\$4,693	\$5,151
Comparison group mean	\$10,146	\$12,009	\$4,576	\$4,696
Impact in 2016 dollars	37 (-120, 206)	600* (339, 878)	210* (63, 353)	522* (360, 670)
Impact as percent	0.4% (-1.2%, 2.0%)	5.0%* (2.8%, 7.3%)	4.6%* (1.4%, 7.7%)	11.1%* (7.7%, 14.3%)
Design Statistics				
Local labor markets	291	268	269	259
Participants in full sample	287,242	70,365	414,484	66,528
Participants included in analysis	276,937	65,720	249,532	43,939
Excluded due to poor comparison	3.6%	6.6%	39.8%	34.0%

Notes: Results are from impact estimates that include covariates used for weighting. For that reason, impact estimates may not always equal the differences in means between treatment and comparison groups. The weighted sample size of the comparison group equals the treated group included in the analysis exactly. Ninety-five percent confidence

intervals are given below each impact estimate in parentheses and were created using 1,000 bootstrap draws on local labor markets. The percent of the treated group excluded in the analysis reflects those in local labor markets where no sufficient comparison sample could be identified.

APPENDIX B.7. | Chapter 4.7 Employment
Training Panel
Supplemental tables and figures

B.7.1. Baseline tables

TABLE B.7.1.1: Baseline comparisons between continuously employed ETP participants from FYs 2014–15 and 2015–16 with a similar WP comparison group

	Treatment Group	Comparison Group	Difference	Effect-size Difference ^a
Demographics				
Age				
Male	66.1%	65.7%	0.4%	n.a.
Hispanic	33.3%	33.4%	-0.1%	n.a.
Black	4.8%	4.8%	0.0%	n.a.
White	34.4%	34.4%	0.0%	n.a.
Declined to state race/ethnicity	0.0%	0.6%	-0.6%	n.a.
Disability (self-identified)				n.a.
Pre-entry labor market				
Industry: construction/manufacturing	45.6%	44.6%	1.0%	n.a.
Industry: trade/transportation	15.3%	15.5%	-0.2%	n.a.
Industry: professional service	25.1%	25.4%	-0.3%	n.a.
Industry: other service	9.3%	9.7%	-0.4%	n.a.
Industry: other	2.5%	2.6%	-0.1%	n.a.
Tenure of last job in quarters	12.3	12.2	0.1	0.02
Earnings in quarter of entry	\$18,112	\$17,936	175	0.02
Earnings 1st quarter before entry	\$18,039	\$17,866	173	0.02
Earnings 2nd quarter before entry	\$17,737	\$17,560	177	0.02
Earnings 3rd quarter before entry	\$17,148	\$16,979	169	0.02
Earnings 4th quarter before entry	\$16,894	\$16,717	178	0.02
Quarterly earnings 2nd year before entry	\$15,456	\$15,241	215	0.02
Quarterly earnings 3rd year before entry	\$14,142	\$14,009	133	0.01
Quarterly earnings 4th year before entry	\$13,145	\$13,044	102	0.01
Quarterly employment 2nd year before entry	23.7%	23.6%	0.1%	0.02
Quarterly employment 3rd year before entry	22.3%	22.2%	0.1%	0.01
Quarterly employment 4th year before entry	21.2%	21.1%	0.1%	0.01
Design Statistics				
Local labor markets	169	169		
Observations (weighted)	81,378	81,378		
Observations (unweighted)	81,378	305,867		
Excluded due to poor comparison	2.3%	n.a.		

Notes: Means reflect design-weighted means from each group. Differences reflect design-weighted differences from within-local labor market comparisons that are then averaged across labor markets with market weights equal to the

treatment group from each market. The percent excluded due to poor comparisons is based on the treatment sample in labor markets where effect sizes on pre-enrollment earnings were above 0.25 standard deviations.

a -- effect size difference is the mean difference divided by the pooled standard deviation for continuous variables only.

TABLE B.7.1.2: Baseline comparisons between continuously employed male ETP participants from FYs 2014–15 and 2015–16 with a similar WP comparison group

	Treatment Group	Comparison Group	Difference	Effect-size Difference ^a
Demographics				
Age				
Male	100.0%	100.0%	0.0%	n.a.
Hispanic	35.8%	35.9%	-0.1%	n.a.
Black	4.4%	4.5%	-0.1%	n.a.
White	34.9%	35.0%	-0.1%	n.a.
Declined to state race/ethnicity	0.0%	0.9%	-0.9%	n.a.
Disability (self-identified)				n.a.
Pre-entry labor market				
Industry: construction/manufacturing	53.5%	51.8%	1.7%	n.a.
Industry: trade/transportation	16.3%	16.7%	-0.4%	n.a.
Industry: professional service	16.1%	16.8%	-0.7%	n.a.
Industry: other service	8.8%	9.3%	-0.5%	n.a.
Industry: other	2.6%	2.8%	-0.2%	n.a.
Tenure of last job in quarters	12.2	12.1	0.2	0.05
Earnings in quarter of entry	\$18,477	\$18,192	285	0.03
Earnings 1st quarter before entry	\$18,537	\$18,239	298	0.03
Earnings 2nd quarter before entry	\$18,233	\$17,936	297	0.03
Earnings 3rd quarter before entry	\$17,595	\$17,313	283	0.03
Earnings 4th quarter before entry	\$17,295	\$16,989	305	0.03
Quarterly earnings 2nd year before entry	\$15,864	\$15,480	384	0.04
Quarterly earnings 3rd year before entry	\$14,529	\$14,299	230	0.02
Quarterly earnings 4th year before entry	\$13,505	\$13,312	193	0.02
Quarterly employment 2nd year before entry	23.7%	23.5%	0.2%	0.04
Quarterly employment 3rd year before entry	22.3%	22.2%	0.1%	0.01
Quarterly employment 4th year before entry	21.2%	21.1%	0.1%	0.01
Design Statistics				
Local labor markets	165	165		
Observations (weighted)	53,034	53,034		
Observations (unweighted)	53,034	153,725		
Excluded due to poor comparison	3.8%	n.a.		

Notes: Means reflect design-weighted means from each group. Differences reflect design-weighted differences from within-local labor market comparisons that are then averaged across labor markets with market weights equal to the treatment group from each market. The percent excluded due to poor comparisons is based on the treatment sample in labor markets where effect sizes on pre-enrollment earnings were above 0.25 standard deviations.

a -- effect size difference is the mean difference divided by the pooled standard deviation for continuous variables only.

TABLE B.7.1.3: Baseline comparisons between continuously employed female ETP participants from FYs 2014–15 and 2015–16 with a similar WP comparison group

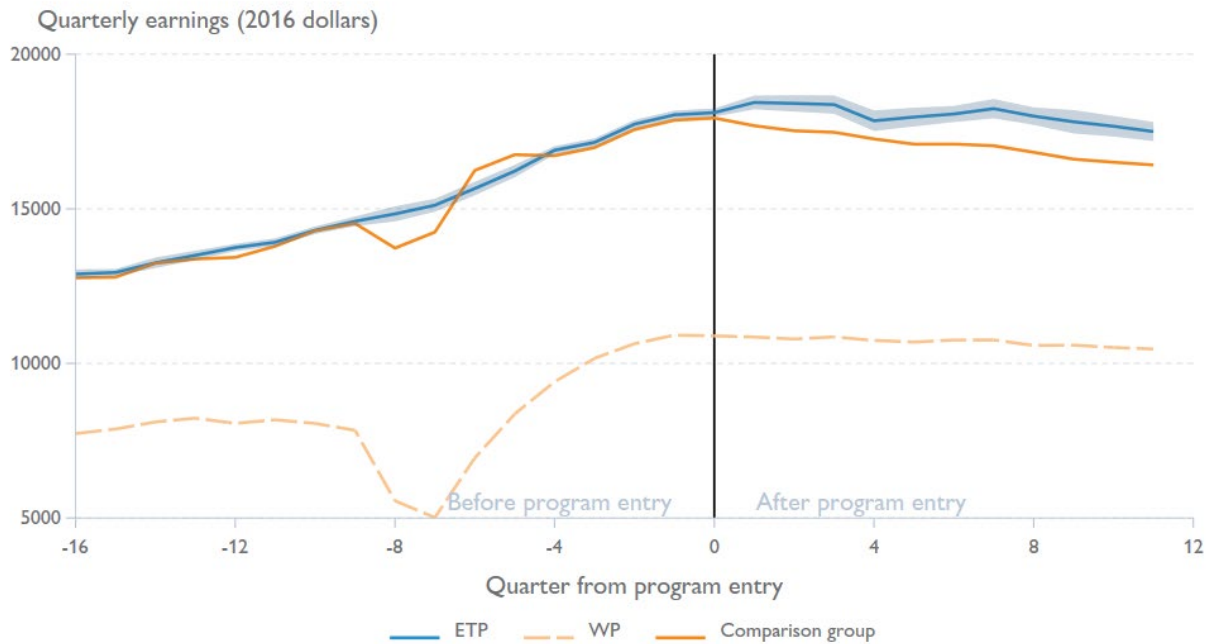
	Treatment Group	Comparison Group	Difference	Effect-size Difference ^a
Demographics				
Age				
Male	0.0%	0.0%	0.0%	n.a.
Hispanic	28.7%	28.9%	-0.2%	n.a.
Black	5.3%	5.5%	-0.2%	n.a.
White	32.7%	33.0%	-0.3%	n.a.
Declined to state race/ethnicity	0.0%	1.0%	-1.0%	n.a.
Disability (self-identified)				n.a.
Pre-entry labor market				
Industry: construction/manufacturing	30.8%	29.3%	1.5%	n.a.
Industry: trade/transportation	13.6%	14.0%	-0.4%	n.a.
Industry: professional service	41.6%	42.0%	-0.4%	n.a.
Industry: other service	10.5%	10.9%	-0.4%	n.a.
Industry: other	1.9%	2.1%	-0.2%	n.a.
Tenure of last job in quarters	12.5	12.3	0.2	0.04
Earnings in quarter of entry	\$17,152	\$16,807	346	0.03
Earnings 1st quarter before entry	\$16,817	\$16,482	335	0.03
Earnings 2nd quarter before entry	\$16,528	\$16,204	323	0.03
Earnings 3rd quarter before entry	\$16,004	\$15,677	327	0.03
Earnings 4th quarter before entry	\$15,860	\$15,515	345	0.03
Quarterly earnings 2nd year before entry	\$14,429	\$14,032	398	0.04
Quarterly earnings 3rd year before entry	\$13,171	\$12,926	246	0.03
Quarterly earnings 4th year before entry	\$12,247	\$12,040	208	0.02
Quarterly employment 2nd year before entry	23.7%	23.5%	0.2%	0.04
Quarterly employment 3rd year before entry	22.3%	22.2%	0.1%	0.01
Quarterly employment 4th year before entry	21.2%	21.1%	0.1%	0.01
Design Statistics				
Local labor markets	116	116		
Observations (weighted)	25,717	25,717		
Observations (unweighted)	25,717	141,788		
Excluded due to poor comparison	8.7%	n.a.		

Notes: Means reflect design-weighted means from each group. Differences reflect design-weighted differences from within-local labor market comparisons that are then averaged across labor markets with market weights equal to the treatment group from each market. The percent excluded due to poor comparisons is based on the treatment sample in labor markets where effect sizes on pre-enrollment earnings were above 0.25 standard deviations.

a -- effect size difference is the mean difference divided by the pooled standard deviation for continuous variables only.

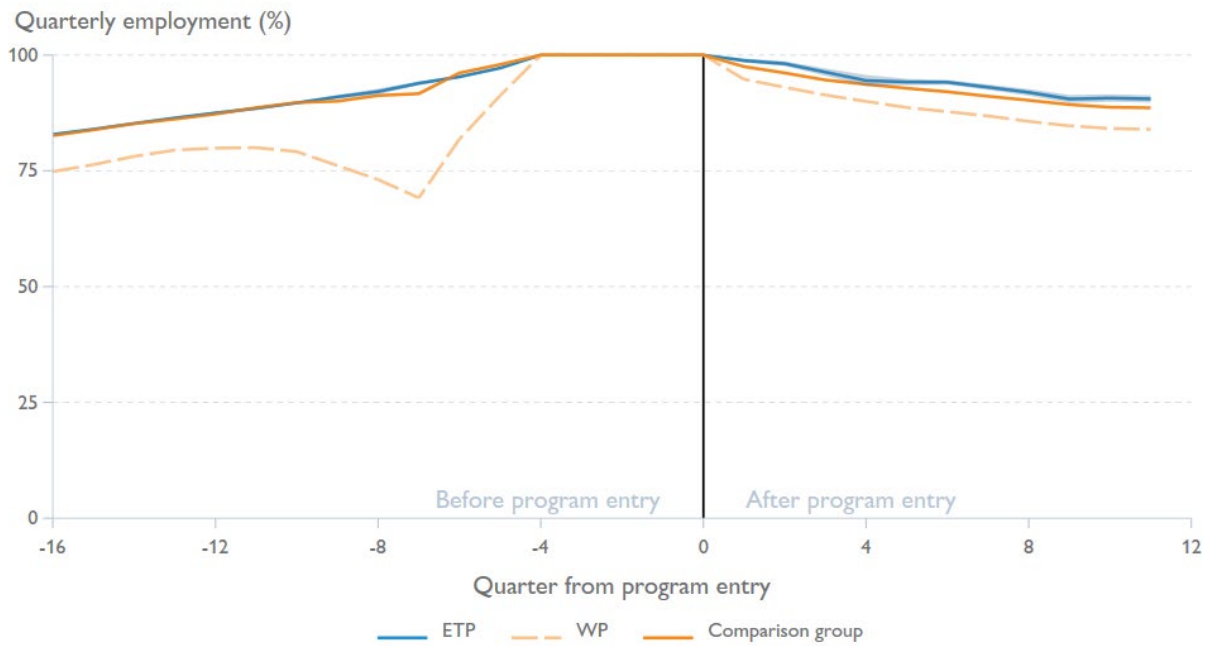
B.7.2. Impact figures for Primary Comparisons with unweighted sample

FIGURE B.7.2.1: Quarterly earnings comparisons between continuously employed ETP participants from FYs 2014–15 and 2015–16 with a similar WP comparison group



Notes: The light-blue shaded region around the Treated trend line represents a 95% confidence band for weighted group differences from within-local labor market comparisons that do not control for covariates and takes the weights as given. This shaded region is also present in the pre-enrollment quarters but is not visually apparent due to precise estimates.

FIGURE B.7.2.2: Quarterly employment comparisons between continuously employed ETP participants from FYs 2014–15 and 2015–16 with a similar WP comparison group



Notes: The light-blue shaded region around the Treated trend line represents a 95% confidence band for weighted group differences from within-local labor market comparisons that do not control for covariates and takes the weights as given. This shaded region is also present in the pre-enrollment quarters but is not visually apparent due to precise estimates.

B.7.3. Impact tables with design components

TABLE B.7.3.1: Labor market impacts for groups of ETP participants from FYs 2014–15 and 2015–16, including design statistics

	Main group: ETP incumbent proxy vs. WP incumbent proxy (1)	ETP incumbent proxy males vs. WP incumbent proxy males (2)	ETP incumbent proxy females vs. ETP incumbent proxy females (3)
Quarterly employment: Q=-8 to Q=-5			
Treatment group mean	94.6%	94.6%	94.7%
Comparison group mean	94.3%	94.0%	94.1%
Impact in percentage points	0.4*	0.6*	0.6*
	(0.2, 0.6)	(0.4, 0.9)	(0.4, 0.9)
Quarterly employment: Q7 to Q11			
Treatment group mean	91.4%	91.3%	91.2%
Comparison group mean	89.6%	88.8%	90.3%
Impact in percentage points	1.6*	2.3*	0.7
	(1, 2.3)	(1.5, 3.2)	(-0.3, 1.6)
Quarterly earnings: Q=-8 to Q=-5			
Treatment group mean	\$15,456	\$15,864	\$14,429
Comparison group mean	\$15,241	\$15,480	\$14,032
Impact in 2016 dollars	215*	384*	398*
	(133, 339)	(252, 547)	(242, 613)
Impact as percent	1.4%*	2.5%*	2.8%*
	(0.9%, 2.2%)	(1.6%, 3.5%)	(1.7%, 4.4%)
Quarterly earnings: Q7 to Q11			
Treatment group mean	\$17,843	\$18,356	\$16,577
Comparison group mean	\$16,679	\$16,889	\$15,636
Impact in 2016 dollars	1,005*	1,202*	621*
	(789, 1245)	(922, 1502)	(305, 931)
Impact as percent	6.0%*	7.1%*	4.0%*
	(4.7%, 7.5%)	(5.5%, 8.9%)	(2.0%, 6.0%)
Design Statistics			
Local labor markets	169	165	116
Participants in full sample	83,262	55,103	28,159
Participants included in analysis	81,378	53,034	25,717
Excluded due to poor comparison	2.3%	3.8%	8.7%

Notes: Results are from impact estimates that include covariates used for weighting. For that reason, impact estimates may not always equal the differences in means between treatment and comparison groups. The weighted sample size of the comparison group equals the treated group included in the analysis exactly. Ninety-five percent confidence intervals are given below each impact estimate in parentheses and were created using 1,000 bootstrap draws on local

labor markets. The percent of the treated group excluded in the analysis reflects those in local labor markets where no sufficient comparison sample could be identified.

APPENDIX B.8. | Chapter 4.8 State Certified
Apprenticeship
Supplemental tables and figures

B.8.1. Baseline tables

TABLE B.8.1.1: Baseline comparisons between SCA participants from FYs 2014–15 and 2015–16 with a similar WP comparison group

	Treatment Group	Comparison Group	Difference	Effect-size Difference ^a
Demographics				
Age	29.2	29.3	-14.2%	-0.02
Male	93.7%	93.2%	0.5%	n.a.
Hispanic	52.0%	51.9%	0.1%	n.a.
Black	7.6%	7.6%	0.0%	n.a.
White	33.8%	33.7%	0.1%	n.a.
Declined to state race/ethnicity	0.0%	0.3%	-0.3%	n.a.
Disability (self-identified)				n.a.
Pre-entry labor market				
Industry: construction/manufacturing	30.4%	30.3%	0.1%	n.a.
Industry: trade/transportation	17.3%	17.3%	0.0%	n.a.
Industry: professional service	10.3%	10.4%	-0.1%	n.a.
Industry: other service	21.8%	21.8%	0.0%	n.a.
Industry: other	8.6%	8.5%	0.1%	n.a.
Tenure of last job in quarters	8.0	8.0	0.0	0.00
Earnings in quarter of entry	\$8,727	\$8,672	56	0.01
Earnings 1st quarter before entry	\$7,127	\$7,087	40	0.01
Earnings 2nd quarter before entry	\$7,025	\$6,978	47	0.01
Earnings 3rd quarter before entry	\$6,800	\$6,741	59	0.01
Earnings 4th quarter before entry	\$6,529	\$6,487	43	0.01
Quarterly earnings 2nd year before entry	\$6,017	\$5,991	27	0.00
Quarterly earnings 3rd year before entry	\$5,284	\$5,288	-4	0.00
Quarterly earnings 4th year before entry	\$4,648	\$4,662	-14	0.00
Quarterly employment 2nd year before entry	17.7%	17.7%	0.0%	0.00
Quarterly employment 3rd year before entry	16.1%	16.1%	0.0%	0.00
Quarterly employment 4th year before entry	14.4%	14.4%	0.0%	0.00
Design Statistics				
Local labor markets	303	303		
Observations (weighted)	39,553	39,553		
Observations (unweighted)	39,553	1,035,166		
Excluded due to poor comparison	2.7%	n.a.		

Notes: Means reflect design-weighted means from each group. Differences reflect design-weighted differences from within-local labor market comparisons that are then averaged across labor markets with market weights equal to the

treatment group from each market. The percent excluded due to poor comparisons is based on the treatment sample in labor markets where effect sizes on pre-enrollment earnings were above 0.25 standard deviations.

a -- effect size difference is the mean difference divided by the pooled standard deviation for continuous variables only.

TABLE B.8.1.2: Baseline comparisons between SCA participants from FYs 2014–15 and 2015–16 who completed training with a similar SCA comparison group who did not complete training

	Treatment Group	Comparison Group	Difference	Effect-size Difference ^a
Demographics				
Age	30.1	29.6	58.6%	0.08
Male	89.8%	90.1%	-0.3%	n.a.
Hispanic	49.8%	50.1%	-0.3%	n.a.
Black	6.0%	6.9%	-0.9%	n.a.
White	35.6%	34.9%	0.7%	n.a.
Declined to state race/ethnicity	0.0%	0.0%	0.0%	n.a.
Disability (self-identified)				n.a.
Pre-entry labor market				
Industry: construction/manufacturing	23.8%	24.4%	-0.6%	n.a.
Industry: trade/transportation	19.1%	19.6%	-0.5%	n.a.
Industry: professional service	11.6%	11.6%	0.0%	n.a.
Industry: other service	19.8%	21.2%	-1.4%	n.a.
Industry: other	12.5%	9.5%	3.0%	n.a.
Tenure of last job in quarters	9.6	9.0	0.5	0.11
Earnings in quarter of entry	\$11,270	\$9,974	1,296	0.19
Earnings 1st quarter before entry	\$9,120	\$7,870	1,249	0.17
Earnings 2nd quarter before entry	\$8,980	\$7,762	1,217	0.16
Earnings 3rd quarter before entry	\$8,857	\$7,611	1,246	0.16
Earnings 4th quarter before entry	\$8,610	\$7,398	1,212	0.16
Quarterly earnings 2nd year before entry	\$8,030	\$6,880	1,150	0.16
Quarterly earnings 3rd year before entry	\$7,213	\$6,157	1,057	0.15
Quarterly earnings 4th year before entry	\$6,483	\$5,488	995	0.14
Quarterly employment 2nd year before entry	19.6%	19.0%	0.6%	0.07
Quarterly employment 3rd year before entry	18.3%	17.6%	0.7%	0.07
Quarterly employment 4th year before entry	17.0%	16.1%	0.9%	0.08
Design Statistics				
Local labor markets	231	231		
Observations (weighted)	14,120	14,120		
Observations (unweighted)	14,120	20,986		
Excluded due to poor comparison	11.1%	n.a.		

Notes: Means reflect design-weighted means from each group. Differences reflect design-weighted differences from within-local labor market comparisons that are then averaged across labor markets with market weights equal to the treatment group from each market. The percent excluded due to poor comparisons is based on the treatment sample in labor markets where effect sizes on pre-enrollment earnings were above 0.25 standard deviations.

^a -- effect size difference is the mean difference divided by the pooled standard deviation for continuous variables only.

TABLE B.8.1.3: Baseline comparisons between SCA participants from FYs 2014–15 who completed training and 2015–16 with a similar WP comparison group

	Treatment Group	Comparison Group	Difference	Effect-size Difference
Demographics				
Age	30.2	30.4	-23.6%	-0.03
Male	90.2%	89.3%	0.9%	n.a.
Hispanic	50.4%	50.3%	0.1%	n.a.
Black	6.0%	6.1%	-0.1%	n.a.
White	35.2%	35.1%	0.1%	n.a.
Declined to state race/ethnicity	0.0%	0.5%	-0.5%	n.a.
Disability (self-identified)				n.a.
Pre-entry labor market				
Industry: construction/manufacturing	24.9%	24.6%	0.3%	n.a.
Industry: trade/transportation	18.8%	18.8%	0.0%	n.a.
Industry: professional service	11.5%	11.8%	-0.3%	n.a.
Industry: other service	19.7%	19.8%	-0.1%	n.a.
Industry: other	12.7%	12.3%	0.4%	n.a.
Tenure of last job in quarters	9.5	9.4	0.0	0.01
Earnings in quarter of entry	\$11,220	\$11,043	177	0.02
Earnings 1st quarter before entry	\$9,125	\$8,974	151	0.02
Earnings 2nd quarter before entry	\$9,006	\$8,841	165	0.02
Earnings 3rd quarter before entry	\$8,857	\$8,670	187	0.02
Earnings 4th quarter before entry	\$8,604	\$8,452	152	0.02
Quarterly earnings 2nd year before entry	\$8,034	\$7,918	116	0.01
Quarterly earnings 3rd year before entry	\$7,226	\$7,170	55	0.01
Quarterly earnings 4th year before entry	\$6,497	\$6,464	33	0.00
Quarterly employment 2nd year before entry	19.5%	19.5%	0.0%	0.01
Quarterly employment 3rd year before entry	18.2%	18.2%	0.0%	0.00
Quarterly employment 4th year before entry	16.9%	16.9%	0.0%	0.00
Design Statistics				
Local labor markets	242	242		
Observations (weighted)	15,231	15,231		
Observations (unweighted)	15,231	1,003,198		
Excluded due to poor comparison	4.2%	n.a.		

Notes: Means reflect design-weighted means from each group. Differences reflect design-weighted differences from within-local labor market comparisons that are then averaged across labor markets with market weights equal to the treatment group from each market. The percent excluded due to poor comparisons is based on the treatment sample in labor markets where effect sizes on pre-enrollment earnings were above 0.25 standard deviations.

a -- effect size difference is the mean difference divided by the pooled standard deviation for continuous variables only.

TABLE B.8.1.4: Baseline comparisons between SCA participants from FYs 2014–15 who did not complete training and 2015–16 with a similar WP comparison group

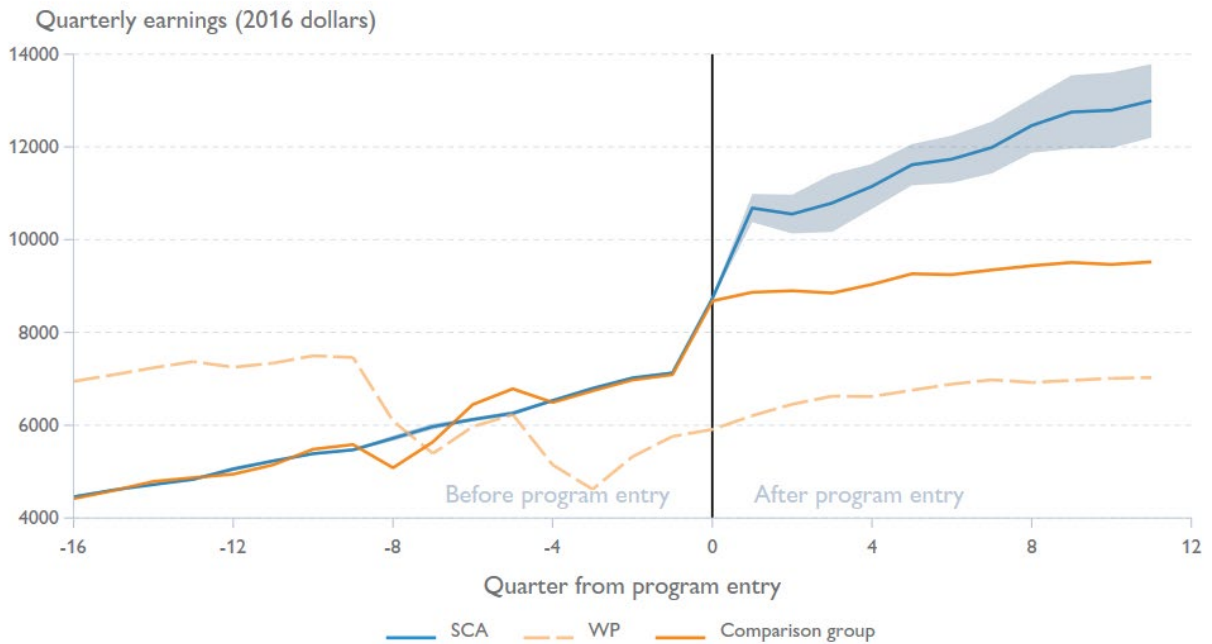
	Treatment Group	Comparison Group	Difference	Effect-size Difference ^a
Demographics				
Age	28.5	28.7	-14.8%	-0.02
Male	95.9%	95.5%	0.4%	n.a.
Hispanic	53.1%	53.1%	0.0%	n.a.
Black	8.8%	8.8%	0.0%	n.a.
White	32.6%	32.6%	0.0%	n.a.
Declined to state race/ethnicity	0.0%	0.2%	-0.2%	n.a.
Disability (self-identified)				n.a.
Pre-entry labor market				
Industry: construction/manufacturing	34.1%	33.9%	0.2%	n.a.
Industry: trade/transportation	16.3%	16.3%	0.0%	n.a.
Industry: professional service	9.6%	9.8%	-0.2%	n.a.
Industry: other service	23.1%	23.1%	0.0%	n.a.
Industry: other	6.0%	5.9%	0.1%	n.a.
Tenure of last job in quarters	7.0	7.0	0.0	0.00
Earnings in quarter of entry	\$7,150	\$7,128	22	0.00
Earnings 1st quarter before entry	\$5,861	\$5,854	8	0.00
Earnings 2nd quarter before entry	\$5,757	\$5,747	10	0.00
Earnings 3rd quarter before entry	\$5,497	\$5,480	17	0.00
Earnings 4th quarter before entry	\$5,225	\$5,217	7	0.00
Quarterly earnings 2nd year before entry	\$4,743	\$4,747	-4	0.00
Quarterly earnings 3rd year before entry	\$4,058	\$4,091	-33	-0.01
Quarterly earnings 4th year before entry	\$3,489	\$3,529	-39	-0.01
Quarterly employment 2nd year before entry	16.6%	16.6%	0.0%	0.00
Quarterly employment 3rd year before entry	14.7%	14.7%	0.0%	0.00
Quarterly employment 4th year before entry	12.8%	12.9%	-0.1%	0.00
Design Statistics				
Local labor markets	271	271		
Observations (weighted)	24,038	24,038		
Observations (unweighted)	24,038	1,035,617		
Excluded due to poor comparison	2.8%	n.a.		

Notes: Means reflect design-weighted means from each group. Differences reflect design-weighted differences from within-local labor market comparisons that are then averaged across labor markets with market weights equal to the treatment group from each market. The percent excluded due to poor comparisons is based on the treatment sample in labor markets where effect sizes on pre-enrollment earnings were above 0.25 standard deviations.

a -- effect size difference is the mean difference divided by the pooled standard deviation for continuous variables only.

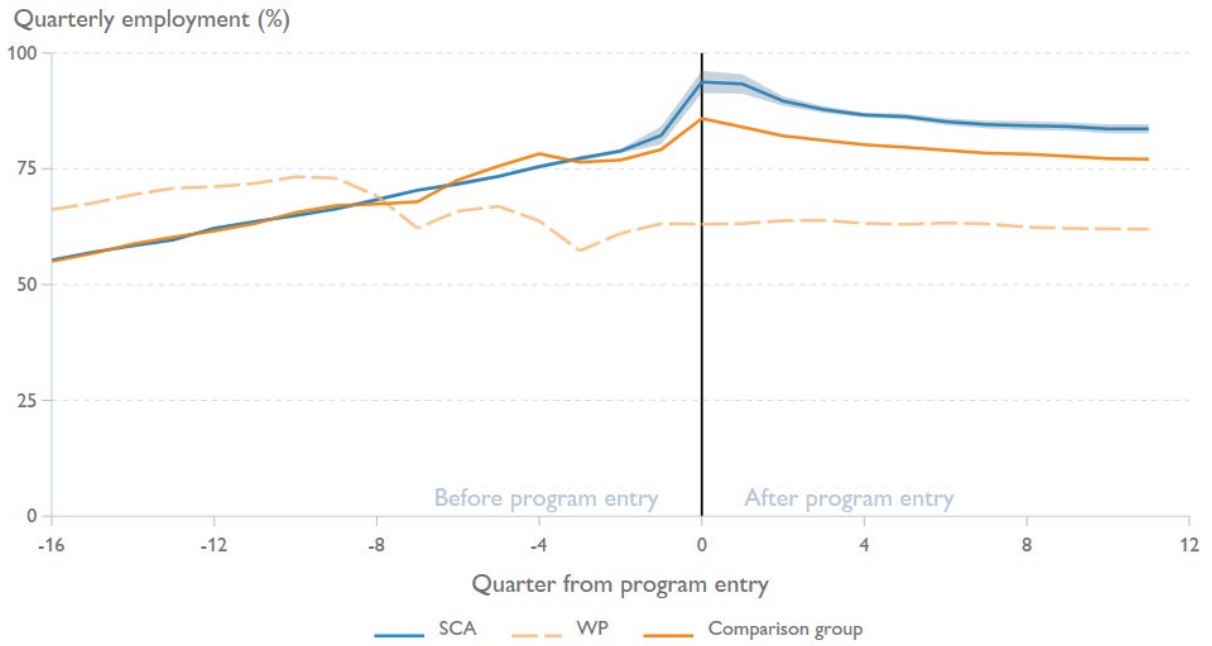
B.8.2. Impact figures for Primary Comparisons with unweighted sample

FIGURE B.8.2.1: Quarterly earnings comparisons between enrolled SCA participants from FYs 2014–15 and 2015–16 with a similar WP comparison group



Notes: The light-blue shaded region around the Treated trend line represents a 95% confidence band for weighted group differences from within-local labor market comparisons that do not control for covariates and takes the weights as given. This shaded region is also present in the pre-enrollment quarters but is not visually apparent due to precise estimates.

FIGURE B.8.2.2: Quarterly employment comparisons between enrolled SCA participants from FYs 2014–15 and 2015–16 with a similar WP comparison group



Notes: The light-blue shaded region around the Treated trend line represents a 95% confidence band for weighted group differences from within-local labor market comparisons that do not control for covariates and takes the weights as given. This shaded region is also present in the pre-enrollment quarters but is not visually apparent due to precise estimates.

B.8.3. Impact tables with design components

TABLE B.8.3.1: Labor market impacts for groups of SCA participants from FYs 2014–15 and 2015–16 who were aged 20–55, including design statistics

	SCA vs. WP (1)	SCA completers vs. SCA non- completers (2)	SCA completers vs. WP (3)	SCA non- completers vs. WP (4)
Quarterly employment: Q=-8 to Q=-5				
Treatment group mean	71.0%	78.6%	78.2%	66.4%
Comparison group mean	70.9%	75.9%	77.9%	66.3%
Impact in percentage points	0.1 (0, 0.1)	2.7* (1.9, 3.8)	0.3* (0.2, 0.4)	0.0 (0, 0.1)
Quarterly employment: Q7 to Q11				
Treatment group mean	84.1%	95.5%	95.3%	76.8%
Comparison group mean	77.7%	79.8%	82.8%	74.7%
Impact in percentage points	6.2* (5.6, 6.7)	14.5* (13, 16.2)	12.2* (11.2, 13.3)	2.0* (1.3, 2.7)
Quarterly earnings: Q=-8 to Q=-5				
Treatment group mean	\$6,017	\$8,030	\$8,034	\$4,743
Comparison group mean	\$5,991	\$6,880	\$7,918	\$4,747
Impact in 2016 dollars	27* (13, 43)	1,150* (838, 1613)	116* (69, 182)	-4 (-13, 6)
Impact as percent	0.5%* (0.2%, 0.7%)	16.7%* (12.2%, 23.4%)	1.5%* (0.9%, 2.3%)	-0.1% (-0.3%, 0.1%)
Quarterly earnings: Q7 to Q11				
Treatment group mean	\$12,607	\$17,623	\$17,556	\$9,412
Comparison group mean	\$9,458	\$11,243	\$11,665	\$8,033
Impact in 2016 dollars	3,090* (2781, 3420)	5,337* (4813, 5740)	5,724* (5378, 6069)	1,356* (1224, 1493)
Impact as percent	32.7%* (29.4%, 36.2%)	47.5%* (42.8%, 51.1%)	49.1%* (46.1%, 52.0%)	16.9%* (15.2%, 18.6%)
Design Statistics				
Local labor markets	303	231	242	271
Participants in full sample	40,647	15,893	15,893	24,749
Participants included in analysis	39,553	14,120	15,231	24,038
Excluded due to poor comparison	2.7%	11.2%	4.2%	2.9%

Notes: Results are from impact estimates that include covariates used for weighting. For that reason, impact estimates may not always equal the differences in means between treatment and comparison groups. The weighted sample size of the comparison group equals the treated group included in the analysis exactly. Ninety-five percent confidence intervals are given below each impact estimate in parentheses and were created using 1,000 bootstrap draws on local labor markets. The percent of the treated group excluded in the analysis reflects those in local labor markets where no sufficient comparison sample could be identified.

APPENDIX B.9. | Chapter 4.9 Trade
Adjustment Assistance
Supplemental tables and figures

B.9.1. Baseline tables

TABLE B.9.1.1: Baseline comparisons between TAA from FYs 2014–15 and 2015–16 who participated in training with a similar WP comparison group

	Treatment Group	Comparison Group	Difference	Effect-size Difference
Demographics				
Age	49.0	48.8	21.3%	0.02
Male	48.1%	48.6%	-0.5%	n.a.
Hispanic	33.9%	33.9%	0.0%	n.a.
Black	4.5%	4.6%	-0.1%	n.a.
White	28.8%	29.0%	-0.2%	n.a.
Declined to state race/ethnicity	13.8%	14.4%	-0.6%	n.a.
Disability (self-identified)	1.3%	1.5%	-0.2%	n.a.
Pre-entry labor market				
Industry: construction/manufacturing	44.4%	43.2%	1.2%	n.a.
Industry: trade/transportation	8.8%	8.3%	0.5%	n.a.
Industry: professional service	18.6%	19.3%	-0.7%	n.a.
Industry: other service	7.0%	7.7%	-0.7%	n.a.
Industry: other	14.9%	15.1%	-0.2%	n.a.
Tenure of last job in quarters	13.2	13.1	0.1	0.04
Earnings in quarter of entry	\$3,162	\$3,319	-157	-0.02
Earnings 1st quarter before entry	\$9,893	\$9,987	-94	-0.01
Earnings 2nd quarter before entry	\$13,859	\$13,799	60	0.00
Earnings 3rd quarter before entry	\$13,121	\$13,126	-6	0.00
Earnings 4th quarter before entry	\$13,697	\$13,618	79	0.01
Quarterly earnings 2nd year before entry	\$14,386	\$14,307	79	0.01
Quarterly earnings 3rd year before entry	\$14,334	\$14,209	125	0.01
Quarterly earnings 4th year before entry	\$14,542	\$14,410	132	0.01
Quarterly employment 2nd year before entry	23.5%	23.3%	0.2%	0.03
Quarterly employment 3rd year before entry	23.4%	23.1%	0.3%	0.04
Quarterly employment 4th year before entry	23.2%	23.0%	0.2%	0.04
Design Statistics				
Local labor markets	39	39		
Observations (weighted)	673	673		
Observations (unweighted)	673	534,324		
Excluded due to poor comparison	8.3%	n.a.		

Notes: Means reflect design-weighted means from each group. Differences reflect design-weighted differences from within-local labor market comparisons that are then averaged across labor markets with market weights equal to the

treatment group from each market. The percent excluded due to poor comparisons is based on the treatment sample in labor markets where effect sizes on pre-enrollment earnings were above 0.25 standard deviations.

a -- effect size difference is the mean difference divided by the pooled standard deviation for continuous variables only.

TABLE B.9.1.2: Baseline comparisons between TAA participants from FYs 2014–15 and 2015–16 who completed training with a similar WP comparison group

	Treatment Group	Comparison Group	Difference	Effect-size Difference
Demographics				
Age	49.3	49.1	26.8%	0.03
Male	50.9%	51.1%	-0.2%	n.a.
Hispanic	33.2%	32.9%	0.3%	n.a.
Black	4.3%	4.3%	0.0%	n.a.
White	27.7%	28.0%	-0.3%	n.a.
Declined to state race/ethnicity	15.5%	16.3%	-0.8%	n.a.
Disability (self-identified)	1.6%	1.7%	-0.1%	n.a.
Pre-entry labor market				
Industry: construction/manufacturing	47.9%	46.2%	1.7%	n.a.
Industry: trade/transportation	7.1%	7.5%	-0.4%	n.a.
Industry: professional service	17.3%	17.9%	-0.6%	n.a.
Industry: other service	6.8%	7.4%	-0.6%	n.a.
Industry: other	13.9%	14.1%	-0.2%	n.a.
Tenure of last job in quarters	13.2	13.1	0.2	0.04
Earnings in quarter of entry	\$2,978	\$3,124	-146	-0.02
Earnings 1st quarter before entry	\$10,217	\$10,302	-84	-0.01
Earnings 2nd quarter before entry	\$14,179	\$14,082	97	0.01
Earnings 3rd quarter before entry	\$13,440	\$13,350	90	0.01
Earnings 4th quarter before entry	\$13,895	\$13,821	73	0.01
Quarterly earnings 2nd year before entry	\$14,658	\$14,495	164	0.02
Quarterly earnings 3rd year before entry	\$14,528	\$14,321	207	0.02
Quarterly earnings 4th year before entry	\$14,727	\$14,530	197	0.02
Quarterly employment 2nd year before entry	23.6%	23.4%	0.2%	0.04
Quarterly employment 3rd year before entry	23.4%	23.1%	0.3%	0.05
Quarterly employment 4th year before entry	23.2%	23.0%	0.2%	0.04
Design Statistics				
Local labor markets	39	39		
Observations (weighted)	560	560		
Observations (unweighted)	560	527,014		
Excluded due to poor comparison	6.4%	n.a.		

Notes: Means reflect design-weighted means from each group. Differences reflect design-weighted differences from within-local labor market comparisons that are then averaged across labor markets with market weights equal to the treatment group from each market. The percent excluded due to poor comparisons is based on the treatment sample in labor markets where effect sizes on pre-enrollment earnings were above 0.25 standard deviations.

a -- effect size difference is the mean difference divided by the pooled standard deviation for continuous variables only.

TABLE B.9.1.3: Baseline comparisons between all TAA participants from FYs 2014–15 and 2015–16 with a similar WP comparison group

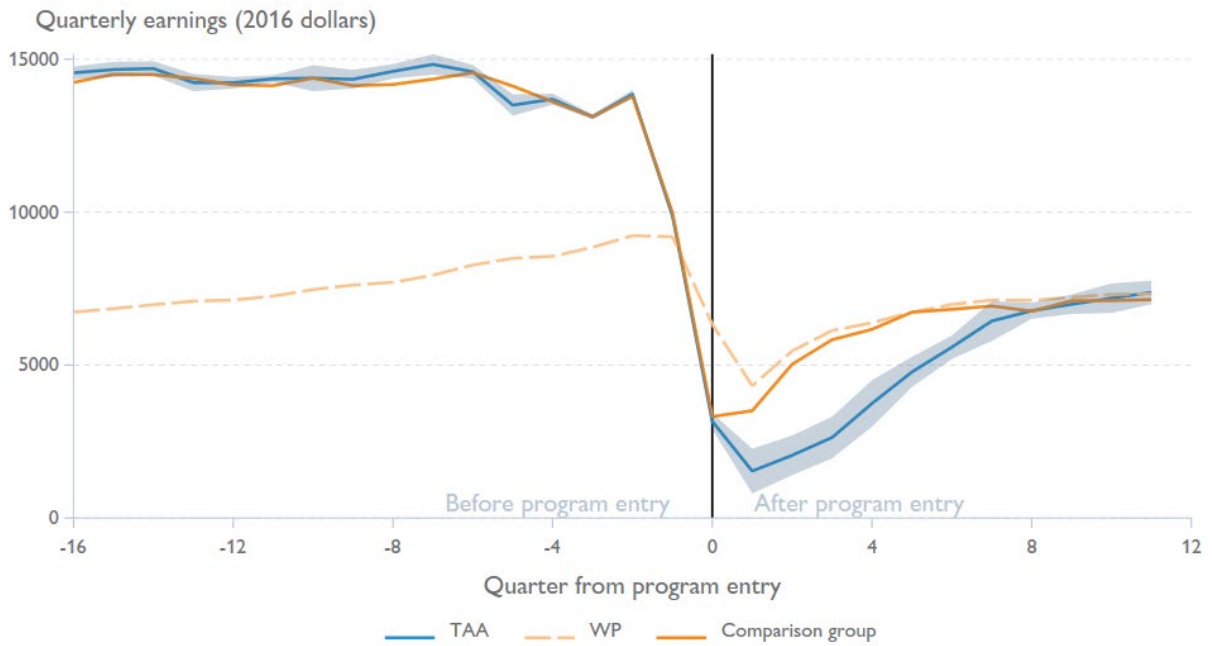
	Treatment Group	Comparison Group	Difference	Effect-size Difference
Demographics				
Age	49.3	48.9	36.2%	0.03
Male	51.6%	51.5%	0.1%	n.a.
Hispanic	31.8%	32.0%	-0.2%	n.a.
Black	5.2%	5.3%	-0.1%	n.a.
White	29.1%	28.8%	0.3%	n.a.
Declined to state race/ethnicity	15.8%	16.1%	-0.3%	n.a.
Disability (self-identified)	1.4%	1.5%	-0.1%	n.a.
Pre-entry labor market				
Industry: construction/manufacturing	45.7%	44.2%	1.5%	n.a.
Industry: trade/transportation	8.2%	8.2%	0.0%	n.a.
Industry: professional service	21.0%	21.5%	-0.5%	n.a.
Industry: other service	5.7%	6.1%	-0.4%	n.a.
Industry: other	12.7%	12.9%	-0.2%	n.a.
Tenure of last job in quarters	13.2	13.0	0.1	0.04
Earnings in quarter of entry	\$3,707	\$3,791	-84	-0.01
Earnings 1st quarter before entry	\$10,279	\$10,111	167	0.01
Earnings 2nd quarter before entry	\$13,687	\$13,461	226	0.02
Earnings 3rd quarter before entry	\$13,404	\$13,219	186	0.02
Earnings 4th quarter before entry	\$13,818	\$13,625	193	0.02
Quarterly earnings 2nd year before entry	\$14,513	\$14,323	189	0.02
Quarterly earnings 3rd year before entry	\$14,417	\$14,190	226	0.02
Quarterly earnings 4th year before entry	\$14,407	\$14,183	223	0.02
Quarterly employment 2nd year before entry	23.6%	23.5%	0.1%	0.03
Quarterly employment 3rd year before entry	23.5%	23.3%	0.2%	0.04
Quarterly employment 4th year before entry	23.3%	23.1%	0.2%	0.04
Design Statistics				
Local labor markets	49	49		
Observations (weighted)	1,228	1,228		
Observations (unweighted)	1,228	588,518		
Excluded due to poor comparison	3.5%	n.a.		

Notes: Means reflect design-weighted means from each group. Differences reflect design-weighted differences from within-local labor market comparisons that are then averaged across labor markets with market weights equal to the treatment group from each market. The percent excluded due to poor comparisons is based on the treatment sample in labor markets where effect sizes on pre-enrollment earnings were above 0.25 standard deviations.

a -- effect size difference is the mean difference divided by the pooled standard deviation for continuous variables only.

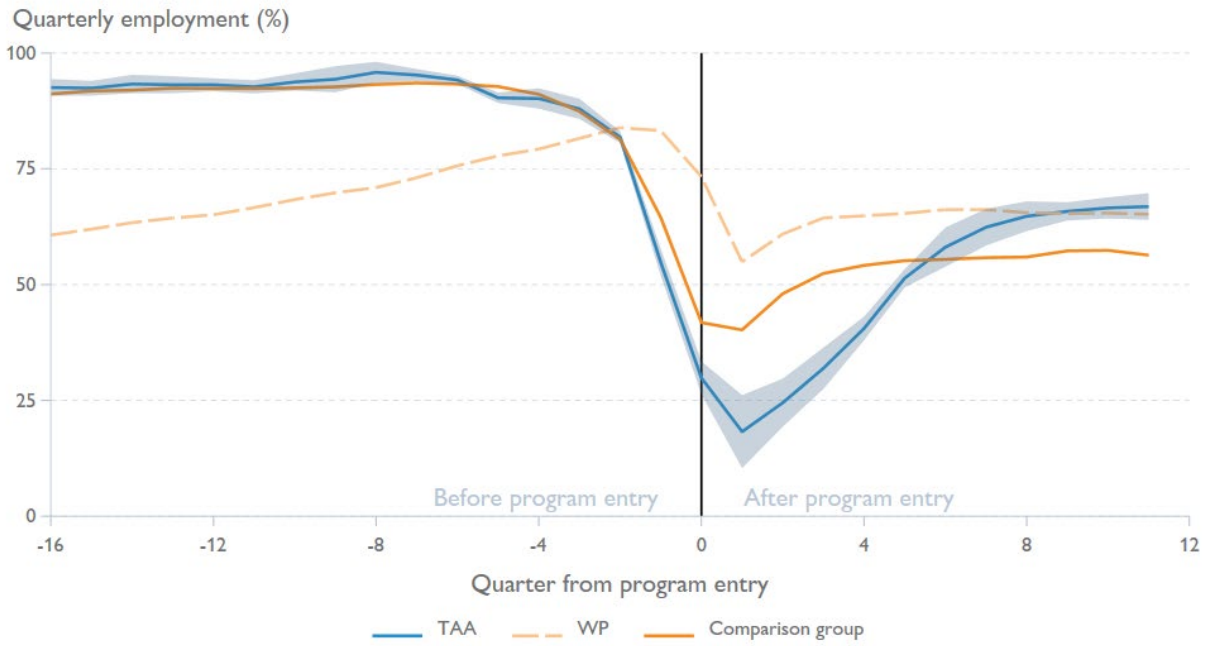
B.9.2. Impact figures for Primary Comparisons with unweighted sample

FIGURE B.9.2.1: Quarterly earnings comparisons between TAA participants from FYs 2014–15 and 2015–16 with a similar WP comparison group



Notes: The light-blue shaded region around the Treated trend line represents a 95% confidence band for weighted group differences from within-local labor market comparisons that do not control for covariates and takes the weights as given. This shaded region is also present in the pre-enrollment quarters but is not visually apparent due to precise estimates.

FIGURE B.9.2.2: Quarterly employment comparisons between TAA participants from FYs 2014–15 and 2015–16 with a similar WP comparison group



Notes: The light-blue shaded region around the Treated trend line represents a 95% confidence band for weighted group differences from within-local labor market comparisons that do not control for covariates and takes the weights as given. This shaded region is also present in the pre-enrollment quarters but is not visually apparent due to precise estimates.

B.9.3. Impact tables with design components

TABLE B.9.3.1: Labor market impacts for groups of TAA participants from FYs 2014–15 and 2015–16, including design statistics

	Main group: TAA trainees vs. WP (1)	TAA completed training vs. WP (2)	TAA all participants vs. WP (3)
Quarterly employment: Q=-8 to Q=-5			
Treatment group mean	93.9%	94.3%	94.4%
Comparison group mean	93.2%	93.5%	93.8%
Impact in percentage points	0.7* (0.2, 1.6)	0.8* (0.2, 1.8)	0.5* (0.3, 1.1)
Quarterly employment: Q7 to Q11			
Treatment group mean	65.3%	65.5%	64.2%
Comparison group mean	56.6%	55.9%	56.8%
Impact in percentage points	8.8* (3.9, 12.5)	9.8* (4.1, 14.4)	7.6* (4.9, 10.4)
Quarterly earnings: Q=-8 to Q=-5			
Treatment group mean	\$14,386	\$14,658	\$14,513
Comparison group mean	\$14,307	\$14,495	\$14,324
Impact in 2016 dollars	79* (16, 194)	164* (63, 346)	189* (81, 375)
Impact as percent	0.6%* (0.1%, 1.4%)	1.1%* (0.4%, 2.4%)	1.3%* (0.6%, 2.6%)
Quarterly earnings: Q7 to Q11			
Treatment group mean	\$6,956	\$7,195	\$7,205
Comparison group mean	\$7,013	\$6,893	\$7,140
Impact in 2016 dollars	-18 (-697, 645)	338 (-394, 1074)	64 (-494, 647)
Impact as percent	-0.3% (-9.9%, 9.2%)	4.9% (-5.7%, 15.6%)	0.9% (-6.9%, 9.1%)
Design Statistics			
Local labor markets	39	39	49
Participants in full sample	734	598	1,272
Participants included in analysis	673	560	1,228
Excluded due to poor comparison	8.3%	6.4%	3.5%

Notes: Results are from impact estimates that include covariates used for weighting. For that reason, impact estimates may not always equal the differences in means between treatment and comparison groups. The weighted sample size of the comparison group equals the treated group included in the analysis exactly. Ninety-five percent confidence intervals are given below each impact estimate in parentheses and were created using 1,000 bootstrap draws on local labor markets. The percent of the treated group excluded in the analysis reflects those in local labor markets where no sufficient comparison sample could be identified.

APPENDIX B.10. | Chapter 4.10 Welfare-to-
Work
Supplemental tables and figures

B.10.1. Baseline tables

TABLE B.10.1.1: Baseline comparisons between WtW participants from FYs 2014–15 and 2015–16 who co-enrolled in another program in the CAAL–Skills dataset with a similar WtW comparison group whose participants did not co-enroll in another program in the CAAL–Skills dataset

	Treatment Group	Comparison Group	Difference	Effect-size Difference
Demographics				
Age	30.2	30.2	0.0	0.00
Male	31.0%	31.0%	0.0	n.a.
Hispanic	45.1%	45.1%	0.0	n.a.
Black	16.0%	16.0%	0.0	n.a.
White	24.2%	24.2%	0.0	n.a.
Declined to state race/ethnicity	0.0%	0.0%	0.0	n.a.
Disability (self-identified)				n.a.
Pre-entry labor market				
Industry: construction/manufacturing	7.6%	7.7%	-0.1	n.a.
Industry: trade/transportation	20.8%	20.7%	0.1	n.a.
Industry: professional service	21.0%	20.9%	0.1	n.a.
Industry: other service	27.7%	27.7%	0.0	n.a.
Industry: other	5.4%	5.4%	0.0	n.a.
Tenure of last job in quarters	6.7	6.7	0.0	0.00
Earnings in quarter of entry	\$1,624	\$1,617	7	0.00
Earnings 1st quarter before entry	\$3,038	\$2,998	39	0.01
Earnings 2nd quarter before entry	\$3,292	\$3,253	39	0.01
Earnings 3rd quarter before entry	\$3,345	\$3,309	35	0.01
Earnings 4th quarter before entry	\$3,353	\$3,316	37	0.01
Quarterly earnings 2nd year before entry	\$3,174	\$3,142	32	0.01
Quarterly earnings 3rd year before entry	\$2,863	\$2,839	25	0.01
Quarterly earnings 4th year before entry	\$2,632	\$2,612	20	0.01
Quarterly employment 2nd year before entry	15.0%	15.0%	0.0	0.00
Quarterly employment 3rd year before entry	13.6%	13.6%	0.0	0.00
Quarterly employment 4th year before entry	12.3%	12.3%	0.0	0.00
Design Statistics				
Local labor markets	234	234		
Observations (weighted)	18,315	18,315		
Observations (unweighted)	18,315	129,168		
Excluded due to poor comparison	3.1%	n.a.		

Notes: Means reflect design-weighted means from each group. Differences reflect design-weighted differences from within-local labor market comparisons that are then averaged across labor markets with market weights equal to the treatment group from each market. The percent excluded due to poor comparisons is based on the treatment sample in labor markets where effect sizes on pre-enrollment earnings were above 0.25 standard deviations.

a -- effect size difference is the mean difference divided by the pooled standard deviation for continuous variables only.

TABLE B.10.1.2: Baseline comparisons between WtW participants from FYs 2014–15 and 2015–16 who cross-trained in another program in the CAAL–Skills dataset with a similar WtW comparison group whose participants did not co-enroll in another program in the CAAL–Skills dataset

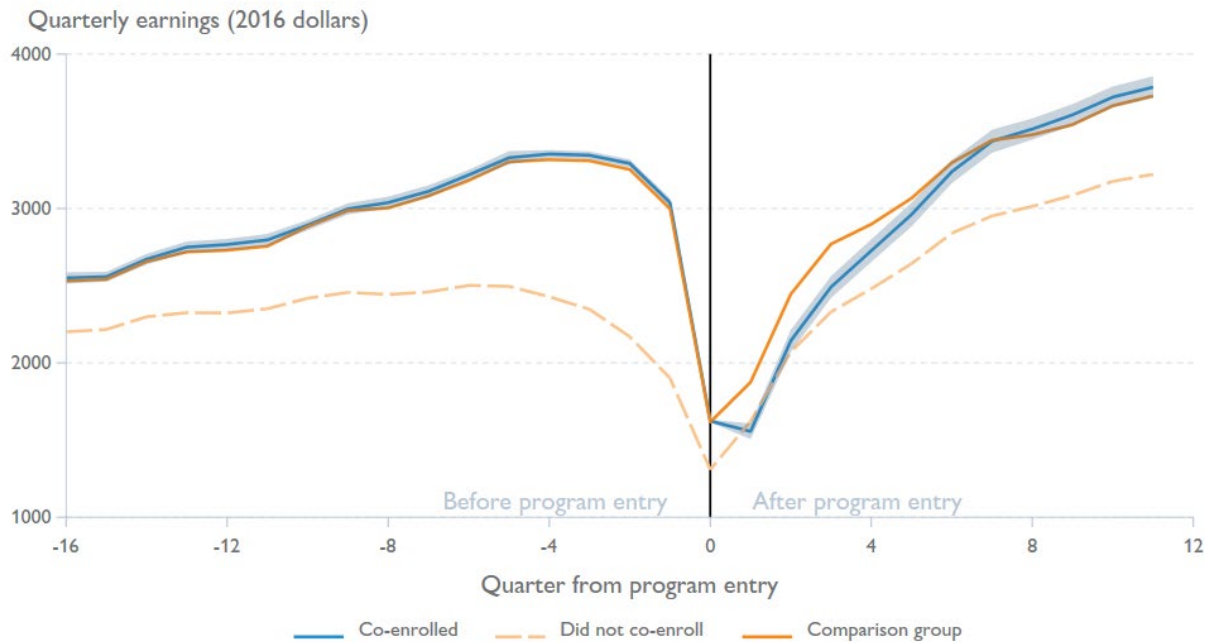
	Treatment Group	Comparison Group	Difference	Effect-size Difference
Demographics				
Age	29.0	29.1	-0.1	-0.01
Male	29.1%	29.2%	-0.1	n.a.
Hispanic	45.8%	46.0%	-0.2	n.a.
Black	15.8%	15.7%	0.1	n.a.
White	23.4%	23.3%	0.1	n.a.
Declined to state race/ethnicity	0.0%	0.0%	0.0	n.a.
Disability (self-identified)				n.a.
Pre-entry labor market				
Industry: construction/manufacturing	7.1%	7.2%	-0.1	n.a.
Industry: trade/transportation	18.1%	18.0%	0.1	n.a.
Industry: professional service	17.2%	17.3%	-0.1	n.a.
Industry: other service	28.2%	28.2%	0.0	n.a.
Industry: other	5.8%	5.9%	-0.1	n.a.
Tenure of last job in quarters	5.9	5.9	0.0	-0.01
Earnings in quarter of entry	\$1,244	\$1,243	1	0.00
Earnings 1st quarter before entry	\$2,044	\$2,029	15	0.00
Earnings 2nd quarter before entry	\$2,275	\$2,275	0	0.00
Earnings 3rd quarter before entry	\$2,425	\$2,426	0	0.00
Earnings 4th quarter before entry	\$2,518	\$2,514	4	0.00
Quarterly earnings 2nd year before entry	\$2,474	\$2,478	-4	0.00
Quarterly earnings 3rd year before entry	\$2,288	\$2,292	-5	0.00
Quarterly earnings 4th year before entry	\$2,123	\$2,124	-1	0.00
Quarterly employment 2nd year before entry	13.6%	13.7%	-0.1	0.00
Quarterly employment 3rd year before entry	12.6%	12.6%	0.0	0.00
Quarterly employment 4th year before entry	11.3%	11.4%	-0.1	-0.01
Design Statistics				
Local labor markets	213	213		
Observations (weighted)	6,529	6,529		
Observations (unweighted)	6,529	123,138		
Excluded due to poor comparison	6.2%	n.a.		

Notes: Means reflect design-weighted means from each group. Differences reflect design-weighted differences from within-local labor market comparisons that are then averaged across labor markets with market weights equal to the treatment group from each market. The percent excluded due to poor comparisons is based on the treatment sample in labor markets where effect sizes on pre-enrollment earnings were above 0.25 standard deviations.

a -- effect size difference is the mean difference divided by the pooled standard deviation for continuous variables only.

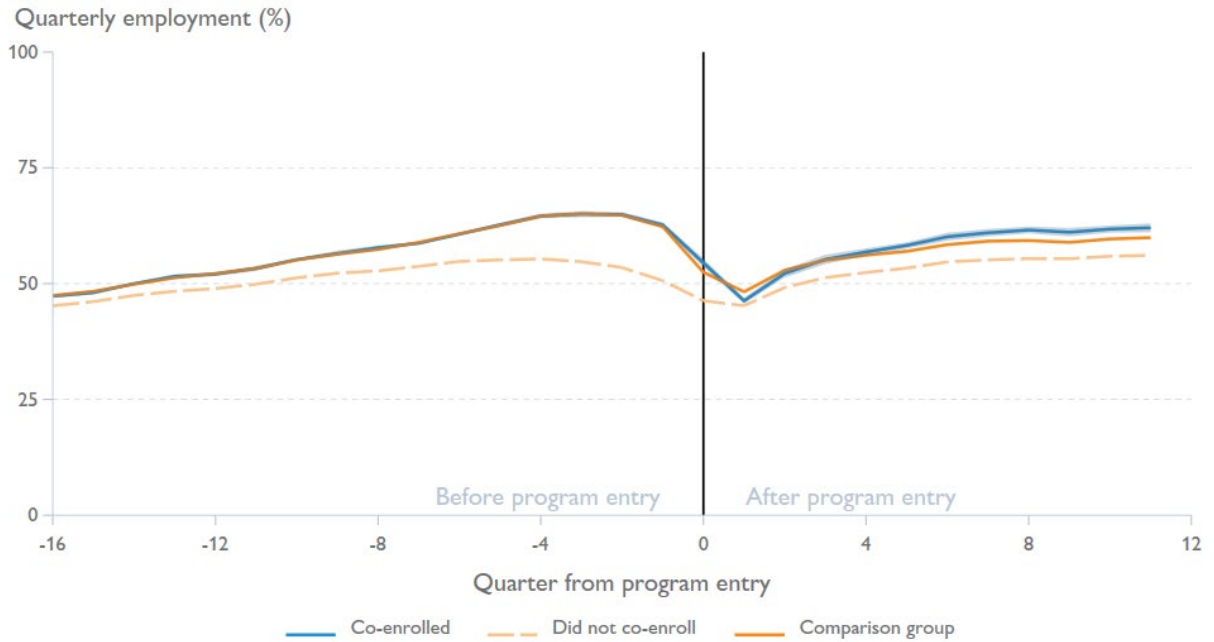
B.10.2. Impact figures for Primary Comparisons with unweighted sample

FIGURE B.10.2.1: Quarterly earnings comparisons between WtW participants from FYs 2014–15 and 2015–16 who co-enrolled in another program in the CAAL–Skills dataset with a similar WtW comparison group whose participants did not co-enroll in another program in the CAAL–Skills dataset



Notes: The light-blue shaded region around the Treated trend line represents a 95% confidence band for weighted group differences from within–local labor market comparisons that do not control for covariates and takes the weights as given. This shaded region is also present in the pre–enrollment quarters but is not visually apparent due to precise estimates.

FIGURE B.10.2.2: Quarterly employment comparisons between WtW participants from FYs 2014–15 and 2015–16 who co-enrolled in another program in the CAAL–Skills dataset with a similar WtW comparison group whose participants did not co-enroll in another program in the CAAL–Skills dataset



Notes: The light-blue shaded region around the Treated trend line represents a 95% confidence band for weighted group differences from within-local labor market comparisons that do not control for covariates and takes the weights as given. This shaded region is also present in the pre-enrollment quarters but is not visually apparent due to precise estimates.

B.10.3. Impact tables with design components

TABLE B.10.3.1: Labor market impacts for WtW participants from FYs 2014–15 and 2015–16 who co-enrolled or cross-trained in another program in the CAAL–Skills dataset relative to similar WtW participants who did not co-enroll in another program in the CAAL–Skills dataset

	Main group: WtW co-enrolled vs. WTW Not co-enrolled (1)	WtW cross-trained vs. WtW Not co-enrolled (2)
Quarterly employment: Q=-8 to Q=-5		
Treatment group mean	60.1%	54.7%
Comparison group mean	60.1%	54.6%
Impact in percentage points	0.1 (-0.1, 0.2)	-0.1 (-0.3, 0.1)
Quarterly employment: Q7 to Q11		
Treatment group mean	61.5%	59.0%
Comparison group mean	59.4%	56.8%
Impact in percentage points	2.1* (1.4, 2.8)	2.3* (1.3, 3.3)
Quarterly earnings: Q=-8 to Q=-5		
Treatment group mean	\$3,181	\$2,473
Comparison group mean	\$3,150	\$2,455
Impact in 2016 dollars	32* (18, 48)	-4 (-22, 16)
Impact as percent	1.0%* (0.6%, 1.5%)	-0.2% (-0.9%, 0.7%)
Quarterly earnings: Q7 to Q11		
Treatment group mean	\$3,613	\$3,184
Comparison group mean	\$3,571	\$3,136
Impact in 2016 dollars	29 (-34, 97)	48 (-59, 149)
Impact as percent	0.8% (-1.0%, 2.7%)	1.5% (-1.9%, 4.8%)
Design Statistics		
Local labor markets	234	213
Participants in full sample	18,906	6,964
Participants included in analysis	18,315	6,529
Excluded due to poor comparison	3.1%	6.2%

Notes: Results are from impact estimates that include covariates used for weighting. For that reason, impact estimates may not always equal the differences in means between treatment and comparison groups. The weighted sample size of the comparison group equals the treated group included in the analysis exactly. Ninety-five percent confidence intervals are given below each impact estimate in parentheses and were created using 1,000 bootstrap draws on local labor markets. The percent of the treated group excluded in the analysis reflects those in local labor markets where no sufficient comparison sample could be identified.