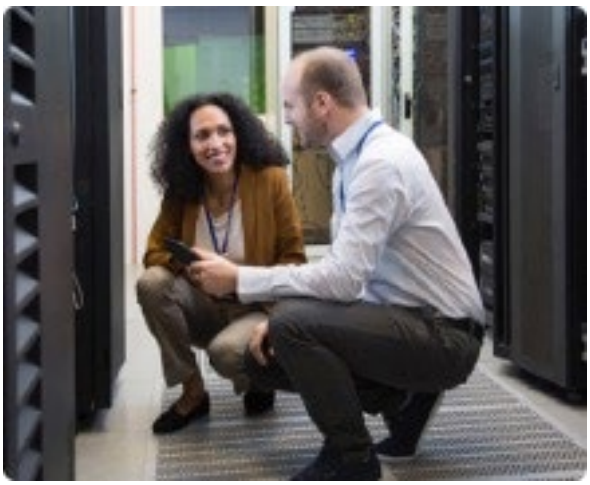
The Ready to Work Partnership Grant Evaluation: Final Report of the Impact Study of Four Employment Services Programs for the Long-Term Unemployed

Contract #: 1630DC–17–F–00013
September 2022





Prepared for:
U.S. Department of Labor
Employment and Training Administration and Chief Evaluation Office
200 Constitution Avenue, NW
Washington, DC 20210

Submitted by:
Jacob Alex Klerman
Jane Leber Herr
Karin Martinson

Abt Associates
6130 Executive Boulevard
Rockville, MD 20852

MEF Associates
1330 Braddock Place
Suite 220
Alexandria, VA 22314

This project has been funded, either wholly or in part, with Federal funds from the Department of Labor, Employment & Training Administration under contract number 1630DC-17-F-00013. The contents of this publication do not necessarily reflect the views or policies of the Department of Labor, nor does mention of trade names, commercial products, or organizations imply endorsement of same by the U.S. Government.

About this Report

The Ready to Work (RTW) Partnership Grants, operated between 2015 and 2019, were funded by the U.S. Department of Labor (DOL) to establish programs that might prove effective in preparing long-term unemployed and underemployed U.S. workers for employment in higher-paying, middle- and high-skill occupations. The RTW grantee programs were to provide customized services that could include staff guidance on career planning, occupational training, work-based training, employment readiness courses, and job search assistance—but with considerable discretion in program design given to grantees.

To understand the impact of the RTW grant program on participants' earnings and employment, the RTW Evaluation, conducted by Abt Associates and MEF Associates for DOL's Employment and Training Administration (ETA), includes an experimental impact study as well as an implementation study. The evaluation assesses the programs implemented by four purposively selected RTW grantees.

This document updates results presented in the RTW Evaluation's *Interim Impact Report* (Klerman et al. 2022) with longer-term follow-up based on administrative data on earnings and employment.

Previous Reporting

The RTW Evaluation's implementation study has produced two reports:

Martinson, K., E. Copson, G. Schneider, S. Elkin, B. Sarfo, T. Kappil, C. Ma, C. Morrison, and A. Nakas. 2017. *Evaluation of the Ready to Work Partnership Grant Program: Findings from the Implementation Study of Four Training Programs for Long-Term Unemployed Workers*. Prepared for the U.S. Department of Labor. Rockville, MD: Abt Associates. https://www.dol.gov/sites/dolgov/files/OASP/legacy/files/RTW-Implementation-Report.pdf

Copson, E., K. Martinson, S. Elkin, B. Sarfo, T. Kappil, C. Morrison, and C. Sierks. 2020. *Providing Employment Services to the Long-Term Unemployed: Implementation and Sustainability of the Programs in the Ready to Work Partnership Grant Evaluation.* Prepared for the U.S. Department of Labor. Rockville, MD: Abt Associates. https://www.dol.gov/sites/dolgov/files/OASP/evaluation/pdf/RTW%20Implementation%20Report_Final.pdf

The RTW Evaluation's impact study has produced an interim report and corresponding appendix volume:

Klerman, J. A., J. L. Herr, K. Martinson, and E. Copson. 2022. *The Ready to Work Partnership Grant Evaluation: Findings from the Interim Impact Study of Four Employment Services Programs for the Long-Term Unemployed*. Prepared for the U.S. Department of Labor. Rockville, MD: Abt Associates. https://www.dol.gov/sites/dolgov/files/OASP/evaluation/pdf/RTW_Interim_Impact_Report_508.pdf

Herr, J. L., J. A. Klerman, K. Martinson, and E. Copson. 2022. *The Ready to Work Partnership Grant Evaluation: Technical Appendix for the Interim Impact Study of Four Employment Services Programs for the Long-Term Unemployed*. Prepared for the U.S. Department of Labor. Rockville, MD: Abt Associates. https://www.dol.gov/sites/dolgov/files/OASP/evaluation/pdf/RTW_Interim_Impact_Report_Appendix_508.pdf

Several special topics analyses are presented in separate reports:

Herr, J. L., J. A. Klerman, and K. Martinson. 2022. *How Did Workers with a History of Long-Term Unemployment Fare during the COVID Recession? Evidence from Applicants to the Ready to Work Partnership Grant Program.* Prepared for the U.S. Department of Labor. Rockville, MD: Abt Associates.

Klerman, J. A. and J. L. Herr. 2022. *Survey Non-Response Bias in the Evaluation of the Ready to Work Partnership Grant Program.* Prepared for the U.S. Department of Labor. Rockville, MD: Abt Associates.

Suggested Citation for this Document

Klerman, J. A., J. L. Herr, and K. Martinson. 2022. *The Ready to Work Partnership Grant Evaluation: Final Report of the Impact Study of Four Employment Services Programs for the Long-Term Unemployed.* Prepared for the U.S. Department of Labor. Rockville, MD: Abt Associates.

Acknowledgments

The authors gratefully acknowledge the efforts of many individuals who assisted in the completion of this report. We greatly appreciate the commitment of the Ready to Work grantee staff, who generously provided their time and coordinated research activities on behalf of the evaluation: Bonnie Speedy and Tracey Brooks of Anne Arundel Workforce Development Corporation; Patty Kwok and Sara Jo Neubauer of Jewish Vocational Service; Lee Koslow and Viatta Carter at RochesterWorks!; and Casey Barnard and Nick Knudsen at Worksystems Inc., Jan Filgas at Clackamas Workforce Partnership, and Miriam Martin and Kevin Perkey at Workforce Southwest Washington. We also thank staff from all the Ready to Work grantee programs who implemented the evaluation's procedures and participated in the site visits conducted for this evaluation. We also owe a deep debt of gratitude to the thousands of adults who volunteered to participate in the evaluation and shared their experiences with us in the follow-up survey.

At the U.S. Department of Labor, Gloria Salas-Kos, the Contracting Officer's Representative for the evaluation, provided guidance throughout the study and reviewed the early drafts of the report. Likewise, Deborah Martierrez of DOL's Chief Evaluation Office provided guidance and review. We appreciate the thoughtful insights and feedback from members of the Technical Working Group: Carolyn Heinrich of Vanderbilt University, Demetra Nightingale of the Urban Institute, and Jeffrey Smith of the University of Wisconsin, Madison.

In addition, many individuals at Abt Associates contributed to this report. Elizabeth Copson was a central member of the evaluation team, helping to interpret the impact results in light of the implementation findings, and creating all graphics included in this report. Karen Gardiner and David Judkins provided important comments on early drafts. MEF staff Sam Elkin and Bright Sarfo served as site liaisons for two of the grantees included in the evaluation. Emily Dastrup, Don LaLiberty, and Doug Walton supported the analysis of survey and administrative data. Jessica Kerbo, David Dupree, and Katheleen Linton provided graphic design support. The team also is appreciative of the role of Bry Pollack in editing the report.

Contents

Executive Summary vi

1 Introduction 1
- 1.1 The Ready to Work Partnership Grant Program 2
- 1.2 The RTW Evaluation and the Four Included Grantee Programs 3
- 1.3 Economic Conditions and Outcomes for the Control Group 6
- 1.4 Earlier Findings of the RTW Evaluation 10
- 1.5 This Report 14

2 Methods and Data Sources 15
- 2.1 Methods 15
  - 2.1.1 Research Design 15
  - 2.1.2 Subgroup Analysis 16
  - 2.1.3 Outcome Classifications 16
  - 2.1.4 Study Samples 17
  - 2.1.5 COVID Effects 18
  - 2.1.6 Results Reported 18
  - 2.1.7 Statistical Significance 19
  - 2.1.8 Sample Size Limitations 19
- 2.2 Data Sources 20
  - 2.2.1 Earnings and Employment 20
  - 2.2.2 Baseline Information 20

3 Impacts on Earnings and Employment 23
- 3.1 Results for Maryland Tech Connection 23
  - 3.1.1 Impacts for the Full Sample 23
  - 3.1.2 Impacts for the Early Cohort 26
  - 3.1.3 Differential Impacts for Subgroups 28
- 3.2 Results for the JVS Programs 28
  - 3.2.1 Impacts for the Full Sample 28
  - 3.2.2 Impacts for the Early Cohort 31
  - 3.2.3 Differential Impacts for Subgroups 32
- 3.3 Results for Finger Lakes Hired 33
  - 3.3.1 Impacts for the Full Sample 33
  - 3.3.2 Impacts for the Early Cohort 36
  - 3.3.3 Differential Impacts for Subgroups 37
- 3.4 Results for Reboot Northwest 38
  - 3.4.1 Impacts for the Full Sample 38
  - 3.4.2 Impacts for the Early Cohort 40
  - 3.4.3 Differential Impacts for the Subgroup Analysis 41
- 3.5 Cross-Program Results 42

4 Discussion 44
- 4.1 RTW Evaluation Findings 44

4.1.1 Context 44
4.1.2 Impact on Receipt of Structured Employment-Related Activities and Credentials 45
4.1.3 Impact on Earnings and Employment 46
4.2 Implications for Program and Evaluation Design 47
4.3 Closing Thoughts 49

References 50

List of Boxes

How to Read this Report's Impact Tables 21

List of Exhibits

Exhibit ES-1: Overview of Grantee Programs in the Ready to Work Evaluation vii
Exhibit ES-2: Quarterly Impacts on Earnings for the Full Sample, MTC xii
Exhibit ES-3: Quarterly Impacts on Earnings for the Full Sample, JVS Programs xiii
Exhibit ES-4: Quarterly Impacts on Earnings for the Full Sample, FLH xiv
Exhibit ES-5: Quarterly Impacts on Earnings for the Full Sample, Reboot NW xv
Exhibit 1-1: Overview of the Four Grantee Programs Included in the Ready to Work Evaluation 4
Exhibit 1-2: Local Unemployment Rates for the Four Grantees (2015–2021) 7
Exhibit 1-3: Control Group Employment Rates for the Four Grantee Study Samples 8
Exhibit 1-4: Weeks of Services Attended through 18 Months after Random Assignment in Total and by Service Type, by Program Group 11
Exhibit 1-5: Impact on Weeks of Services Attended through 18 Months after Random Assignment, in Total and by Service Type 13
Exhibit 2-1: Grantee-Specific Study Enrollment and Follow-up Period, Full Sample and Early Cohort 18
Exhibit 3-1: Impacts on Earnings and Employment for the Full Sample, MTC 24
Exhibit 3-2: Quarterly Earnings Levels and Impacts for the Full Sample, MTC 25
Exhibit 3-3: Quarterly Employment Levels and Impacts for the Full Sample, MTC 26
Exhibit 3-4: Quarterly Earnings Levels and Impacts for the Early Cohort, MTC 27
Exhibit 3-5: Impacts on Earnings and Employment for the Full Sample, JVS Programs 29
Exhibit 3-6: Quarterly Earnings Levels and Impacts for the Full Sample, JVS Programs 30
Exhibit 3-7: Quarterly Employment Levels and Impacts for the Full Sample, JVS Programs 31
Exhibit 3-8: Quarterly Earnings Levels and Impacts for the Early Cohort, JVS Programs 32
Exhibit 3-9: Impacts on Earnings and Employment for the Full Sample, FLH 34
Exhibit 3-10: Quarterly Earnings Levels and Impacts for the Full Sample, FLH 35
Exhibit 3-11: Quarterly Employment Levels and Impacts for the Full Sample, FLH 36
Exhibit 3-12: Quarterly Earnings Levels and Impacts for the Early Cohort, FLH 37
Exhibit 3-13: Impacts on Earnings and Employment for the Full Sample, Reboot NW 38

Exhibit 3-14: Quarterly Earnings Levels and Impacts for the Full Sample, Reboot NW 39
Exhibit 3-15: Quarterly Employment Levels and Impacts for the Full Sample, Reboot NW 40
Exhibit 3-16: Quarterly Earnings Levels and Impacts for the Early Cohort, Reboot NW 41

Executive Summary

To assist those experiencing long-term unemployment or underemployment because of the Great Recession of 2007-2009, the U.S. Department of Labor (DOL) funded the **Ready to Work (RTW) Partnership Grant Program** in 2014. DOL awarded four-year grants to 24 partnerships of workforce agencies, training providers, employers, and other local organizations. Grants operated from 2015 to 2019. Per DOL guidance, targeted workers included those who had lost their jobs during or after the 2007-2009 recession and who either remained *unemployed* (for 27 consecutive weeks or more) or were *underemployed* (meaning those who had obtained short-term or part-time employment but had not yet found a full-time job in line with their previous level of skill or earnings). The RTW grantees were to use the funds to provide such workers with a range of customized services including staff guidance on career planning, occupational training, work-based training, employment readiness courses, and job search assistance. Within these broad categories, grantees had flexibility to develop services that, based on their understanding of the local labor market, met the needs of the local economy and the individuals served.

To document the implementation of the grantees' programs and to estimate their effects on participant outcomes, DOL contracted with Abt Associates and its partner, MEF Associates, to evaluate the RTW program. Specifically, the **RTW Evaluation** includes an implementation study and an experimental impact study of four purposively selected RTW programs to describe grantees' program implementation and to estimate grantee program impacts on participant outcomes.

Building on an *Interim Impact Report* at 18 months after program start, this *Final Impact Report* describes each program's impacts on participant earnings and employment through 3 years or more. For this *Final Impact Report*, the evaluation pre-specified *average quarterly earnings for the period from 1 year to 2.5 years after random assignment* as the evaluation's main indicator of the extent to which a given RTW program had impact.

RTW Evaluation: Research Questions, Design, Data Sources, and Study Sample

The RTW Evaluation's implementation and impact studies focus on four purposively selected grantee programs. As Exhibit ES-1 below shows, although the four programs incorporate all of the service elements listed above, they vary in service area, target industries, and approach to service delivery.

The impact study addresses two overarching research questions:

- ***What was the impact of the offer of the RTW program on the outcomes specified in the logic model*** (e.g., receipt of program services, educational attainment, employment, and earnings)? The evaluation estimates the impact of the offer of each grantee's RTW program relative to not being offered the RTW program but potentially enrolling in other programs or services available in the community.
- ***How did those impacts vary with study member baseline characteristics?*** The evaluation focuses on differences in impacts based on education, age, employment status, and gender.

To reliably estimate the impact of the offer of an RTW program on participants, the impact study uses an experimental design. Applicants at each grantee program were randomly assigned, approximately evenly, between two groups: (1) the program group, which was offered the employment-related services funded by the RTW grant, and (2) the control group, which was not offered RTW services but had access to other resources in the community. (Services available in the community included an array of standard

employment preparation and job search services funded by the Workforce Innovation and Opportunity Act (WIOA) and other partner programs, available through American Job Centers.) This design ensures that no systematic differences existed between the groups at the time they entered the study; as a result, any differences between the groups can be attributed directly to access to RTW program services.

To generate the most precise possible grantee-specific impact estimates, the evaluation sought to maximize the sample sizes by (1) selecting larger programs that were also likely to be able to recruit an equal-sized control group, and (2) conducting random assignment over much of each grantee's four-year program enrollment period. Each of the selected grantees was to randomly assign approximately 1,000 study members. With samples of that size, conventional power calculations suggest that the evaluation could reliably detect a program-specific earnings impact of $1,400 per quarter.

Exhibit ES-1: Overview of Grantee Programs in the Ready to Work Evaluation

Grantee Lead Agency	Program Name and Characteristics	Target Industries	Key Grant-Funded Components
Anne Arundel Workforce Development Corporation (AAWDC) 12 counties in Maryland	**Maryland Tech Connection (MTC)** **Enrollment:** 1,254 **Study Sample:** 1,029 **Grant Amount:** Total: $9,995,047 Per person served: $7,971 **Program Operation:** May 2015–Oct 2019	• Advanced Manufacturing • Bioscience • Healthcare • Information Technology	• Staff assessed participants to develop customized services, with most initially attending a 2-week employment readiness course • Subsequent individualized services included occupational training, work-based training, and job search assistance
Jewish Vocational Service (JVS) San Francisco, CA	**Skills to Work in Technology (STW-T)** and **Job Search Accelerator (JSA)** **Enrollment:** 1,006 **Study Sample:** 993 **Grant Amount:** Total: $6,396,276 Per person served: $6,358 **Program Operation:** May 2015–Oct 2019	• Information Technology	• STW-T program consisted of three technical skills training courses: Business Administration Bootcamp, Digital Marketing, and Salesforce® Administration • JSA was a 2-week program focused on job search and readiness skills (implemented partway through the grant)
RochesterWorks! Monroe County, NY	**Finger Lakes Hired (FLH)** **Enrollment:** 1,007 **Study Sample:** 610 **Grant Amount:** Total: $5,189,848 Per person served: $5,154 **Program Operation:** Jan 2015–Jun 2019	• Advanced Manufacturing • Healthcare • Information Technology	• Staff assessed participants to develop customized services • Emphasis on participation in 1-week employment readiness course and one-on-one assistance from staff • Other options included occupational training, work-based training, and job search assistance

Exhibit ES-1: Overview of Grantee Programs in the Ready to Work Evaluation (continued)

Grantee Lead Agency	Program Name and Characteristics	Target Industries	Key Grant-Funded Components
Worksystems Inc. (WSI) Portland, OR and Vancouver, WA	**Reboot Northwest (Reboot NW)** **Enrollment:** 1,348 **Study Sample:** 980 **Grant Amount:** Total: $8,455,004 Per person served: $6,272 **Program Operation:** Apr 2015–Jun 2019	• Advanced Manufacturing • Information Technology	• Staff assessed participants to develop customized services • Services included 2- to 3-week employment readiness course, occupational training and work-based training, and job search assistance

SOURCE: Developed by Abt Associates based on staff reports and RTW grantee program materials.
NOTES: The study sample includes the number of individuals randomly assigned as part of the evaluation to either the program or control group, after excluding those who withdrew from the study after random assignment; see the opening sections of Appendices F through I in the *Technical Appendix for the Interim Impact Study* (Herr, Klerman, Martinson, and Copson 2022) for the counts of withdrawals. Grant amount per person served is calculated on the number of individuals served by the grant, not the number of workers in the study's program group. As discussed in the implementation study (see Martinson et al. 2017; Copson et al. 2020), in addition to members of their program groups, the grantees served other individuals such as veterans, incumbent workers, and people who enrolled before the study started and after random assignment for the study concluded.

The analyses presented in this report use data from two sources: (1) quarterly earnings data from the **National Directory of New Hires (NDNH)**, a national database of quarterly earnings maintained by the U.S. Department of Health and Human Services; and (2) the study's **Baseline Information Form,** completed immediately before program study members were randomly assigned, which includes study members' demographic and socioeconomic characteristics, employment and education history, receipt of public benefits, and opinions about work.

This report presents estimates of *impact*—that is, what difference the offer of a given RTW program made—by comparing average outcomes for their program group versus average outcomes for their control group. It estimates impacts through more than three years for each grantee's **full sample**. It estimates impacts through nearly five years for each grantee's **early cohort**, meaning those study members randomly assigned early in the evaluation, accounting for approximately the first half of each full sample. It also reports estimates of impacts for subgroups based on baseline education, age, employment status, and gender. And it reports pooled estimates of the average impact across the four RTW programs.

Earlier Findings of the RTW Evaluation

To provide context for this report, this section summarizes the key findings from the implementation study (see Martinson et al. 2017; Copson et al. 2020) and the *Interim Impact Report* (see Klerman et al. 2022), which reported impacts 18 months after random assignment.

Program context. When DOL developed the RTW grant program in 2014, U.S. unemployment rates, and in particular long-term unemployment rates, remained high after the Great Recession of 2007-2009. However, economic conditions improved sharply over the four-year term of the grants (2015-2019), with unemployment rates dropping steadily to among the lowest ever recorded.

Population served. Reflecting the RTW grant program's focus on the long-term unemployed, more than 80 percent of study members across all four grantees were unemployed when they entered the study. About 30 percent of all study members were unemployed for a year or more. Reflecting RTW's target population of workers with the experience or education appropriate for middle- or high-skill jobs, study participants were generally middle-aged (45 on average) and close to, or over half, had a college degree (between 44 percent and 79 percent had at least a bachelor's degree). The demographic characteristics of the study sample members varied across the four grantee programs, reflecting their different program designs and geographic locations.

Grantee staff observed that as the economy improved over the 2015-2019 grant period, many of the long-term unemployed workers targeted by the RTW grant, particularly those with more education and work experience, were able to find jobs on their own, and therefore did not apply to the RTW program. As a result, grantee staff reported that many of those who did enroll in the RTW programs faced greater barriers to employment, and had lower skill levels and less work experience than grantees had anticipated when originally designing their programs.

Program design. The four grantee programs all provided activities and services consistent with DOL's *Solicitation for Grant Applications* (SGA) for the RTW program, including one-on-one staff assistance, occupational training, employment readiness activities (that could include help with a resume, interviewing skills, and networking skills), and work-based training (unpaid internships, paid internships, or on-the-job training). The RTW programs also provided financial and behavioral health supports. Grantees varied in how they targeted and sequenced services and in the content of the services offered (see Martinson et al. 2017; Copson et al. 2020). The program's logic model implied that these activities and services should lead to additional receipt of credentials and higher earnings.

Types and amounts of program services attended. The types and amounts of services that participants in the RTW programs attended varied across the four grantees, reflecting differences in program design. A follow-up survey at 18 months after random assignment collected study members' self-reports on their length of attendance in three key program activities: occupational training, work-based training, and employment readiness courses. Across all four grantees, average attendance was:

- *Occupational training*: 9 weeks in three grantee programs and 18 weeks in the other (Reboot NW).
- *Work-based training*: 1 week in two grantee programs and 3 to 4 weeks in the other two.
- *Employment readiness courses*: 1 to 2 weeks in three of the grantee programs and 5 weeks in the other (Reboot NW).
- *Total "structured employment-related activities"*: 3 to 4 months of these three services combined in three grantee programs and almost 6 months in the other (Reboot NW).

Impacts on weeks of services attended. While the program group attended a substantial number of weeks of structured employment-related activities in their RTW program, the control group also attended a substantial number of weeks of structured-employment related activities elsewhere in the community. In net, the impacts on weeks of structured employment-related activities are much smaller than the number of weeks of services attended by the program group.

Three of the programs had positive impacts on total structured employment-related activities attended (ranging from 6 to 13 weeks). Two programs increased weeks of occupational training attended (MTC

and the JVS programs; 3 and 6 weeks respectively). One program increased weeks of work-based training (MTC; 3 weeks). All four programs increased weeks of employment readiness courses (ranging from 1 to 2 weeks).

Impacts on credential receipt and other outcomes. As measured by the survey, impacts on program services attended—in particular, occupational training—led to impacts on educational attainment (i.e., certificates, credentials, licenses, or degrees). MTC, the JVS programs, and Reboot NW (the programs with the largest impacts on service receipt) had a positive impact on educational attainment (10 to 22 percentage points, or 33 to 159 percent of the control group level). Most of these were certificates for completion of a short-term occupational training course, and few received professional certifications. The exception is FLH, where no impact on educational attainment was detected. For all programs other than FLH, the evaluation also detected strong impacts on receipt of financial support for occupational training. For no programs were impacts detected on confidence in career knowledge or factors that affect the ability to work.

Impacts on employment, earnings, and public benefits receipt. For no program did the study detect a favorable impact on earnings in the period 12 to 18 months after random assignment (the evaluation's pre-specified main outcome for the *Interim Impact Report*). Moreover, for no program did the study detect an increase in employment or a decrease in public benefits receipt.[1] However, there was some evidence of positive impacts 12 to 18 months after random assignment on other measures of employment and earnings, which suggested that positive impacts might emerge with longer follow-up.

Findings

This section summarizes the results of the final impact study for the RTW Evaluation. The section first presents results separately for each of the four grantee programs included in the evaluation. It then presents pooled estimates of the average impact across all four RTW programs. This discussion focuses on the single pre-specified confirmatory outcome for this *Final Impact Report—average quarterly earnings for the period from 1 year to 2.5 years after random assignment* and the single pre-specified secondary outcome—*any employment from 1 year to 2.5 years after random assignment*. The discussion notes the impacts for other employment and earnings outcomes and for subgroups.

Anne Arundel Workforce Development Corporation: Maryland Tech Connection (MTC)

AAWDC, a workforce investment board in Anne Arundel County in Maryland, operated MTC in coordination with six other boards in northeast Maryland. MTC provided job search and readiness assistance, occupational training, and work-based training in the sectors of advanced manufacturing, bioscience, cybersecurity, healthcare, and information technology (IT). MTC participants began the program with a two-week employment readiness workshop, and then worked one-on-one with program staff to identify appropriate additional program activities based on their skills and interests, most commonly attending occupational training.

[1] For MTC, the *Interim Impact Report* (Klerman et al. 2022) found negative impacts on earnings 12 to 18 months after random assignment, but no impact on employment. For the other three programs, it detected no impacts on either earnings or employment.

- **From 1 year to 2.5 years after random assignment, MTC has no detected positive impact on average quarterly earnings (the confirmatory outcome) or on any employment (the secondary outcome).**

There is weak evidence that the offer of MTC led to a *decrease* in earnings from 1 to 2.5 years after random assignment (the 5th through 10th quarters).[2] Average earnings over these quarters in the program group was $8,271, some 11 percent lower than the $9,332 average earnings in the control group. As with all evaluations, this impact is estimated with uncertainty. Incorporating that uncertainty into a range of plausible impacts implies that the true negative impact of the MTC program on average quarterly earnings during this period could be as large as −$1,955 or as small as −$165.[3]

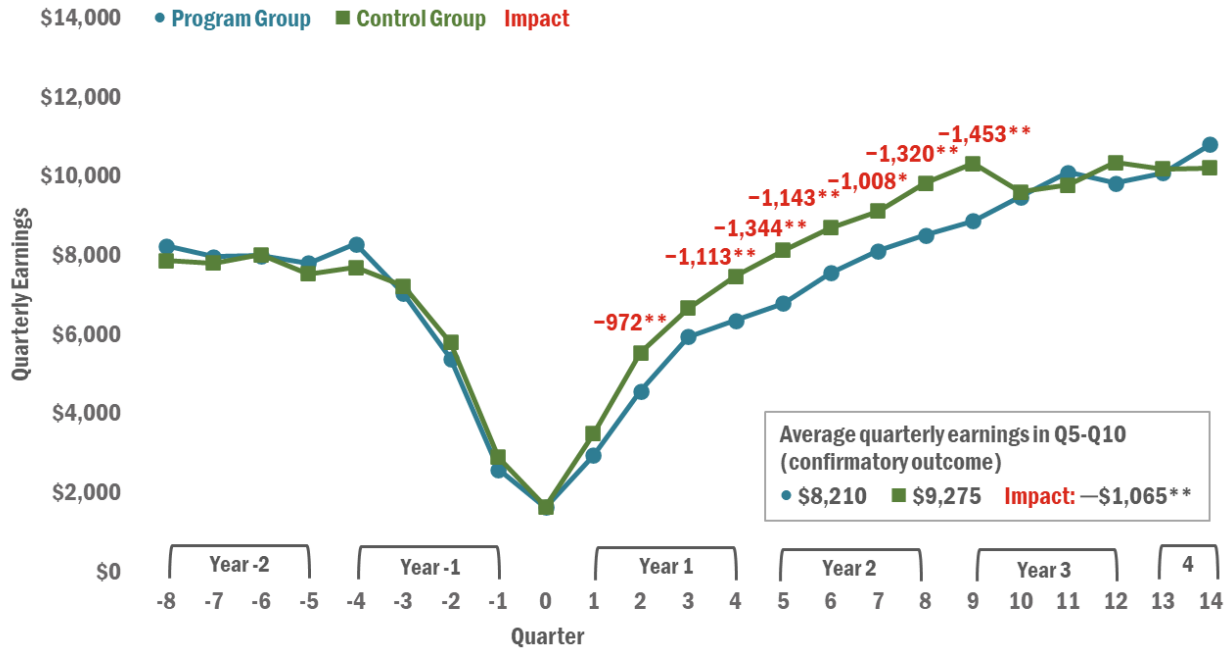
For the MTC program and control groups, Exhibit ES-2 plots quarterly earnings from 2 years (8 quarters) before random assignment to 3.75 years (15 quarters) after. The earnings "dip" around Q0 is consistent with patterns for applicants to job training and other social programs and has been widely documented in the literature. Individuals often apply to these programs soon after encountering particularly difficult circumstances or crises, such as the loss of a job. Some, but often far from all, of that decline is usually temporary. Thus, employment and earnings rise even in the absence of the program (here represented by the control group) after applying to the program.

The negative impacts on earnings evident in Exhibit ES-2 occurred in part while program group members were more likely to be participating in program activities, a period that extended through 15 months after random assignment (see Klerman et al. 2022). Notably, although the negative impacts of the MTC program did not continue past Q9, the impact on earnings did not become positive.

[2] The negative impact is statistically significant at the 10 percent level (p = .052, see Appendix Exhibit C.1-1).

[3] These values are the endpoints for a 90 percent confidence interval for the impact on average quarterly earnings in Q5-Q10.

Exhibit ES-2: Quarterly Impacts on Earnings for the Full Sample, MTC



SOURCE AND FOLLOW-UP PERIOD: National Directory of New Hires; through 14 quarters after random assignment.

NOTES: On the x-axis, negative numbers indicate quarters before random assignment; 0 indicates the quarter that random assignment occurred. The evaluation has data for the full sample through seven quarters before random assignment and data for 94 percent of the full sample through the eighth quarter before random assignment. Impacts that are significantly different from zero are reported in red text. Reported impact may not equal the difference between the reported program and control group means because of rounding. The full sample of 1,022 includes 536 program group and 486 control group members.

Statistical significance based on two-sided hypothesis tests; significance levels are as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

No positive impact is detected for the secondary outcome, any employment from 1 to 2.5 years after random assignment. About 82 percent of both the program and control group were employed in some quarter over this interval. Consistent with these results, MTC had no detected positive impact on other exploratory measures of employment and earnings: for longer follow-up periods, for the early cohort, and for any group considered in the subgroup analysis.

Jewish Vocational Service: Skills to Work in Technology and Job Search Accelerator

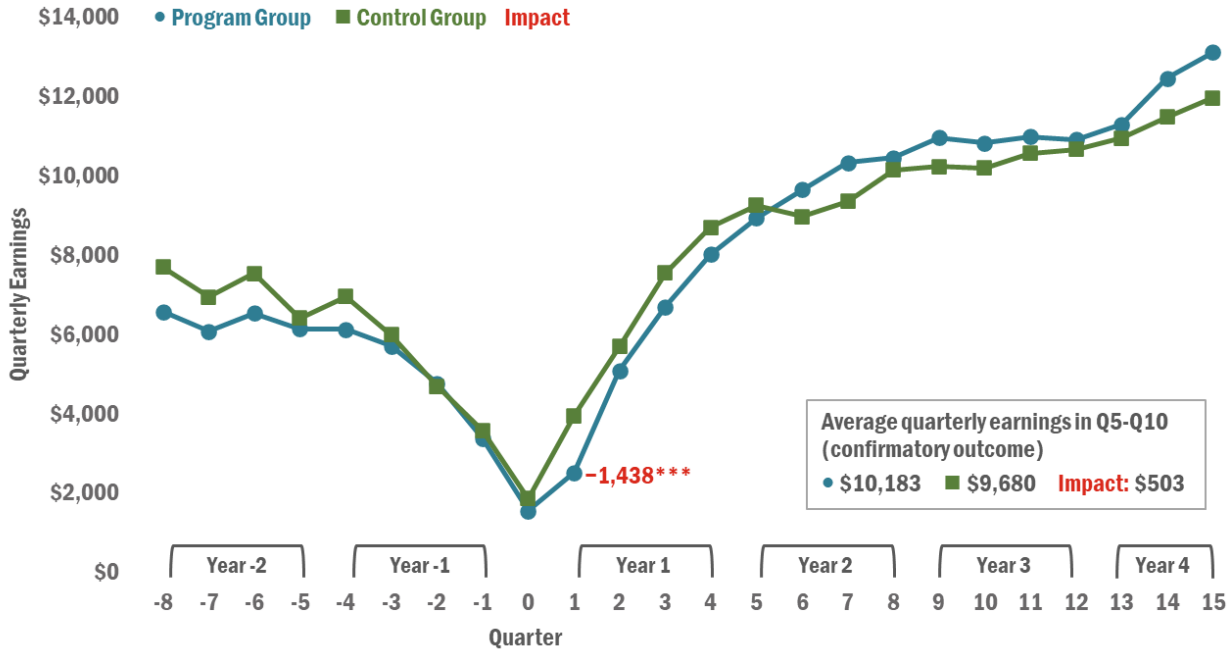
JVS, a San Francisco-based non-profit organization, operated two programs funded by its RTW grant: (1) Skills to Work in Technology, an IT-focused training program that included three courses (Business Administration, Digital Marketing, and Salesforce Administration); and (2) Job Search Accelerator, a two-week program focused on job search and job readiness skills.

- **From 1 year to 2.5 years after random assignment, the JVS programs have no detected positive impact on average quarterly earnings (the confirmatory outcome) or on any employment (the secondary outcome).**

Exhibit ES-3 plots earnings over time for the JVS program and control groups. For the confirmatory outcome, no impact is detected, with both the program and control group members earning on average approximately $10,000 per quarter from 1 to 2.5 years after random assignment. Allowing for uncertainty,

the true impact of the JVS programs on average quarterly earnings in this period could be as high as $1,617 or as low as −$597.[4]

Exhibit ES-3: Quarterly Impacts on Earnings for the Full Sample, JVS Programs



SOURCE AND FOLLOW-UP PERIOD: National Directory of New Hires; through 15 quarters after random assignment.
NOTES: On the x-axis, negative numbers indicate quarters before random assignment; 0 indicates the quarter that random assignment occurred. The evaluation has data for the full sample through seven quarters before random assignment, and data for 99 percent of the full sample through the eighth quarter before random assignment. Impacts that are significantly different from zero are reported in red text. Reported impact may not equal the difference between the reported program and control group means because of rounding. The full sample of 965 includes 491 program group and 474 control group members.
Statistical significance based on two-sided hypothesis tests; significance levels are as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

For the secondary outcome, no positive impact is detected. About 80 percent of both the program and control group were employed in some quarter over this interval.

Consistent with these results, no positive impact is detected on most other exploratory measures of employment and earnings considered: both for longer follow-up periods and for the early cohort. The exception is weak evidence of larger impacts for less educated workers, younger workers, and women on average quarterly earnings from 1 to 2.5 years after random assignment.

RochesterWorks!: Finger Lakes Hired (FLH)

RochesterWorks!, the workforce investment board for Monroe County, which includes the city of Rochester in western New York State, operated the FLH program. FLH provided individualized services, including employment readiness courses, occupational training, and work-based training, designed to help participants find employment in the advanced manufacturing, healthcare, and IT industries. With a focus

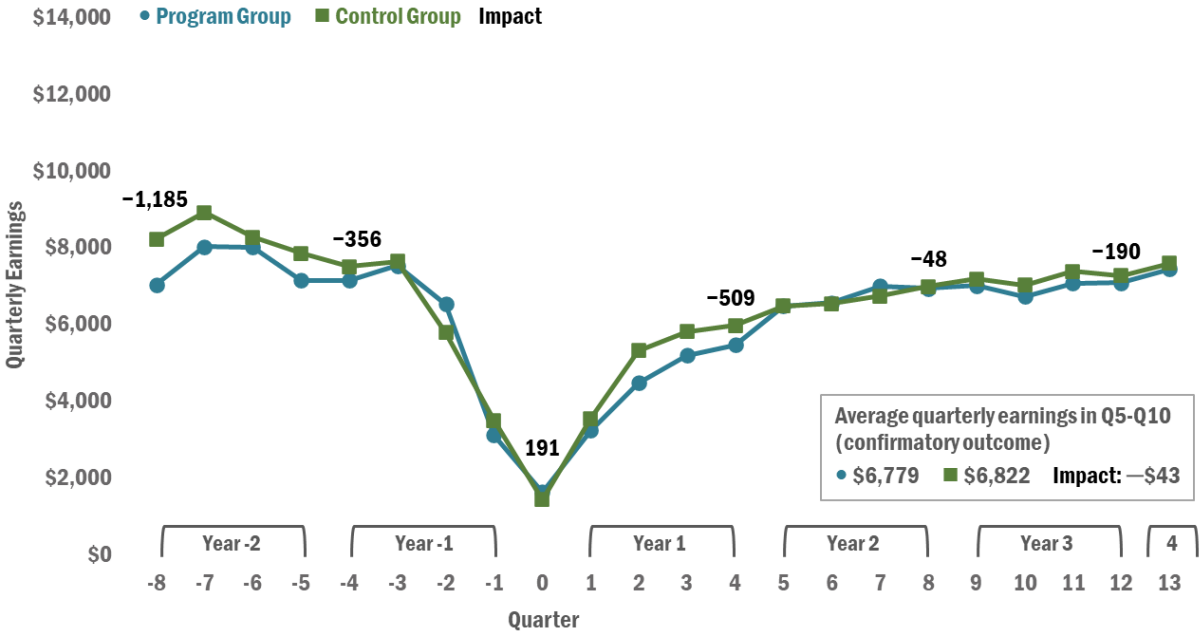
[4] These values are the endpoints for a 90 percent confidence interval for the impact on average quarterly earnings in Q5-Q10.

on finding employment as quickly as possible, FLH emphasized one-on-one job search assistance from grant-funded staff and an employment readiness workshop.

- **From 1 year to 2.5 years after random assignment, FLH had no detected positive impact on average quarterly earnings (the confirmatory outcome) or on any employment (the secondary outcome).**

Exhibit ES-4 plots earnings over time for the FLH program and control groups. For the confirmatory outcome, no impact is detected: in both the program and control group, average quarterly earnings were approximately $6,800. Allowing for uncertainty, the true impact of FLH on average quarterly earnings during this period could be as high as $817 or as low as −$903.[5]

Exhibit ES-4: Quarterly Impacts on Earnings for the Full Sample, FLH



SOURCE AND FOLLOW-UP PERIOD: National Directory of New Hires; through 13 quarters after random assignment.
NOTES: On the x-axis, negative numbers indicate quarters before random assignment; 0 indicates the quarter that random assignment occurred. The evaluation has data for the full sample through seven quarters before random assignment, and data for 98 percent of the full sample through the eighth quarter before random assignment. Impacts are reported in black text (none is statistically significantly different from zero). Reported impact may not equal the difference between the reported program and control group means because of rounding. The full sample of 595 includes 300 program group and 295 control group members.
Statistical significance based on two-sided hypothesis tests; significance levels are as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

For the secondary outcome, no positive impact is detected. About 83 percent of both the program and control group were employed in some quarter over this interval.

Consistent with these results, no positive impact is detected on most other exploratory measures of employment and earnings considered: for longer follow-up periods and for the early cohort. The exception is evidence of differential impact by education, with weak evidence of positive earnings impacts for those with less than a bachelor's degree.

[5] These values are the endpoints for a 90 percent confidence interval for the impact on average quarterly earnings in Q5-Q10.

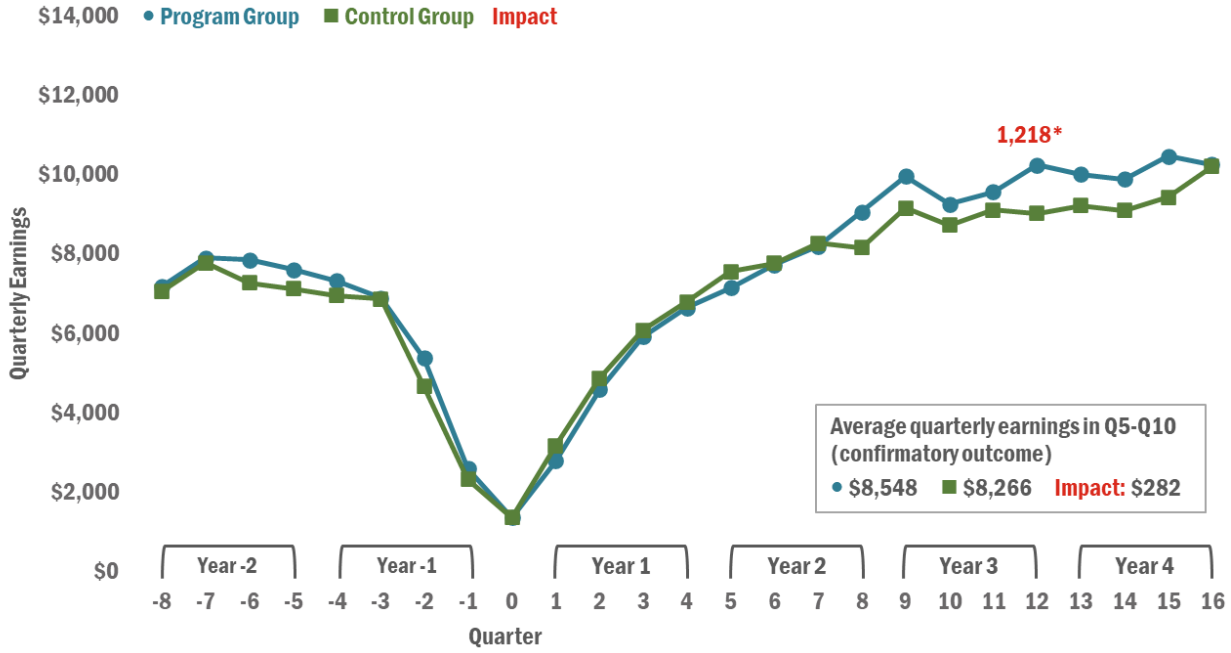
Worksystems Inc.: Reboot Northwest (Reboot NW)

Worksystems Inc., a workforce investment board in the Portland, Oregon area, partnered with two other boards to operate the Reboot NW program in several counties in Oregon and Washington State. The Reboot NW program was designed to assist unemployed workers find skilled positions in the advanced manufacturing and IT/software development industries. To do so, Reboot NW provided employment readiness courses, occupational training, work-based training, and job search assistance, most commonly occupational training in IT.

- **From 1 year to 2.5 years after random assignment, Reboot NW has no detected positive impact on average quarterly earnings (the confirmatory outcome) or on any employment (the secondary outcome).**

Exhibit ES-5 plots earnings over time for the Reboot NW program and control groups. For the confirmatory outcome, no impact is detected: in both the program and control group, average quarterly earnings were about $8,400. Allowing for uncertainty, the true impact of Reboot NW on average quarterly earnings during this period could be as high as $1,162 or as low as −$592.[6]

Exhibit ES-5: Quarterly Impacts on Earnings for the Full Sample, Reboot NW



SOURCE AND FOLLOW-UP PERIOD: National Directory of New Hires; through 16 quarters after random assignment.
NOTES: On the x-axis, negative numbers indicate quarters before random assignment; 0 indicates the quarter that random assignment occurred. The evaluation has data for the full sample through seven quarters before random assignment, and data for 92 percent of the full sample through the eighth quarter before random assignment. Impacts that are significantly different from zero are reported in red text. Reported impact may not equal the difference between the reported program and control group means because of rounding. The full sample of 972 includes 489 program group and 486 control group members.
Statistical significance based on two-sided hypothesis tests; significance levels are as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

[6] These values are the endpoints for a 90 percent confidence interval for the impact on average quarterly earnings in Q5-Q10.

For the secondary outcome, no positive impact is detected. About 83 percent of both the program and control group were employed in some quarter over this interval.

There is some scattered evidence of positive impacts on other exploratory earnings and employment outcomes. For the full sample, there is weak evidence that Reboot NW had a positive impact on earnings in Q12. For the early cohort, there is weak evidence of a positive impact on earnings in approximately the third year after random assignment (Q8-Q15); however, there is no detected impact thereafter (Q16-Q19). No differences in impacts are detected between subgroup categories.

Pooled Estimates of Average Impact across the Four Grantees

Considering the view that the four RTW programs are similar—in that they responded to the SGA's same guidance and requirements—the evaluation includes a summary estimate of their impact, using the average of the estimates across all four grantees.[7]

- **Although pooling the study samples for all four grantees yields more precise estimates of impact, no positive impact is detected on average quarterly earnings (the confirmatory outcome) or on any employment (the secondary outcome) between 1 and 2.5 years after random assignment.**

A conventional power analysis implies that the grantee-specific estimates can reliably detect earnings impacts of about $1,400 per quarter. Pooling the results from the four grantees allows the evaluation to detect impacts approximately half as large, about $700 per quarter. Even with pooling, no positive impact is detected on either average quarterly earnings or any employment from 1 to 2.5 years after random assignment.

Discussion

Like the earlier *Interim Impact Report* and its 18 months of follow-up (Klerman et al. 2022), this *Final Impact Report* and its 3 to 4 years of follow-up detects no sustained positive impact on earnings or employment for any of the four RTW grantee programs. Even considering the four programs together, no impact is detected. Given that most program services were received within a year of study entry, it seems unlikely that still longer follow-up would detect impacts.

This pattern of positive impacts on receipt of services and credentials but not on earnings or employment is a common finding in recent experimental impact studies of job training programs (Peck et al. 2021; Juras and Buron 2021).[8]

Four possible and not mutually exclusive explanations for the lack of earnings or employment impacts are discussed below.

[7] Given that the grantees were purposively selected—in part based on anticipated strength of their program—this is likely an overestimate of the average impact across all 24 of the RTW grantees' programs.

[8] These reviews consider the broader job training literature. The reviewed papers considered do not focus on older and more educated populations such as the population included in the RTW Evaluation.

- **It is possible that the programs generated positive impacts on earnings that are large enough to be policy relevant, but *samples were too small* to detect those impacts.**

As is true for all impact evaluations, program sample sizes affect what RTW impacts can be detected. In order to have the largest possible study sample, the evaluation deliberately chose the largest grantees and conducted random assignment over nearly all of each program's enrollment period. Substantially larger samples were therefore not available.

Given the study's sample sizes, conventional power calculations suggest that the evaluation could reliably detect a program-specific earnings impact of $1,400 per quarter but no smaller. Pooling the four programs, the evaluation could detect impacts of about half that size, approximately $700 per quarter. Even then, no impacts are detected.

Few studies have detected impacts as large as $1,400 per quarter (Peck et al. 2021). Understanding the extent to which programs produce more modest but still policy-relevant results will fill important gaps in the evidence base. To facilitate efforts to build evidence on effective programs, future DOL evaluations of RTW-like programs should consider research designs that could detect smaller impacts.

- **It is possible that the programs would have generated positive impacts in the economic environment for which they were designed.**

The RTW programs were designed in 2014 to help workers who lost their jobs during the Great Recession "through no fault of their own and [who were] facing long spells of unemployment for the first time in their careers" (DOL/ETA 2014). In contrast, the programs were implemented, and study members looked for work, during a long and robust economic recovery. Thus, this evaluation estimates the impact of the four RTW programs in an environment that is different from the one for which the programs were designed. Even if the programs did not have positive impacts during this sustained recovery, there might have been positive impacts if the programs operated during a less robust economic period.

- **It is possible that relative to what the control group received, the grantee programs did not *sufficiently increase* service receipt to cause impacts on earnings large enough to be detected.**

The logic model for most workforce programs—including the RTW Partnership Grant Program—posits the following causal chain: The program offers employment-related services. Workers seek out and attend the employment-related activities. Finally, relative to what would have occurred without these services, service receipt leads to higher earnings and employment.

If there were no other local programs available to applicants to provide structured employment-related activities and services, this logic model would imply—for RTW programs and workforce programs more broadly—that just *providing* such activities and services would lead to higher earnings and employment. But, like most workforce programs, the four RTW programs were not the only local options available to receive employment-related services. Any new program is always *in addition to* the existing workforce system (broadly defined), and that existing workforce system already provides a broad array of programs and services.

The experiences of the RTW control group suggest that in the absence of the local grantee program, RTW participants would have had access to and would have attended a substantial amount of employment-related services from other sources. In an experimental evaluation, experiences of the control group are a

good proxy for the experiences of program participants in the absence of the program. Such evaluations consistently find that, even without the program, some control group members will seek out services on their own (Bloom 2010). This is also the finding of the RTW Evaluation.

Viewing a program as an addition to the existing workforce system shifts what the program must do in order to improve earnings and employment for participants. It is not enough that the program provide employment-related services. It must ensure participants get *more* employment-related services than they would have gotten without the program. Furthermore, evidence suggests that to produce even moderate impacts on earnings requires substantial impacts on employment-related services; a few more weeks may not be sufficient (Weiss et al. 2015; Stevens, Kurlaender, and Grosz 2019).

The RTW programs provided *considerable* employment-related services to participants. In fact, they provided *more* employment-related services to participants than those participants would have received otherwise. Nevertheless, one explanation of the lack of impact on earnings is that the programs did not provide *enough more* employment-related services. That statistically positive but small impacts on services are not sufficient to generate impacts on earnings that can be detected is an emerging theme in labor market studies (Weiss et al. 2015). This line of argument suggests that in designing future programs, the focus should be on how the new program's design will lead to receipt of *considerably more* employment-related services than program participants would have received otherwise.

Doing so may be challenging. More employment services might lead to higher earnings; but in the short-term, older and more educated workers need to support themselves. This pressure to cover living expenses leads participants in general, and perhaps even more so older workers, to favor shorter programs. Inasmuch as longer programs are needed to increase earnings, some form of financial support to attend such programs might be worth considering.

- **It is possible that there exists a mix of employment-related services that would have yielded detectable impacts on earnings in the context in which they were implemented, but that the grantees did not provide such a mix of services.**

The previous bullet considered impacts on the *quantity* of services provided. It is useful to also consider the *mix* of services. It is possible that the service mix was not appropriate for the population for which it was designed. Compared to the general population served by the workforce system, participants in the RTW grant programs were expected to be—and were—older and more educated. Earlier studies have found that these workers face special challenges, including employer age discrimination, emotional distress due to unemployment, and outdated skills (Holzer 2021; Jacobson, LaLonde, and Sullivan 1993, 2005a, 2005b). Perhaps there was some mix of services that would have been more effective for this population in the rapidly improving economy in which they were seeking employment. However, the four RTW programs do not appear to have identified and delivered a service mix such that modest impacts on weeks of structured employment-related activities would lead to impacts on earnings that could be detected.

Further efforts to identify such a service mix might benefit from refining the theory of action: G*iven other services already available in the community, for older and longer-term unemployed workers, what specific employment-related services would be particularly impactful? In what sequence?* Such a theory of action might help to generate useful conjectures about how to design a program with a service mix that would increase earnings for the target population, given other employment-related services available in the community.

In sum, the RTW grantee programs attempted to increase the employment, with higher earnings, of a key population: the long-term unemployed, in particular the long-term unemployed during a deep recession. This evaluation did not detect that the RTW programs had such impacts, and identified four plausible explanations of the lack of impact on earnings. While these are not mutually exclusive explanations and the precise reason cannot be established, it appears that the first (insufficient sample) and third (insufficient impact on service receipt) are likely the primary reasons for the result. Work should continue to identify program approaches to serve this population, in particular well beyond what is commonly available in the community, and evaluation designs that can detect smaller impacts.

1 Introduction

A key challenge facing policymakers and program administrators is how to develop effective strategies to help the long-term unemployed achieve reemployment in jobs commensurate with their experience and skills. These issues are particularly salient during steep economic downturns, when many who have been steadily employed, sometimes with high earnings, lose their jobs through no fault of their own (Jacobson, LaLonde, and Sullivan 2011) and then experience long spells of unemployment (Krueger, Cramer, and Cho 2014; Kroft, Lange, and Notowidigdo 2013).

To assist those workers experiencing long-term unemployment because of the Great Recession of 2007-2009, in 2014 the U.S. Department of Labor (DOL) funded the **Ready to Work (RTW) Partnership Grant Program** that is the focus of this report (DOL/ETA 2014).[9] DOL awarded four-year grants to 24 partnerships of workforce agencies, training providers, employers, and other local organizations.[10] Operating from 2015 to 2019, grantees were to use the funds to provide such workers with a range of customized services including occupational training, work-based training, employment readiness courses, job search assistance, and staff guidance on career planning.

To document the implementation of the grantees' programs and to estimate their effects on participant outcomes, DOL's Employment and Training Administration (ETA), in collaboration with DOL's Chief Evaluation Office (CEO), contracted with Abt Associates and its partner, MEF Associates, to evaluate the RTW Partnership Grant Program. Specifically, the **RTW Evaluation** focuses on four purposively selected RTW programs:

- Anne Arundel Workforce Development Corporation's (AAWDC) Maryland Tech Connection (MTC);
- Jewish Vocational Service's (JVS) Skills to Work in Technology (STW-T) and Job Search Accelerator (JSA);
- RochesterWorks!'s Finger Lakes Hired (FLH); and
- Worksystems Inc.'s (WSI) Reboot Northwest (Reboot NW).

For those four programs, the evaluation includes an implementation study and an experimental study to estimate grantee program impacts on participant outcomes.

This is the fourth RTW Evaluation report. The first of two implementation reports (Martinson et al. 2017) describes the design and early operation of the programs based on the first year of program activities. The second implementation report (Copson et al. 2020) describes the programs' operation over the full four-year grant period. The evaluation's *Interim Impact Report* (Klerman et al. 2022) describes the impacts of these four RTW programs on outcomes 18 months (1.5 years) after study members applied to the programs. In particular, the report focuses on impacts on receipt of the programs' three primary

[9] In December 2008 the National Bureau of Economic Research (NBER) determined that what is sometimes called "the Great Recession" began in December 2007 (https://www.nber.org/news/business-cycle-dating-committee-announcement-december-1-2008).

[10] Originally, DOL made four-year awards in 2014 to 23 grantees, totaling $170 million. In 2015, DOL awarded one additional RTW grant, bringing the total number of grantees to 24. The grant period for that late grantee ended in 2020.

services—occupational training, work-based training, and employment readiness courses—and on early impacts (through 18 months) on participants' employment and earnings.

This is the RTW Evaluation's *Final Impact Report*, examining the impact of the four RTW programs on participants' employment and earnings over a longer follow-up period. This report focuses on impacts through two and a half years after program start, with additional follow-up through approximately four years.

The balance of this opening chapter describes the RTW grant program (Section 1.1); the RTW Evaluation and the four grantee programs it included (Section 1.2); economic conditions during the evaluation and outcomes in the absence of the program (Section 1.3); key findings of the earlier evaluation reports (Section 1.4); and the plan for the remainder of this report (Section 1.5).

1.1 The Ready to Work Partnership Grant Program

During the Great Recession of 2007-2009, nearly 7 million workers lost jobs that they had held for at least three years (BLS, 2010; see also Kosanovich and Sherman 2015).[11] Even as the economy recovered and more workers found new jobs, a substantial proportion of those who remained out of work had been unemployed for a long time.[12] As stated in DOL's RTW *Solicitation for Grant Applications* (SGA; DOL/ETA 2014): "Many long-term unemployed workers [have] lost their jobs through no fault of their own and are facing long spells of unemployment for the first time in their careers." Earlier research suggests such displaced workers typically experience long unemployment spells and substantial long-run declines in earnings—often 10 percent or more.[13]

DOL developed the RTW grant program to help such workers to prepare for higher-paying middle- and high-skill jobs.[14] Some services for displaced workers already are provided at American Job Centers through the Workforce Innovation and Opportunity Act (WIOA of 2014; PL 113-128). To augment services already available through WIOA, the RTW SGA required grantees to:

---

[11] Those who experienced job loss for more than three years are sometimes called "displaced" workers. The Displaced Worker Supplement to the Current Population Survey defines a displaced worker as someone who lost a job which they had held for at least three years. During calendar years 2007, 2008, and 2009 (which incorporates the Great Recession), BLS estimates 6.9 million such displaced workers. This was nearly twice as many workers as had been displaced during the previous three-year period (BLS 2010).

[12] In 2014, when the RTW grants were awarded, over one-third of those who were unemployed had been out of work for six months or more, and one-fourth had been unemployed a year or longer (Bureau of Labor Statistics, Current Population Survey, Table A-30, https://www.bls.gov/cps/aa2014/cpsaat30.htm).

[13] See Jacobson, LaLonde, and Sullivan (1993); Fallick (1996); Kletzer (1998); and Couch and Placzek (2010). Krolikowski (2018) argues, however, that these papers overstate impacts by comparing workers displaced at a given point in time to workers who are never displaced, rather than to workers who are not displaced at that point but might be displaced later. Also, most of that literature deliberately limits analysis to workers laid off after long periods of (usually continuous) employment. As noted in Section 1.3, the patterns in pre-program employment for the members of this study suggest that the population who applied to the RTW programs were unlike the displaced workers from this literature.

[14] The SGA indicated that grantees could not target entry-level occupations, but rather should provide training and services that promoted employment in higher-skilled occupations. In addition, the SGA specified that to be eligible to participate in grant-funded services, individuals had to be at least 18 years of age and have a high school diploma or GED as well as some postsecondary education and/or work experience.

- **Target long-term unemployed workers**, defined as those who had been jobless for 27 consecutive weeks or more. Targeted workers included those who had lost their jobs during or after the 2007-2009 recession and who either remained *unemployed* or were *underemployed* (meaning those who had obtained short-term or part-time employment but had not yet found a full-time job in line with their previous level of skill or earnings). Grantees could also accept a small share of "other unemployed workers," meaning those without a job for fewer than 27 consecutive weeks and not underemployed.
- **Assess participants' skills and needs and provide customized services** along three tracks. Participants could receive services in more than one track.

  (1) Staff guidance (including intensive coaching and specialized services) and other direct job placement services;

  (2) Short-term training leading to direct job placement; and

  (3) Accelerated training culminating in an industry-recognized credential and employment.
- **Provide paid work-based training** (e.g., on-the-job training and paid work experience) and **provide services to address the unique barriers facing long-term unemployed workers**, such as financial counseling, behavioral health counseling and other employment readiness activities.

Though each RTW grantee was to provide the same general set of services, grantees had discretion to tailor their program design and content based on the local economy and the specific needs and interests of the local population.

1.2 The RTW Evaluation and the Four Included Grantee Programs

The RTW Evaluation comprises two major components: (1) an **implementation study** to examine how the programs were designed and operated, and (2) an **impact study** to determine the programs' effects on services received and subsequent employment and earnings of study participants. The implementation study used field research, consisting of three rounds of semi-structured interviews with program staff and organizational partners, as well as program administrative data. The impact study uses administrative data on earnings and employment, supplemented with data collected in a follow-up survey 18 months after study members applied to the programs. The survey collected information on study members' receipt of employment-related services; educational attainment (i.e., receipt of a certificate, credential, license, or degree); perceived factors that affected their ability to work; employment and job characteristics; and public benefits receipt.

Both the implementation study and the impact study focus on the RTW programs offered by the four purposively selected grantees. The evaluation selected the grantees based on the perceived strength of their program services, program size, sufficient demand to fill the study's control group, and ability to accommodate study procedures (see Martinson et al. 2017).[15]

[15] The evaluation literature makes a distinction between an *efficacy* test that evaluates a program under near ideal conditions versus an *effectiveness* test that operates under more standard conditions (Singal, Higgins, and Waljee 2014). Because perceived strength of the program was one of the evaluation's criteria in selecting grantees to study, this evaluation should be viewed as closer to an efficacy test. In particular, the average RTW grantee's program likely had an impact smaller than the impacts estimated for the four programs selected for the evaluation.

Exhibit 1-1 below provides summary information on the four grantees and their programs included in the evaluation. The grantee programs were in different urban areas, but each served a relatively large geography that included suburban and rural communities. JVS is a non-profit organization; the other three grantees are workforce agencies that provide services under WIOA. Three of the four grantees focused their RTW programs on employment in more than one industry: all included information technology (IT), three also included advanced manufacturing, two also included healthcare. As required by the RTW SGA, each of the grantees targeted long-term unemployed worker populations.

Because grantees could tailor their program structure, the four RTW programs varied in their relative emphasis on the main program elements provided by all grantees—occupational training, work-based training, employment readiness courses, and one-on-one assistance (staff guidance on career planning and job search assistance).

Exhibit 1-1: Overview of the Four Grantee Programs Included in the Ready to Work Evaluation

Grantee Lead Agency	Program Name and Characteristics	Target Industries	Key Grant-Funded Components
Anne Arundel Workforce Development Corporation (AAWDC) • 12 counties in MD	**Maryland Tech Connection (MTC)** **Enrollment:** 1,254 **Study Sample:** 1,029 **Grant Amount:** Total: $9,995,047 Per person served: $7,971 **Program Operation:** May 2015–Oct 2019	• Advanced Manufacturing • Bioscience • Healthcare • Information Technology	• Staff assessed participants to develop customized services, with most initially attending a 2-week employment readiness course • Subsequent individualized services included occupational training, work-based training, and job search assistance
Jewish Vocational Service (JVS) • San Francisco, CA	**Skills to Work in Technology (STW-T)** and **Job Search Accelerator (JSA)** **Enrollment:** 1,006 **Study Sample:** 993 **Grant Amount:** Total: $6,396,276 Per person served: $6,358 **Program Operation:** May 2015–Oct 2019	• Information Technology	• STW-T program consisted of three technical skills training courses: Business Administration Bootcamp, Digital Marketing, and Salesforce® Administration • JSA was a 2-week program focused on job search and readiness skills (implemented partway through the grant)
RochesterWorks! • Monroe County, NY	**Finger Lakes Hired (FLH)** **Enrollment:** 1,007 **Study Sample:** 610 **Grant Amount:** Total: $5,189,848 Per person served: $5,154 **Program Operation:** Jan 2015–Jun 2019	• Advanced Manufacturing • Healthcare • Information Technology	• Staff assessed participants to develop customized services • Emphasis on participation in 1-week employment readiness course and one-on-one assistance from staff • Other options included occupational training, work-based training, and job search assistance

Exhibit 1-1: Overview of the Four Grantee Programs Included in the Ready to Work Evaluation (continued)

Grantee Lead Agency	Program Name and Characteristics	Target Industries	Key Grant-Funded Components
Worksystems Inc. (WSI) • Portland, OR and Vancouver, WA	**Reboot Northwest (Reboot NW)** **Enrollment:** 1,348 **Study Sample:** 980 **Grant Amount:** Total: $8,455,004 Per person served: $6,272 **Program Operation:** Apr 2015–Jun 2019	• Advanced Manufacturing • Information Technology	• Staff assessed participants to develop customized services • Services included 2- to 3-week employment readiness course, occupational training and work-based training, and job search assistance

SOURCE: Developed by Abt Associates based on staff reports and RTW grantee program materials.
NOTES: The study sample includes the number of individuals randomly assigned as part of the evaluation to either the program or control group, after excluding those who withdrew from the study after random assignment; see the opening sections of Appendices F through I in the *Technical Appendix for the Interim Impact Study* (Herr, Klerman, Martinson, and Copson 2022) for the counts of withdrawals. (The sample sizes reported in the results exhibits in Chapter 3 are somewhat smaller because of missing outcome data; see Appendix A.3 of the *Technical Appendix for the Final Report of the Impact Study* (Herr, Klerman, and Martinson 2022) for more detail.) Grant amount per person served is calculated on the number of individuals served by the grant, not the number of individuals in the study's program group. As discussed by Martinson et al. (2017) and Copson et al. (2020), in addition to members of their program groups, the grantees served other individuals such as veterans, incumbent workers, and people who enrolled before the study started and after random assignment for the study concluded.

The RTW Evaluation's impact study is informed by a logic model, which identifies how grant inputs lead to program services, which in turn should lead to program participant outcomes in the short and longer term. For more on the logic model, see Appendix Section A.1 of the *Technical Appendix for the Final Report of the Impact Study* (Herr, Klerman, and Martinson 2022).

Based on this logic model, the impact study addresses two overarching research questions:

- ***What was the impact of the offer of the RTW program on the outcomes specified in the logic model*** (e.g., receipt of program services, educational attainment, employment, and earnings)? The evaluation estimates the impact of the offer of each grantee's RTW program relative to not being offered the RTW program but potentially enrolling in other programs or services available in the community.
- ***How did those impacts vary with study member baseline characteristics?*** The evaluation focuses on differences in impacts based on education, age, employment status, and gender.

To assess the impact of the RTW programs, the evaluation randomly assigned program applicants either to a "program group" (who were offered the RTW program) or to a "control group" (who were not offered the program but could access other services in the community).[16] The evaluation measures the impact of the programs by comparing the average outcomes for those study members in the program group versus average outcomes for those in the control group.

[16] Services available in the community included an array of standard employment preparation and job search services provided through American Job Centers. Those services include job search services and employment readiness activities funded by WIOA. Partners co-located at the American Job Centers offer a range of other services.

1.3 Economic Conditions and Outcomes for the Control Group

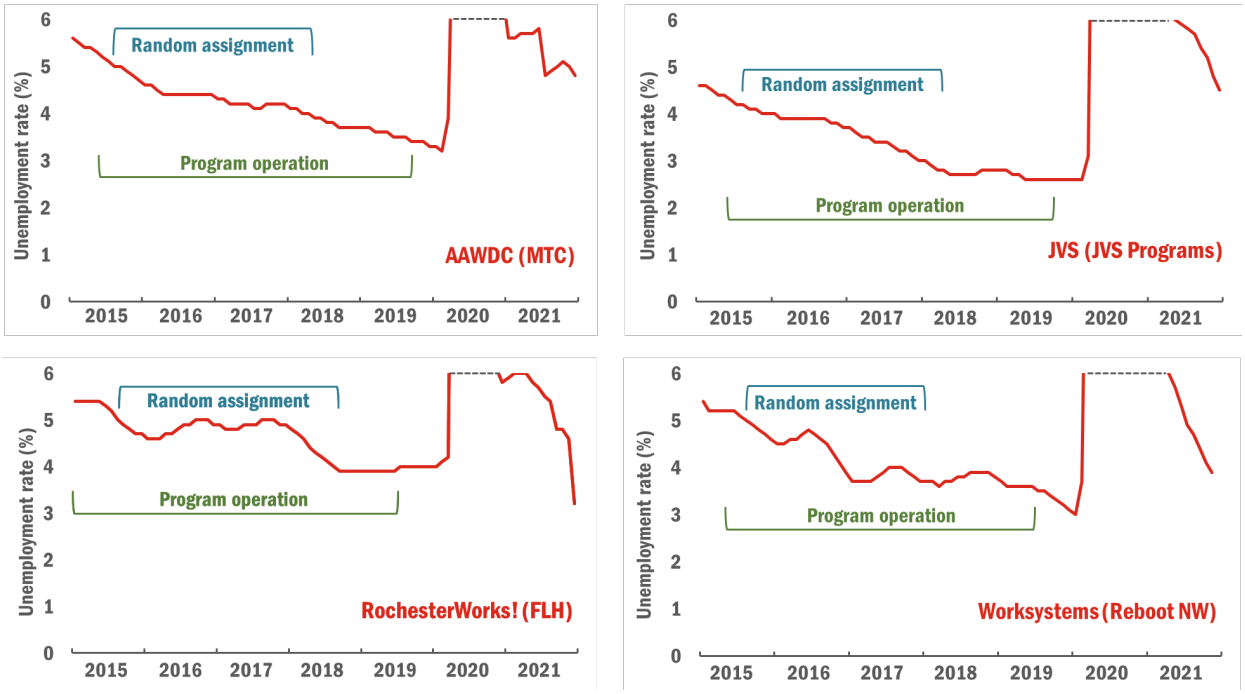
Local economic conditions and experiences in the absence of an RTW program are useful for understanding the program's impacts. The RTW SGA was released in 2014, when the economy was starting to recover from the Great Recession; still, at that point, one-third of workers who remained unemployed were those experiencing long-term unemployment.[17] In contrast, RTW program service delivery occurred from 2015 to 2019. This was during the robust economic expansion following the Great Recession. The end of the evaluation's follow-up period varies across study members based on the date each applied to the given RTW program, ranging from late 2018 to late 2021.[18]

Exhibit 1-2 shows the local unemployment rates for the four grantees over the period of the evaluation, from 2015, when program operations began, to 2021, the latest follow-up. The study period thus includes the economic expansion after the Great Recession—plus the arrival of the COVID-19 pandemic and its associated economic downturn.

[17] Bureau of Labor Statistics, Current Population Survey, Table A-30, https://www.bls.gov/cps/aa2014/cpsaat30.htm. See also Center on Budget and Policy Priorities (2019).

[18] The study followed each sample member for three to four years after they applied to the program (3.25 years for FLH, 3.75 years for MTC and the JVS programs, and 4 years for Reboot NW; see Exhibit 2-1). Thus, for example, members of the MTC study sample who applied to the program in Summer 2015 were followed through Spring 2019, and only those who applied in early 2018 were followed as late as December 2021.

Exhibit 1-2: Local Unemployment Rates for the Four Grantees (2015–2021)

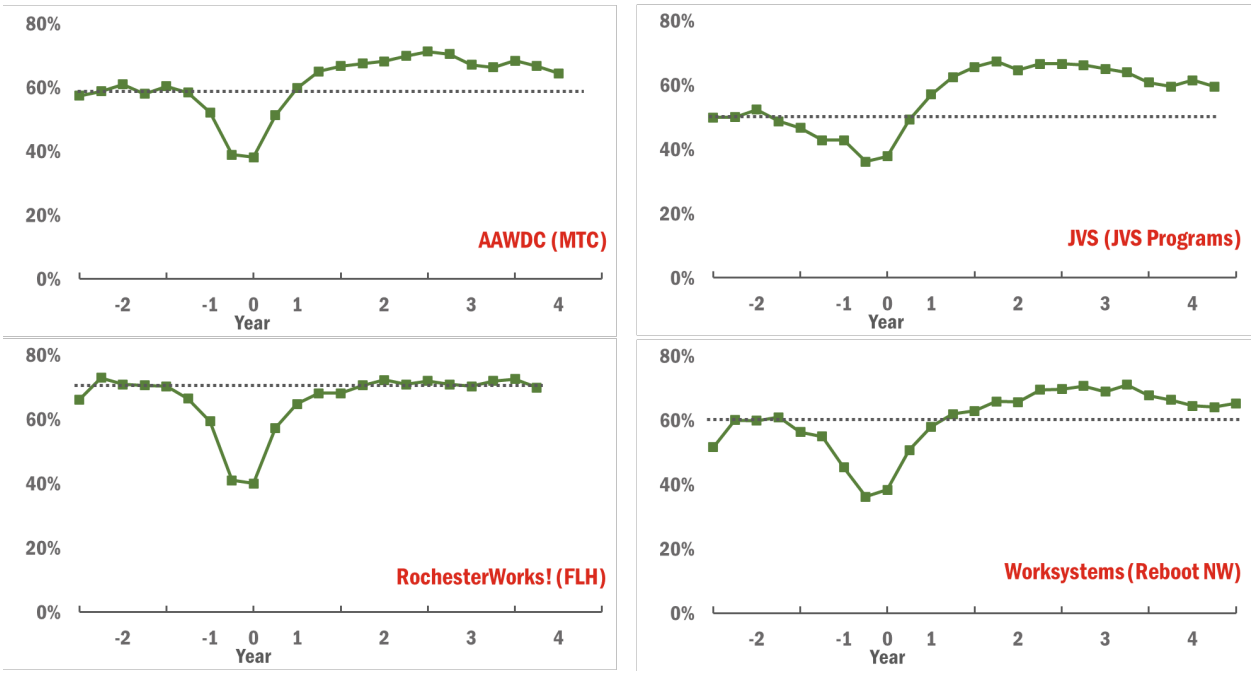


SOURCE: U.S. Bureau of Labor Statistics, Local Area Unemployment Statistics: Smoothed Seasonally Adjusted Metropolitan Area Estimates, 2015-2021, https://www.bls.gov/lau/metrossa.htm.

NOTES: The following metropolitan statistical areas were used: Baltimore-Columbia-Towson, MD for AAWDC (MTC); San Francisco-Oakland-Hayward, CA for JVS; Rochester, NY for RochesterWorks! (FLH); and Portland-Vancouver-Hillsboro, OR-WA for WSI (Reboot NW). (For full grantee and program names, see Exhibit 1-1.) With the emergence of COVID-19, the local unemployment rates spiked in April 2020 to the following levels: 9.5 percent for AAWDC, 13.9 percent for JVS, 16.0 percent for RochesterWorks!, and 13.1 percent for WSI. (Grey dotted lines indicate that the unemployment rate in the given period extends beyond the maximum value of the y-axis of the chart.) The RTW Evaluation includes study members who applied to the given RTW program from July or August 2015 through December 2017 (for Reboot NW), March 2018 (for MTC and the JVS programs), and August 2018 (for FLH). All sample members are followed for a period of three to four years after program application (see Exhibit 2-1); thus, the calendar years of the follow-up period vary by when a given sample member applied to the program. The follow-up period extends through December 2021 only for the very last applicants to each RTW program.

Reflecting strong economic expansion during most of the follow-up period (through the start of 2020), outcomes improved sharply for the evaluation's control group (those who could not access the RTW program). Specifically, Exhibit 1-3 shows employment rates for each grantee's control group from two years before applying to the given RTW program (the earliest data available for each sample member) to approximately four years after application.

Exhibit 1-3: Control Group Employment Rates for the Four Grantee Study Samples



SOURCE AND FOLLOW-UP PERIOD: National Directory of New Hires; through 16 quarters after random assignment.
NOTES: On the x-axis, negative numbers indicate years before random assignment; 0 reflects the quarter that random assignment occurred. (Random assignment occurred at the time of application to the program.) For all four study samples, the evaluation has data through seven quarters (1.75 years) before random assignment for all control group members. The evaluation has data through eight quarters (2 years) before random assignment for the following percentage of all control group members: 94 percent for AAWDC (MTC), 99 percent for JVS, 98 percent for RochesterWorks! (FLH), and 92 percent for WSI (Reboot NW). The sample sizes of the control groups are as follows: 486 for AAWDC (MTC), 474 for JVS, 295 for RochesterWorks! (FLH), and 483 for WSI (Reboot NW). (For full grantee and program names, see Exhibit 1-1.)

Three periods on the graphs in Exhibit 1-3 have implications for the interpretation of the findings in Chapter 3:

- **Immediately before application** to the RTW program[19] employment levels dropped sharply; they then recovered rapidly after application to the program, even without access to RTW services. This pattern is consistent with the existing literature that notes that individuals usually apply for training programs after a sharp worsening of their economic circumstances (e.g., job loss).[20] Even in the absence of receiving training, most of these individuals will find jobs in the months following the dip in employment—especially in a strong economy.
- **Two years before applying** to the program, RTW applicants were not universally employed. For all but FLH, 50 to 60 percent of control group members were employed, compared to 75 to 80 percent of

[19] As is discussed in Section 2.1.1 in Chapter 2, applicants to a given RTW program were randomly assigned at the time they applied for the program. Exhibit 1-3 plots employment patterns for those sample members who were randomly assigned to the control group, and therefore could not access the RTW program services.

[20] This pattern is known as the "Ashenfelter dip"; see Ashenfelter and Card (1985) and Heckman and Smith (1999).

similarly aged U.S. workers at the time.[21] These control group employment rates are lower than rates in the displaced workers literature, which focuses on workers laid off after long periods of (usually continuous) employment (Holzer 2021; Jacobson, LaLonde, and Sullivan 1993, 2005a, 2005b). However, the control group employment rates are consistent with RTW grantees' reports that the populations they recruited—workers who remained long-term unemployed even as the economy improved—had weaker recent employment histories than was envisioned in the SGA.[22]

- **Within a year after applying to the RTW program**, applicants' employment rates and earnings recovered to levels of two years before application (except for FLH).[23] Furthermore, by three years after applying, their employment rates were roughly 10 percentage points higher than two years before application and earnings growth was even stronger (shown in Chapter 3).[24] This is different from the displaced workers pattern of long-term earnings losses. The controls' improvement in employment and earnings relative to two years before application—even without access to the services of the local RTW program—is plausibly due to the strong economic recovery during this period.[25]

This pattern of growth in employment and earnings from two years before program application to three years after, even without gaining access to the program, points to the importance of the RTW Evaluation's random assignment research design. That design compares the outcomes for applicants who had access to an RTW program versus outcomes for applicants who did not have access to an RTW program, in the same time periods. Thus, both groups experience the same broad economic conditions. Without a random assignment research design, the considerable gains in employment and earnings

---

[21] Current Population Survey data for individuals ages 30–55 in 2013 to 2016 (the period approximately two years before most sample members applied to the given RTW program) show employment rates of 75 to 80 percent (https://www.bls.gov/cps/tables.htm#otheryears).

Furthermore, except for the FLH controls, only 3 to 7 percent of control group members were collecting unemployment insurance two years before program application, presumably based on employment just before that point (see Appendix Exhibits C.1-5 for MTC, C.2-5 for the JVS programs, C.3-5 for FLH, and C.4-5 for Reboot NW). (In the two years before program application the FLH sample members had on average substantially higher employment rates than the other three study samples, and approximately 15 percent were collecting unemployment insurance two years before applying to FLH.) Because many of those controls were also employed for at least part of a given quarter, the percentage who were either employed or receiving unemployment insurance in the period approximately two years before program application is very similar to the proportions shown in Exhibit 1-3 (see Appendix Exhibits C.1-6 for MTC, C.2-6 for the JVS programs, C.3-6 for FLH, and C.4-6 for Reboot NW).

Because the RTW Evaluation could not observe employment earlier than eight quarters before random assignment, the evaluation could not rule out possibly strong employment well before this window. However, based on the evidence in Exhibit 1-3, it appears that the workers applying to the RTW programs were less strongly tied to the labor market than the populations studied in the displaced workers literature.

[22] The SGA refers to "[those who] are facing long spells of unemployment for the first time in their careers" (DOL/ETA 2014), suggesting workers with long-established work histories such as in the displaced workers literature.

[23] The exception is FLH, where a weaker economic recovery (shown in Exhibit 1-2) appears to have led to employment rates barely returning to the level of two years before program application and earnings remaining 13 percent below that level through three years after program application.

[24] For the MTC, JVS, and Reboot NW controls, employment levels in the third year after program application were between 9 and 14 percentage points higher than they were two years before applying, and earnings were 23 to 46 percent higher.

[25] Sharp increases in employment and earnings with an improving economy are consistent with marginal workers benefiting more from an improving labor market than stable workers do (stable workers are in implicit long-term contracts, such that their employment hardly varies and their earnings do not vary much; Okun et al. 1973; Aaronson et al. 2019).

observed after program group members enrolled in the RTW programs might erroneously be attributed to program services.

1.4 Earlier Findings of the RTW Evaluation

This section summarizes the key findings from earlier RTW Evaluation reports as context for this *Final Impact Report*.

Population served. Reflecting the RTW grant program's focus on the long-term unemployed, more than 80 percent of study members across all four grantees were unemployed when they entered the study. About 30 percent of all study members were unemployed for a year or more. Reflecting RTW's target population of workers with sufficient experience or education to move in to middle- or high-skill jobs, study participants were generally middle-aged (45 on average) and well educated compared with the long-term unemployed during this period and the general WIOA population (between 44 percent and 79 percent had at least a bachelor's degree).[26] The demographic characteristics of the study sample members varied across the four grantee programs, reflecting their different program designs and geographic locations.[27]

Grantee staff observed that as the economy improved over the 2015-2019 grant period, many of the long-term unemployed workers targeted by the RTW grant, particularly those with more education and work experience, were able to find jobs on their own and therefore did not apply to an RTW program. As a result, grantee staff reported that many of those who did enroll in the RTW programs faced greater barriers to employment, and had lower skill levels and less work experience, than grantees had anticipated when originally designing their programs.

Program design. The four grantee programs all provided activities and services consistent with the tracks specified by the RTW SGA, including one-on-one staff assistance, occupational training, employment readiness activities (that could include help with a resume, interviewing skills, and networking skills), and work-based training (unpaid internships, paid internships, or on-the-job training). The RTW programs also provided financial and behavioral health supports. Grantees varied in how they targeted and sequenced services and in the content of the services offered (see Martinson et al. 2017; Copson et al. 2020).

Types and amounts of program services attended. The types and amounts of services that program group members attended varied across the four programs, reflecting differences in program design. A follow-up survey at 18 months after random assignment collected study members' self-reports on their length of attendance in three key program activities: occupational training, work-based training, and employment readiness courses.[28] Based on that data, Exhibit 1-4 shows the average weeks of RTW services attended by the program group. In particular, the exhibit shows weeks of occupational training,

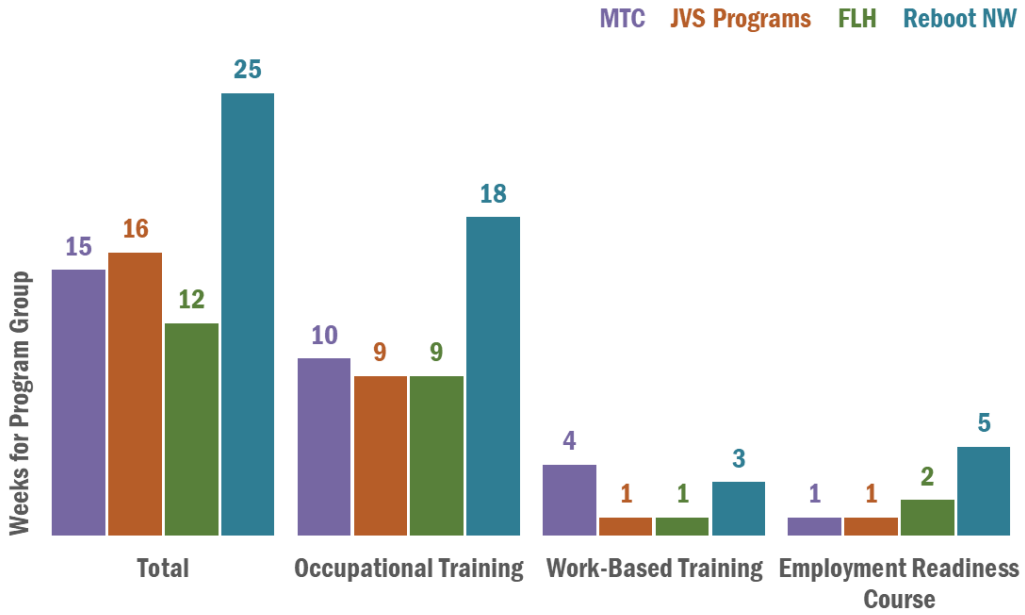
[26] By comparison, among the population served by WIOA in 2017, 64 percent were under age 45 and only 15 percent had a bachelor's degree. See Appendix B of the *Technical Appendix for the Final Report of the Impact Study* (Herr, Klerman, and Martinson 2022) for more detail on the demographic comparison of the RTW study samples to those served by WIOA.

[27] See Appendix B of the *Technical Appendix for the Final Report of the Impact Study* (Herr, Klerman, and Martinson 2022) for more information on sample demographics.

[28] The reported weeks of attendance in occupational training, work-based training, and employment readiness courses, as well as all structured employment-related activities as a whole, reflect the sum of the number of weeks in each training or activity, and will double count some weeks if the respondent attended more than one training in the given week.

work-based training, employment readiness courses, and their sum, total structured employment-related activities.[29] Each average includes program group members who did not attend any services and therefore have zero weeks attended.[30]

Exhibit 1-4: Weeks of Services Attended through 18 Months after Random Assignment in Total and by Service Type, by Program Group



KEY: Total=All structured employment-related activities (occupational training, work-based training, or employment readiness courses).
SOURCE AND FOLLOW-UP PERIOD: 18-month follow-up survey, as of 18 months after random assignment.
NOTES: The sample sizes of the program groups are as follows: 455 for MTC, 411 for the JVS programs, 250 for FLH, and 400 for Reboot NW (for full grantee and program names, see Exhibit 1-1). Each average includes program group members who did not attend any services and therefore have zero weeks attended. For the JVS programs, the exhibit reports "adjusted" weeks of services attended, reflecting the inclusion of information collected during the 18-month survey interview as text responses of training types attended, asked only of program group members who initially reported no training. Because the population with incomplete data on weeks of services attended varies by type of service, the average weeks of services for the three underlying types among those with non-missing data do not sum to the average weeks of total services for those with non-missing data for all three types. See Appendix G of the *Technical Appendix for the Interim Impact Study* (Herr, Klerman, Martinson, and Copson 2022) for more discussion. For the JVS programs, unadjusted measures of weeks of activities attended are four weeks of occupational training, one week of employment readiness courses, and six weeks of all activities combined (there is no adjustment necessary for weeks of work-based training). For the other three programs, the number of weeks of total services may not equal the sum of weeks for the three underlying types of services because of rounding.

[29] This focus on *weeks* of services is in contrast to the *Interim Impact Report* (Klerman et al. 2022). For that report, the evaluation focused on *hours* of service receipt. The discussion here focuses on weeks because it provides a clearer sense of "dosage"; that is, of the intensity of services received.

[30] Including non-attendees means that even if those who attended the RTW program attended a large number of weeks of services, this measure still would be low if only a small share of the program group attended the program.

- *Occupational training*:[31] On average, members of the program group for Reboot NW attended 18 weeks of occupational training; in contrast, program group members for the other three grantee programs attended approximately 9 weeks of occupational training.[32]
- *Work-based training*:[33] For MTC and Reboot NW, program group members attended on average 3 to 4 weeks of work-based training, whereas for the JVS programs and FLH, program group members attended on average 1 week.
- *Employment readiness courses*:[34] For Reboot NW, members of the program group attended 5 weeks of employment readiness courses; for the other three, program group members attended only 1 to 2 weeks.
- *Total*: MTC, JVS, and FLH program group members attended on average 3 to 4 months of structured employment-related activities (these three services combined); Reboot NW program group members attended on average almost 6 months.

Impacts on weeks of services attended. Three of the programs had positive impacts on total structured employment-related activities: the difference in total services attended between the program group and control group (Exhibit 1-5). Two programs increased weeks of occupational training (MTC by 3 weeks and the JVS programs by 6 weeks). One program increased weeks of work-based training (MTC by 3 weeks). All four programs increased weeks attending employment readiness courses (by 1 to 2 weeks).

---

[31] Occupational training included vocational or occupational training programs aimed at a specific job, trade, or occupation; or for-credit programs toward a college degree, including those offered online, at a community college, or at a two- or four-year college campus (not including recreational programs).

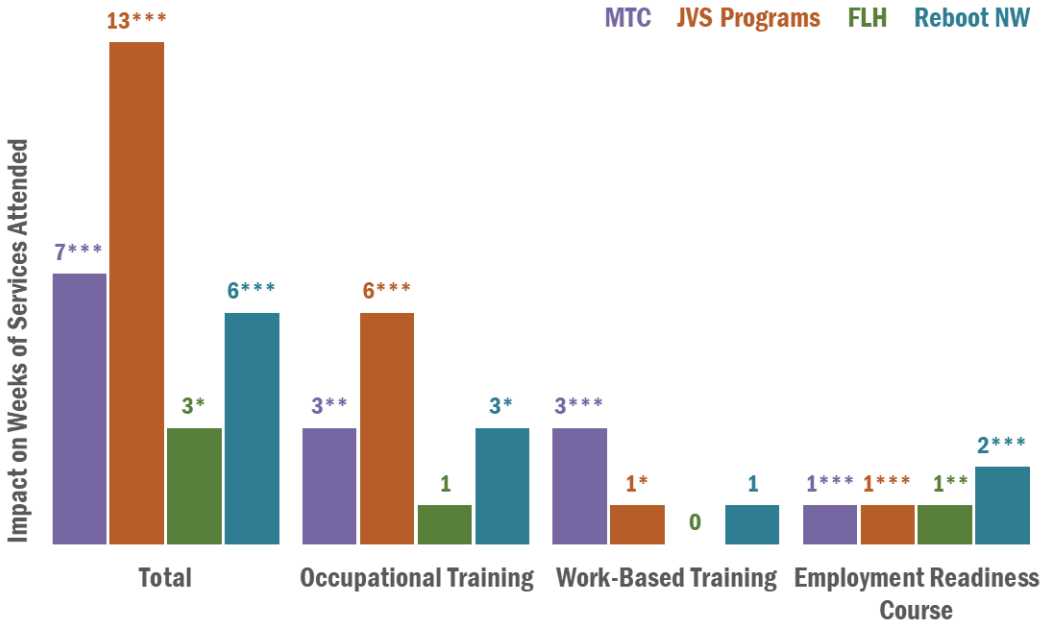
[32] As described in detail in the *Interim Impact Report*, among program group members in the JVS study sample, respondents to the 18-month follow-up survey appeared to misinterpret a series of questions on occupational training and employment readiness courses. In particular, a large majority initially responded that they did *not* attend either occupational training or employment readiness courses. Later, however, in an open-ended follow-up question asked of program group members only, they reported attending specific JVS programs of those types. Questions on *length* of attendance followed from the initial question on any attendance. For that reason, for these respondents who *initially* reported attending no such activities, the evaluation is missing data on weeks of training. (Because the follow-up question was asked only of members of the program group, the evaluation may be underestimating the length of services attended by members of the control group, if control group members also failed to report training activities and were therefore recorded as attending zero weeks of training.) Note, also, that the evaluation has missing data for weeks of occupational training and weeks of employment readiness courses for different (although overlapping) sets of respondents; there is no missing data for weeks of work-based training.

The measure of weeks of any structured employment-related activity is set to missing if any of the three underlying measures is missing (occupational training, work-based training, or employment readiness courses). For the JVS programs, the levels and impacts shown in Exhibits 1-4 and 1-5 report the adjusted measures of weeks of activities attended. See the exhibits' table notes for the corresponding unadjusted values.

[33] Work-based training included unpaid internships, paid internships, and on-the-job training.

[34] Employment readiness courses included classes or workshops on professional and general life skills (sometimes called "soft skills"), including workplace skills. These workshops or classes also focused on resume development, job search techniques, and interview skills, and they addressed topics geared toward the stresses that can accompany long-term unemployment.

Exhibit 1-5: Impact on Weeks of Services Attended through 18 Months after Random Assignment, in Total and by Service Type



KEY: Total=All structured employment-related activities (occupational training, work-based training, or employment readiness courses).
SOURCE AND FOLLOW-UP PERIOD: 18-month follow-up survey, as of 18 months after random assignment.
NOTES: The total sample (those who completed the 18-month follow-up survey) are as follows: 831 for MTC (455 program group and 376 control group members), 793 for the JVS programs (411 program group and 382 control group members), 477 for FLH (250 program group and 227 control group members), and 747 for Reboot NW (400 program group and 347 control group members). (For full grantee and program names, see Exhibit 1-1.) For the JVS programs, the exhibit reports impacts on "adjusted" weeks of services attended, reflecting the inclusion of information collected during the 18-month survey interview as text responses of training types attended, asked only of program group members who initially reported no training. See Appendix G of the *Technical Appendix for the Interim Impact Study* (Herr, Klerman, Martinson, and Copson 2022) for more discussion. The unadjusted estimates of impact for the JVS programs are one week of occupational training (not statistically significant), one week of employment readiness courses (significant at the 1 percent level), and two weeks of all activities combined (significant at the 1 percent level).
Statistical significance based on two-sided hypothesis tests; significance levels are as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

Yet impacts on structured employment-related activities (Exhibit 1-5) are much smaller than amounts of services attended by the program groups (Exhibit 1-4). Although the program groups attended considerable activities in their RTW programs, the control groups did as well from sources available elsewhere in the communities. Thus overall, although Reboot NW program group members *attended* a greater number of weeks of services than did program group members in the other three programs (Exhibit 1-4), Reboot NW's *impact* was less than that of the JVS programs because the Reboot NW control group also attended substantial services (Exhibit 1-5).

Impacts on credential receipt and other outcomes. As measured by the 18-month follow-up survey and reported in the *Interim Impact Report* (Klerman et al. 2022), impacts on program services attended—in particular, occupational training—led to impacts on educational attainment (i.e., certificates, credentials, licenses, or degrees). MTC, the JVS programs, and Reboot NW (the programs with the largest impacts on service receipt) had a positive impact on educational attainment (10 to 22 percentage points, or 33 to 159 percent of the control group level). Most of these were certificates for completion of a short-term

occupational training course, and few received professional certifications.[35] The exception is FLH, where no impact on educational attainment was detected. For all programs other than FLH, the evaluation also detected strong impacts on receipt of financial support for occupational training. For no programs were impacts detected on confidence in career knowledge or factors that affect the ability to work.

Impacts on employment, earnings, and public benefits receipt. For no program did the study detect a favorable impact on earnings in the period 12 to 18 months (1 to 1.5 years) after random assignment (the evaluation's pre-specified main outcome for the *Interim Impact Report*). Moreover, for no program did the study detect an increase in employment or a decrease in public benefits receipt.[36] However, there was some evidence of positive impacts 12 to 18 months after random assignment on other measures of employment and earnings, which suggested that positive impacts might emerge with longer follow-up.

1.5 This Report

This *Final Impact Report* uses administrative data on earnings and employment to extend the follow-up period for the RTW Evaluation for an additional 1.75 years beyond the *Interim Impact Report*'s 1.5 years.[37] With this longer follow-up period, the impact study has at least 3.25 years of follow-up for all study participants, and 4.75 years for the "early cohort" (study members who applied to the given RTW program by March 31, 2017).

The balance of this report is structured as follows. Chapter 2 briefly describes the methods and data for the analysis discussed in this report. Chapter 3 presents impacts on earnings and employment, separately for the four RTW grantee programs. Then Chapter 4 summarizes the findings and considers their implications for program design and evaluation.

In the separate *Technical Appendix for the Final Report of the Impact Study* ("*Final Appendix*"; Herr, Klerman, and Martinson 2022), Appendix A presents additional detail on the methods and data for this analysis. Appendix B compares the study samples for the four RTW programs versus workers enrolled in WIOA, and versus the long-term unemployed more generally. Appendix C presents additional detailed results to supplement those reported in Chapter 3, including subgroup impacts. Appendix D reports COVID-specific analyses, comparing the impact of the RTW programs before versus during the COVID-19 pandemic.

[35] Impacts on receipt of a professional certification or license are substantially smaller: 3 percentage points for MTC (not statistically different from zero), 6 percentage points for the JVS programs, and 7 percentage points for Reboot NW.

[36] For MTC, the *Interim Impact Report* (Klerman et al. 2022) found negative impacts on earnings 12 to 18 months after random assignment, but no impact on employment. For the other three programs, it detected no impacts on either earnings or employment.

[37] The RTW Evaluation did not include a second follow-up survey, so this *Final Impact Report* includes no new survey-based results.

2 Methods and Data Sources

For the results reported in Chapter 3, this chapter briefly discusses methods (Section 2.1) and data (Section 2.2). For more information, see Appendix A of the *Final Appendix*.

2.1 Methods

As described briefly in Chapter 1, the RTW Evaluation's research questions focus on the **impact** of the program on sample members' outcomes; that is, the difference in outcomes for those offered the RTW program relative to what outcomes would have been if they had not been offered the program (represented by the control group).

2.1.1 Research Design

To produce strong estimates of the RTW program's impacts, the evaluation uses an experimental design, randomly assigning applicants (by a process akin to a lottery) to either:[38]

- A **program group** whose members could access the grant-funded RTW services (whether or not they actually participated); or
- A **control group** whose members could not access the grant-funded RTW services but could participate in any similar services available in the community, including standard services available through WIOA.

This random assignment design ensures that there were no systematic differences between the two groups when they entered the study (at "baseline"). (Testing for equality of baseline characteristics between the two treatment groups confirms that there are no systematic differences.[39]) Thus, any differences in outcomes between the two groups detected after random assignment (any "impacts") are due either to the program or to chance (Fisher 1935). The evaluation uses conventional statistical methods to identify how likely a given impact estimate (or one more extreme) would occur by chance if the program in reality had no impact. (For more detail on these methods see Appendix Section A.2 of the *Final Appendix.*[40])

Maintaining the comparability of the two groups of study members requires comparing all those in the program group versus all those in the control group, regardless of whether program group members actually participated in the RTW program. Thus, the study estimates what is called the "intention-to-treat" (ITT) impact; that is, the impact of being offered the RTW program versus not being offered the program

[38] At each grantee, study participants were randomly assigned at the time they applied for the RTW program, beginning in Summer 2015 through approximately early 2018 (see "Random Assignment Period" in Exhibit 2-1 below). Each grantee recruited potential participants, verified their eligibility, and obtained their informed consent to participate in the evaluation prior to randomly assigning them (for more detail see Martinson et al. 2017).

[39] See Sections F.1.2, G.1.2, H.1.2, and I.1.2 of Herr, Klerman, Martinson, and Copson (2022) for tests for balance between members of the program and control group in each grantee study sample. In part because there remained a handful of differences due to chance, the evaluation controls for baseline characteristics when estimating impacts.

[40] The evaluation uses data measured at baseline as controls in statistical analyses to increase the precision of the impact estimates. See Appendix Section A.6 of the *Final Appendix* for detail on how these controls are selected, and for the set of controls selected for each grantee program.

but having access to other services in the community. As such, the evaluation estimates the incremental effect of an RTW program above and beyond these other services.[41]

Furthermore, because the evaluation randomly assigned access to the given RTW program as a whole, the evaluation is not directly informative about the impact of the individual components of the given RTW program. Other designs would be needed to estimate the separate impact of the individual components of a given program's package of services.

2.1.2 Subgroup Analysis

The evaluation also assesses how impacts vary with study member baseline characteristics—that is, whether a grantee's RTW program was more effective for certain groups of the population served.[42] The evaluation estimates the impact of the RTW programs separately for groups based on (1) *education*: less than a bachelor's degree versus a bachelor's degree or more; (2) *age*: 49 or older versus younger than 49; (3) *employment status*: no earnings in the year (four quarters) before random assignment versus positive earnings in those four quarters;[43] and (4) *gender*: women versus men.[44] The evaluation focuses on whether there is **differential impact**; that is, whether the impact on an outcome is different for one group versus the other group for any of the four subgroup analyses considered. Furthermore, the discussion in Chapter 3 concentrates on those instances of differential impact where there is evidence of a positive impact for at least one of the two groups in the given analysis.

2.1.3 Outcome Classifications

The evaluation focuses on the program's impact on a single pre-specified **confirmatory outcome,** the evaluation's main indicator of the extent to which a given RTW program had impact.[45] This *Final Impact Report*'s confirmatory outcome is *average quarterly earnings from 1 year to 2.5 years after random assignment* (the 5th through 10th quarters, Q5-Q10), as measured in administrative data.[46] This choice of

---

[41] The evaluation also estimates the impact of *receiving* the RTW program, the "treatment-on-the-treated" (TOT) impact estimate, for the confirmatory and secondary outcomes; see Appendix Section C.5 of the *Final Appendix*.

[42] Baseline data for the evaluation were collected in the Baseline Information Form (BIF); see Section 2.2.2 for more detail on the BIF and Section E of the *Technical Appendix for the Interim Impact Study* (Herr, Klerman, Martinson, and Copson 2022) for the definitions of baseline measures. In order to inherit the benefits of random assignment, subgroup impact estimates must compare all program group members to all control group members who meet the given subgroup criteria (e.g., younger than age 49), and subgroups must be defined on characteristics as of baseline.

[43] As discussed in Section 2.2.1, this study uses administrative data on quarterly earnings, with the quarter of random assignment defined as "quarter 0" (Q0). As discussed in the *Interim Impact Report*, because the administrative earnings data cannot be linked to the data collected in the 18-month follow-up survey, that report uses a different definition of the *employment status* subgroup for those outcomes measured from the survey.

[44] The evaluation pre-specified the first three subgroup categories before analysis began. The fourth (*gender*) was added on guidance from the evaluation's Technical Working Group.

[45] See Appendix Section A.4 of the *Final Appendix* for more detail on the classification of outcomes, and Appendix Section A.5 for definitions of all outcomes included in this report. The RTW Evaluation estimates impacts for a large number of outcomes, which increases the potential for at least one false positive even when the given RTW program has no true impact. As discussed in Appendix Section A.4, the evaluation addresses this "multiple comparisons" problem by pre-specifying a single confirmatory outcome by which the impact of the program is to be measured.

[46] All outcomes for this report are measured in administrative data in the National Directory of New Hires (NDNH); see Section 2.2.1 for more detail on the NDNH and Appendix Section A.5 of the *Final Appendix* for detailed definitions of outcomes.

confirmatory outcome reflects the evaluation's focus on whether the RTW grants increased earnings of unemployed and underemployed workers.[47]

This report pre-specified *any employment from 1 year to 2.5 years after random assignment* as its single **secondary outcome**, an additional important indicator of program success. All other outcomes discussed in Chapter 3 are **exploratory**, including the results of the subgroup analysis. Impact estimates for exploratory outcomes can be useful for interpreting estimates for the confirmatory and secondary outcomes.

2.1.4 Study Samples

The study estimates separate program-specific impacts for the four RTW programs included in the evaluation. The grantee-specific study samples for the RTW Evaluation include individuals who applied to each program and agreed to participate in the evaluation starting in Summer 2015 and ending between December 2017 and August 2018 (Exhibit 2-1).[48] The study also reports longer-term impacts for a subset of sample members who were randomly assigned between Summer 2015 and March 2017 (the **early cohort**). For each grantee, Exhibit 2-1 reports the size of the full sample and the early cohort.[49]

[47] The confirmatory outcome excludes earnings in the first year after program application because it might be expected that participants in an RTW program would work less and therefore have lower earnings while they attend program activities.

[48] Although both AAWDC and JVS ended random assignment in March 2018, the follow up period for AAWDC's MTC program is one quarter shorter than for the JVS programs (for both the full sample and early cohort) because Maryland and Virginia submitted their quarterly data to the NDNH one quarter later than the other states included in the analysis. For MTC the evaluation has data through the third quarter of 2021; for the other three programs the evaluation has data through the fourth quarter of 2021.

[49] The full sample includes all study members who applied to the given RTW program and were randomly assigned (excepting those who subsequently withdrew from the evaluation). Among program group members this includes both those who did and did not participate in the RTW program. The early cohort likewise includes all study members who applied and were randomly assigned by March 31, 2017. See the *Technical Appendix for the Interim Impact Study* (Herr, Klerman, Martinson, and Copson 2022) for the counts of study members who withdrew from the evaluation. The sample sizes reported in the exhibits in Chapter 3 are somewhat smaller because of missing data in the NDNH (see Appendix A.3 of the *Final Appendix* for more detail).

Exhibit 2-1: Grantee-Specific Study Enrollment and Follow-up Period, Full Sample and Early Cohort

Grantee (Program)	Random Assignment Period	Full Sample Size			Early Cohort Sample Size (randomly assigned by 3/31/17)	Length of Follow-up Period			
						Full Sample		Early Cohort	
		Program Group	Control Group	Total	Total	Years	Qtrs	Years	Qtrs
AAWDC (MTC)	Aug 2015–Mar 2018	540	489	1,029[a]	553	3.5	14	4.5	18
JVS (2 programs)	Aug 2015–Mar 2018	502	491	993	479	3.75	15	4.75	19
RochesterWorks! (FLH)	Aug 2015–Aug 2018	307	303	610	361	3.25	13	4.75	19
Worksystems (Reboot NW)	Jul 2015–Dec 2017	493	487	980	683	4.00	16	4.75	19

KEY: Qtrs=quarters. For full grantee and program names, see Exhibit 1-1.
SOURCE: Developed by Abt Associates based on staff reports and RTW grantee program materials.
[a] AAWDC randomly assigned enrollees at multiple intake locations. Because the random assignment ratio at some of the smaller intake locations was 2:1 (two applicants randomized into the program group for every one applicant randomized into the control group), the study sample includes slightly more members in the program group than the control group.
NOTE: Length of follow-up period is the number of years (or quarters) for which there is data for every member of the full sample or early cohort.

2.1.5 COVID Effects

As noted in Chapter 1, COVID-19 emerged during the follow-up period for this report and dramatically disrupted the labor market (Hershbein and Holzer 2021). Thus, some of the data used in this analysis reflect earnings and employment that occurred during the quarters following that emergence in March 2020. However, because for most sample members COVID emerged *after* the 10th quarter after random assignment (Q10), and therefore does not affect their confirmatory or secondary outcome, the bulk of the analysis for this report combines data across the entire follow-up period.[50] Appendix D of the *Final Appendix* compares the impact of the grantees' RTW programs before versus during the COVID-19 pandemic.

2.1.6 Results Reported

The first four sections of Chapter 3 report the estimated impacts of the four RTW programs separately on long-term earnings and employment (through at least 3.25 years after random assignment). Section 3.5 then reports estimates that pool the samples across the four grantees to estimate the average impact across the four programs.[51] In addition, Chapter 3 reports statistical tests of the probability that the observed impacts could be due to chance rather than to the program services, Sections 3.1 through 3.4 considering each grantee program separately and Section 3.5 considering them combined.

The box **How to Read this Report's Impact Tables** at the end of this chapter briefly explains how to read and interpret the impact tables in Chapter 3. Because the reported impacts are estimated with

[50] Across the four grantees, the key follow-up period through 10 quarters after random assignment (Q5-Q10) includes this post-COVID period for between 8 and 24 percent of the grantee study samples.

[51] See Appendix Section C.6 of the *Final Appendix* for additional results considering the four grantee programs together, including multiple-comparison-adjusted tests using a Bonferroni-Holm correction.

uncertainty, Chapter 3 also reports a range around the statistical estimate for the program-specific confirmatory outcome. That range includes plausible values for the impact (the upper and lower bounds of the 90 percent confidence interval).

2.1.7 Statistical Significance

In general, this report discusses impacts only when the statistical tests imply that the impacts are not due to chance (formally $p < .05$). Results where chance is moderately likely (formally $.05 < p < .10$) are described as "weak evidence." Results where chance is quite likely (formally $p > .10$) are described as "no detected impact," "no clear evidence of impact," or simply "no impact." Exceptions to each of these general rules are explicitly noted.

Similarly, in general, this report discusses subgroup results only when statistical tests suggest that the difference in impacts between groups in a given subgroup analysis (e.g., men versus women) is not due to chance (again, formally $p < .05$) and the results show clear evidence of *positive* impacts for at least one of the two groups. Given that Chapter 3 considers a large number of subgroup results and that all of those results are exploratory, the reader is cautioned against drawing strong conclusions from them.

2.1.8 Sample Size Limitations

Sample sizes determine the magnitude of the impact that can be detected: the larger the sample, the smaller the impact that can be reliably detected at a given level of statistical significance (Bloom 2008).

To generate the most precise possible grantee-specific impact estimates, the evaluation sought to maximize the sample size by: (1) selecting larger programs that were also likely to be able to support an equal-sized control group, and (2) conducting random assignment over most of the program enrollment period.[52] Each of the selected grantees were to randomly assign approximately 1,000 study members—500 program group members and 500 control group members. With samples of that size, conventional power calculations suggest that the evaluation could reliably detect a program-specific earnings impact of $1,400 per quarter.[53]

As shown in the "Full Sample Size" columns of Exhibit 2-1 above, three of the grantees substantially met this goal; only RochesterWorks! did not. For the RochesterWorks! FLH program, all other things being equal, its smaller samples imply that the study can detect impacts only slightly larger than those for the other programs.

The study's sample sizes of approximately 1,000 or less imply that some substantively important impacts might not be detected. These concerns are particularly salient for impacts on earnings, because they require larger samples. Furthermore, the study's sample sizes are sufficient to detect only large differential impacts on earnings between groups in the subgroup analysis. Such sample size concerns also

---

[52] The random assignment period could not extend through the full four-year grant period because sample members needed sufficient time to receive services, and to allow at least 18 months between random assignment and before the fielding of the follow-up survey.

[53] While the *Interim Impact Report* notes that a sample of 1,000 sample members was estimated to be sufficient to detect an impact on quarterly earnings of approximately $1,000, that calculation reflects the level of impact that could be detected if present (the ends of a 95 percent confidence interval). The value of $1,400 reported here instead reflects the impact level that could be reliably detected with a sample of this size (minimum detectable impact, alpha=.05, 1-beta=80%).

apply to subgroup analyses of employment. Thus, even if present, substantively important differential impacts might plausibly go undetected.

2.2 Data Sources

Analyses for this *Final Impact Report* use data from administrative sources and a survey administered at baseline.

2.2.1 Earnings and Employment

All results presented in Chapter 3 analyze data collected in the **National Directory of New Hires (NDNH).** Compiled by the Office of Child Support Enforcement at the U.S. Department of Health and Human Services, the NDNH is a national database of quarterly earnings. The NDNH compiles data on earnings associated with most types of employment; however, jobs that do not provide a W-2 are not included. Such jobs include contract work, self-employment, and work paid "under-the-table."[54]

Using the quarterly earnings data, the study infers quarterly employment based on observing positive earnings in the given quarter. This report uses post–random assignment NDNH data as outcomes, and pre–random assignment NDNH data as controls in statistical analyses to improve the precision of impact estimates. (For more detail on the NDNH data, see Appendix Section A.3 of the *Final Appendix*.)

The results reported in Chapter 3 use quarterly earnings data from the fourth quarter of 2013 (seven quarters before random assignment for the earliest sample members) through the third quarter of 2021 for the MTC program, and through the fourth quarter of 2021 for all other programs (the latest data available at the time of this report).[55] More quarters of NDNH data are therefore available for those sample members who were randomly assigned earlier in the evaluation. As shown in the "Early Cohort" columns of Exhibit 2-1 above, the study reports impacts on earnings and employment through 4.5 years (18 quarters) for MTC's early cohort, and through 4.75 years (19 quarters) for members of the early cohort for the other three programs. (The 18th or 19th quarter is the last quarter for which the study has complete data for all members of the given early cohort.)

Furthermore, because random assignment ended at different times across the four RTW grantees (and because the evaluation had one fewer quarter of data for MTC), the length of follow-up available for the four full samples varies across programs, from 3.25 years for FLH to 4 years for Reboot NW, as shown in the "Full Sample" columns of Exhibit 2-1. The evaluation reports results through the last quarter for which NDNH data are available for all study members randomly assigned for the given grantee program.

2.2.2 Baseline Information

This report also uses information from the evaluation's **Baseline Information Form (BIF)**. Immediately before random assignment, applicants to an RTW grantee program who agreed to participate in the evaluation completed the study's BIF, which captured information on their demographic and

---

[54] The IT sector, a target industry for all four RTW programs included in the evaluation, is one of the most common users of independent contract workers ("Research Reveals the Top 10 Industries for Independent Workers," https://blog.talentwave.com/research-reveals-the-top-10-industries-for-independent-workers). Because contracting work is fairly common in the IT sector, the NDNH may underestimate earnings for those working in that sector.

[55] As noted above, because Maryland and Virginia submitted their quarterly data to the NDNH one quarter later than the other states included in the analysis, the evaluation only has data through the third quarter of 2021 for MTC.

socioeconomic characteristics, employment and education history, receipt of public benefits, and opinions about work. The evaluation uses information from the BIF to describe the study sample for each grantee, define subgroups, and as controls in statistical analyses.[56]

How to Read this Report's Impact Tables

Tables presenting impacts in Chapter 3 use the format shown below. The far-left column (**Outcome**) identifies the outcomes whose findings appear in the rows, as well as the units of those outcome (e.g., percent, dollars). To the right are the following data columns:

- **Program Group Mean** is the mean outcome for the program group, adjusted to correct for random baseline differences between the program group and control group.
- **Control Group Mean** is the mean outcome for the control group.
- **Impact (Difference)** is the difference between the program group and control group means—that is, the difference between the outcome for those offered the given RTW program, compared to the control group outcome representing what the program group's outcome would have been absent the offer of the program.
- **Standard Error** is a measure of uncertainty in the impact. It reflects chance variation due to randomization and measurement error in the outcome.
- **Relative Impact (%)** is the impact of the program as a percentage change from the control group mean. Relative impact offers a sense of how "big" or "small" the impact of the intervention is relative to the control group mean.

Outcome	Program Group Mean	Control Group Mean	Impact (Difference)	Standard Error	Relative Impact (%)
Average quarterly earnings in Q5-Q10 ($)	***10,183***	***9,680***	***503***	***672***	***5***
Average quarterly earnings in Q5-Q10, if any employment in Q5-Q10 ($)	*12,823*	*12,138*	*685*	*754*	*6*
Any employment in Q5-Q10 (%)	**80.5**	**79.7**	**0.8**	**2.4**	**1**
Any employment in Q1-Q10 (%)	87.9	84.0	3.9*	2.1	5

SOURCE AND FOLLOW-UP PERIOD: National Directory of New Hires, through 10 quarters after random assignment.
NOTE: ***Confirmatory outcome is indicated in bold italics;* secondary outcome is indicated in bold**; exploratory outcomes are neither bolded nor italicized. *Unbolded outcome in italics* applies to the subset of sample members who were ever employed during Q5 through Q10 and is thus non-experimental. All other outcomes apply to the full sample and impact estimates are experimental. Reported impact may not equal the difference between the reported program and control group means because of rounding. "Relative impact" represents impacts as a percentage of the corresponding control group mean (i.e., 100 x [impact / control group mean]). The full sample of 965 includes 491 program group and 474 control group members. Appendix tables report item-specific sample sizes.
Statistical significance based on two-sided hypothesis tests; significance levels are as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

[56] See Appendix E of the *Technical Appendix for the Interim Impact Study* (Herr, Klerman, Martinson, and Copson 2022) for detail on the derived baseline measures, including how subgroup and control variables are built.

In this example, focusing on the first line of the table above:

- **Impact (Col 3).** On average, the program group earned $10,183 (see Col 1) per quarter from 1 year to 2.5 years after random assignment (the 5th through 10th quarters, Q5-Q10); by comparison, the control group earned on average $9,680 (see Col 2). So, the estimated impact of this RTW program on average quarterly earnings from 1 year to 2.5 years after random assignment (Q5-Q10) is $503, which is not statistically different from $0 (as indicated by a lack of stars next to that value). Formally, the null hypothesis of no RTW program impact on this outcome is not rejected.
- **Standard Error (Col 4).** The standard error on this reported $503 impact is $672. The standard error can be used to construct a *confidence interval*—a range around the statistical estimate that includes plausible values for the impact. Chapter 3 reports the upper and lower bounds of the 90 percent confidence interval, which for this impact estimate runs from an impact of −$602 to $1,608 (which includes $0).
- **Relative Impact (Col 5).** The relative impact is a 5 percent increase, calculated as 100 x [$503 / $9,680].

Classification of Outcomes

Exhibits presenting impacts indicate the confirmatory outcome using bolded and italicized text, and the secondary outcome using bolded text. This special formatting signals that these outcomes were pre-specified as focal. In the shown example, that "***Average quarterly earnings in Q5-Q10 ($)***" is bolded and italicized indicates it is the confirmatory outcome. Likewise, that "**Any employment in Q5-Q10 (%)**" is bolded but not italicized indicates it is the secondary outcome. That "Any employment in Q1-Q10 (%)" is neither bolded nor italicized indicates that it is an exploratory outcome.

Conditional Outcomes

For some outcomes, the exhibits report both an overall outcome and that outcome conditional on some other outcome. Impacts on conditional outcomes are italicized and the outcome name is indented in the exhibits. In the shown example, "Average quarterly earnings in Q5-Q10 ($)" reports an overall outcome inclusive of both study members who had no earnings in Q5-Q10 (indicating they were never employed in that period) and study members who were ever employed in Q5-Q10. The outcome "Average quarterly earnings in Q5-Q10, if any employment in Q5-Q10 ($)" is conditional. Analyses of conditional outcomes, which are non-experimental because they apply only to a subset of sample members and are thus not supported by the random assignment design, should be interpreted with caution.

Sample Size

The total numbers of sample members (program, control) for the given data source are reported in the exhibit's notes. Corresponding exhibits in the accompanying *Technical Appendix* report sample sizes for each outcome.

3 Impacts on Earnings and Employment

This chapter reports the long-term impacts of the RTW programs on earnings and employment. The discussion focuses on program-specific impacts for the evaluation's pre-specified confirmatory and secondary outcomes—*average quarterly earnings* and *any employment,* respectively—over the 18-month period from 1 year to 2.5 years after random assignment (Q5-Q10). For all four programs, the chapter also presents results for their **full samples** for a longer follow-up period of 3 to 4 years after random assignment and for their **early cohorts** through 4.5 to 4.75 years.[57] Finally, the chapter examines the results of the subgroup analysis.

The first four sections of this chapter present separate program-specific results for the four RTW grantee programs. Each of these sections has the same structure: impacts for the grantee's full sample, impacts for the early cohort, and differential impacts for subgroups (for the confirmatory and secondary outcomes only).[58] Finally, Section 3.5 presents pooled estimates of the average impact of RTW on the study's confirmatory and secondary outcomes across all four programs.

3.1 Results for Maryland Tech Connection

This section presents results for Anne Arundel Workforce Development Corporation's MTC program. Appendix Section C.1 in the *Final Appendix* presents additional results.

3.1.1 Impacts for the Full Sample

Exhibit 3-1 below reports MTC's impacts on key measures of earnings and employment for its full sample. The measures include average quarterly earnings from 1 year to 2.5 years after random assignment (Q5-Q10; the confirmatory outcome) and any employment in this same timeframe (the secondary outcome). The exhibit also presents impacts for a range of exploratory earnings and employment outcomes.

[57] As noted above, this chapter presents results for the number of quarters for which the evaluation has complete NDNH data for all members of the given study sample. See the "Length of Follow-up Period" panel of Exhibit 2-1 for the length of follow up by sample (full sample versus early cohort) and by program. The length of follow-up for the full samples varies across the four programs for two reasons: (1) because the grantees completed random assignment at different times, and (2) because the evaluation has one fewer quarter of data for MTC than for the other three programs. (The evaluation has data through only the third quarter of 2021 instead of the fourth quarter of 2021 for MTC because Maryland and Virginia had not submitted data for the fourth quarter of 2021 as of May 24, 2022, when the last data for the evaluation was pulled.) The evaluation therefore has complete data for the full samples through 3.5 years (14 quarters) after random assignment for MTC, through 3.75 years (15 quarters) for the JVS programs, through 3.25 years (13 quarters) for FLH; and through 4 years (16 quarters) for Reboot NW. The length of follow-up for the MTC early cohort is shorter than for the early cohorts for the other three programs (through 18 quarters instead of 19 quarters) because of the missing data for the fourth quarter of 2021.

[58] This chapter does not discuss the results of subgroup analyses beyond noting lack of a statistically significant difference—unless the estimates suggest a "differential" impact, meaning impacts that are statistically significantly different for the two groups within a given subgroup analysis (e.g., women versus men).

Exhibit 3-1: Impacts on Earnings and Employment for the Full Sample, MTC

Outcome	Program Group Mean	Control Group Mean	Impact (Difference)	Standard Error	Relative Impact (%)
Earnings					
Average quarterly earnings in Q5-Q10 ($)	***8,210***	***9,275***	***−1,065****	***540***	***−11***
Average quarterly earnings in Q5-Q10, if any employment in Q5-Q10 ($)	*10,015*	*11,326*	*−1,311**	*586*	*−12*
Cumulative earnings in Q5-Q10 ($)	49,259	55,652	−6,393**	3,239	−11
Cumulative earnings in Q1-Q10 ($)	69,030	78,770	−9,740**	4,506	−12
Average quarterly earnings in Q9-Q14 ($)	9,854	10,066	−212	633	−2
Employment					
Any employment in Q5-Q10 (%)	**83.1**	**81.9**	**1.2**	**2.3**	**1**
Number of quarters employed in Q5-Q10	4.1	4.1	0.0	0.1	0
Percentage of quarters employed in Q5-Q10 (%)	69.1	69.0	0.1	2.4	0
Longest job tenure in Q5-Q10 (quarters)	3.6	3.7	−0.1	0.1	−3
Number of quarters employed in Q9-Q14	4.2	4.0	0.1	0.1	3

KEY: Q=quarter.
SOURCE AND FOLLOW-UP PERIOD: National Directory of New Hires; through 14 quarters after random assignment.
NOTES: ***Confirmatory outcome is indicated in bold italics***; **secondary outcome is indicated in bold**; exploratory outcomes are neither bolded nor italicized. *Unbolded outcome in italics* applies to the subset of sample members who were ever employed during Q5 through Q10 and is thus non-experimental. All other outcomes apply to the full sample and impact estimates are experimental. Reported impact may not equal the difference between the reported program and control group means because of rounding. "Relative impact" represents impacts as a percentage of the corresponding control group mean (i.e., 100 x [impact / control group mean]). The full sample of 1,022 includes 536 program group and 486 control group members. Appendix tables report item-specific sample sizes.
Statistical significance based on two-sided hypothesis tests; significance levels are as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

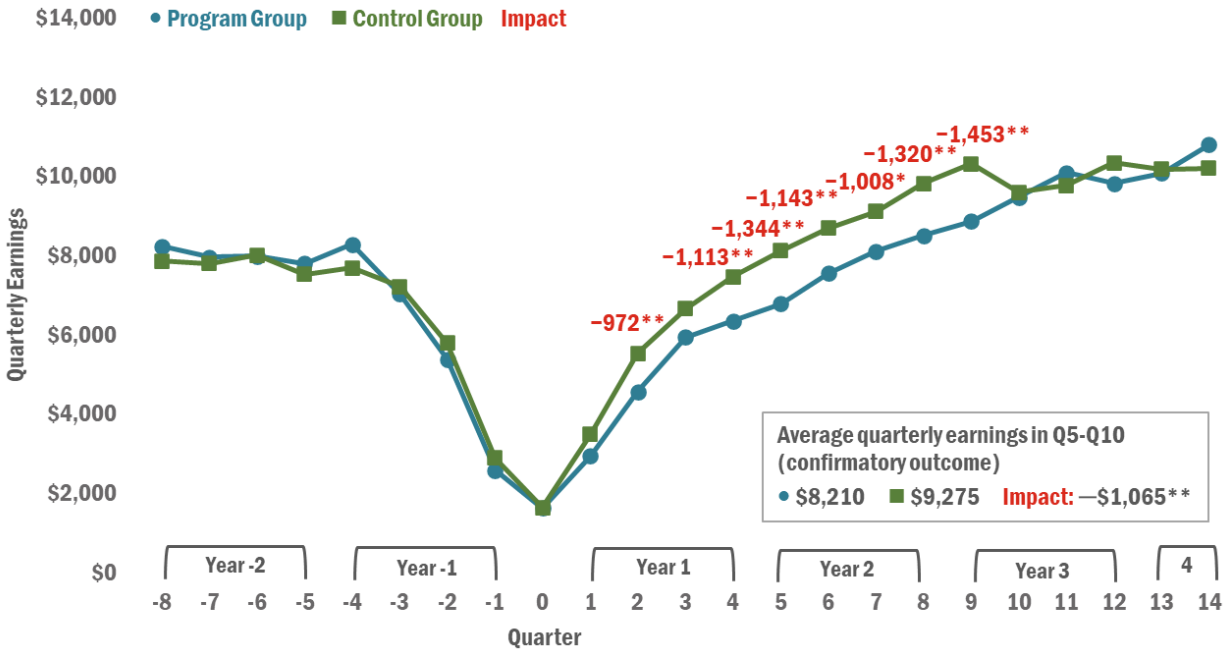
- **There is evidence that MTC led to a *decrease* in average quarterly earnings from 1 year to 2.5 years after random assignment (the confirmatory outcome).**

As shown in Exhibit 3-1 above, there is evidence that the offer of MTC led to a *decrease* in earnings during the period from 1 year to 2.5 years after random assignment (Q5-Q10). Average quarterly earnings over this period in the program group were $8,210, a level that is 11 percent *lower* than the average quarterly earnings in the control group of $9,275 (including $0 earnings for those who did not work). As noted in Section 2.1.6, this impact on the confirmatory outcome is estimated with uncertainty. Incorporating that uncertainty into a range of plausible impacts implies that the true impact of MTC on average quarterly earnings during this period could be as large as −$1,953 or as small as −$177 (not shown).[59]

Results are similar for the longer follow-up period of 3.5 years after random assignment. Exhibit 3-2 plots quarterly earnings from 2 years (8 quarters) before random assignment through 3.5 years (14 quarters) after random assignment for the full sample—separately for the program group (blue line) and control group (green line). Impacts on earnings that are statistically different from zero are indicated in red text.

[59] As discussed in Section 2.1.6 in Chapter 2, these values are the endpoints for a 90 percent confidence interval for the impact on average quarterly earnings in Q5 through Q10.

Exhibit 3-2: Quarterly Earnings Levels and Impacts for the Full Sample, MTC



SOURCE AND FOLLOW-UP PERIOD: National Directory of New Hires; through 14 quarters after random assignment.
NOTES: On the x-axis, negative numbers indicate quarters before random assignment; 0 indicates the quarter that random assignment occurred. The evaluation has data for the full sample through seven quarters before random assignment and data for 94 percent of the full sample through the eighth quarter before random assignment. Impacts that are significantly different from zero are reported in red text. Reported impact may not equal the difference between the reported program and control group means because of rounding. The full sample of 1,022 includes 536 program group and 486 control group members.
Statistical significance based on two-sided hypothesis tests; significance levels are as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

Through 2.25 years after random assignment (Q9), MTC had a negative impact on earnings in most quarters.[60] From 2.5 through 3.5 years after random assignment (Q10-Q14), in no quarter did MTC have a detected impact on earnings. The negative impacts on earnings occurred in part while program group members were more likely than the control group to be participating in program activities, a period that extended through 15 months (1.25 years) after random assignment (see the *Interim Impact Report* for more detail on the timing of impacts on program participation). Notably, although the negative impacts of the MTC program did not continue past Q9, no positive impacts were detected beyond that quarter.

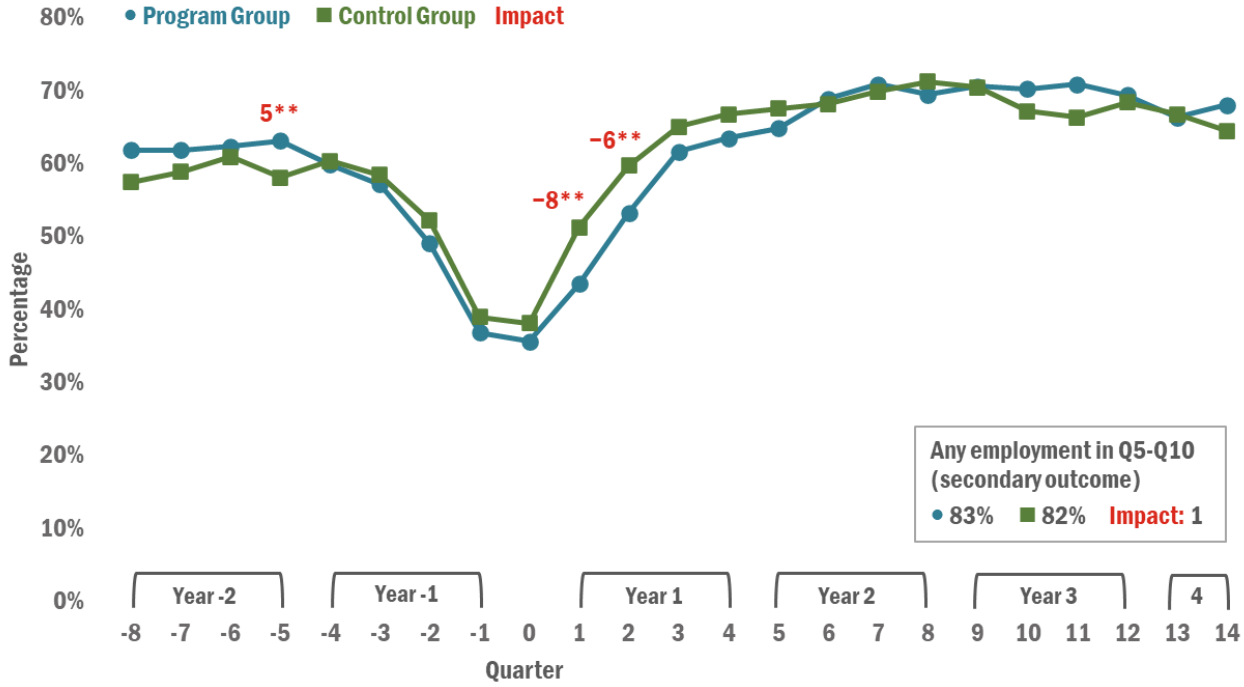
- **MTC had no detected impact on any employment from 1 year to 2.5 years after random assignment (the secondary outcome).**

No impact is detected on the percentage with any employment between 1 year and 2.5 years after random assignment (Q5-Q10; see Exhibit 3-1 above). In both the program and control group, about 82 percent of study members were employed at some point during this period.

[60] The negative impact is statistically significant at the 5 percent level in Q2, Q4 through Q6, and Q8 through Q9. For Q7 the negative impact is only statistically significant at the 10 percent level (p = .086; see Appendix Exhibit C.1-3). For the remaining two quarters (Q1 and Q3), the impact estimate is not significantly different from zero.

Results are similar for the longer follow-up period (Exhibit 3-3). Through 3.5 years after random assignment (Q14), MTC had no detected positive impact on employment in any quarter.

Exhibit 3-3: Quarterly Employment Levels and Impacts for the Full Sample, MTC



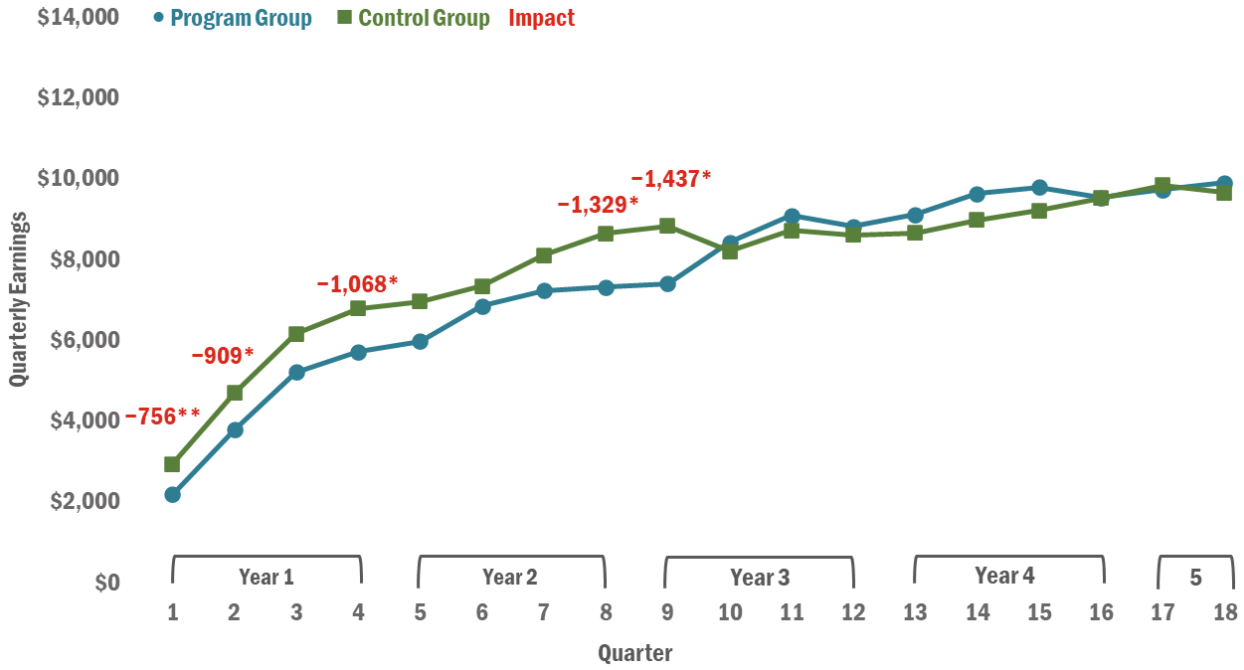
SOURCE AND FOLLOW-UP PERIOD: National Directory of New Hires; through 14 quarters after random assignment.
NOTES: On the x-axis, negative numbers indicate quarters before random assignment; 0 indicates the quarter that random assignment occurred. The evaluation has data for the full sample through seven quarters before random assignment, and data for 94 percent of the full sample through the eighth quarter before random assignment. Impacts that are significantly different from zero are reported in red text. Reported impact may not equal the difference between the reported program and control group means because of rounding. The full sample of 1,022 includes 536 program group and 486 control group members.
Statistical significance based on two-sided hypothesis tests; significance levels are as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

That employment rates for the program and control groups are similar indicates that the negative earnings impacts discussed above are driven by employed members of the program group earning less than employed members of the control group. Among study members who were ever employed between 1 year and 2.5 years after random assignment (Q5-Q10; a non-experimental comparison), quarterly earnings were 12 percent lower for the program group than for the control group: $10,015 for the program group compared to $11,326 for the control group (see Exhibit 3-1 above). Employed members of the program group may have worked in relatively lower paying jobs, or for fewer hours.

3.1.2 Impacts for the Early Cohort

Exhibit 3-4 plots earnings for the early cohort through 4.5 years after random assignment (18 quarters), providing an additional year of follow-up beyond that shown in Exhibit 3-2 above for the full sample. MTC's early cohort includes 54 percent of its full sample.

Exhibit 3-4: Quarterly Earnings Levels and Impacts for the Early Cohort, MTC



SOURCE AND FOLLOW-UP PERIOD: National Directory of New Hires; through 18 quarters after random assignment.
NOTES: Impacts that are significantly different from zero are reported in red text. Reported impact may not equal the difference between the reported program and control group means because of rounding. The early cohort includes 549 sample members (290 program group members and 259 control group members).
Statistical significance based on two-sided hypothesis tests; significance levels are as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

- **For the early cohort, even in the longer term, MTC had no detected positive impact on earnings in any quarter through 4.5 years after random assignment.**

As with the full sample, through 4.5 years after random assignment (Q18), in no quarter is a positive impact on earnings detected for the early cohort. Instead, as in the full sample (see Exhibit 3-2 above), there is weak evidence[61] that the offer of MTC led to a *decrease* in earnings through the first 2.25 years (Q9).[62] Thereafter, no impact, either negative or positive, is detected (Q10-Q18). To the extent that the results for the early cohort provide insight for the longer-term impacts for the full sample, these results suggest the full sample is unlikely to see positive earnings impacts from MTC.

[61] As noted in Section 2.1.7 in Chapter 2, the report describes evidence as "weak" when $.05 < p < .10$.

[62] The negative impacts on earnings in the first nine quarters are statistically significant at the 5 percent level in Q1, and at the 10 percent level in Q2 ($p = .082$), Q4 ($p = .097$), Q8 ($p = .079$), and Q9 ($p = .056$); see Appendix Exhibit C.1-8. This evidence is not as strong as in the full sample, but because the early cohort sample is smaller, evidence would be expected to be weaker.

3.1.3 Differential Impacts for Subgroups

This section presents results of the subgroup analysis for the confirmatory and secondary outcomes, comparing impacts by baseline education, age, employment status, and gender. See Appendix Exhibit C.1-10 for all results discussed in this section.[63]

- **For no group is a positive impact on earnings detected.**

As discussed above, for the full sample, the study detects a negative impact on average quarterly earnings from 1 year to 2.5 years after random assignment (Q5-Q10). Considered separately by education, this negative earnings impact is concentrated among study members with a bachelor's degree or more (−$1,817); the study does not detect an impact for those without a bachelor's degree (the estimate is positive but not statistically different from zero). Thus, like the JVS programs and FLH (discussed later in this chapter), the impact of MTC is more favorable for those with less education at baseline. No differential impacts are detected by baseline age, employment, or gender.

- **With one exception, for no group is a positive impact on employment detected. The exception is a positive impact for those with less than a bachelor's degree.**

Although no impacts on employment from 1 to 2.5 years after random assignment (Q5-Q10) are detected for the full sample, there is evidence of a differential impact on employment by education. Potentially explaining the previous finding, among study members *without* a bachelor's degree, the program group experienced an *increase* in employment of 9 percentage points compared to the control group. However, among those *with* a bachelor's degree or more, there is no evidence of an impact on employment in either direction.

3.2 Results for the JVS Programs

This section presents results for Jewish Vocational Service's (JVS) RTW programs, Skills to Work in Technology and Job Search Accelerator. Appendix Section C.2 in the *Final Appendix* presents additional results.

3.2.1 Impacts for the Full Sample

Exhibit 3-5 reports the JVS programs' impacts on key measures of earnings and employment for the full sample, including the confirmatory and secondary outcomes.

[63] Appendix Exhibit C.1-10 also reports differential impacts for average quarterly earnings from Q9 through Q14; there are no differential impacts by subgroups on this outcome.

Exhibit 3-5: Impacts on Earnings and Employment for the Full Sample, JVS Programs

Outcome	Program Group Mean	Control Group Mean	Impact (Difference)	Standard Error	Relative Impact (%)
Earnings					
Average quarterly earnings in Q5-Q10 ($)	***10,183***	***9,680***	***503***	***672***	***5***
Average quarterly earnings in Q5-Q10, if any employment in Q5-Q10 ($)	*12,823*	*12,138*	*685*	*754*	*6*
Cumulative earnings in Q5-Q10 ($)	61,096	58,077	3,019	4,034	5
Cumulative earnings in Q1-Q10 ($)	83,385	83,939	−554	5,497	−1
Average quarterly earnings in Q9-Q15 ($)	11,494	10,853	641	788	6
Employment					
Any employment in Q5-Q10 (%)	**80.5**	**79.7**	**0.8**	**2.4**	**1**
Number of quarters employed in Q5-Q10	3.9	4.0	−0.1	0.1	−1
Percentage of quarters employed in Q5-Q10 (%)	65.1	66.0	−0.9	2.5	−1
Longest job tenure in Q5-Q10 (quarters)	3.4	3.5	−0.1	0.1	−3
Number of quarters employed in Q9-Q15	4.2	4.4	−0.1	0.2	−3

KEY: Q=quarter.

SOURCE AND FOLLOW-UP PERIOD: National Directory of New Hires; through 15 quarters after random assignment.

NOTES: ***Confirmatory outcome is indicated in bold italics***; **secondary outcome is indicated in bold**; exploratory outcomes are neither bolded nor italicized. *Unbolded outcome in italics* applies to the subset of sample members who were ever employed during Q5 through Q10 and is thus non-experimental. All other outcomes apply to the full sample and impact estimates are experimental. Reported impact may not equal the difference between the reported program and control group means because of rounding. "Relative impact" represents impacts as a percentage of the corresponding control group mean (i.e., 100 x [impact / control group mean]). The full sample of 965 includes 491 program group and 474 control group members. Appendix tables report item-specific sample sizes.

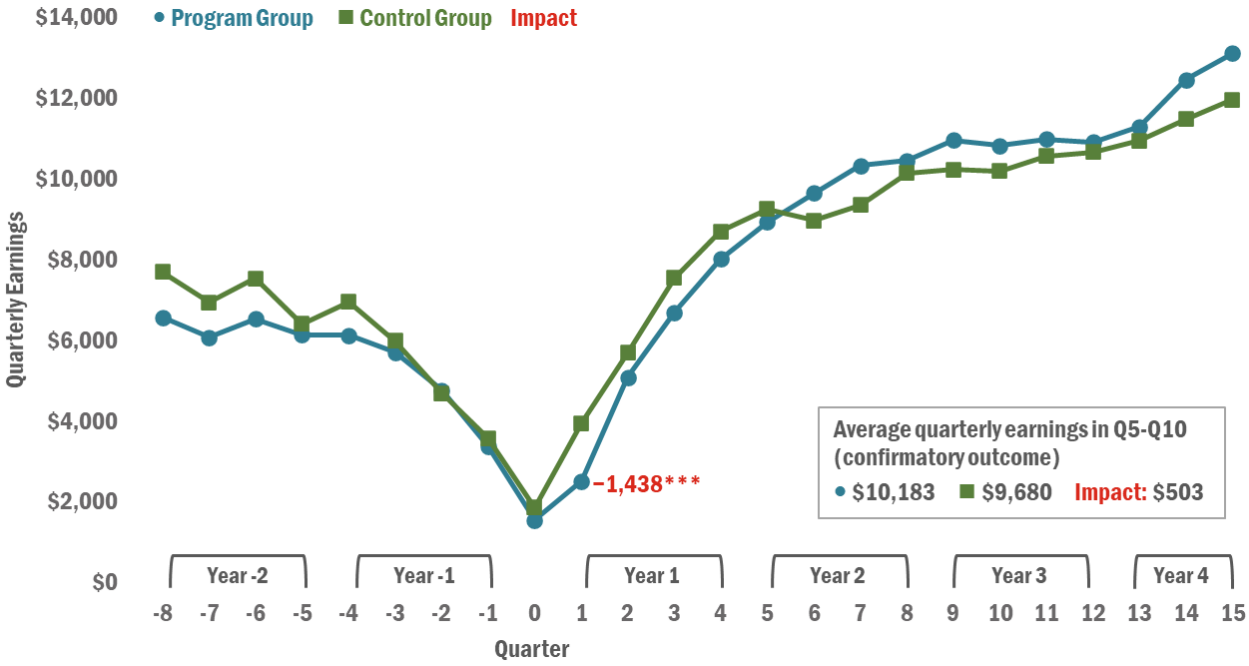
Statistical significance based on two-sided hypothesis tests; significance levels are as follows: *** = 1 percent; ** = 5 percent; * = 10 percent. The JVS programs had no detected impact on average quarterly earnings from 1 year to 2.5 years after random assignment (the confirmatory outcome).

As shown in Exhibit 3-5 above, the JVS programs had no detected impact on average quarterly earnings during the period from 1 year to 2.5 years after random assignment (Q5-Q10). Both the program and control group members earned on average approximately $10,000 per quarter (including $0 earnings for those who did not work). Allowing for uncertainty, the true impact of the JVS programs on average quarterly earnings in this period could be as high as $1,608 or as low as −$602 (not shown).[64]

Results are similar for the longer follow-up period (Exhibit 3-6). Through 3.75 years after random assignment (Q15), the JVS programs had no detected positive impact on earnings in any quarter.

[64] As discussed in Section 2.1.6 in Chapter 2, this impact on the confirmatory outcome is estimated with uncertainty. These values are the endpoints for a 90 percent confidence interval for the impact on average quarterly earnings in Q5 through Q10.

Exhibit 3-6: Quarterly Earnings Levels and Impacts for the Full Sample, JVS Programs



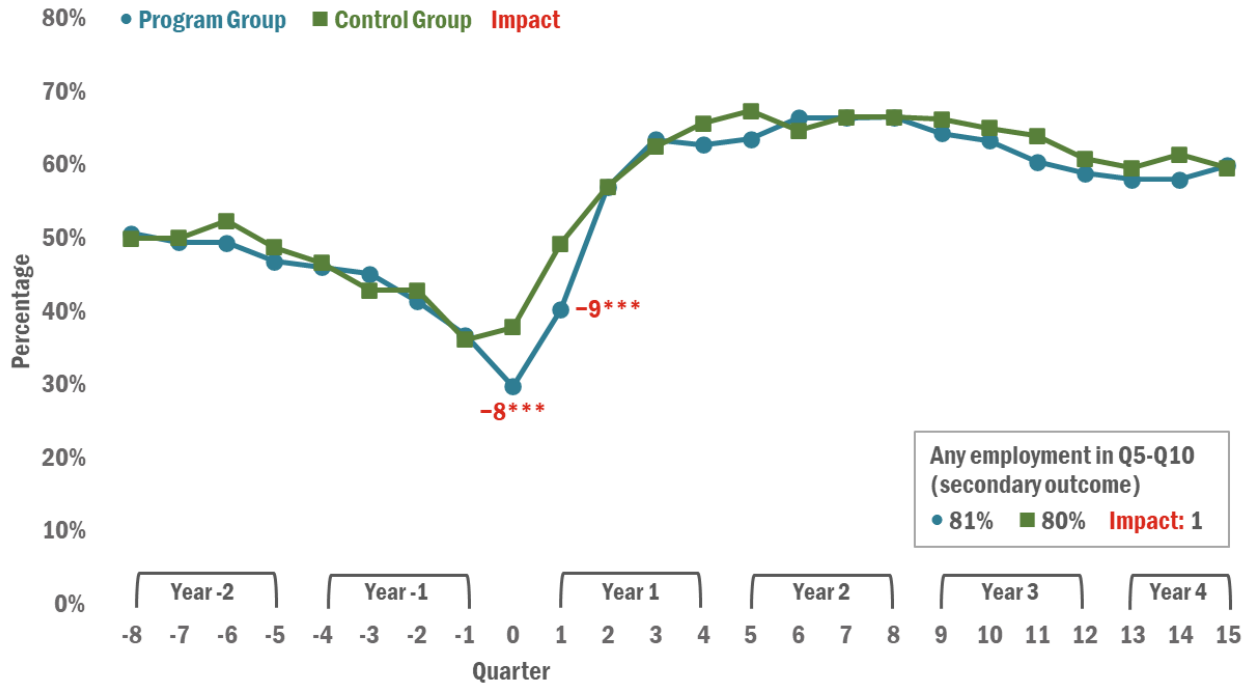
SOURCE AND FOLLOW-UP PERIOD: National Directory of New Hires; through 15 quarters after random assignment.
NOTES: On the x-axis, negative numbers indicate quarters before random assignment; 0 indicates the quarter that random assignment occurred. The evaluation has data for the full sample through seven quarters before random assignment, and data for 99 percent of the full sample through the eighth quarter before random assignment. Impacts that are significantly different from zero are reported in red text. Reported impact may not equal the difference between the reported program and control group means because of rounding. The full sample of 965 includes 491 program group and 474 control group members.
Statistical significance based on two-sided hypothesis tests; significance levels are as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

- **The JVS programs had no detected impact on any employment from 1 year to 2.5 years after random assignment (the secondary outcome).**

The JVS programs had no detected impact on the percentage with any employment between 1 year and 2.5 years after random assignment (Q5-Q10; see Exhibit 3-5 above). In both the program and control group, about 80 percent were employed at some point during this period.

Results are similar for the longer follow-up period (Exhibit 3-7). Through 3.75 years after random assignment (Q15), the JVS programs had no detected positive impact on employment in any quarter.

Exhibit 3-7: Quarterly Employment Levels and Impacts for the Full Sample, JVS Programs

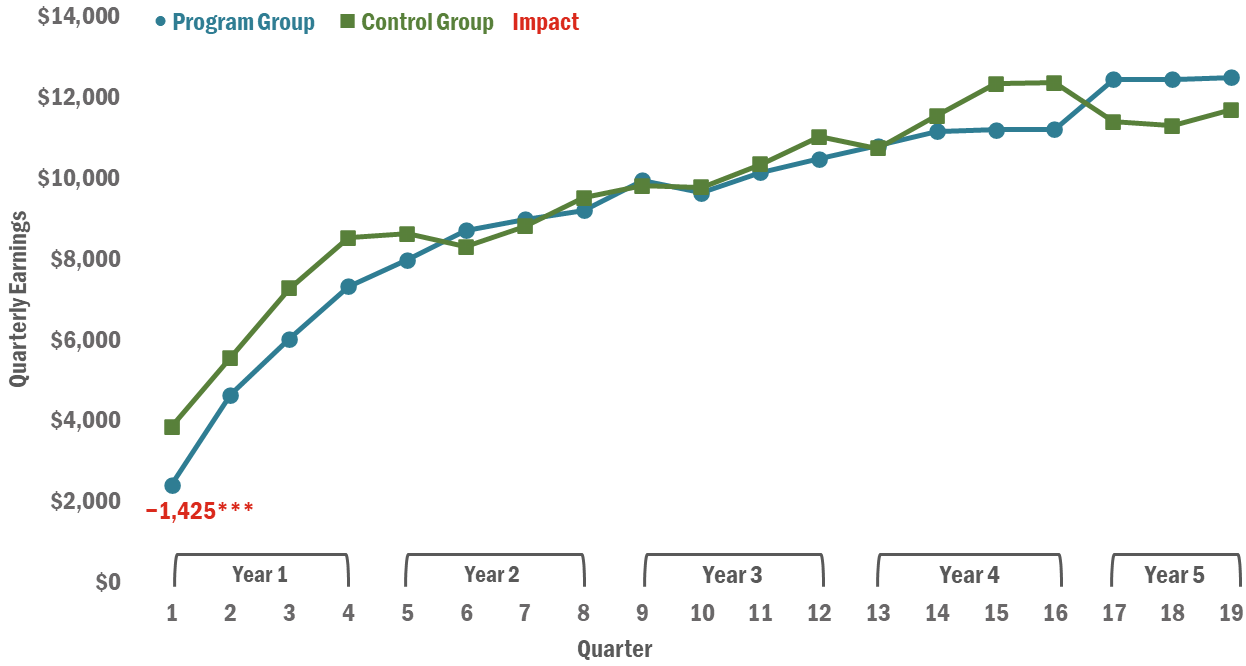


SOURCE AND FOLLOW-UP PERIOD: National Directory of New Hires; through 15 quarters after random assignment.
NOTES: On the x-axis, negative numbers indicate quarters before random assignment; 0 indicates the quarter that random assignment occurred. The evaluation has data for the full sample through seven quarters before random assignment, and data for 99 percent of the full sample through the eighth quarter before random assignment. Impacts that are significantly different from zero are reported in red text. Reported impact may not equal the difference between the reported program and control group means because of rounding. The full sample of 965 includes 491 program group and 474 control group members.
Statistical significance based on two-sided hypothesis tests; significance levels are as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

3.2.2 Impacts for the Early Cohort

Exhibit 3-8 plots earnings for the early cohort through 4.75 years after random assignment (19 quarters), providing an additional year of follow-up beyond that shown in Exhibit 3-6 above for the full sample. JVS's early cohort includes 48 percent of its full sample.

Exhibit 3-8: Quarterly Earnings Levels and Impacts for the Early Cohort, JVS Programs



SOURCE AND FOLLOW-UP PERIOD: National Directory of New Hires; through 19 quarters after random assignment.
NOTES: Impacts that are significantly different from zero are reported in red text. Reported impact may not equal the difference between the reported program and control group means because of rounding. The early cohort includes 468 sample members (237 program group members and 231 control group members).
Statistical significance based on two-sided hypothesis tests; significance levels are as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

- **For the early cohort, even in the longer term, the JVS programs had no detected positive impact on earnings in any quarter through 4.75 years after random assignment.**

Consistent with the pattern for the full sample (see Exhibit 3-6 above), after a negative impact on earnings in the first quarter, when more than 25 percent of the program group were participating in RTW services,[65] no impacts on earnings are detected through 4.75 years after random assignment (Q19).

3.2.3 Differential Impacts for Subgroups

This section presents results for the subgroup analysis of the confirmatory and secondary outcomes, comparing impacts by baseline education, age, employment status, and gender. See Appendix Exhibit C.2-10 for all results discussed in this section.[66]

[65] See Exhibit 4-5 in the *Interim Impact Report* (Klerman et al. 2022) for more detail on the pattern of program participation in the JVS programs.

[66] Appendix Exhibit C.2-10 also reports differential impacts for average quarterly earnings from Q9 through Q15; those results are similar to results for average quarterly earnings from Q5 through Q10.

- **For the JVS programs, there is weak evidence of larger impacts for less educated workers, younger workers, and women.**

For the education subgroup, there is a differential impact on earnings, but not on employment. The impact on average quarterly earnings from 1 year to 2.5 years after random assignment (Q5-Q10) is positive for study members without a bachelor's degree ($2,586), but no impact is detected for those with a bachelor's degree or more. Thus, as with MTC and FLH (see below), the impact is more favorable for those with less education at baseline.

For the age subgroup, differential impacts on both earnings and employment are detected. For earnings, there is weak evidence of a differential impact; a positive impact on average quarterly earnings for study members younger than age 49 ($1,490), but not for those age 49 or older.[67] In contrast, for employment, the differential impact is reversed: there is weak evidence of a positive impact on any employment during this period (Q5-Q10) for the older group (7 percentage points), but not for the younger group.[68] The reason for those opposite results is unclear.

Last, there is weak evidence of a differential impact by gender on earnings but not employment. For women, there is weak evidence of a positive impact on average quarterly earnings ($1,438). In contrast, the JVS programs had no detected impact on earnings for men.[69]

3.3 Results for Finger Lakes Hired

This section presents results for RochesterWorks!'s FLH. Appendix Section C.3 in the *Final Appendix* presents additional results.

3.3.1 Impacts for the Full Sample

Exhibit 3-9 reports FLH's impacts on key measures of earnings and employment for the full sample, including the confirmatory and secondary outcomes.

[67] The positive impact on average quarterly earnings in Q5 through Q10 for those younger than age 49 is statistically significant at the 10 percent level (p = .098), and the differential impact of age on earnings is also statistically significant at the 10 percent level (p = .068; see Appendix Exhibit C.2-10).

[68] The positive impact on any employment in Q5 through Q10 for those age 49 or older is statistically significant at the 10 percent level (p = .085; see Appendix Exhibit C.2-10).

[69] The positive impact on earnings for women is statistically significant at the 10 percent level (p = .093), and the differential impact on earnings by gender is statistically significant at the 10 percent level (p = .062); see Appendix Exhibit C.2-10.

Exhibit 3-9: Impacts on Earnings and Employment for the Full Sample, FLH

Outcome	Program Group Mean	Control Group Mean	Impact (Difference)	Standard Error	Relative Impact (%)
Earnings					
Average quarterly earnings in Q5-Q10 ($)	***6,779***	***6,822***	***−43***	***523***	***−1***
Average quarterly earnings in Q5-Q10, if any employment in Q5-Q10 ($)	*8,149*	*8,214*	*−65*	*556*	*−1*
Cumulative earnings in Q5-Q10 ($)	40,674	40,930	−256	3,141	−1
Cumulative earnings in Q1-Q10 ($)	59,038	61,562	−2,524	4,493	−4
Average quarterly earnings in Q9-Q13 ($)	7,058	7,286	−228	590	−3
Employment					
Any employment in Q5-Q10 (%)	**83.6**	**83.1**	**0.6**	**3.0**	**1**
Number of quarters employed in Q5-Q10	4.2	4.3	−0.0	0.2	−1
Percentage of quarters employed in Q5-Q10 (%)	70.3	71.1	−0.7	3.0	−1
Longest job tenure in Q5-Q10 (quarters)	3.7	3.8	−0.1	0.2	−4
Number of quarters employed in Q9-Q13	3.4	3.6	−0.2	0.2	−5

KEY: Q=quarter.
SOURCE AND FOLLOW-UP PERIOD: National Directory of New Hires; through 13 quarters after random assignment.
NOTES: ***Confirmatory outcome is indicated in bold italics***; **secondary outcome is indicated in bold**; exploratory outcomes are neither bolded nor italicized. *Unbolded outcome in italics* applies to the subset of sample members who were ever employed during Q5 through Q10 and is thus non-experimental. All other outcomes apply to the full sample and impact estimates are experimental. Reported impact may not equal the difference between the reported program and control group means because of rounding. "Relative impact" represents impacts as a percentage of the corresponding control group mean (i.e., 100 x [impact / control group mean]). The full sample of 595 includes 300 program group and 295 control group members. Appendix tables report item-specific sample sizes.
Statistical significance based on two-sided hypothesis tests; significance levels are as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

- **FLH had no detected impact on average quarterly earnings from 1 year to 2.5 years after random assignment (the confirmatory outcome).**

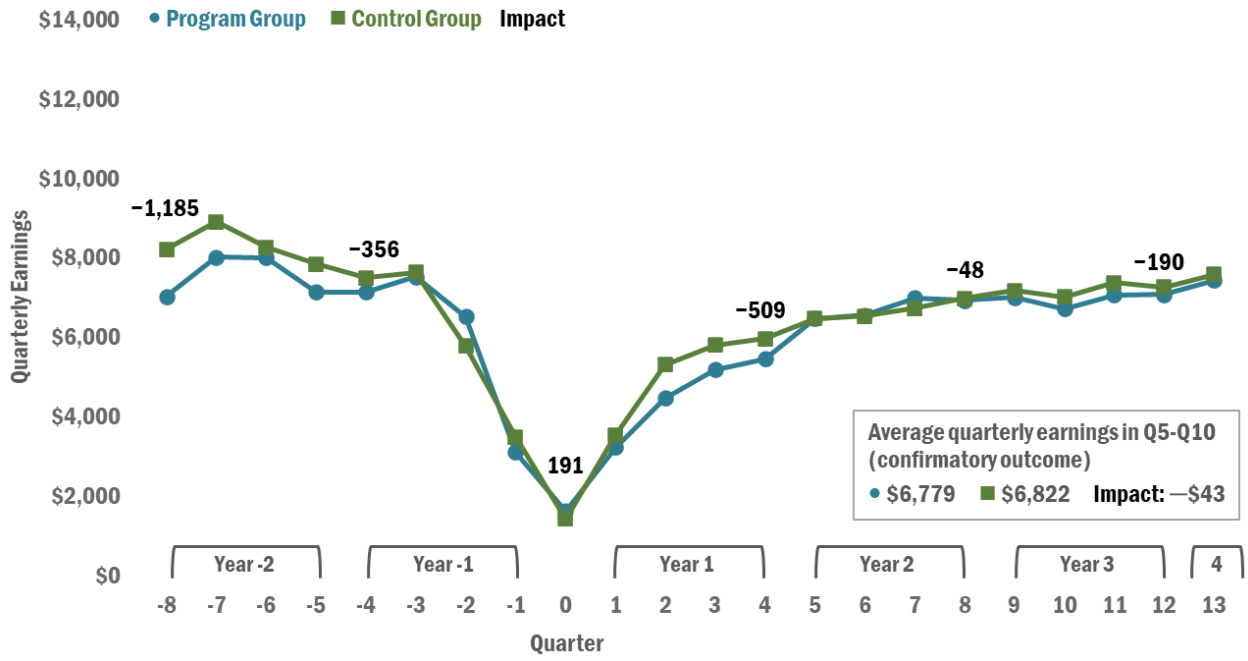
As shown in Exhibit 3-9 above, there is no detected impact on average quarterly earnings during the period from 1 year to 2.5 years after random assignment (Q5-Q10). In both the program and control group, average quarterly earnings were approximately $6,800 (including $0 for those who were not employed). Allowing for uncertainty, the true impact of FLH on average quarterly earnings during this period could be as high as $817 or as low as −$903 (not shown).[70]

Results are similar for the longer follow-up period (Exhibit 3-10). Through 3.25 years after random assignment (Q13), FLH had no detected positive impact on employment in any quarter. [71]

[70] As discussed in Section 2.1.6 in Chapter 2, this impact on the confirmatory outcome is estimated with uncertainty. These values are the endpoints for a 90 percent confidence interval for the impact on average quarterly earnings in Q5 through Q10.

[71] As discussed in Section 2.2 of Chapter 2, because RochesterWorks! ended random assignment later than the other three RTW programs, the evaluation has data for the full sample only through 3.25 years (13 quarters) for FLH.

Exhibit 3-10: Quarterly Earnings Levels and Impacts for the Full Sample, FLH



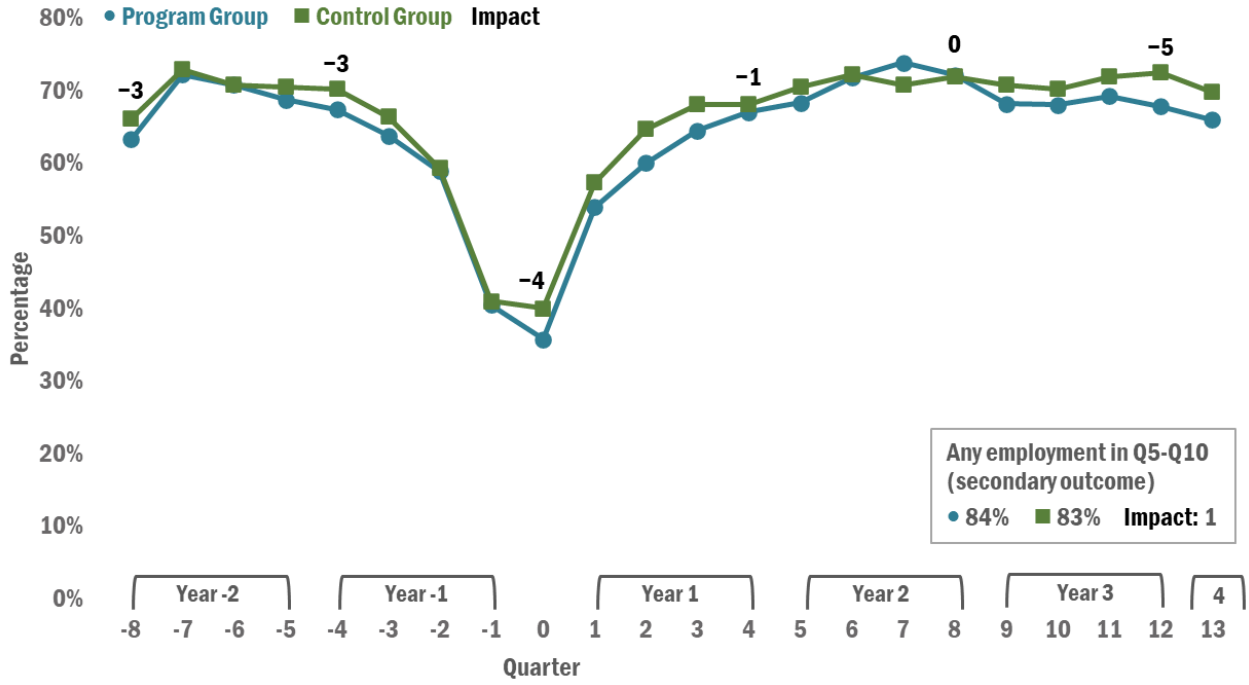
SOURCE AND FOLLOW-UP PERIOD: National Directory of New Hires; through 13 quarters after random assignment.
NOTES: On the x-axis, negative numbers indicate quarters before random assignment; 0 indicates the quarter that random assignment occurred. The evaluation has data for the full sample through seven quarters before random assignment, and data for 98 percent of the full sample through the eighth quarter before random assignment. Impacts are reported in black text (none is statistically significantly different from zero). Reported impact may not equal the difference between the reported program and control group means because of rounding. The full sample of 595 includes 300 program group and 295 control group members.
Statistical significance based on two-sided hypothesis tests; significance levels are as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

- **FLH had no detected impact on any employment from 1 year to 2.5 years after random assignment (the secondary outcome).**

FLH had no detected impact on ever being employed from 1 to 2.5 years after random assignment (Q5-Q10; see Exhibit 3-9 above).

Results are similar for the longer follow-up period (Exhibit 3-11). Through 3.25 years after random assignment (Q13), FLH had no detected positive impact on employment in any quarter.

Exhibit 3-11: Quarterly Employment Levels and Impacts for the Full Sample, FLH

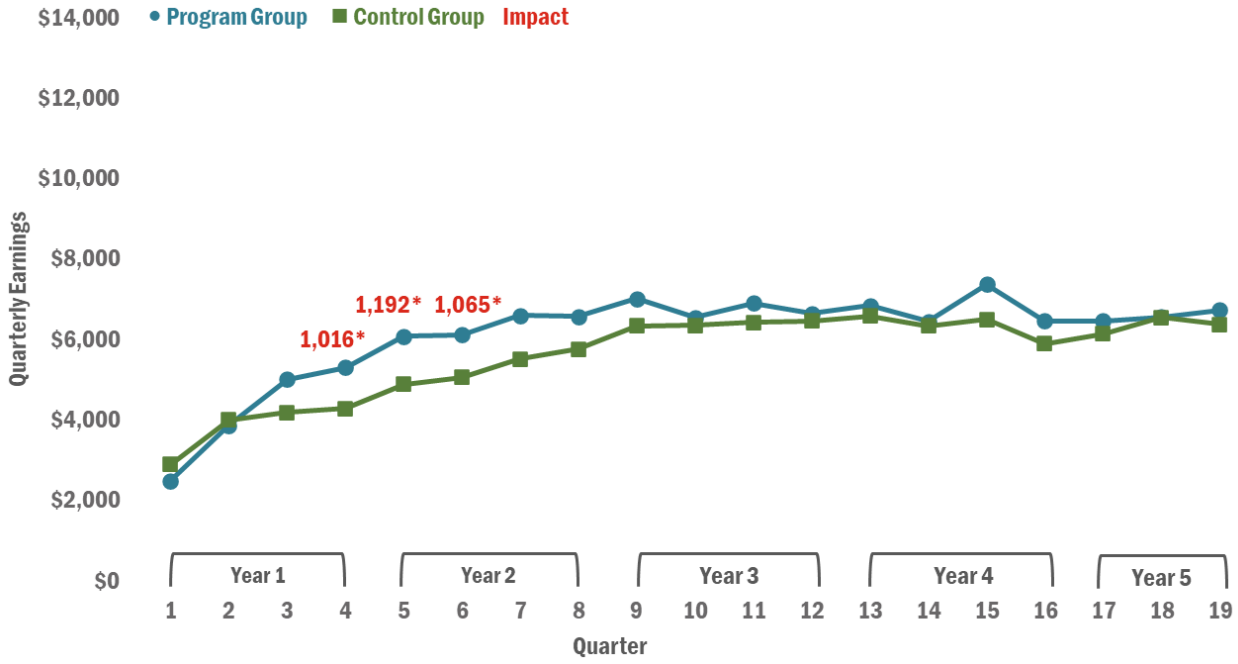


SOURCE AND FOLLOW-UP PERIOD: National Directory of New Hires; through 13 quarters after random assignment.
NOTES: On the x-axis, negative numbers indicate quarters before random assignment; 0 indicates the quarter that random assignment occurred. The evaluation has data for the full sample through seven quarters before random assignment, and data for 98 percent of the full sample through the eighth quarter before random assignment. Impacts are reported in black text (none is statistically significantly different from zero). Reported impact may not equal the difference between the reported program and control group means because of rounding. The full sample of 595 includes 300 program group and 295 control group members.
Statistical significance based on two-sided hypothesis tests; significance levels are as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

3.3.2 Impacts for the Early Cohort

Exhibit 3-12 plots earnings for the early cohort through 4.75 years after random assignment (19 quarters), providing an additional 1.5 years of follow-up beyond that shown in Exhibit 3-10 above for the full sample. FLH's early cohort includes 59 percent of its full sample.

Exhibit 3-12: Quarterly Earnings Levels and Impacts for the Early Cohort, FLH



SOURCE AND FOLLOW-UP PERIOD: National Directory of New Hires; through 19 quarters after random assignment.
NOTES: Impacts that are significantly different from zero are reported in red text. Reported impact may not equal the difference between the reported program and control group means because of rounding. The early cohort includes 351 sample members (178 program group members and 173 control group members).
Statistical significance based on two-sided hypothesis tests; significance levels are as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

- **For the early cohort, no positive impact of FLH on earnings is detected past 1.5 years after random assignment.**

For the early cohort, there is weak evidence of positive impacts on earnings emerging approximately 1 year after random assignment (Q4-Q6), but the impact does not persist in the second year or beyond (Q7 and later).[72]

3.3.3 Differential Impacts for Subgroups

This section presents results for the subgroup analysis of the confirmatory and secondary outcomes, comparing impacts by baseline education, age, employment status, and gender. See Appendix Exhibit C.3-10 for all results discussed in this section.[73]

[72] The positive impacts on earnings in Q4 through Q6 are statistically significant at the 10 percent level (for Q4, $p = .097$; for Q5, $p = .084$; for Q6, $p = .098$; see Appendix Exhibit C.3-8).

[73] Appendix Exhibit C.3-10 also reports differential impacts for average quarterly earnings from Q9 through Q13; those results are similar to results for average quarterly earnings from Q5 through Q10.

- **For FLH, there is evidence of a differential impact on earnings by education, with weak evidence of positive earnings impacts for those with less than a bachelor's degree.**

Evidence of a differential impact on average quarterly earnings from 1 year to 2.5 years after random assignment (Q5-Q10) is detected by education, but not by age, employment status, or gender. There is weak evidence of a positive impact on earnings for study members with less than a bachelor's degree ($979), but no evidence of impact is detected for those with a bachelor's degree or more.[74] Thus, as with MTC and the JVS programs, there is evidence of more favorable impacts for those with less education.

3.4 Results for Reboot Northwest

This section presents results for Worksystems Inc.'s Reboot NW. Appendix Section C.4 in the *Final Appendix* presents additional results.

3.4.1 Impacts for the Full Sample

Exhibit 3-13 reports Reboot NW's impacts on key measures of earnings and employment for the full sample, including the confirmatory and secondary outcomes.

Exhibit 3-13: Impacts on Earnings and Employment for the Full Sample, Reboot NW

Outcome	Program Group Mean	Control Group Mean	Impact (Difference)	Standard Error	Relative Impact (%)
Earnings					
Average quarterly earnings in Q5-Q10 ($)	***8,548***	***8,266***	***282***	***533***	***3***
Average quarterly earnings in Q5-Q10, if any employment in Q5-Q10 ($)	*10,256*	*10,056*	*200*	*571*	*2*
Cumulative earnings in Q5-Q10 ($)	51,288	49,594	1,694	3,198	3
Cumulative earnings in Q1-Q10 ($)	71,195	70,467	728	4,338	1
Average quarterly earnings in Q9-Q16 ($)	9,941	9,236	704	598	8
Employment					
Any employment in Q5-Q10 (%)	**83.5**	**82.2**	**1.3**	**2.4**	**2**
Number of quarters employed in Q5-Q10	4.1	4.1	−0.0	0.1	−0
Percentage of quarters employed in Q5-Q10 (%)	68.1	68.3	−0.2	2.4	−0
Longest job tenure in Q5-Q10 (quarters)	3.5	3.5	−0.1	0.1	−2
Number of quarters employed in Q9-Q16	5.4	5.4	0.0	0.2	0

KEY: Q=quarter.
SOURCE AND FOLLOW-UP PERIOD: National Directory of New Hires; through 16 quarters after random assignment.
NOTES: ***Confirmatory outcome is indicated in bold italics***; **secondary outcome is indicated in bold**; exploratory outcomes are neither bolded nor italicized. *Unbolded outcome in italics* applies to the subset of sample members who were ever employed during Q5 through Q10 and is thus non-experimental. All other outcomes apply to the full sample and impact estimates are experimental. Reported impact may not equal the difference between the reported program and control group means because of rounding. "Relative impact" represents impacts as a percentage of the corresponding control group mean (i.e., 100 x [impact / control group mean]). The full sample of 972 includes 489 program group and 486 control group members. Appendix tables report item-specific sample sizes.
Statistical significance based on two-sided hypothesis tests; significance levels are as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

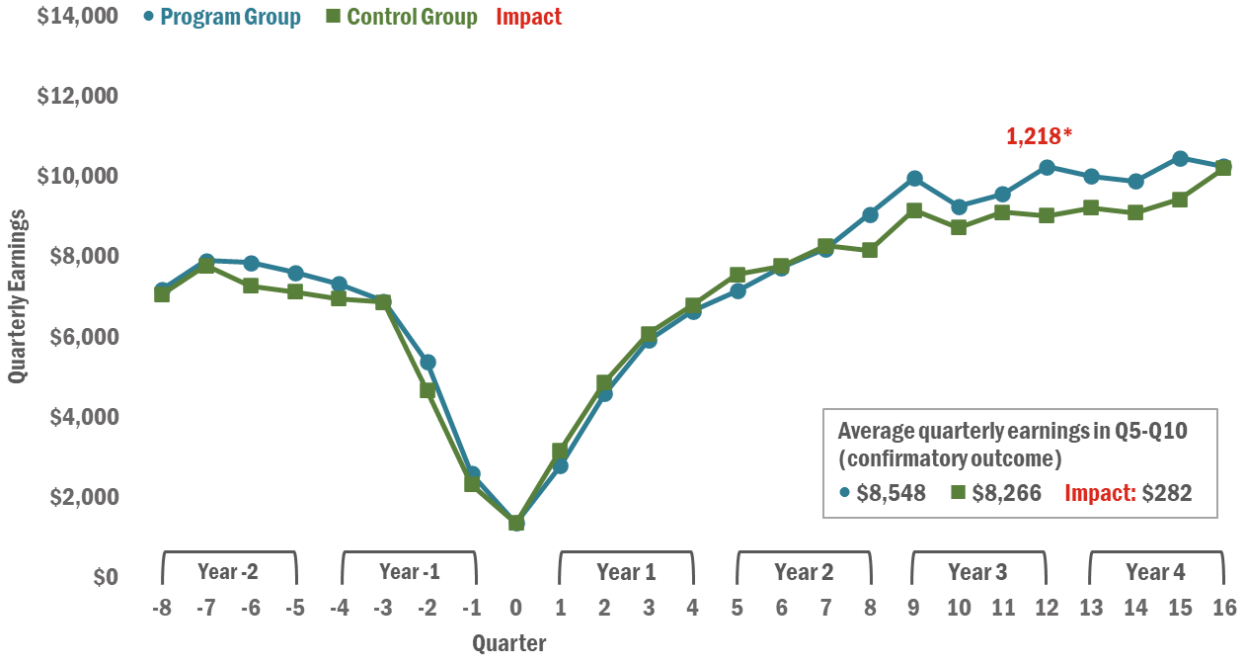
[74] The positive impact on earnings for those with less than a bachelor's degree is statistically significant at the 10 percent level (p = .066; see Appendix Exhibit C.3-10).

- **Reboot NW had no detected impact on average quarterly earnings from 1 year to 2.5 years after random assignment (the confirmatory outcome).**

As shown in Exhibit 3-13 above, there is no detected impact on average quarterly earnings during the period from 1 year to 2.5 years after random assignment (Q5-Q10). In both the program and control group, average quarterly earnings were about $8,400 (including $0 for those who were not working). Allowing for uncertainty, the true impact of Reboot NW on average quarterly earnings during this period could be as high as $1,159 or as low as −$595 (not shown).[75]

Results are similar for the longer follow-up period (Exhibit 3-14). Through 4 years after random assignment (Q16),[76] only in Q12 is weak evidence of a positive impact detected.[77]

Exhibit 3-14: Quarterly Earnings Levels and Impacts for the Full Sample, Reboot NW



SOURCE AND FOLLOW-UP PERIOD: National Directory of New Hires; through 16 quarters after random assignment.
NOTES: On the x-axis, negative numbers indicate quarters before random assignment; 0 indicates the quarter that random assignment occurred. The evaluation has data for the full sample through seven quarters before random assignment, and data for 92 percent of the full sample through the eighth quarter before random assignment. Impacts that are significantly different from zero are reported in red text. Reported impact may not equal the difference between the reported program and control group means because of rounding. The full sample of 972 includes 489 program group and 486 control group members.
Statistical significance based on two-sided hypothesis tests; significance levels are as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

[75] As discussed in Section 2.1.6 in Chapter 2, this impact on the confirmatory outcome is estimated with uncertainty. These values are the endpoints for a 90 percent confidence interval for the impact on average quarterly earnings in Q5 through Q10.

[76] As noted in Section 2.2 in Chapter 2, because of variation across grantees in the timing of random assignment, the study has more quarters of follow-up for Reboot NW than for the other three grantees.

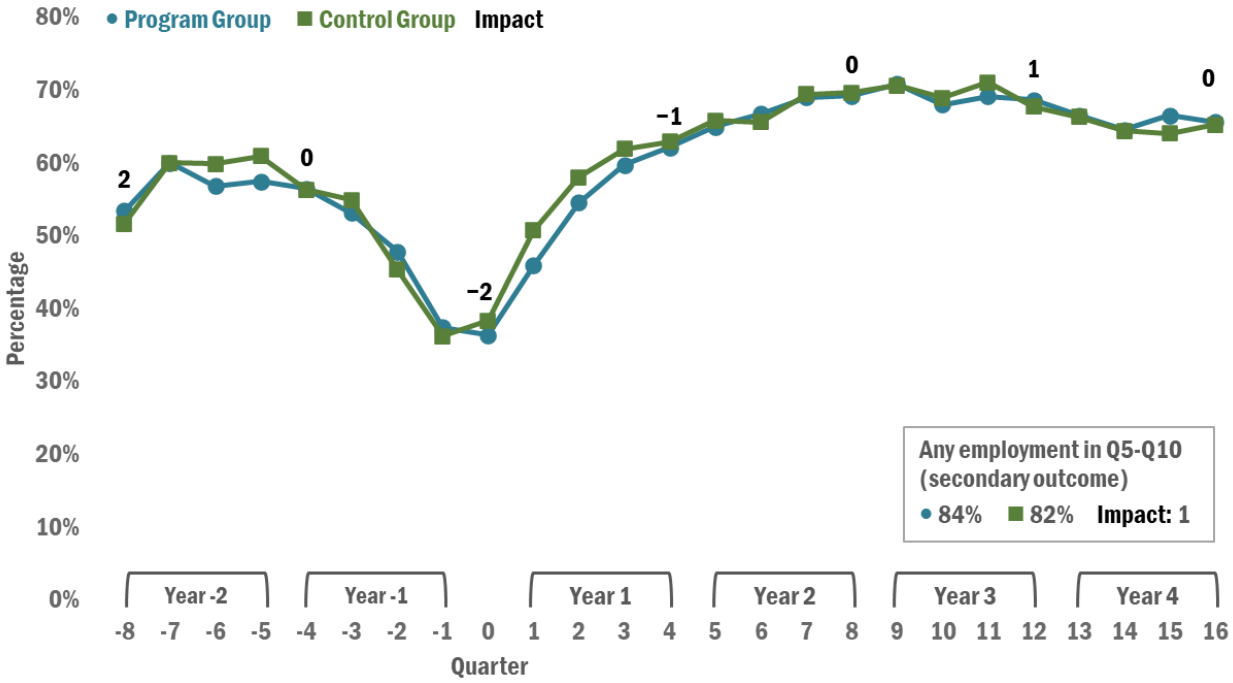
[77] The impact on average quarterly earnings in Q12 is statistically significant at the 10 percent level (p = .062; see Appendix Exhibit C.4-3).

- **Reboot NW had no detected impact on any employment from 1 year to 2.5 years after random assignment (the secondary outcome).**

No impact is detected on the percentage ever employed between 1 year and 2.5 years after random assignment (Q5-Q10; see Exhibit 3-13 above). In both the program and control group, about 83 percent were employed at some point during this period.

Results are similar for the longer follow-up period (Exhibit 3-15). Through 4 years after random assignment (Q16), Reboot NW had no detected positive impact on employment in any quarter.

Exhibit 3-15: Quarterly Employment Levels and Impacts for the Full Sample, Reboot NW

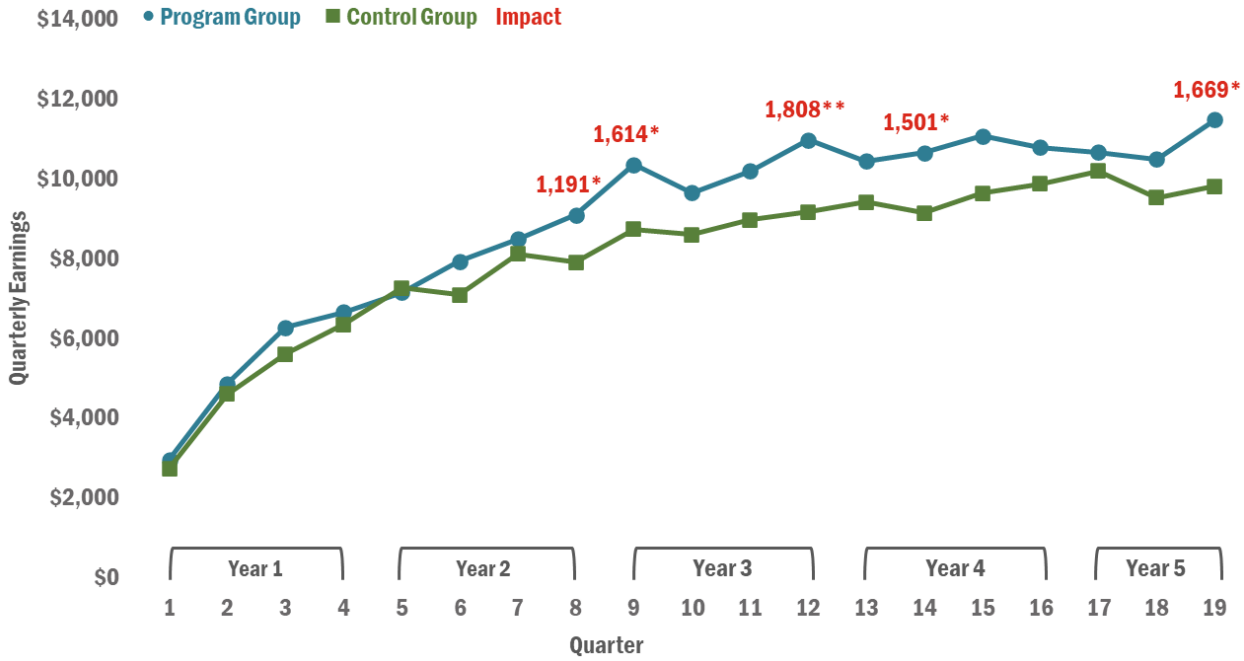


SOURCE AND FOLLOW-UP PERIOD: National Directory of New Hires; through 16 quarters after random assignment.
NOTES: On the x-axis, negative numbers indicate quarters before random assignment; 0 indicates the quarter that random assignment occurred. The evaluation has data for the full sample through seven quarters before random assignment, and data for 92 percent of the sample through the eighth quarter before random assignment. Impacts are reported in black text (none is statistically significantly different from zero). Reported impact may not equal the difference between the reported program and control group means because of rounding. The full sample of 972 includes 489 program group and 486 control group members.
Statistical significance based on two-sided hypothesis tests; significance levels are as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

3.4.2 Impacts for the Early Cohort

Exhibit 3-16 plots earnings for the early cohort through 4.75 years after random assignment (19 quarters), providing an additional 9 months (3 quarters) of follow-up beyond that shown in Exhibit 3-14 (above) for the full sample. Reboot NW's early cohort includes 70 percent of its full sample.

Exhibit 3-16: Quarterly Earnings Levels and Impacts for the Early Cohort, Reboot NW



SOURCE AND FOLLOW-UP PERIOD: National Directory of New Hires; through 19 quarters after random assignment.
NOTES: Impacts that are significantly different from zero are reported in red text. Reported impact may not equal the difference between the reported program and control group means because of rounding. The early cohort includes 677 sample members (341 program group members and 336 control group members).
Statistical significance based on two-sided hypothesis tests; significance levels are as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

- **For the early cohort, through 4.75 years after random assignment, there is weak evidence that Reboot NW had a positive impact on earnings starting in the third year.**

For Reboot NW's early cohort there is weak evidence of positive impacts emerging after approximately two years (starting in Q8) and strong evidence of a positive impact on earnings at three years (Q12).[78] With the additional follow-up through 4.75 years (19 quarters), however, there is only limited evidence that the positive impacts on earnings for the early cohort remain beyond this point. In the third year and beyond there is only weak evidence of positive impacts at 3.5 years (Q14) and 4.75 years (Q19).[79]

3.4.3 Differential Impacts for the Subgroup Analysis

This section presents results for the subgroup analysis of the confirmatory and secondary outcomes, comparing impacts by baseline education, age, employment status, and gender. See Appendix Exhibit C.4-10 for all results discussed in this section.[80]

---

[78] The positive impacts on earnings are statistically significant at the 10 percent level in Q8 (p = .092) and Q9 (p = .097; see Appendix Exhibit C.4-8).

[79] The positive impacts on earnings are statistically significant at the 10 percent level in Q14 (p = .052) and Q19 (p = .079; see Appendix Exhibit C.4-8).

[80] Appendix Exhibit C.4-10 also reports differential impacts for average quarterly earnings from Q9 through Q16; those results are similar to results for average quarterly earnings from Q5 through Q10.

- **For Reboot NW, no differential impacts are detected.**

For both the confirmatory and secondary outcomes, no differential impacts are detected by baseline education, age, employment status, or gender.

3.5 Cross-Program Results

The previous four sections of this chapter follow the evaluation's primary analytic strategy in presenting separate impact estimates for each RTW grantee program. For none of the four programs are positive impacts on the confirmatory outcome detected. Yet allowing for uncertainty, the impacts on average quarterly earnings could be as high as $1,608 for the JVS programs and $1,159 for Reboot NW, which are large and substantively important.[81]

One possible explanation for the lack of a detected positive impact on earnings for each program alone, however, is that statistical power is weak because of small sample sizes. This section therefore combines the samples across the four grantees to provide a "pooled" estimate of the average impact across all four programs.[82] Pooling's key advantage is a larger sample and therefore a more precise estimate.[83] Despite the larger sample that pooling provides, the pooled estimates do not detect evidence that the RTW programs had a positive impact on either the confirmatory outcome or the secondary outcome.

The pooled impact estimate for this report's confirmatory outcome—average quarterly earnings from 1 year to 2.5 years after random assignment—is −$81 and not statistically different from zero (see Appendix Exhibit C.6-1). Allowing for uncertainty, the true impact on average quarterly earnings in this period could be as high as $388 or as low as −$550.[84] Thus, the more precise estimate from pooling across the four RTW programs does not suggest a positive impact, and the upper bound of $388 is notably smaller than the upper bound for the JVS programs and Reboot NW when estimated alone ($1,608 and $1,159, respectively). Similarly, the pooled impact estimate for this report's secondary outcome—any employment during this same period—is only 1.0 percentage point and not statistically significant (see Appendix Exhibit C.6-1).

---

[81] These values are the upper endpoints for a 90 percent confidence interval for the impact on average quarterly earnings in Q5 through Q10 for the JVS programs and Reboot NW. The upper end of the 90 percent confidence interval is somewhat smaller for FLH ($817). It is negative for MTC (−$177).

[82] This section reports a simple mean of the four grantee impacts (and the standard error of that simple mean, see the "Pooled" columns of Appendix Exhibit C.6-1); that is, the pooled estimates weight each program's impact equally.

With a larger number of programs, a random effects model would be preferable. Such a random effects model would likely lead to larger standard errors. However, four programs are not enough to estimate such a random effects model.

Appendix Section C.6 also presents more cross-grantee analyses including multiple comparisons-adjusted tests of statistical significance and tests of equality of impacts. As discussed there, after adjusting for multiple comparisons using a Bonferroni-Holm correction, the negative estimated impact on earnings for MTC is no longer statistically significant.

[83] All four grantee programs were designed in response to the RTW *Solicitation for Grant Applications* (DOL/ETA 2014), which provided some guidance as to the nature and content of any grantee programs. Thus, one can think of this approach as providing a summary measure of the impact of the RTW grant funding stream as a whole. As discussed in Chapter 1, however, that the four evaluated grantees were selected in part based on the strength of their programs means this estimate would be expected to be an overestimate of the average impact of the RTW program. Chapter 4 returns to this issue.

[84] These values are the endpoints for a 90 percent confidence interval for the pooled estimate of impact on average quarterly earnings in Q5 through Q10.

Overall, the pooled results confirm the findings from the individual program results of no positive impacts on earnings or employment from 1 to 2.5 years after random assignment.

4 Discussion

The Ready to Work Partnership Grants, operated between 2015 and 2019, were funded by the U.S. Department of Labor to establish programs that might prove effective in preparing long-term unemployed and underemployed U.S. workers for employment in middle- and high-skill occupations. The RTW grantee programs were to provide customized services that could include staff guidance on career planning, occupational training, work-based training, employment readiness courses, and job search assistance—but with considerable discretion in program design given to grantees.

As discussed in Chapter 2, the evaluation estimates the impact of the given RTW program by comparing outcomes for all those in the program group with all those in the control group, regardless of whether or not program group members actually enrolled in the RTW program. Thus, the evaluation is an "intention to treat" (ITT) study—it estimates the impact of being *offered* the RTW program, compared to not being offered the program but having access to other services in the community including those offered by the workforce system. Furthermore, because the evaluation randomly assigned access to the given RTW program *as a whole*, the evaluation is not directly informative about the impact of the individual components of the given RTW program. Other designs would be needed to estimate the separate impact of the individual components of a given program's package of services.

Chapter 3 presents the long-term impacts on earnings and employment for the four purposively selected RTW grantee programs. For these four programs, the evaluation detects little evidence of positive impacts on earnings or employment through three to four years after random assignment. This chapter discusses those findings. Drawing on results in the earlier *Interim Impact Report* and in this *Final Impact Report*, Section 4.1 briefly summarizes the evaluation's findings. Then Section 4.2 considers the implications of those results for program design and for evaluation design. The final section (Section 4.3) provides some closing thoughts.

4.1 RTW Evaluation Findings

This section provides context and then summarizes the findings of the RTW Evaluation, including the implementation study, the interim impact study, and the final impact study. Section 4.1.1 discusses context: a rapidly improving economy. Sections 4.1.2 and 4.1.3 summarize the estimates of impact on service receipt, and on earnings and employment, respectively.

4.1.1 Context

DOL created the RTW Partnership Grant Program in response to the Great Recession of 2007-2009 and relatively high rates of long-term unemployment even as the economy was otherwise improving. Its *Solicitation for Grant Applications* called on programs to provide employment-related services customized to a "highly skilled" population who lost their jobs during that recession "through no fault of their own and [who were] facing long spells of unemployment for the first time in their careers" and would be transitioning to "new industries" (DOL/ETA 2014).[85] Such "displaced workers"—older, better-

[85] See the RTW SGA (2014): "Many of these workers are highly skilled and may require career coaching and assistance in adapting their skills and experience to new industries, while others at lower skill levels may benefit from short-term and even longer-term training to obtain jobs that can match their previous earnings."

educated, with steady employment prior to the economic downturn—were at risk of substantial long-term earnings losses of 10 percent or more (Jacobson, LaLonde, and Sullivan 1993; Fallick 1996).

The population RTW served appears to differ from the population the SGA targeted. Grantee staff reported that the improving economy allowed the long-term unemployed with more education and work experience to find jobs on their own. As a result, those who enrolled in the RTW programs faced greater barriers to employment, and had lower skill levels and less work experience, than the SGA anticipated (Copson et al. 2020). Consistent with those grantee staff reports, for three of the four programs, employment rates among study members two years before applying to the RTW program were only 50 to 60 percent.[86]

Furthermore, the RTW programs were not the only resources available. Even without access to the RTW program, control group members participated in a substantial level of employment-related activities on their own. Across the four programs, control group members attended between 1 and more than 4 months of employment-related activities.[87] Thus, for RTW to have had any impact, the program group would need to attend *more* or *better tailored* services than the control group did.

Finally, DOL's SGA motivated the RTW program-provided training as a way "to obtain jobs that [could] match their previous earnings." In contrast, the strong economy appears to have sharply improved employment prospects, even for those not strongly attached to the labor market such as the population that applied to the RTW programs. As with most training programs, immediately after random assignment, control group members had sharp improvements in outcomes relative to immediately before program entry (Ashenfelter 1978). Unlike displaced workers who had long-term earnings *losses* of 10 percent or more (Jacobson, LaLonde, and Sullivan 1993), RTW's control group members had continued sharp improvements in outcomes over time, even relative to two years before program entry. For three of the four grantee study samples, control group employment levels between 2 years before and 3 years after random assignment *rose* by approximately 10 percentage points; earnings rose 20 percent or more. Thus, for RTW to have had any impact, the program group would need to have seen improvements in outcomes above and beyond the substantial improvements in the control group.

4.1.2 Impact on Receipt of Structured Employment-Related Activities and Credentials

Consistent with the SGA, the *Interim Impact Report* at 18 months (1.5 years) after random assignment found that the four selected RTW grantees provided the program group with 3 to 6 months of structured employment-related activities. Control group members could receive similar services on their own, from sources in the community. In net, program *impact*—that is, outcomes for the program group relative to outcomes for the control group—was a positive 1 to 3 months of activities, depending on the grantee.

---

[86] These employment rates for two years before application to the given RTW program are well below employment rates for the general population of individuals in this age range. Current Population Survey data for individuals ages 30–55 in 2013 to 2016 (the period approximately two years before most RTW sample members applied to the given grantee program) show employment rates of 75 to 80 percent (https://www.bls.gov/cps/tables.htm#otheryears).

Furthermore, the available evidence suggests that these low employment rates were true even before two years prior to application to RTW. If the non-employed individuals had been recently stably employed, they likely would have qualified for and been collecting unemployment insurance; few were, however (see Appendix C in the *Final Appendix*).

[87] See *weeks of training attended by the control group*, reported in the second section of each of grantee-specific Chapters 3-6 in the *Interim Impact Report* (Klerman et al. 2022).

Similarly, for three of the grantee programs, the *Interim Impact Report* (Klerman et al. 2022) found moderate to large positive impacts on receipt of a certificate, credential, license, or degree, although these were primarily certificates for completion of a short-term occupational training course, rather than professional certifications.

4.1.3 Impact on Earnings and Employment

Despite positive impacts on receipt of services and, for three programs, receipt of credentials, the *Interim Impact Report* at 18 months (1.5 years) after random assignment detected no impacts on earnings (*average quarterly earnings 12 to 18 months after random assignment,* its confirmatory outcome) or on employment (*any employment* in that same timeframe, its secondary employment outcome).

With another year of follow-up for the confirmatory and secondary outcomes and even more follow-up for some exploratory outcomes, this *Final Impact Report*'s findings on earnings and employment are similar to those at 18 months.

For this *Final Impact Report*, the evaluation pre-specified *average quarterly earnings from 1 year to 2.5 years after random assignment* as the confirmatory outcome. For none of the four RTW programs is a positive impact on this outcome detected. The evaluation also pre-specified *any employment from 1 year to 2.5 years after random assignment* as the secondary outcome. Again, for none of the four RTW programs is an impact on this outcome detected. Exploratory findings in this *Final Impact Report* also provide little evidence of a positive impact on earnings. For the full sample, through 3 to 4 years after random assignment, there is no consistent evidence of positive impacts on earnings or employment for any of the four programs.

For the early cohort, through almost 5 years after random assignment, there are only scattered positive effects. In particular, there is some weak evidence of a positive impact for Reboot NW, for the early cohort, from about 3 to 5 years after random assignment. However, the totality of evidence suggests that there is no clear evidence of impact on earnings.[88]

Subgroup results also provide little evidence of positive impacts. The evaluation considered differential impacts for four subgroups, based on baseline education, age, employment status, and gender. With one exception, there is little evidence of consistent patterns of more favorable impacts on the confirmatory or secondary outcome for any group. The exception is some exploratory evidence in two sites that the impact is more favorable for study members with less than a bachelor's degree than for those with a bachelor's degree or more.[89]

Last, the evaluation estimated pooled impacts of the four RTW programs together. Pooling the four grantee study samples, the evaluation could detect an impact about half as large as what could be detected

[88] There is little evidence of an impact in the full sample. Pooling across Q9 to Q16 in the full sample also shows no evidence of positive impact. There is no evidence of an impact for the evaluation's confirmatory outcome. Finally, the number of statistically significant positive impacts in Q9 and later—across all four grantees and both the full sample and early cohorts—is about what would be expected by chance.

[89] For the JVS programs and FLH, there is a positive impact on earnings for the less educated group, but no impact is detected for the more educated group. For MTC, the impact on earnings is negative for the more educated group, but no impact is detected for the less educated group. As discussed in Chapter 3, some of these impacts are statistically weak. For Reboot NW, no differences in impacts were detected for the education subgroup analysis.

when considering each grantee program alone. Nevertheless, even pooled estimates of impact yield no clear evidence of positive impacts on either the confirmatory outcome (*average quarterly earnings from 1 year to 2.5 years after random assignment*) or the secondary outcome (*any employment from 1 year to 2.5 years after random assignment*).

4.2 Implications for Program and Evaluation Design

Like the earlier *Interim Impact Report* and its 1.5 years of follow-up (Klerman et al. 2022), this *Final Impact Report* and its 3 to 4 years of follow-up detects no sustained positive impact on earnings or employment for any of the four RTW grantee programs. Even considering the four programs together, no impact is detected. Given that most program services were received within a year of study entry, it seems unlikely that still longer follow-up would detect impacts.

This pattern of positive impacts on receipt of services and credentials but not on earnings or employment is a common finding in recent experimental evaluations of general job training programs (Peck et al. 2021; Juras and Buron 2021).[90] It is also the finding of evaluations of programs to increase the earnings of "displaced workers" and of workers receiving Trade Adjustment Assistance (e.g., Decker and Corson 1995; D'Amico and Schochet 2012; Fortson et al. 2017).

Four possible and not mutually exclusive explanations for the lack of earnings or employment impacts are discussed below.

- **It is possible that the programs generated positive impacts on earnings that are large enough to be policy relevant, but *samples were too small* to detect those impacts.**

As is true for all impact evaluations, program sample sizes affect what RTW impacts can be detected. In order to have the largest possible study sample, the evaluation deliberately chose the largest grantees and conducted random assignment over nearly all of each program's enrollment period. Substantially larger samples were therefore not available.

Given the study's sample sizes, conventional power calculations suggest that the evaluation could reliably detect a program-specific earnings impact of $1,400 per quarter but no smaller. Pooling the four programs, the evaluation could detect impacts of about half that size, approximately $700 per quarter. Even then, no impacts are detected.

Few studies have detected impacts as large as $1,400 per quarter (Peck et al. 2021). Understanding the extent to which programs produce more modest but still policy-relevant results will fill important gaps in the evidence base. To facilitate efforts to build evidence on effective programs, future DOL evaluations of RTW-like programs should consider research designs that could detect smaller impacts.

- **It is possible that the programs would have generated positive impacts in the economic environment for which they were designed.**

The RTW programs were designed in 2014 to help workers who lost their jobs during the Great Recession "through no fault of their own and [who were] facing long spells of unemployment for the first

[90] These reviews consider the broader job training literature. The reviewed papers do not focus on older and more educated populations such as the population included in the RTW Evaluation.

time in their careers" (DOL/ETA 2014). In contrast, the programs were implemented, and study members looked for work, during a long and robust economic recovery. Thus, this evaluation estimates the impact of the four RTW programs in an environment that is different from the one for which the programs were designed. Even if the programs did not have positive impacts during this sustained recovery, there might have been positive impacts if the programs operated during a less robust economic period.

- **It is possible that relative to what the control group received, the grantee programs did not *sufficiently increase* service receipt to cause impacts on earnings large enough to be detected.**

The logic model for most workforce programs—including the RTW Partnership Grant Program—posits the following causal chain: The program offers employment-related services. Workers seek out and attend the employment-related activities. Finally, relative to what would have occurred without these services, service receipt leads to higher earnings and employment.

If there were no other local programs available to applicants to provide structured employment-related activities and services, this logic model would imply—for RTW programs and workforce programs more broadly—that just *providing* such activities and services would lead to higher earnings and employment. But, like most workforce programs, the four RTW programs were not the only options available to receive employment-related services. Thus, any new program is always *in addition to* the existing workforce system (broadly defined), and that existing workforce system already provides a broad array of programs and services. (See the *Interim Impact Report* for information on the levels of services attended by the control groups for each of the four study samples.)

The experiences of the RTW control group suggest that in the absence of the local grantee program, RTW participants would have had access to and would have attended a substantial amount of employment-related services from other sources. In an experimental evaluation, experiences of the control group are a good proxy for the experiences of program participants in the absence of the program. Such evaluations consistently find that, even without the program, some control group members will seek out services on their own (Bloom 2010). This is also the finding of the RTW Evaluation.

Viewing a program as an addition to the existing workforce system shifts what the program must do in order to improve earnings and employment for participants. It is not enough that the program provide employment-related services. It must ensure participants get *more* employment-related services than they would have gotten without the program. Furthermore, evidence suggests that to produce even moderate impacts on earnings requires substantial impacts on employment-related services; a few more weeks may not be sufficient (Weiss et al. 2015; Stevens, Kurlaender, and Grosz 2019).

The RTW programs provided *considerable* employment-related services to participants. In fact, they provided *more* employment-related services to participants than those participants would have received otherwise. Nevertheless, one explanation of the lack of impact on earnings is that the programs did not provide *enough more* employment-related services. That statistically positive but small impacts on services are not sufficient to generate impacts on earnings that can be detected is an emerging theme in labor market studies (Weiss et al. 2015). This line of argument suggests that in designing future programs, the focus should be on how the new program's design will lead to receipt of *considerably more* employment-related services than program participants would have received otherwise.

Doing so may be challenging. More employment services might lead to higher earnings; but in the short-term, older and more educated workers need to support themselves. This pressure to cover living expenses leads participants in general, and perhaps even more so older workers, to favor shorter programs. Inasmuch as longer programs are needed to increase earnings, some form of financial support to attend such programs might be worth considering.

- **It is possible that there exists a mix of employment-related services that would have yielded detectable impacts on earnings in the context in which they were implemented, but that the grantees did not provide such a mix of services.**

The previous bullet considered impacts on the *quantity* of services provided. It is useful to also consider the *mix* of services. It is possible that the service mix was not appropriate for the population for which it was designed. Compared to the general population served by the workforce system, participants in the RTW grant programs were expected to be—and were—older and more educated. Earlier studies have found that these workers face special challenges including employer age discrimination, emotional distress due to unemployment, and outdated skills (Holzer 2021; Jacobson, LaLonde, and Sullivan 1993, 2005a, 2005b). Perhaps there was some mix of services that would have been more effective for this population in the rapidly improving economy in which they were seeking employment. However, the four RTW programs do not appear to have identified and delivered a service mix such that modest impacts on weeks of structured employment-related activities would lead to impacts on earnings that could be detected.

Further efforts to identify such a service mix might benefit from refining the theory of action: G*iven other services already available in the community, for older and longer-term unemployed workers, what specific employment-related services would be particularly impactful? In what sequence?* Such a theory of action might help to generate useful conjectures about how to design a program with a service mix that would increase earnings for the target population, given other employment-related services available in the community.

4.3 Closing Thoughts

The RTW grantee programs attempted to increase the employment, with higher earnings, of a key population: the long-term unemployed, in particular the long-term unemployed during a deep recession. This evaluation did not detect that the RTW programs had such impacts, and identified four plausible explanations of the lack of impact on earnings. While these are not mutually exclusive explanations and the precise reason cannot be established, it appears that the first (insufficient sample) and third (insufficient impact on service receipt) are likely the primary reasons for the result. Work should continue to identify program approaches to serve this population, in particular well beyond what is commonly available in the community, and evaluation designs that can detect smaller impacts.

References

Aaronson, S. R., M. C. Daly, W. L. Wascher, and D. W. Wilcox. 2019. "Okun Revisited: Who Benefits Most from a Strong Economy?" *Brookings Papers on Economic Activity* 2019 (1): 333-404.

Ashenfelter, O. 1978. "Estimating the Effect of Training Programs on Earnings." *The Review of Economics and Statistics* 60 (1): 47-57.

Ashenfelter, O., and D. Card. 1985. "Using the Longitudinal Structure of Earnings to Estimate the Effect of Training Programs." *The Review of Economics and Statistics* 67 (4): 648-660.

Bloom, H.S., 2008. The core analytics of randomized experiments for social research. *The SAGE handbook of social research methods*, pp. 115-133.

Bloom, H. S. 2010. *Nine Lessons about Doing Evaluation Research.* Washington, DC: MDRC. https://www.mdrc.org/publication/nine-lessons-about-doing-evaluation-research

Bureau of Labor Statistics. 2010. *Worker Displacement: 2007-2009.* https://www.bls.gov/news.release/archives/disp_08262010.pdf

Center on Budget and Policy Priorities. 2019. "Long-Term Unemployment Fell from Record Peak but Long-Term Unemployed as a Share of All Unemployed Remains High." *Chart Book: Tracking the Post-Great Recession Economy.* Accessed Feb. 12, 2020. https://www.cbpp.org/research/economy/chart-book-tracking-the-post-great-recession-economy

Copson, E., K. Martinson, S. Elkin, B. Sarfo, T. Kappil, C. Morrison, and C. Sierks. 2020. *Providing Employment Services to the Long-Term Unemployed: Implementation and Sustainability of the Programs in the Ready to Work Partnership Grant Evaluation.* Prepared for the U.S. Department of Labor. Rockville, MD: Abt Associates. https://www.dol.gov/sites/dolgov/files/OASP/evaluation/pdf/RTW%20Implementation%20Report_Final.pdf

Couch, K. A., and D. W. Placzek. 2010. "Earnings Losses of Displaced Workers Revisited." *American Economic Review* 100 (1): 572-589. https://www.aeaweb.org/articles?id=10.1257/aer.100.1.572

D'Amico, R. and Schochet, P.Z. 2012. *The evaluation of the trade adjustment assistance program: A synthesis of major findings*. Mathematica Policy Research.

Decker, P.T. and Corson, W. 1995. International trade and worker displacement: Evaluation of the trade adjustment assistance program. *Industrial and Labor Relations Review*, 48(4): 758-774.

DOL/ETA (U.S. Department of Labor, Employment and Training Administration). 2014. *Notice of Availability of Funds and Solicitation for Grant Applications for H-1B Ready to Work Partnership Grants* (Solicitation for Grant Applications, SGA/DFA PY-13-07). Washington, DC: U.S. Department of Labor, Employment and Training Administration. https://www.doleta.gov/grants/pdf/SGA_DFA_PY_13_07.pdf

Fallick, B. C. 1996. "A Review of the Recent Empirical Literature on Displaced Workers." *ILR Review* 50 (1): 5-16.

Fisher Ronald A. 1935. *The Design of Experiments*. Edinburgh: Oliver and Boyd.

Fortson, K., Rotz, D., Burkander, P., Mastri, A., Schochet, P., Rosenberg, L., McConnell, S. and D'amico, R. 2017. *Providing public workforce services to job seekers: 30-Month impact findings on the WIA Adult and Dislocated Worker programs*. Washington, DC: Mathematica Policy Research.

Heckman, J. J., and J. A. Smith. 1999. "The Pre-programme Earnings Dip and the Determinants of Participation in a Social Programme. Implications for Simple Programme Evaluation Strategies." *The Economic Journal* 109 (457): 313-348.

Herr, J. L., J. A. Klerman, and K. Martinson. 2022. *The Ready to Work Partnership Grant Evaluation: Technical Appendix for the Final Report of the Impact Study of Four Employment Services Programs for the Long-Term Unemployed*. Prepared for the U.S. Department of Labor. Rockville, MD: Abt Associates.

Herr, J. L., J. A. Klerman, K. Martinson, and E. Copson. 2022. *The Ready to Work Partnership Grant Evaluation: Technical Appendix for the Interim Impact Study of Four Employment Services Programs for the Long-Term Unemployed.* Prepared for the U.S. Department of Labor. Rockville, MD: Abt Associates. https://www.dol.gov/sites/dolgov/files/OASP/evaluation/pdf/RTW_Interim_Impact_Report_Appendix_508.pdf

Hershbein, B.J., and H.J. Holzer. 2021. *COVID-19's Impacts on the Labor Market in 2020*. Upjohn Institute Working Paper, 2-11-2021.

Holzer, H. J. 2021. *After COVID-19: Building a More Coherent and Effective Workforce Development System in the United States.* Washington, DC: The Brookings Institution. https://www.hamiltonproject.org/papers/after_covid_19_building_a_more_coherent_and_effective_workforce_development_system_in_the_united_states

Jacobson, L. S., R. J. LaLonde, and D. G. Sullivan. 1993. "Earnings Losses of Displaced Workers." *The American Economic Review* 83 (4): 685-709. http://www.jstor.org/stable/2117574

Jacobson, L. S., R. J. LaLonde, and D. G. Sullivan. 2005a. "Is Retraining Displaced Workers a Good Investment?" *Economic Perspectives* 29 (2): 47-66.

Jacobson, L. S., R. J. LaLonde, and D. G. Sullivan. 2005b. "The Impact of Community College Retraining on Older Displaced Workers: Should We Teach Old Dogs New Tricks?" *ILR Review* 58 (3): 398-415.

Jacobson, L. S., R. J. LaLonde, and D. G. Sullivan. 2011. "Policies to Reduce High-Tenured Displaced Workers' Earnings Losses through Retraining." The Hamilton Project Discussion Paper 2011-11. Washington, DC: The Brookings Institution. https://www.hamiltonproject.org/assets/legacy/files/downloads_and_links/11_displaced_JLS_paper.pdf

Juras, R., and L. Buron. 2021. *Summary and Insights from the Ten PACE and HPOG 1.0 Job Training Evaluations: Three-Year Cross-Site Report.* OPRE Report 2021-155. Prepared by Abt Associates. Washington, DC: Office of Planning, Research, and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services.

Klerman, J. A., J. L. Herr, K. Martinson, and E. Copson. 2022. *The Ready to Work Partnership Grant: Findings from the Interim Impact Study of Four Employment Service Programs for the Long-Term Unemployed*. Prepared for the U.S. Department of Labor. Rockville, MD: Abt Associates. https://www.dol.gov/sites/dolgov/files/OASP/evaluation/pdf/RTW_Interim_Impact_Report_508.pdf

Kletzer, L. G. 1998. "Job Displacement." *Journal of Economic Perspectives* 12 (1): 115-136.

Kosanovich, K., and E. T. Sherman. 2015, March. *Trends in Long-Term Unemployment.* Spotlight on Statistics. Washington, DC: U.S. Bureau of Labor Statistics. https://www.bls.gov/spotlight/2015/long-term-unemployment/pdf/long-term-unemployment.pdf

Krolikowski, P. 2018. Choosing a control group for displaced workers. *Industrial and Labor Relations Review*, 71(5): 1232-1254.

Kroft, K., F. Lange, and M. J. Notowidigdo. 2013, August. "Duration Dependence and Labor Market Conditions: Evidence from a Field Experiment." *The Quarterly Journal of Economics* 128 (3): 1123-1167. https://doi.org/10.1093/qje/qjt015

Krueger, A. B., J. Cramer, and D. Cho. 2014. "Are the Long-Term Unemployed on the Margins of the Labor Market?" *Brookings Papers on Economic Activity* 2014 (Spring): 229-299. https://www.brookings.edu/wp-content/uploads/2016/07/2014a_Krueger.pdf

Martinson, K., E. Copson, G. Schneider, S. Elkin, B. Sarfo, T. Kappil, C. Ma, C. Morrison, and A. Nakas. 2017. *Evaluation of the Ready to Work Partnership Grant Program: Findings from the Implementation Study of Four Training Programs for Long-Term Unemployed Workers*. Prepared for the U.S. Department of Labor. Rockville, MD: Abt Associates. https://www.dol.gov/sites/dolgov/files/OASP/legacy/files/RTW-Implementation-Report.pdf

Okun, A. M., W. Fellner, and A. Greenspan. 1973. "Upward Mobility in a High-Pressure Economy." *Brookings Papers on Economic Activity* 1973 (1): 207-261.

Peck, L. R., D. Schwartz, J. Strawn, C. C. Weiss, R. Juras, S. Mills de la Rosa, N. Greenstein, T. Morris, G. Durham, and C. Lloyd. 2021. *A Meta-Analysis of 46 Career Pathways Impact Evaluations.* Rockville, MD: Abt Associates.

Singal, A. G., P. D. Higgins, and A. K. Waljee. 2014. "A Primer on Effectiveness and Efficacy Trials." *Clinical and Translational Gastroenterology* 5 (1): e45. https://doi.org/10.1038/ctg.2013.13

Stevens, A. H., M. Kurlaender, and M. Grosz. 2019. "Career Technical Education and Labor Market Outcomes Evidence from California Community Colleges." *Journal of Human Resources* 54 (4): 986-1036.

Weiss, M. J., A. K. Mayer, D. Cullinan, A. Ratledge, C. Sommo, and J. Diamond. 2015. "A Random Assignment Evaluation of Learning Communities at Kingsborough Community College – Seven Years Later." *Journal of Research on Educational Effectiveness* 8 (2): 189-217. https://doi.org/10.1080/19345747.2014.946634