Westat

50 years — Improving lives through research

NYC Center for Economic Opportunity Independent Evaluation

Sector-Focused Career Centers Evaluation: Effects on Employment and Earnings After One Year

Authors

Joseph Gasper
Kathryn Henderson

July 2014

Prepared for:
New York City Center for Economic Opportunity (CEO)
New York City, New York

Prepared by:
Westat
An Employee-Owned Research Corporation®
1600 Research Boulevard
Rockville, Maryland 20850-3129
(301) 251-1500

Center for
Economic Opportunity

CEO Response to the Sector Focused Career Centers Evaluation Report

In 2008 the New York City Center for Economic Opportunity (CEO) worked with the NYC Department of Small Business Services (SBS) to create Sector Focused Career Centers (SFCC) as an innovative approach to workforce development. These SFCCs are based on growing evidence and literature that shows that the sector focused approach helps improve outcomes for low-wage workers by tailoring program services to key industries, and providing workforce preparation grounded in the employment needs of businesses, and the career development needs of jobseekers and employees.[1]

Managed by SBS, SFCCs advance the efforts of SBS's regular Workforce1 Career Centers (WF1CC) to help unemployed and low-income New Yorkers interested in accessing quality job opportunities in specific sectors. Like SBS's standard WF1CCs, the sector centers make strong matches for both candidates and employers by using a unique combination of recruitment expertise, industry knowledge, and skill-building workshops to strengthen candidates' employment prospects. In the SFCCs, these services are tailored to align with the specific needs of each targeted industry (Healthcare or Manufacturing & Transportation)[2].

Westat's evaluation uses a quasi-experimental design to compare labor market outcomes of SFCC participants in the year after exit to those of a matched comparison group of SBS's regular career center participants who had similar demographic characteristics, prior work history, and prior earnings.[3] The evaluation found that SFCC participants are significantly more likely to work in each of the quarters after exit and work more consistently than their matched WF1CC participants. SFCC participants earned $5,800 more than their matched counterparts at the WF1CC in the year after their participation.

In addition to the strong overall impacts demonstrated for SFCC participants, the report also demonstrates that those who received hard skills occupational training do even better. Those participants who received targeted industry-specific hard skills training increased their earnings on

---

[1] Maguire, Sheila, et al. Turning In to Local Labor Markets: Findings from the sectoral employment impact study. Public/Private Ventures, 2010.

[2] At the time of this evaluation there were three distinct sector centers: Manufacturing, Industrial, and Healthcare. Since that time the Manufacturing and Industrial Sector Centers have merged to form the Industrial and Transportation Sector Center. The Healthcare sector center remains independent. These Sector Centers are two of 20 Workforce1 Career Centers (WF1CC) run by SBS.

[3] Participants are matched using New York State Department of Labor Wage data.

average by an estimated 82 percent ($9,071) in the year following completion.[4] While there remains a substantial benefit to participation without training, these findings suggest that the provision of employer driven training within a sector initiative is a key ingredient in the success of the sector-based approach.[5]

Additionally, the study found that the approach worked for a wide cross-section of the population, and that demographic characteristics such as race/ethnicity, education level, and disability status, were unrelated to the income impacts. These findings suggests that the sector strategy is an effective approach to addressing inequality for participants from a variety of backgrounds, further supporting the sector-based approach as a promising strategy to affect change among low and middle income income job seekers.

Furthering the research agenda on the sector approach, CEO is partnering with the Mayor's Fund to Advance NYC and MDRC to conduct a random assignment study of WorkAdvance- a sector-focused career advancement model in NYC, Tulsa (OK) and Cleveland (OH). The study, funded by the Corporation for National and Community Services through the Social Innovation Fund together with private funders, will have results in late 2015.

CEO's poverty research shows that more than 650,000 NYC residents living in a household with at least one full-time year round worker live in poverty (CEO 2012).[6] Given the strong findings that support the sector-based approach, CEO will work with local and national partners to strategize on how to bring this approach to a larger scale as the Center continues to advance evidence-based employment and training strategies and other work supports to help the working poor. Effective workforce strategies leading to increased employment opportunity and earnings, coupled with efforts to enhance job quality such as paid sick leave and the expansions of the Earned Income Tax Credit, are vital steps in helping address income inequalities.

David S. Berman,
Director of Program Management and Policy

Shammara K. Wright,
Senior Advisor

Carson Hicks,
Director of Programs and Evaluation

---

[4] Workforce1 Career Center participants who receive general skills training that were studied earned an estimated 51 percent more than matched non participants (about $5,620).

[5] Earnings are sustained up to one year after participation in the program and these participants benefit from the sector approach regardless of both their characteristics at enrollment and prior work history.

[6] CEO developed a more accurate measure that takes into account the local cost of living as well as the impact of government benefits for low-income populations. See nyc.gov/ceo for more information. At the time of this publication, 2012 is the most recently available data.

NYC Center for Economic Opportunity Independent Evaluation

Sector-Focused Career Centers Evaluation: Effects on Employment and Earnings After One Year

Authors

Joseph Gasper
Kathryn Henderson

July 2014

Prepared for:
New York City Center for Economic Opportunity (CEO)
New York City, New York

Prepared by:
Westat
An Employee-Owned Research Corporation®
1600 Research Boulevard
Rockville, Maryland 20850-3129
(301) 251-1500

Foreword

The Center for Economic Opportunity (CEO) is committed to evaluating its programs and policies and has contracted with Westat and Metis Associates in order to inform decision-making within CEO and the city agencies with whom they partner. Westat and Metis have developed a collaborative team approach in the planning, design, and implementation of various types of evaluations, including impact, outcome, and implementation studies. In some cases, staff from both Westat and Metis share duties and responsibilities in implementing the study. In other cases, staff from either Westat or Metis is responsible for conducting the study. This study of the Workforce1 Transportation Career Center, Workforce1 Manufacturing Career Center, and Workforce1 Healthcare Career Center was conducted by staff from Westat.

Joseph Gasper is the primary author of this report. The analytic plan was developed by Joseph Gasper and Kathryn Henderson of Westat. Analysis was conducted by Joseph Gasper of Westat. Yong Lee of Westat conducted the statistical programming. Additional contributions were made by Frank Jenkins, Christopher Manglitz, and Saunders Freeland.

We would like to acknowledge the cooperation of Small Business Services (SBS) staff, and Kelly Richardson, specifically, for all of their assistance is accessing the data. We would also like to thank Martin D'Andrade and Shannon Cantu Rzasa, directors of the Workforce1 Industrial and Transportation Career Center and the Workforce1 Healthcare Career Center, respectively, at the time this evaluation was conducted. We also appreciate the help provided by the staff of CEO, especially David Berman, who facilitated this relationship with SBS, and has served as an invaluable resource during the project. Finally, we are grateful for the assistance of Jeff Sorenson and Brian Close of the New York State Department of Labor (NYSDOL), who guided us through the process of obtaining the quarterly Unemployment Insurance (UI) earnings records data for this evaluation.

Table of Contents

Contents (continued)

Appendixes **Page**

Tables

Contents (continued)

Contents (continued)

Figures

Executive Summary

Sectoral employment has emerged as an innovative approach to workforce development in which unemployed and underskilled workers are provided with services and training needed to fill positions in sectors with high growth potential. This report examines the sectoral employment initiative sponsored and managed by the New York City (NYC) Department of Small Business Services (SBS) in partnership with the NYC Center for Economic Opportunity (CEO). There are three sector-focused career centers – the Workforce1 Transportation Career Center, the Workforce1 Manufacturing Career Center, and the Workforcee1 Healthcare Career Center. The purpose of the report is to examine the effects of participation in the sector-focused programs on the labor market outcomes of jobseekers after one year.

Sector-Focused Career Centers

Established under the Workforce Investment Act (WIA), Workforce1 Career Centers (WF1CCs) provide NYC residents with a full array of employment services, including job placement, career advisement, job search counseling, and skills training. Broadly, Workforce1 services prepare and connect New Yorkers to job opportunities. Currently there are 20 WF1CCs located across the five boroughs. WF1CCs are operated by SBS in coordination with contracted providers and the New York State Department of Labor (NYSDOL). Beginning in 2008, CEO and SBS created a number of sector-focused career centers to provide industry-specific job services and training to both unemployed jobseekers and incumbent workers looking to advance in their careers. The Transportation Career Center was launched in 2008, the Healthcare Career Center was launched in 2009, and the Manufacturing Career Center was launched in 2010. These sector-focused career centers were designed to target particular sectors that offered competitive wages of at least $10 per hour, schedules with at least 30 hours per week, advancement opportunities for job seekers and incumbent workers, and high growth potential for businesses. Each sector-focused career center has mid-wage goals of $15 per hour for a share of their clients in addition to job placement and job promotion for jobseekers and incumbent workers. These sector-focused career centers provide a range of services centered on job placement and career advancement, industry-specific education and training, career advisement, job search counseling, and support services that are tailored to the sector or sectors they target. Additionally, jobseekers may be awarded scholarships for industry-specific training offered by the sector-focused career centers or awarded ITGs, which are vouchers intended to cover the cost of specialized occupational training, such as a commercial driver's license training courses or medical assistant training courses.

In 2011, SBS consolidated the Transportation and Manufacturing Career Centers into a unified Industrial and Transportation Career Center. The Industrial and Transportation Career Center targets low-income individuals who are interested in accessing higher-wage occupations with career advancement potential within the transportation, manufacturing, wholesale trade, and construction sectors. Examples of such occupations include baggage handlers, mechanics, drivers, dispatchers, machinists, and customer service representatives. The Industrial and Transportation Career Center has set a goal to help a large percentage (35% in 2012 and 45% in 2013) of placed or promoted jobseekers earn a high wage ($15 or more). In addition to the services previously outlined, the Industrial and Transportation

Career Center offers various no-cost industry-specific training to participants each year. In 2012, the center offered commercial driving (Class A, B, and C) training, inventory management training, supervisory training, and dispatcher training. In other years, the center offered computerized numerical control (CNC machinist) training and diesel technician training. Jobseekers and incumbent workers may access ITGs for some high-growth occupations, including commercial driving. Because the Transportation Career Center and the Manufacturing Career Center operated as independent programs during most of the study period of 2009 through 2011, they are evaluated separately in this report.

The Workforce1 Healthcare Career Center targets low-income individuals who are already working in clinical healthcare field and who want to access new or higher-wage occupations paying $15 or more per hour as well as individuals who want to obtain entry-level positions that pay at least $10 per hour. Examples of these occupations include registered nurse (RN), licensed practical nurse (LPN), certified nursing assistant (CNA), medical assistants (MA), paramedics, emergency medical technician (EMT), direct care workers, occupational therapy assistants (OTA), and medical billers and coders. In addition to an array of sector-focused job search services described earlier, the Healthcare Career Center offers various no-cost industry-specific training to participants each year. In 2012, these trainings included EMT training, paramedic training, patient care technician (PCT) training, dental assistant training, an anesthesia upgrade for dental hygienists training, and NCLEX preparation for RNs and LPNs with an English as a Second Language (ESL) component. In other years the trainings have included home health aide training, medical assistant training, pharmacy technician training, and electronic biller and coder training. Jobseekers and incumbent workers may access ITGs for some high-growth occupations, including MAs and CNAs.

Effects of Sector-Focused Career Center Participation on Labor Market Outcomes

- Increases earnings by an estimated 53 percent or $5,800 per participant
- Participants who receive training experience the greatest earnings gains—an estimated $9,071 per participant
- Earnings gains are sustained up to one year after participation in the program
- Participants benefit from the sector approach regardless of their characteristics at enrollment or prior work history

Study Design

Westat sought to answer the following questions: Do the sector-focused programs result in significant labor market gains for job seekers? Do specific groups of participants who face barriers in the labor market, such as youth ages 18 to 24, individuals with less than or only a high school diploma, unemployed workers, low-wage workers, and those with an unstable work history, benefit from participation? How does the industry-specific training received by participants contribute to employment and earnings outcomes at each sector-focused career center?

To answer these questions about the effects of the program on labor market outcomes, we used a quasi-experimental design in which we compared the labor market outcomes of sector-focused career center participants to those of a sample of WF1CC participants matched on demographic characteristics and prior work history and earnings using propensity score matching. Data on demographic characteristics came from SBS's electronic records system. Data on prior work history

and employment and earnings outcomes were ascertained from quarterly Unemployment Insurance (UI) earnings data provided by NYSDOL.

Effects of Sector-Focused Career Center Participation on Labor Market Outcomes

In evaluating the effects of sector-focused career center participation, we considered participants' employment, employment stability, earnings, and earnings growth over the course of the year after exit in the program.[7]

Key findings include:

Participants in sector-focused programs were more likely to be employed in the year after exit than matched WF1CC participants. Sector-focused career center participants were more likely than matched WF1CC participants to be employed at least one quarter in the year after exit (83 percent versus 73 percent). These differences in employment between sector-focused career center participants and matched WF1CC participants were observed from the first quarter after exiting the program through the fourth quarter after exit, indicating that the effects of the program on employment did not diminish over time.

Participants in sector-focused programs experienced greater job stability in the year after exit than matched WF1CC participants. Sector-focused career center participants were more likely to work in each of the four quarters after exit (48 percent versus 34 percent)—an indication that the sector-based approach helped them find steady employment.

Participants in sector-focused programs earned significantly more in the year after exit than matched WF1CC participants. Participation in the sector-focused programs increases earnings by an estimated $5,800 per participant—or about 53 percent. The effect of sector-focused career center participation on earnings was sustained over the year after exit. Part of the sector-focused career center participants' earnings gains can be attributed to the fact that participants were more likely to find work and worked more steadily throughout the year. However, sector-focused career center participants who worked earned significantly more—$5,003, or 33 percent—than their matched WF1CC counterparts who worked.

Participation in the sector-focused programs increased the likelihood of employment and raised earnings for all subgroups. Groups that face barriers in the labor market, including youth, racial and ethnic minorities, low skilled workers, low wage workers, and individuals with an unstable work history, all experienced significant employment and earnings gains under the sector-focused approach. In addition, there were no differences in earnings gains by education level at enrollment, disability, or employment status at enrollment. This is an encouraging finding which suggests that all groups benefited from the program.

Sector-focused career center participants who received industry-specific training had greater employment and earnings gains than those who did not receive training. Sector-focused career center participants who received industry-specific training increased earnings an estimated $9,071—or about 82 percent, whereas those who received no training gained an estimated $5,620, or about 51

[7] SBS data indicate the date that a participant exited the program. Participants are considered to have exited the program when they have not received services for 90 days. SBS data record the date of exit as the date the participant last received services, not the date of the end of the 90 day period. During the time period considered in this evaluation, exit dates were updated manually for the Industrial and Transportation Career Center and automatically for the Healthcare Career Center.

percent, a significant difference. These findings suggest that the provision of training is a key ingredient in the success of the sector-based approach but that there is still a substantial benefit to participation without training. The earnings gains of participants who did not receive training may be attributable to the connections that the sector-focused programs have with employers and the ability to place participants into high-quality jobs in a specific industry.

Sector-Focused Career Center-Specific Effects

The three sector-focused programs considered in this study differ in the populations they serve and provide services and placement for different types of industries. For these reasons, we examined the effects of the three programs separately. All three sector-focused programs resulted in significant increases in the likelihood of employment and stable employment and earnings gains for participants. Earnings gains in the Healthcare Career Center were somewhat larger than in the other two programs.

Conclusions

Overall, these findings suggest that the sector-specific approach to employment services offered by the SBS and CEO may be successful in helping participants to find steady employment and increasing earnings one year later. The receipt of industry-specific training appears to play a role in the positive labor market experiences of participants post-exit. However, even participants who do not receive industry-specific training fare better than if they had been served by the WF1CCs.

While this evaluation is a good start, there is a need for longer term studies that track participants over more than a year to determine whether the labor market gains observed here are sustained or diminish. There is also a need for more controlled studies that would allow us to better disentangle the effects of the sector-focused programs from preexisting industry-specific experience, interests, and motivation of individuals who enroll in these specialized programs.

1. Introduction

Launched in 2006, CEO works with both City agencies and the federal government to implement anti-poverty initiatives that focus on building human capital and improving financial security in New York and partner cities across the United States. Since its inception, CEO has funded more than 50 initiatives across 28 sponsoring city agencies and 200 community-based providers aimed at reducing the number of working poor, young adults, and children living in poverty in NYC. CEO is committed to assessing the impact of its programs through rigorous evaluation and close program monitoring.

Sectoral employment emerged as an innovative approach to workforce development over the past two decades. In sectoral employment, unemployed and underskilled workers are provided with the industry-specific training and career development support necessary to get a job or advance in their current job. Sectoral employment also serves to meet the needs of local businesses that require highly skilled workers to fill vacancies. The particular sectors are chosen based on their growth potential. Because employers are often involved in the design of sectoral employment programs, participants learn the specific skills required for a position.

This report considers three CEO sector-focused career centers sponsored and managed by the NYC Department of Small Business Services (SBS). These are the Workforce1 Transportation Career Center, the Workforce1 Manufacturing Career Center, and the Workforce1 Healthcare Career Center. The sector-focused programs utilize an innovative strategy that serves the employment needs of businesses within a specific economic sector or related sectors, helping businesses meet their staffing needs for qualified workers and seeking to provide higher-wage jobs with career potential to low-income individuals. An earlier report demonstrated that participants in the Workforce1 Transportation Career Center have higher placement rates and placement wages (ranging from $2.76-$4.89 more per hour) than participants in the WF1CCs (Henderson, MacAllum, & Karakus, 2010).

The purpose of the current report is to expand the analysis to multiple sector-specific approaches, examine the factors that influence job placement outcomes at the sector-focused programs, and to track the wages of sector-focused career center participants after they leave the program. Specifically, this report examines whether participation in the sector-focused career center programs increases the likelihood of employment and raises earnings one year after program participation. This report also examines whether sector-focused career center participation has effects for key subgroups of participants as well as the role played by industry-specific training in these outcomes. To answer these questions, Westat used a quasi-experimental design that involved a comparison group of WF1CC participants matched on demographic characteristics and previous work history and earnings.

Following this introduction, we provide a background on sectoral employment initiatives around the country and summarize what is known about the impacts of these programs. Then, we discuss the various program models for the three SBS-CEO sector-focused programs. Next, we outline the study design, including the research questions, the data, and analysis strategy. Then we provide a description of the program participants and their experiences while in the program, including the demographic characteristics, previous work history, and services received. Next, we assess the effects

of the sector-focused programs on labor market outcomes using Unemployment Insurance (UI) earnings data from NYSDOL and a matched comparison group of WF1CC participants. We discuss conclusions and implications of the findings.

Overview of Sector-Focused Approach

As a result of the recent economic crisis, the U.S. unemployment rate was at or around 9 percent in 2010 and 2011 and has remained at about 8 percent since then. Millions of workers lost their jobs and were receiving temporary unemployment benefits. Moreover, while employment losses occurred throughout the economy, they were concentrated in mid-wage occupations (National Employment Law Project, 2012). Federal, state, and local governments have been trying different employment programs to connect dislocated workers and other unemployed and underemployed adults with the labor market.

For the last three decades, workers with only a high school diploma or less education have seen a serious decline in earnings (Roder, Clymer, & Wyckoff, 2008). Years ago, attaining these levels of education was adequate to guarantee entry into America's middle class income level. However, in today's knowledge-based economy, lower educational attainment typically equals lower earnings levels. More than half of the families in the U.S. with incomes in the bottom quintile will still be in the lowest income group a decade later (Maguire, Freely, Clymer, Conway, & Schwarz, 2010; Roder et al., 2008). In addition to earning low wages, workers with low levels of education usually lack the skills needed to sustain a career or to advance to higher paying positions within the companies in which they are employed. The combination of a growing knowledge-based economy with a growing number of under-educated and less-skilled workers has caused employment gaps in a number of industries, including transportation, manufacturing, and healthcare (Maguire et al., 2010).

In order to address the employment gaps in certain industries, providers of employment services have developed innovative approaches to workforce development, including sector-focused employment programs. These programs involve the creation of industry-specific training and career development programs that focus on training less-skilled and less-educated workers to help them develop the sector-specific skills needed to connect with and be successful in skilled jobs. Sector-focused employment also focuses on improving employment opportunities for individuals already within an industry and moving workers out of jobs that offer low pay, few benefits, and little job security (Elliott & King, 1999; Maguire et al., 2010).

SHARED CHARACTERISTICS OF SECTOR-FOCUSED EMPLOYMENT PROGRAMS

- **Target specific industry/sector occupation;**
- **Develop understanding of business competitiveness and workforce needs of targeted sector;**
- **Make systemic changes in targeted sector that benefits workers with access to jobs with higher earnings and career pathways;**
- **Improve workers' skills capacity to compete for higher quality work in targeted sector; and**
- **Meet employers' needs by improving the employer's ability to compete in the marketplace.**

Sector-focused employment programs use different strategies that vary widely across states and localities, but there are

characteristics that are shared by each program. The majority of sector-focused employment programs that share these characteristics use one or a combination of three approaches to achieve systemic changes for low-income workers and businesses in a targeted sector (Elliott & King, 1999; Roder et al., 2008).

The first approach is creating systemic changes that benefit a large number of low-income workers by altering the way companies recruit, pay, and promote workers (Elliott & King, 1999). Programs utilizing this approach attempt to provide more jobs that offer higher pay for higher skills by engaging in specific steps including recognizing and rewarding companies that meet high standards of pay and benefits for their employees, while removing artificial barriers to employment, and training the next generation of business owners.

The second approach is to achieve changes in a targeted sector that benefit a large number of low-income workers by providing skills training and job placement services to individuals or increasing access to better jobs. (Elliott, Roder, & Stillman, 2001; Roder et al., 2008).

The third approach focuses on policy change. Several states and municipalities have developed initiatives that offer competitive grant funding to encourage local workforce providers to collaborate with businesses to develop sector-focused strategies that meet business needs while providing good jobs for workers (Conway, Blair, Dawson, & Dworak-MuNoz, 2007).

It is necessary to evaluate sector-focused employment programs to determine their effectiveness and develop evidence based approaches to implementing such programs. For example, an earlier study in 2003 evaluated the effectiveness of six sector focused employment programs over a three year period by using a pre- and post-test design (Conway & Rademacher, 2003). The study found that 94 percent of participants were employed during follow-up periods compared to only 67 percent at baseline. In addition, participants experienced a significant increase in the number of hours worked and on average, there was a two-fold increase in the wage rate in the second year after training. Interviews with participants revealed that in addition to education and technical training, training in workplace culture (e.g., communication and problem-solving skills) and provision of human services supports (e.g., day care) were important elements in job placement and retention. However, because the study did not include a comparison group of participants receiving non-sector based employment services; it is unclear whether increases in placement, wages, and hours are specifically attributable to the sector-focused approach.

In a recent study, researchers assessed outcomes of nine sector-focused employment programs in Philadelphia (Roder, Clymer, & Wyckoff, 2008). Findings indicate that average wages of participants increased by 30 percent two years after the workers graduated from a skills training program. They also found that the rate of home ownership among graduates rose from 13 percent to 19 percent after two years.

A 2010 evaluation of the Workforce1 Transportation Career Center found that the participants were placed at higher rates, had higher hourly wages (ranging from $2.76-$4.89 more per hour) and worked more weekly hours (ranging from 2.8-4.9 more hours per week) upon placement than participants served by the WF1CCs (Henderson, MacAllum, & Karakus, 2010). Another evaluation of three sector employment programs found that compared with the random control group, participants in the sector employment programs earned

significantly more money (about $4,500 over 24 months), worked significantly more months (1.3 months more over 24 months), found work more consistently; and were more likely to work at a job that included benefits, such as health insurance and paid time off (Maguire et al., 2010).

Overall, these evaluations found that sector-focused employment approaches play an important part in making positive changes in the field of workforce development. Sector-focused employment approaches that merge employment and training services with efforts to make systemic changes benefiting a large number of low-income workers in a targeted sector have a greater likelihood of being more successful than traditional workforce development programs.

Workforce1 Sector-Focused Career Centers

Beginning in 2008, CEO and SBS created a number of sector-focused career centers to provide industry-specific job services and training to both unemployed jobseekers and incumbent workers looking to advance in their careers. The Transportation Career Center was launched in 2008, the Healthcare Career Center was launched in 2009, and the Manufacturing Career Center was launched in 2010. These sector-focused career centers were designed to target particular sectors that offered competitive wages of at least $10 per hour, schedules with at least 30 hours per week, advancement opportunities for job seekers and incumbent workers, and high growth potential for businesses. The sector-focused career centers all have mid-wage goals for placement of jobseekers and promotion of incumbent workers of $15 per hour for a proportion of their clients. These sector-focused career centers provide a range of services centered on job placement and career advancement, industry-specific education and training, career advisement, job search counseling, and support services that are tailored to the sector or sectors they target. Jobseekers may be awarded scholarships for industry-specific training offered by the sector-focused career centers or awarded ITGs, which are vouchers intended to cover the cost of specialized occupational training, such as a commercial driver's license training courses or medical assistant training.

The Workforce1 sector-focused career centers make an active effort to recruit participants. The center advertises its services in industry-focused journals and across employment websites, including Monster and Career Builder. The centers also host their own recruitment events, attend industry-specific events, and work with alumni from local colleges. The sector-focused career centers also receive referrals from WF1CCs. In addition to in-center services, individuals are able to apply to the center online, attend an online orientation, and apply for jobs online.

Workforce1 Industrial and Transportation Career Center

The transportation sector provides thousands of jobs for entry- and mid-level workers in NYC, as the city ranks first among U.S. cities in passenger miles flown, transit passenger miles, and truck freight volume (Labor Market Information Services, 2008). In 2008, SBS launched the Workforce1 Transportation Career Center. In 2010, SBS launched the Workforce1 Manufacturing Career Center. In 2011, both centers were merged into a single Industrial and Transportation Career Center.[8] The Center is currently co-located with the Queens

[8] Although the two centers have merged, this study considers the Transportation Career Center and the Manufacturing Career Center separately since they operated as distinct programs during most of the period for which we have data.

Workforce1 Career Center in Jamaica, Queens – a non-sector focused career center (standard general one-stop) funded by WIA. The Workforce1 Industrial and Transportation Career Center supplies workers to a set of related industrial sectors in NYC: transportation, manufacturing, wholesale trade, and construction. The goal of the Workforce1 Industrial and Transportation Career Center is to place or promote low-wage workers in quality transportation or industrial sector jobs that pay $10 or more per hour with benefits and between 35-45 percent of all workers into jobs that pay $15 or more. Examples of such occupations include baggage handlers, mechanics, drivers, dispatchers, machinists, and customer service representatives.

The Workforce1 Industrial and Transportation Career Center works closely with companies in the aforementioned sectors to assess their hiring and training needs and design job preparation and training services to meet the employer's specific needs. At the time of this report, the Industrial and Transportation Career Center had partnerships with over 250 employers. For example, in response to employers' concerns about the need to bring in workers with computer skills in manufacturing, the Workforce1 Industrial and Transportation Career Center developed a CNC machinist training program to recruit and train machinists to operate complex robotics used on assembly lines, such as those used in automobile manufacturing.

To be eligible to receive services from the Workforce1 Industrial and Transportation Career Center, participants must be at least 18 years old and eligible to work in the U.S. The Workforce1 Industrial and Transportation Career Center focuses on both connecting jobseekers to job opportunities and providing training and support for incumbent workers to advance in their current positions. This strategy is designed to help create a pipeline of highly qualified and trained transportation and industrial workers, thereby saving companies time and money in staffing, increasing productivity, and making businesses in the transportation and industrial sectors more competitive.

After participants are determined to be eligible, they participate in an introduction to services and an intake team provides an initial assessment and determines which services they need. Services provided include job preparation and career strategies workshops, resume review, interview skill development, career advisement, and education and training support. If needed, some participants may receive support services, such as referrals to clothing and food banks, and for high school equivalency or ESL programs.

In addition to the services above, the Industrial and Transportation Career Center provides industry-specific training to workers at no cost. These trainings include (or have included) commercial driving (Class A, B, and C), dispatcher training, supervisory training, diesel technician training, CNC machinist training and inventory management training.

The Industrial and Transportation Career Center also provides services to employers including recruitment assistance, industry-specific training for new hires and incumbent workers (through the Customized Training and On-the-Job Training programs), and retention services. Employers are also eligible to receive NYC Business Solutions services, another set of services offered by SBS that allows business to start, operate, and expand, including legal and financial assistance, government navigation, MWBE certification and City procurement support, incentives access, and capacity building through business courses.

The Industrial and Transportation Career Center is particularly responsive to the

changing needs of employers and the community. The center developed a business advisory council, composed of transportation and industrial employers, training providers, industry associations, and economic development organizations, which meets quarterly to discuss market trends and provide feedback on the strategic direction of the Industrial and Transportation Career Center.

Workforce1 Healthcare Career Center

The healthcare industry is the second largest employer in NYC, employing 402,000 people working at more than 70 hospitals, thousands of clinics, and private practices (Kohli, 2009). In 2009, SBS launched the Workforce1 Healthcare Career Center. The Healthcare Career Center seeks to connect employers in the healthcare industry in NYC with qualified candidates and to provide training to new and incumbent workers for the purpose of promotion. At the time of this study, the Healthcare Career Center was located in Long Island City on the campus of LaGuardia Community College[9]. Healthcare Career Center is to place or promote workers into mid-level, clinical healthcare sector jobs that pay at least $10 an hour, with a specific focus on those positions that pay $15 or more per hour. The Healthcare Career Center primarily prepares applicants for the following occupations: RN, LPN, CNA, MA, paramedics, EMT, direct care workers, OTA, and medical billers and coders

The Workforce1 Healthcare Career Center works with community partners to facilitate access to the services offered to individuals in the healthcare field. The Healthcare Career Center has 12 to 15 community partners, including community colleges, public libraries, and community-based organizations.

As with the Industrial and Transportation Career Center, participants in the Healthcare Career Center Services are eligible for career, training, job placement, and supportive services that are tailored for the industry. Employers are also eligible to receive the full range NYC Business Solutions services.

As with the Industrial and Transportation Career Center, to be eligible to receive services from the Healthcare Career Center, individuals must be at least 18 years old and able to work in the U.S. Once it is determined that an individual is eligible, they receive an introduction to services and an initial assessment to determine appropriate services and next steps. Those who are not ready for immediate employment meet with a career advisor to determine what additional services are required for access to or advancement in the healthcare field.

Moreover, the Healthcare Career Center offers various industry-specific trainings to participants each year. In 2012, these trainings included EMT training, paramedic training, patient care technician (PCT) training, dental assistant training, an anesthesia upgrade for dental hygienists training, and NCLEX preparation for RNs and LPNs with an ESL component. In other years the trainings have included home health aide training, medical assistant training, pharmacy technician training, and electronic biller and coder training. Jobseekers and incumbent workers may access ITGs for some high-growth occupations, including MAs and CNAs. The Center offers only one of nine programs in the U.S. that offers the NCLEX exam with an ESL component. Last year, the Center sought to enroll 200 individuals in these trainings.[10]

[9] As of July 2013, the center is located in Lower Manhattan.

[10] The center has an enrollment goal of about 500 trainees for 2013.

Like the Industrial and Transportation Career Center, the Healthcare Career Center seeks to be responsive to the needs of employers. Although the Healthcare Career Center does not have a business advisory council, they regularly seek input from employers on the direction of the Healthcare Career Center.

Workforce1 Career Centers

Individuals who are not in a sector-focused employment program can receive services through the standard (non-sector specific) WF1CCs. "Workforce1" is the City's branding of its Workforce Investment Act (WIA)-funded career centers which are known nationally as "one-stops". WIA provides federal funds for workforce investment activities through statewide and local systems called Workforce Investment Boards (WIB). Authorized workforce investment activities provided at the local level benefit jobseekers, dislocated workers, youth, foster care participants, incumbent workers, new entrants to the workforce, Veterans, persons with disabilities, and employers. These activities are designed to promote an increase in employment, job retention, earnings, and occupational skill attainment by participants. In NYC, SBS offers WIA services to adults while the Department of Youth and Community Development provides WIA services to youth.

The WF1CCs are a critical part of the City's workforce development system that connects employers to skilled workers, and provides training and placement services to the City's adult and dislocated workforce. Through the WF1CCs, SBS provides jobseekers with a full array of general employment services, including job placement and advancement, career advisement, job search counseling, and skills training. Twenty WF1CCs are located in each of the five boroughs and are operated by contracted providers in coordination with NYSDOL. Some WF1CCs are co-located with NYC Business Solutions Centers, also administrated by SBS, which provide businesses with access to skilled labor through customized recruitment and training initiatives.

The WF1CCs are open to all NYC residents looking to find jobs, increase their skills, or advance in their careers. They provide access and services to all jobseekers, regardless of income. To assist NYC residents in finding a job, the WF1CCs offer:

- Resource rooms for job search
- Personalized career advisement
- Interview assistance workshops
- Resume assistance workshops
- Job placement services
- Occupational training through ITGs
- Connection to supportive services (or other job placement and training services) through Community Partners
- Support to businesses in training and recruiting qualified candidates

The WF1CCs in NYC were established in 2003 when SBS took over the city's adult workforce services. Prior to 2003, when Mayor Bloomberg created SBS, employment services and business services were offered by separate agencies – the Department of Employment and Department of Business Services, respectively.

In 2012, the city's 20 WF1CCs helped place 29,197 New Yorkers in jobs or promotions.

The standard (non-sector specific) WF1CCs serve as our source for the matched comparison group for this evaluation.

2. Study Design

2.1 Research Questions

This report addresses the following research questions:

a) Do the sector-focused career centers produce significant labor market gains for jobseekers one year after exit? More specifically, do the sector-focused programs increase the chances that participants are able to find employment and work more consistently? Does program participation raise the earnings of participants?

b) Do the sector-focused career centers increase the likelihood of employment and raise earnings for specific groups of participants, such as youth, workers with only a high school diploma, low-wage workers, or those with an unstable work history?

c) What is the effect of receiving industry-specific training at the sector-focused career centers on employment and earnings outcomes? Does participation in the sector-focused career centers without industry-specific training produce labor market gains?

To answer these questions, we used a quasi-experimental design in which we compared the labor market outcomes of sector-focused career center participants in the year after exit to those of a matched comparison group of WF1CC participants who were similar on demographic characteristics, prior work history, and prior earnings.[11]

2.2 Data Sources

Data for this study came from NYSDOL and SBS's electronic record system.

We obtained data on labor market outcomes in the year after exit from the NYSDOL Unemployment Insurance (UI) earnings records. The UI earnings records system is designed to track employees' earnings to determine eligibility in the event that they file a claim for UI benefits. Employers who are covered by the UI system are required to submit a Quarterly UI Wage Report to the state listing total wages paid to each employee. Roughly 95 percent of employers are covered by UI system in New York State. The types of employment that are not covered in the UI wage record system include self-employment, independent contracting, some types of agricultural employment, and federal work study employment.

The UI earnings records provided to Westat contained quarterly earnings for all jobs in each quarter from the 1st quarter of 2008 through the 3rd quarter of 2011 (the most recent quarter of earnings data available at the time this report was written). The availability of data from this period allowed us to track the employment and earnings patterns of participants from one year before enrollment in the program to one year after exit from the program. The file also included North American Industry Classification System (NAICS) codes for the industry from which the participant earned the majority of earnings in each quarter.

[11] SBS data indicate the date that a participant exited the program. Participants are considered to have exited the program when they have not received services for 90 days. SBS data record the date of exit as the date the participant last received services, not the date of the end of the 90 day period. During the time period considered in this evaluation, exit dates were updated manually for the Industrial and Transportation Career Center and automatically for the Healthcare Career Center.

This allowed us to determine whether participants had previous work experience in the industry for which they were seeking training and services and examine whether participants were employed in jobs in the sector targeted by the program. No personally identifiable information about participants was shared with Westat.[12]

The SBS data provided data on participants' demographic characteristics and program enrollment. Demographic characteristics included age, gender, race/ethnicity, disability status, education level, school enrollment status, and Veteran status. The SBS data also provide information on participants' recent employment situation, including employment status at enrollment and hourly wage and hours worked per week at the current or most recent job.[13]

The recent work status of participants available in the SBS data may not accurately reflect their previous work experience. Therefore, we also used NYSDOL UI earnings record data to tap previous work history and earnings. These measures included the number of quarters that participants worked in the year before enrollment, whether participants had the majority of their earnings in at least one quarter from the industry for which they sought employment, and the total earnings from all jobs in each of the four quarters prior to enrollment. Pre-program earnings and industry work experience are the most important measures on which to match sector-focused program and WF1CC participants because these factors identify job seekers with similar work histories, the most important predictor of future important. Moreover, it is extremely important to match on earnings over the entire year before enrollment in the program, as prior research on employment and training programs has demonstrated that the earnings of participants tend to decline prior to enrollment (Ashenfelter and Card, 1985).

SBS data on demographic characteristics and NYSDOL data on prior work history and earnings were used to match sector-focused career center participants to WF1CC participants. The SBS data also provided information on service receipt. This information was used to identify sector-focused career center participants who received industry-specific training. This enabled us to assess the relationship between receipt of industry-specific training and labor market outcomes.

2.3 Labor Market Outcome Measures

We examined whether participation in the sector-focused career centers increased employment and raised earnings using UI earnings records data. Table 2.1 provides a description of the employment and earnings outcomes measures. *Ever employed in the year after exit* is a binary indicator for whether the

[12] Westat provided SBS with a list of participants to be included in the study and for whom wage records were required. SBS pulled the Social Security Numbers (SSNs) for these individuals and provided them to NYSDOL, who returned de-identified wage data to Westat.. NSYDOL matched the data on the basis of SSN only, not name, because matching on name introduced errors and decreased the number of matches in the UI wage records owing to differences in the way names were reported by SBS and employers. Of the 333,006 participants for whom Westat requested UI wages, NYSDOL was able to match 292,926 to wage records. Of the 333,006 participants for whom Westat requested UI wage records, SBS did not have a SSN on file for 10,923 participants. NYSDOL could not find a match in the UI wage records for another 29,137 participants. In these cases, there may have been a discrepancy between the SSN on the employer records and NYSDOL records. Because NYSDOL only included participants for whom a wage record was found in the file, we were unable to examine whether participants who did not have a wage record differed from those who did have a wage record.

[13] The SBS data also include information on job placement outcomes, including whether the participant was placed or promoted into a job, placement wages, and placement hours worked. A previous report examined the job placement outcomes of Transportation Career Center participants (Westat, 2010). The main focus of this report is on the labor market outcomes of participants in the year after exit. Appendix C provides analysis of the job placement outcomes of participants.

Table 2.1. Post-Exit Employment Experience, Earnings, and Earnings Gains Measures

Measure	Definition/Operationalization
Employment[1]	
Any employment in year after exit	Any earnings in 4 quarters after exit
1 quarter after exit	Any earnings in 1st quarter after exit
2 quarters after exit	Any earnings in 2nd quarter after exit
3 quarters after exit	Any earnings in 3rd quarter after exit
4 quarters after exit	Any earnings in 4th quarter after exit
Quarters worked after exit	
0 quarters	Worked 0 quarters after exit
1 quarter	Worked 1 quarters after exit
2 quarters	Worked 2 quarters after exit
3 quarters	Worked 3 quarters after exit
4 quarters	Worked 4 quarters after exit
Industry of employment	
Transportation, warehousing and wholesale trade	Majority of earnings in at least 1 quarter after exit from construction (23), manufacturing (31-33), wholesale trade (42), transportation and warehousing (48-49), administrative and support and waste management and remediation services (56), and other services (81)
Manufacturing and construction	Majority of earnings in at least 1 quarter after exit from construction (23), manufacturing (31-33), wholesale trade (42), transportation and warehousing (48-49), administrative and support and waste management and remediation services (56), and other services (81)
Healthcare and social assistance	Majority of earnings in at least 1 quarter from healthcare and social assistance (62)
Average quarterly earnings	
Unconditional	
Total year after exit	Total earnings from all jobs in all 4 quarters after exit
1 quarter after exit	Total earnings from all jobs in 1st quarter after exit
2 quarters after exit	Total earnings from all jobs in 2nd quarter after exit
3 quarters after exit	Total earnings from all jobs in 3rd quarter after exit
4 quarters after exit	Total earnings from all jobs in 4th quarter after exit
Conditional on employment	
Total year after exit	Total earnings from all jobs in all 4 quarters after exit for those who were employed
1 quarter after exit	Total earnings from all jobs in 1st quarter after exit for those who were employed
2 quarters after exit	Total earnings from all jobs in 2nd quarter after exit for those who were employed
3 quarters after exit	Total earnings from all jobs in 3rd quarter after exit for those who were employed
4 quarters after exit	Total earnings from all jobs in 4th quarter after exit for those who were employed

[1] Individuals are considered employed in a quarter if they had at least $100 in earnings. Individuals who were employed may not have been employed in the same job or the entire quarter.

participant was employed in any of the four quarters after exit from the program.[14]

We considered an individual to be employed if he or she had any earnings in a quarter.[15] It is important to note that individuals who were employed in a quarter may not necessarily have held the same job continuously or worked the entire quarter. *Quarterly employment* is measured with four binary indicators for whether a participant had any employment in each quarter after exit to understand whether observed effects diminish or are sustained over time. In addition to employment status, we also included employment stability. *Number of quarters employed* is measured with five binary indicators for whether an individual was employed in none, one, two, three, or all four of the quarters in the year after exit. Participants who were employed in all four quarters are considered to have the most employment stability but may not necessarily have been employed continuously in the same job.

Our earnings measures capture total earnings and total earnings conditional on employment. *Total earnings* is the total earnings from all jobs in the four quarters after exit. Individuals with no earnings are included in this measure and coded as $0. Therefore, this measure captures the full effect of sector-focused career center participation on earnings. Because some individuals are not placed into jobs, we also examined *total earnings conditional on employment*. This measure only includes those who worked in the year after exit; individuals with no earnings are excluded.[16] Inclusion of this measure helps to sort out whether the effects of sector-focused career center participation on earnings are due to the fact that participation increases employment or to increasing earnings among those who work.

Finally, we included a measure of *industry of employment* to capture whether a participant worked in the industry for which they received services or training. This measure indicates whether the majority of an individual's earnings in at least one quarter came from a job in the sector for which they received services (transportation, manufacturing, or healthcare). Although this evaluation used data from before the Transportation Career Center and Manufacturing Career Center consolidated, examination of the earnings data revealed that a substantial proportion of Transportation Career Center participants had the majority of post-program earnings in sectors served by the Manufacturing Career Center and vice versa. For this reason, individuals served by these two programs were counted as employed in the target sector if they had

[14] The first quarter after exit is the first full quarter after exit. We do not consider the quarter in which a participant exited as a post-exit quarter. This is because the quarter in which a participant exited includes time spent enrolled in the program, during which he or she may not have been working because of training. For some participants, the quarter of exit also includes earnings from before enrollment if they enrolled and exited in the same quarter. Therefore, earnings from the quarter of exit cannot be attributed to the program and is not included as an outcome measure.

[15] As is common in studies using UI earnings records, we imposed a $100 minimum on earnings per quarter to count an individual as employed. This definition is the same as that applied by the Social Security Administration (SSA) when measuring the duration of insured employment to determine eligibility for retirement benefits. A very small percentage of individuals with earnings earned less than $100 and counting these individuals as employed made no difference in the results.

[16] We top coded a very small number of outlier values of quarterly earnings that were greater than $25,000.

earnings from the industries served by either program.[17]

2.4 Study Design

This study includes participants who enrolled in one of the three sector-focused career centers or a WF1CC between January 1, 2009 and September 30, 2011. We were unable to include participants who enrolled after September 30, 2011 because a full four quarters of post-program earnings data were not available for these participants due to an administrative lag in the reporting of UI earnings records data. The three sector centers sometimes serve participants who were previously enrolled in a WF1CC. Such individuals are included in this study as sector center participants if their enrollment in that program falls within the study period. In addition, some sector-focused career center participants exited the program and re-enrolled at a later date. For such individuals, we focused on their employment and earnings patterns following their first exit from the program.[18]

We examined the factors that influence the job placement outcomes of sector-focused career center participants using multivariate regression analysis. These analyses provide information about the independent influence of each factor included in the model (e.g., age, employment status at program entry, number of services received) and the outcome of interest (e.g., the likelihood of achieving a job placement).

We used propensity score matching to estimate the effects of the three sector-focused career centers on participants' labor market outcomes in the year after exit. Participants both self-select and are referred into the different programs based on their personal preferences, their "work readiness," their geographic proximity to various sector-focused career center locations within the City, the programs' intended populations, and their eligibility criteria. Propensity score matching addresses this issue by forming comparison groups of individuals who were similar to sector-focused career center participants but who did not participate in a sector-focused career center. A single comparison group was formed for participants in all three of the sector-focused career centers. In addition, separate comparison groups were formed for each of the three sector-focused career centers because participants in these programs differed from each other. The comparison groups were drawn from individuals who enrolled in WF1CCs during the same time period as the sector-focused program participants (January 1, 2009 to September 30, 2011). WF1CCs sometimes refer individuals to other specialized employment and training programs. These individuals were not considered in the comparison group because

[17] The UI data contained only 2-digis NAICS codes to identify the broad industry sector. We were thus unable to identify industry subsectors. For participants in the Workforce1 Transportation Career Center and the Workforce1 Manufacturing Career Center, we considered all participants employed in the Administrative Support and Waste Management and Remediation (56) and other services (81) industries to be employed in the sector. We were unable to specifically identify participants in waste management and remediation services (562) and automotive repair and maintenance (8111). For participants in the Workforce1 Healthcare Career Center, we considered all participants employed in healthcare and social assistance (62) to be employed in the sector. We were unable to identify participants with jobs in Ambulatory Health Care Services (621). This means that some participants may be counted as employed in the sector even though they did not work in these specific subsectors.

[18] For participants who exited the program more than once, we choose to focus on labor market outcomes in the year after the first exit rather than the last exit because participants who exited the program more than once received more services from the program at the time of their last exit than those who exited once. Using the first exit ensures that all participants are on equal footing with respect to their exposure to the program. Using the last exit would have made it difficult to separate the effects of first time participation from the effects of repeated participation. Our program effects therefore give the effect of first time participation on labor market outcomes. About 10 percent of sector-focused career center participants reenrolled in the same sector-focused career center a second time.

they received services in addition to those offered by WF1CCs. It is important to draw a clear distinction between the sector-based programs and "services as usual" (i.e., those offered by WF1CCs). Participants in the sector-focused career centers were matched to participants in WF1CCs who enrolled in the same year and who were similar on demographic characteristics, previous work history and earnings, and prior experience in the industry for which they were seeking services.[19]

We then compared the employment and earnings of sector-focused program participants to those in the matched comparison groups. We used regression analysis to further control for participant characteristics. We also examined the program effects separately for key groups of participants defined on the basis of characteristics at enrollment, including youth and low-wage workers. A detailed description of the propensity score matching methodology we used, the comparability of the sector-focused career center participants and matched WF1CC participants, and the procedures we used to estimate the program effects is given in Appendix E.

2.5 Limitations

There are a couple of limitations that should be kept in mind when interpreting the results of this study. First, as mentioned previously, only those sector-focused career center participants for whom one year of post-exit UI earnings data were available are included in this study. Because of an administrative lag in the availability of UI earnings data, we could not include participants who enrolled after September 30, 2011. The findings thus reflect the experiences of participants who enrolled during this approximately three year period and may not be representative of later enrollees.

Second, although propensity score matching is a well-respected quasi-experimental tool for estimating program effects, the results may not be interpreted as causal impacts of the program. This is because propensity score matching is only able to address differences between the sector-focused career center and WF1CC participants on measures that are available in the data are explicitly included in the matching process only. Propensity score matching cannot address differences between the groups that are unobserved. Although we believe that we have matched on some of the most important pre-program measures (e.g., prior earnings, previous work history, and previous experience in the industry), it is possible that some important characteristics have been omitted. For example, we do not know whether participants have pre-existing training in the industry in which they are seeking employment, or the specific skills, interests, or motivation that they bring to the table. Differences such as these may explain some of the more positive outcomes of sector-focused career center participants, and the program effects would be overstated.

[19] While there are many methods to match individuals, we used a popular method known as 1-to-1 nearest neighbor caliper matching without replacement. Under this method, one comparison case is chosen for each sector-focused program participant based on how similar their propensity scores are to each other. Once a comparison case was determined a match, they are removed from the pool of possible comparison cases and cannot be matched to another sector-focused program participant. Appendix E provides additional details on the matching process.

3. Description of Program Participants

In this section we provide a general description of the similarities and differences among participants in the three sector-focused career centers and the WF1CC population with respect to demographics, prior work history and earnings, and services received.

3.1 Demographic Characteristics and Work History of Program Participants

Table 3.1 provides a description of the demographic characteristics of participants in each of the three sector-focused career centers to participants in the WF1CCs.[20] The participants in the WF1CCs in the table include all participants (i.e., is not limited to the matched comparison group) to highlight the differences with the sector-focused career center participants. Because we had data on the entire population of sector-focused career center and WF1CC participants who enrolled from 2009 to 2011, we did not conduct significance testing for the differences. The observed differences are the actual differences in the population of participants who enrolled during this period.[21]

Not surprisingly, the WF1CCs clearly outweigh the three sector-focused career centers with respect to the number of individuals served, with almost half of all WF1CC participants enrolling in 2009 when unemployment rates in NYC peaked (Bureau of Labor Statistics, 2013). In contrast, two of the three sector-focused career centers were just being implemented in 2009 so the majority of enrollments occurred in 2010 and 2011.

The three sector-focused career centers served a lower percentage of youth ages 18 to 24 (8.6 percent and 15.7 percent) than the WF1CCs (19.5 percent). Whereas the WF1CCs serve almost equal proportions of males and females (47.9 percent and 51.5 percent), the three sector-focused career centers disproportionately serve either males or females. Approximately three-quarters of participants in the Transportation and Manufacturing Career Centers are male (77.5 percent and 73.8 percent, respectively) and almost three-quarters of participants (73.9 percent) in the Healthcare Career Center are female.

Relatively few of the participants (less than 3 percent) in any of the sector-focused career centers or the WF1CCs had a self-reported disability. A higher proportion of participants in the Transportation and Manufacturing Career Centers reported being Veterans (4.4 percent and 4.8 percent), compared with 1.6 percent of participants in the Healthcare Career Center and 2.2 percent in the WF1CCs.

With respect to educational attainment, the WF1CCs had the highest proportion of participants with less than a high school diploma (16.2 percent), followed by the Manufacturing Career Center (10.6 percent).

[20] As mentioned earlier, because the data for this evaluation are from the period before the Workforce1 Transportation Career Center and Workforce1 Manufacturing Career Center consolidated, these two programs are considered separately. Although they are considered separately, under the consolidated Workforce1 Industrial and Transportation Career Center, the distinction between the two programs is not as clear cut. For example, participants who are enrolled in Manufacturing may be placed into Transportation sector jobs and vice versa.

[21] In contrast, if we had sampled from among participants who enrolled during this period, then we would need to determine whether the differences we observed were statistically significant—that is, whether they were due simply to chance or sampling variability or were actual differences in the population.

Table 3.1. Demographic Characteristics of Participants in Each Program

Characteristic	All Sector-Focused Career Centers	Workforce1 Transportation Career Center	Workforce1 Manufacturing Career Center	Workforce1 Healthcare Career Center	Workforce1 Career Centers
Year of enrollment (%)					
2009	31.9	44.4	2.2	11.0	46.1
2010	37.9	30.0	61.6	48.0	34.4
2011	30.3	25.6	36.2	41.0	19.6
Age (%)					
18 to 24	11.9	11.2	8.6	15.7	19.5
25 to 54	78.3	78.5	79.8	76.7	70.4
55 and older	9.9	10.3	11.6	7.6	10.1
Mean age	38.0	38.4	39.1	36.2	36.4
Standard deviation	11.4	11.4	11.3	11.1	12.2
Gender (%)					
Male	65.7	77.5	73.8	25.4	47.9
Female	31.8	19.0	25.8	73.9	51.5
Information missing	1.5	3.5	0.4	0.7	0.6
Race/ethnicity %)					
White, non-Hispanic	10.7	8.8	16.7	13.1	10.4
African American	38.7	40.9	34.6	34.7	39.8
Hispanic	28.0	28.4	30.2	25.7	31.6
Other/Multi-racial	10.5	9.3	10.9	13.7	7.0
Information missing	12.1	12.7	7.6	12.8	11.3
Disability status (%)					
Disabled	1.8	1.8	2.1	1.3	2.8
Not disabled	89.2	88.4	91.4	90.7	88.7
Information missing	9.0	9.8	6.5	8.0	8.5
Veteran status (%)					
Veteran	3.8	4.4	4.8	1.6	2.2
Not a Veteran	87.7	86.1	90.5	91.1	90.5
Information missing	8.5	9.6	4.8	7.3	7.3
Education level (%)					
Less than high school	8.1	9.2	10.6	3.3	16.2
High school diploma or GED	35.4	40.8	30.3	22.2	33.2
Some college or vocational	39.4	37.2	35.8	48.0	32.6
College degree or higher	16.2	11.8	22.7	25.5	17.1
Information missing	1.0	1.0	0.6	1.1	0.9

Table 3.1. Demographic Characteristics of Participants in Each Program (continued)

Characteristic	All Sector-Focused Career Centers	Workforce1 Transportation Career Center	Workforce1 Manufacturing Career Center	Workforce1 Healthcare Career Center	Workforce1 Career Centers
Enrollment status (%)					
Enrolled in school	15.4	12.2	12.4	26.6	16.0
Not enrolled in school	75.8	77.3	82.3	67.9	76.1
Information missing	8.8	10.5	5.3	7.3	8.0
Location of residence (%)					
Brooklyn	26.3	22.9	43.2	26.8	19.7
Bronx	12.8	13.2	15.3	10.4	33.7
Manhattan	7.9	7.6	8.9	8.5	15.3
Queens	48.4	51.6	30.1	49.0	22.3
Staten Island	1.3	1.2	1.6	1.2	6.5
Other location[1]	3.3	3.4	0.9	4.3	2.6
Number of participants	13,104	8,603	1,638	2,863	254,115

SOURCES: Westat calculations using SBS data.
[1] Other location includes participants with zip codes outside of NYC.
Distributions may not add to 100 percent because of rounding.

Of the three sector-focused career centers, participants in the Transportation Career Center had the lowest levels of educational attainment with 50 percent having a high school degree or less. Participants served by the Healthcare Career Center had the highest level of education achievement with 48 percent having some college and 25.5 percent having a college degree or higher. Similarly, the Healthcare Career Center reports a higher proportion of participants enrolled in school at the time of their program enrollment, most likely due to its co-location with the LaGuardia Community College.

While the sector-focused career centers serve participants from throughout NYC, most participants in each program are from the boroughs closest to the centers' locations. That is, the majority of participants in the three sector-focused career centers are from Queens, where the Transportation and Healthcare Career Centers are located, and Brooklyn, where the Manufacturing Career Center was located until the merger in 2011. In contrast, the majority of participants in the WF1CCs are from the Bronx (33.7 percent) and Queens (22.3 percent), where there are multiple career center locations.

Table 3.2 provides descriptive statistics on participants' employment and prior work history at program enrollment. Participants in the three sector-focused career centers have higher employment rates at program entry than do participants in the WF1CCs, which is not surprising given the programs' focus on helping incumbent workers advance in their careers as well as providing jobs with career advancement opportunities for the unemployed. However, there is still a considerable range between the three sector-focused career centers. The Healthcare Career Center has more than twice as many incumbent workers (39.6 percent) upon program enrollment as the Manufacturing Career Center (18.2 percent).

Table 3.2. Recent Employment Situation and Prior Work History of Participants in Each Program

	All Sector-Focused Career Centers	Workforce1 Transportation Career Center	Workforce1 Manufacturing Career Center	Workforce1 Healthcare Career Center	Workforce1 Career Centers
Employment status at enrollment (%)					
Employed	29.3	28.0	18.2	39.6	14.2
Unemployed	70.7	72.0	81.8	60.4	85.8
Prior hourly wage (%)[1]					
Less than $7.25	4.2	5.0	2.5	2.9	6.1
$7.25 - $8.00	7.6	7.6	7.1	8.0	9.0
$8.01 - $10.00	17.9	18.5	15.5	17.8	14.9
$10.01 - $12.50	13.5	14.7	11.4	11.0	8.1
$12.51 - $15.00	12.0	12.5	13.9	9.4	7.0
$15.00 or more	25.3	23.1	34.4	26.6	18.0
Information missing	19.5	18.7	15.3	24.4	36.8
Mean wage ($)	14.41	13.84	15.75	15.38	14.24
Standard deviation	8.24	7.80	8.00	9.50	9.86
Prior hours worked per week (%)[1]					
35 or more	60.7	64.3	68.6	45.2	44.4
Less than 35	21.0	18.2	17.0	31.9	19.5
Information missing	18.3	17.5	14.4	23.0	36.1
Mean hours	36.5	37.6	37.6	32.3	34.9
Standard deviation	10.7	10.5	9.3	11.0	10.5
Quarters worked in year before enrollment (%)*					
Worked 0 quarters	31.6	30.5	37.6	31.6	26.3
Worked 1 quarter	12.4	13.0	13.1	10.4	10.6
Worked 2 quarters	11.8	12.5	11.9	9.6	11.2
Worked 3 quarters	12.5	13.2	11.9	10.8	13.1
Worked 4 quarters	31.7	30.9	25.6	37.7	38.7
Earnings in year before enrollment*					
$0	31.6	30.5	37.6	31.6	26.3
$1-$5,000	18.8	19.2	19.2	17.3	19.6
$5,001-$10,000	11.2	11.2	9.7	12.0	12.1
$10,001- $15,000	8.8	8.8	8.2	9.1	9.1
$15,001-$20,000	7.1	7.5	7.0	6.2	6.9
More than $20,000	22.5	22.8	18.4	23.9	26.0
Mean earnings ($)	11,814	11,827	9,975	12,827	14,078
Standard deviation	16,352	16,014	14,866	18,001	18,909

Table 3.2. Current Employment Situation and Prior Work History of Participants in Each Program (continued)

	All Sector-Focused Career Centers	Workforce1 Transportation Career Center	Workforce1 Manufacturing Career Center	Workforce1 Healthcare Career Center	Workforce1 Career Centers
Industry of employment (%)*[2]					
Transportation, warehousing, and wholesale trade	--	18.3	--	--	3.0
Manufacturing and construction	--	--	11.8	--	2.7
Healthcare and social assistance	--	--	--	31.3	13.8
Number of participants	13,104	8,603	1,638	2,863	254,115

SOURCES: Westat calculations using SBS data and New York State unemployment insurance (UI) earnings records.
NOTES: The data source for characteristics marked with an asterisk (*) is the New York State unemployment insurance (UI) earnings records.
Otherwise, the data source is the SBS data.
Distributions may not add to 100 percent because of rounding.
[1] For participants who were employed at enrollment, prior hourly wage and prior hours worked per week refer to wage and hours at their current job. For participants who were unemployed, this information refers to their most recent job.
[2] Industry of employment indicates whether a participant received the majority of his or her earnings from the industry in one or more quarters before enrollment.

After the Healthcare Career Center, the highest pre-enrollment employment rate was found among the Workforce1 Transportation Career Center participants at 28 percent.

Hourly wages at program entry at the participant's current or most recent job ranged from $13.84 per hour in the Transportation Career Center to $15.75 per hour in the Manufacturing Career Center, with the Healthcare Career Center ($15.38 per hour) and the WF1CCs falling in between ($14.24 per hour). Participants served by the Transportation and Manufacturing Career Centers worked the most hours per week at program entry or at their most recent job (37.6 hours), followed by those of the WF1CCs (34.9 hours). Workers in the Healthcare Career Centers had the lowest number of weekly hours at program entry with 32.3 hours, which may be attributable to their higher rate of enrollment in school at the time of program entry.

As the recent work status of participants available in the SBS data may not fully reflect their previous work experience, we also used information available in the NYSDOL UI earnings records data to create several measures of previous work history and earnings.

Measures of the number of quarters that participants worked in the year before enrollment indicate that participants in the WF1CCs were more likely to have worked at least one quarter in the year prior to program enrollment than participants in any of the three sector-focused career centers. They were also the most likely to work for all four quarters in the year prior to program enrollment. The lower pre-program employment rates of sector-focused career center participants suggests that individuals experiencing employment difficulties may be more motivated to seek training under the more intensive sector-focused approach. Furthermore, participants in the WF1CCs, on

average, earned the most during the year prior to program enrollment ($14,078). Participants in the Manufacturing Career Center were the least likely to have worked during the year prior to program enrollment and, relatedly, they earned the least amount of income ($9,975).

NAICS codes reveal that the majority of participants in each of the sector-focused career centers did not hold jobs in those sectors during the year prior to program enrollment.

3.2 Services Received

The SBS database provided information on the services participants received from the sector-focused career centers. Each program has a different list of services unique to its program model. For the purpose of being able to compare a manageable number of services, all services were re-categorized into the following groups based on sector-focused program discussions with SBS and CEO staff: orientation to the program and services available; assessment of basic skills and work readiness; assistance with resume preparation; interview skills training; counseling, job search (including referrals to employers), job readiness services; use of facilities for fax, copier, or internet access; computer skills training; workshops and education services; and financial counseling services. Individuals can also receive referrals to social service agencies if needed. A list of the specific services included in each of the groups is in Appendix A.

Training services indicate that the participant received specialized job training. In the sector-focused career centers, some training is paid for directly by CEO in addition to that which is provided through WIA. WF1CC and sector-focused career center participants may receive an ITG, which is a voucher intended to cover the market cost of specialized occupational training, such as a commercial driving or medical assistant training course.[22]

Table 3.3 shows the types of service provided by the three sector-focused career centers and the WF1CCs with the percentage of participants who received each service at least one time. The sector-focused career centers are more service-intensive programs, with participants receiving an average of 4.8 services, compared to an average of 2.2 services from the WF1CCs. The Transportation Career Center is the most service-intensive program, providing participants with an average of 5.4 different services, compared with 4.0 for Manufacturing Career Center, 3.5 for the Healthcare Career Center. More than one-third (37.8 percent) of participants in the Transportation Career Center received 7 or more services compared to only 1.7 percent in the WF1CCs.

The majority of participants across all four programs received an orientation and most participants in the three sector-focused career centers received an assessment and counseling.[23]

[22] Although the sector-focused career centers could not directly issue ITGs because they had to be provided by WIA-funded staff, they closely coordinated with WF1CCs to make ITGs available to sector-focused career center participants. The SBS data indicate that among sector-focused career center participants who received training, about 40 received training that was paid for directly by CEO and 60 percent received training through ITGs. The majority of sector-focused career center participants who received ITGs received training specific to the transportation, manufacturing, and healthcare industries. Participants in the sector-focused career centers who received ITGs as well as industry-specific training paid for directly by CEO are considered to have received training for this study.

[23] Although orientation is a program requirement, some participants did not have an orientation recorded in the SBS data. Nearly all participants (99 percent) for whom there was no record of an orientation also received other services, suggesting that these were not individuals who enrolled but dropped out before orientation. It is possible that orientation was simply not recorded as a service for these participants.

Table 3.3. Services Received by Participants in Each Program

	All Sector-Focused Career Centers	Workforce1 Transportation Career Center	Workforce1 Manufacturing Career Center	Workforce1 Healthcare Career Center	Workforce1 Career Centers
Type of service (%)					
Assessment	54.6	52.1	51.5	64.1	43.0
Computer skills	1.2	1.6	1.2	<0.1	3.3
Counseling	72.7	83.7	66.4	43.4	7.9
Facilities	8.7	10.7	9.9	1.9	8.7
Financial services	1.4	1.9	0.4	0.2	2.6
Interview skills	48.0	64.0	23.1	13.9	1.7
Training	6.6	8.0	1.0	5.7	3.3
Job readiness	41.6	53.2	1.6	29.6	0.2
Job search	69.3	80.4	62.8	39.6	40.2
Orientation	90.4	87.9	92.2	97.0	68.3
Referrals	2.2	1.3	1.6	5.1	19.5
Resume preparation	44.3	55.8	27.4	19.3	10.3
Workshops/Education services	38.5	38.6	56.0	28.1	9.9
Number of services (%)					
1 to 3	31.7	22.3	46.0	51.8	87.3
4 to 6	41.3	40.0	43.0	44.2	11.0
7 or more	27.1	37.8	11.0	4.1	1.7
Mean number of services	4.8	5.4	4.0	3.5	2.2
Standard deviation	2.4	2.4	1.8	1.8	1.4
Number of participants	13,104	8,603	1,638	2,863	254,115

SOURCES: Westat calculations using SBS data.
Distributions may not add to 100 percent because of rounding.

Following orientation, assessment, and counseling, the most common services provided were those related to job search, resume preparation, interview skills, and job readiness with smaller percentages of participants receiving computer skills, financial services, referrals, training, and use of the facilities.

Yet there is a great deal of variation across the three programs. Higher percentages of participants in the Transportation Career Center received most services, except for assessment and orientation.

Participants in the Manufacturing Career Center report lower receipt of counseling, interview skills, resume preparation, and training than their Transportation Career Center counterparts; however, a higher percentage report receiving workshops and education. This finding may result from different service classifications between the programs, rather than actual differences in the ways that participants are assisted with job preparation and placement.

Of the three sector-focused career centers, participants in the Healthcare Career Center report the lowest rates of receipt of

counseling, interview skills, job search, resume preparation, workshops, and use of the facilities.

Participants in the WF1CCs were less likely to receive most services than their counterparts served by the sector-focused career centers. These percentages, however, likely reflect differences in the nature of the programs. The sector-focused career centers focus on placing participants into jobs that usually require more certifications, licenses, education, and experience than positions through the WF1CCs. In addition, the sector-focused career centers serve fewer individuals than the WF1CCs, resulting in more one-on-one support and more intensive services.

4. Overall Effects of Sector-Focused Career Center Participation on Labor Market Outcomes after One Year

In this chapter, we summarize the effects of participation in the sector-focused career centers on labor market outcomes after one year. Specifically, we examine whether participation increases the likelihood of employment, the stability of employment, and increases in earnings in the year after exit. We used propensity score matching to select a comparison group of WF1CC participants who enrolled during the study period (2009 to 2011) and who were similar to sector-focused career center participants on demographic characteristics, previous work history, and earnings in the year before enrollment. Appendix C provides a summary of the key findings on the effects of each of the three sector-focused career centers separately.

4.1 Key Findings on the Effects on Employment and Earnings

Table 4.1 shows the post-exit employment experience of sector-focused career center participants and matched WF1CC comparison group participants. The two leftmost columns show the employment rates for the two groups. For example, over the year after exit, over 70 percent of both groups were employed at some point. The table shows that 82.5 percent of the sector-focused career center participants were employed at any time in year after exit compared to 73.3 percent of the matched WF1CC participants. The difference column shows the difference in the employment rate between the two groups (in percentage points). The difference is 9.2 percentage points, indicating that participation increases the employment rate by 9.2 percentage points. Differences that are statistically significant are marked with asterisks. The table also shows the effect of participation in terms of the percentage change, which may be a more meaningful metric. The percentage change is the difference divided by the matched WF1CC employment rate. In this case, participation increases the probability of employment by 12.5 percent (9.2/73.3*100). Most of the tables in this report use a similar format. See also Figure 4.1.

Key Findings on the Effects on Employment

Compared to matched WF1CC participants, Sector participants were:

- **More likely to be employed at some point in the year after exit (82.5 percent versus 73.3 percent–an increase of 12.5 percent)**
- **More likely to work in all four quarters (48.4 percent versus 34.8 percent–an increase of 39.1 percent), suggesting that participation leads to steady work**
- **More likely to work in the fourth quarter after exit (66.4 percent versus 55.7 percent–an increase of 19.2 percent), suggesting that the effects of participation are long-lasting.**

Table 4.1 also shows that participants in the sector-focused career centers were significantly more likely to work in each of the four quarters after exit and work more consistently than matched WF1CC participants. For both groups, employment rates in each quarter were lower than the employment rate for the year because more individuals work at least one quarter than work all four quarters. Employment rates were significantly higher in each of the four quarters in the year after exit for the sector-focused career center participants than the matched WF1CC participants. In the first

Table 4.1. Effects of Sector-Focused Career Center Participation on Post-Exit Employment Experience

Outcome	All Sector-Focused Career Centers	Matched WF1CCs	Difference (Program Effect)	Percentage Change
Employment (%)				
Any employment in year after exit	82.5	73.3	9.2***	12.5
1 quarter after exit	66.1	52.9	13.2***	25.0
2 quarters after exit	67.1	54.9	12.2***	22.2
3 quarters after exit	66.8	54.9	11.9***	21.7
4 quarters after exit	66.4	55.7	10.7***	19.2
Quarters worked after exit (%)				
0 quarters	17.6	26.7	-9.2***	-34.4
1 quarter	9.3	12.1	-2.7***	-22.5
2 quarters	10.4	11.3	-0.9	-8.2
3 quarters	13.4	13.6	-0.3	-2.1
4 quarters	48.4	34.8	13.6***	39.1
Industry of employment (%)				
Employment in sector[1]	62.0	39.9	22.1***	55.4
Number of participants	13,102	13,102		

SOURCES: Westat calculations using New York State unemployment insurance (UI) earnings records.
Regression analysis was used to further control for differences between the sector-focused career center and matched WF1CC groups. Statistical significance levels are indicated as ***=1 percent, **=5 percent, and *=10 percent.
Percentage change is the difference divided by the matched WF1CC group average.
Distributions may not add to 100 percent because of rounding.
[1] Employment in sector indicates whether a participant received the majority of his or her earnings in at least one quarter from a job in the following sectors: Majority of earnings in at least 1 quarter after exit from construction (23), manufacturing (31-33), wholesale trade (42), transportation and warehousing (48-49), administrative and support and waste management and remediation services (56), other services (81), and healthcare and social assistance services (62).

quarter after exit, 66.1 percent of the sector-focused career center participants were employed, compared to 52.9 percent of the matched WF1CC participants—a difference of 13.2 percent points.[24] Put another way, sector-focused career center participants were 25 percent more likely to be employed in the first quarter after exit than matched WF1CC participants. By the fourth quarter after exit, the pattern of employment remained similar across the two groups.

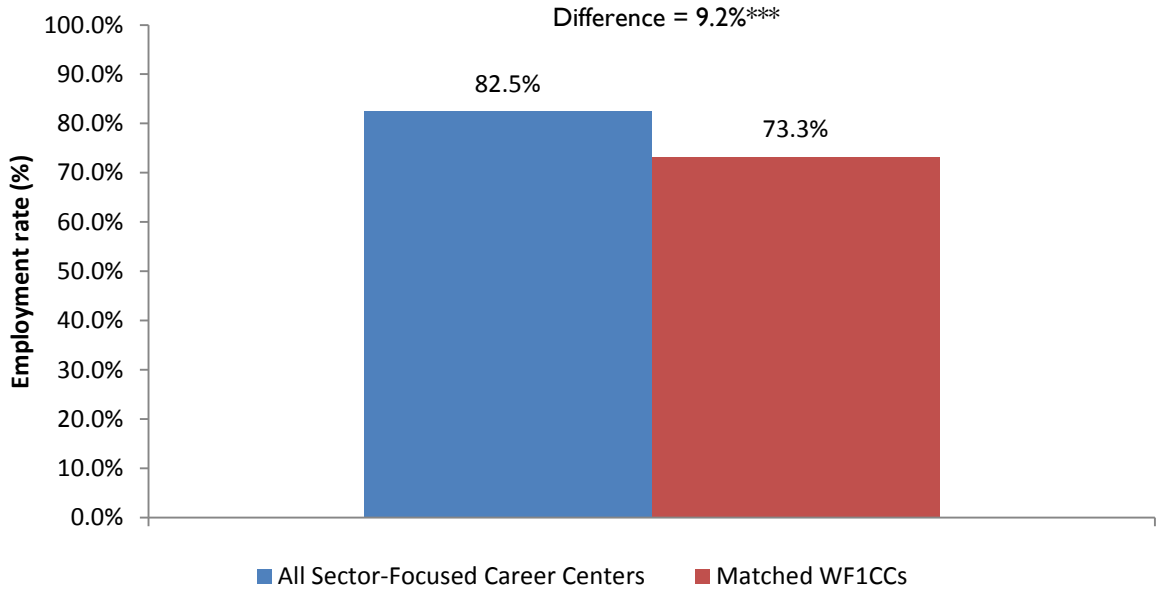
In the fourth quarter after exit, 66.4 percent of the sector-focused career center participants are employed compared to 55.7 percent of the matched WF1CC participants. These participants were employed in the fourth quarter after exit but may not have been employed the entire year. Sector-focused career center participation increases the probability of working one year after exit by 19.2 percent, suggesting that the effects of sector-focused career center participation are long-lasting. Of equal importance is to note that the employment rates within each of two groups did not change much over the four quarters after exit. Specifically, employment

[24] It was impossible to determine whether participants were employed with the same employer as the job into which they were placed because the UI earnings data provided to Westat did not contain employer identification numbers (EINs).

rates did not drop for either group from the first to fourth quarter after exit.

Figure 4.1 shows the quarterly employment rate of participants in both groups from the fourth quarter before enrollment to the fourth quarter after exit. The employment rate in all quarters enrolled is the average employment rate for all quarters in which a participant was enrolled in the program. The number of quarters enrolled differs across participants. Quarterly differences that are statistically significant are indicated. As can be seen, both groups experience a decline in employment in the year before enrollment. While both groups begin to experience an increase in employment after exit, the increase is larger for sector-focused career center participants than for matched WF1CC participants.

Figure 4.1. Employment Rate in the Year after Exit for Sector-Focused Career Center and Matched WF1CC Participants



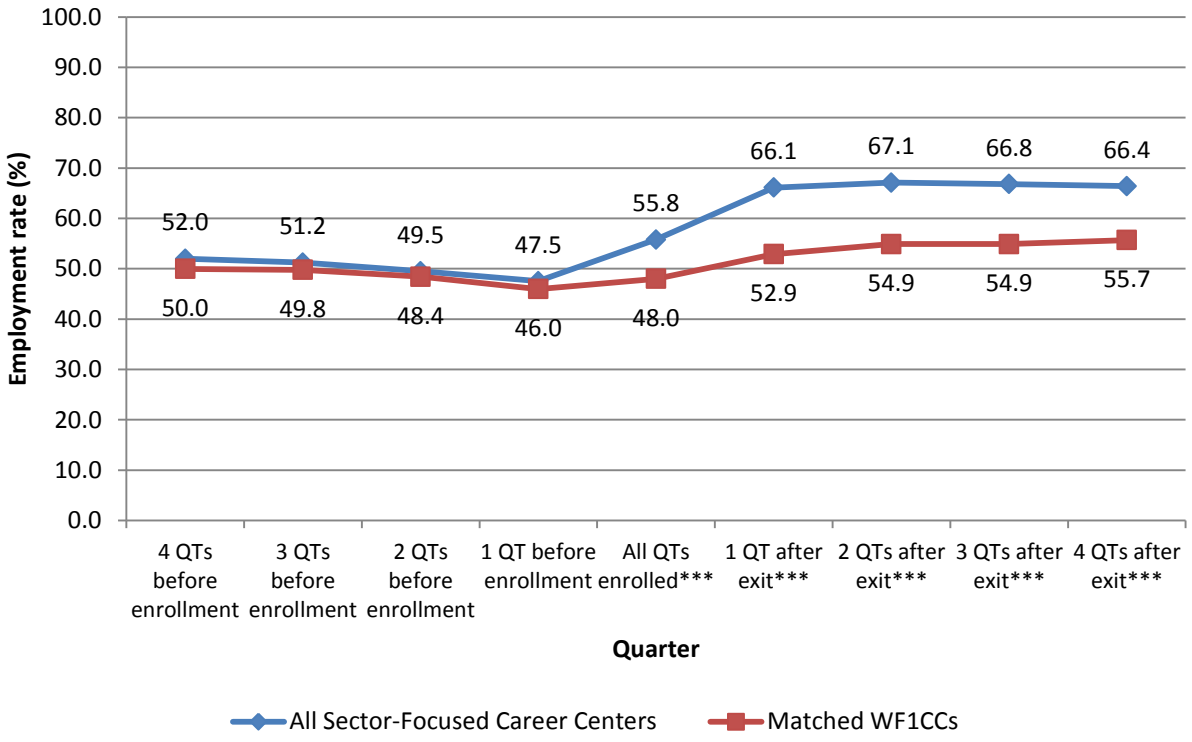
SOURCES: Westat calculations using New York State unemployment insurance (UI) earnings records.
NOTE: Matches could not be found for 2 sector-focused career center participants. Regression analysis was used to further control for differences between the sector-focused career center and matched WF1CC groups. Statistical significance levels are indicated as ***= p < .001, **= p < .01, and *= p <.05.
The sample size is 13,102.

It is not uncommon for individuals to enter and exit employment over the course of the year. For this reason, this study also looked at employment stability in the four quarters after exit. The proportion of participants who worked one to four or no quarters in the year after exit is shown in Table 4.1. More than one-quarter (26.7 percent) of the matched WF1CC participants did not work in any quarter in the year after exit, compared to 17.6 percent of the sector-focused career center participants. This indicates that sector-focused career center participants are more attached to the formal labor force. In addition, sector-focused career center participants were more likely to have earnings in all four quarters compared to WF1CC participants (48.4 percent versus 34.8 percent)—an indication that the sector-focused career centers helped participants to

find steady employment. Thus, post-exit employment stability was 39.1 percent higher in the sector-focused career center group than in the matched WF1CC group. Participants who had earnings in all four quarters may not necessarily have been employed continuously, however. The fact that the share of participants in both groups who were ever employed in the year after exit is higher than the share of participants who worked all four quarters suggests that the participants experienced a fair amount of unemployment and work instability after exiting the programs. Although about three-quarters of the participants in both groups worked at least one quarter after exit, a smaller portion of those who worked stayed employed for a full year after exit.

Table 4.1 also shows that nearly two-thirds of sector-focused career center participants (62.0 percent) had the majority of their earnings in at least one quarter from a job in the transportation, manufacturing, or healthcare sectors.

Figure 4.2. Quarterly Employment Rates for Sector-Focused Career Center and Matched WF1CC Participants



SOURCES: Westat calculations using New York State unemployment insurance (UI) earnings records.
NOTE: Matches could not be found for 2 sector-focused career center participants. Regression analysis was used to further control for differences between the sector-focused career center and matched WF1CC groups. Statistical significance levels are indicated as ***= p < .001, **= p < .01, and *= p <.05.
The sample size is 13,102.

Because the industry of employment measures capture whether the majority of an individual's earnings came from the target industry, it may not fully reflect all post-program work experience in the sector. Participants were significantly more likely to

work in these industries than their matched WF1CC counterparts (39.9%).[25]

Table 4.2 shows the post-exit earnings and earnings gains for sector-focused career center and matched WF1CC participants. Participants in the sector-focused career centers earned significantly more than matched WF1CC participants over the year after exit. Participants in the sector-focused career centers earned $5,800—or 52.5 percent—more than matched WF1CC participants in the year after exit ($16,840 versus $11,040). See also Figure 4.3. Although sector-focused career center participants earned significantly more than matched WF1CC participants, the earnings for both groups was quite low—below $20,000 per year for both groups. This is very similar to the post-program earnings observed in other studies of sector employment programs serving low-income individuals.[26]

Key Findings on the Effects on Earnings

Compared to matched WF1CC participants, Sector participants:

- **Earned $5,800—or 52.5 percent—more than matched WF1CC participants in the year after exit**
- **Earned $1,534—or 49.1 percent—more in the fourth quarter after exit, indicating that the effects on earnings did not diminish over time**

Differences in earnings between the sector-focused career center and matched WF1CC participants were sustained from the first to fourth quarters after exit.

In the first quarter after exit, the average earnings for sector-focused career center participants was $3,693, which is $1,353, or 57.8 percent, higher than the average earnings for the matched WF1CC participants ($2,340). By the fourth quarter after exit, average quarterly earnings increased slightly for both groups. By the fourth quarter after exit, sector-focused career center participants earned 49.1 percent more on average than their matched WF1CC counterparts, or $1,502 more ($4,563 versus $3,061). See also Figure 4.4.

Part of the effect of the sector-focused career center participation on earnings could be due to two factors. First, participation may lead to greater employment among participants, which would lead to higher earnings for sector-focused career center participants. Second, participation may raise earnings among those who work. In an attempt to sort out these issues, we examined the effects of sector-focused career center participation on the earnings of those who worked in each quarter. The average quarterly earnings for those who worked (earnings conditional on employment) are presented in Table 4.2. Part of the sector-focused career center participants' earnings gains can be attributed to the fact that participants were more likely to work and worked more consistently. However, when we compare sector-focused career center participants who worked to matched WF1CC

[25] The difference in industry of employment between sector-focused career center participants and matched WF1CC participants is likely to be somewhat understated because, as discussed earlier, we did not have access to NAICS industry subsector codes. It is likely that some matched WF1CC participants are counted as having worked in a target sector because they worked in a broad industry category but not an industry subsector for which sector-specific training is required. For example, a WF1CC participant who obtained employment in administrative support and waste management and remediation services (56) would be counted as having obtained a job in a sector but it is impossible to know whether they obtained a job in waste management and remediation (562) for which sector-specific training is required. This has the possible effect of overstating the number of WF1CC participants who obtained sector jobs.

[26] Given the relatively short (one year) follow up period,, the program effect estimates were not adjusted for inflation. However, a sensitivity analysis was conducted in which the earnings were adjusted for inflation to the first quarter of 2008 using the Consumer Price Index (CPI). The inflation adjusted estimates were very similar to those obtained without adjusting for inflation. For example, in the year after exit, participation increased earnings by $5,557; in the 1st quarter the estimate was $1404; in the 2nd quarter $1,405; in the 3rd quarter $1,367, and in the 4th quarter $1,382. The inflation adjusted estimates would not be expected to differ much, given the very low inflation during the time period considered in this study.

participants who also worked, sector-focused career center participants still earned significantly more. Participants in the sector-focused career centers who worked in the year after exit earned $5,003—or 33.1 percent more than matched WF1CC participants who worked ($20,133 versus $15,130). The

Table 4.2. Effects of sector-focused career center Participation on Post-Exit Earnings and Earnings Growth

Outcome	All Sector-Focused Career Centers	Matched WF1CCs	Difference (Program Effect)	Percentage Change
Average quarterly earnings ($)				
Unconditional				
Total year after exit	16,840	11,040	5,800***	52.5
1 quarter after exit	3,693	2,340	1,353***	57.8
2 quarters after exit	4,178	2,720	1,458***	53.6
3 quarters after exit	4,407	2,920	1,486***	50.9
4 quarters after exit	4,563	3,061	1,502***	49.1
Conditional on employment				
Total year after exit	20,133	15,130	5,003***	33.1
1 quarter after exit	5,395	4,356	1,039***	23.9
2 quarters after exit	6,054	4,876	1,179***	24.2
3 quarters after exit	6,426	5,253	1,173***	22.3
4 quarters after exit	6,705	5,404	1,300***	24.1
Number of participants	13,102	13,102		

SOURCES: Westat calculations using New York State unemployment insurance (UI) earnings records.
NOTE: Matches could not be found for 2 sector-focused career center participants. Regression analysis was used to further control for differences between the sector-focused career center and matched WF1CC groups. Statistical significance levels are indicated as ***= p < .001, **= p < .01, and *= p <.05.
Percentage change is the difference divided by the matched WF1CC group average.

conditional earnings differences between the two groups also did not change from the first quarter to the fourth quarter after exit.

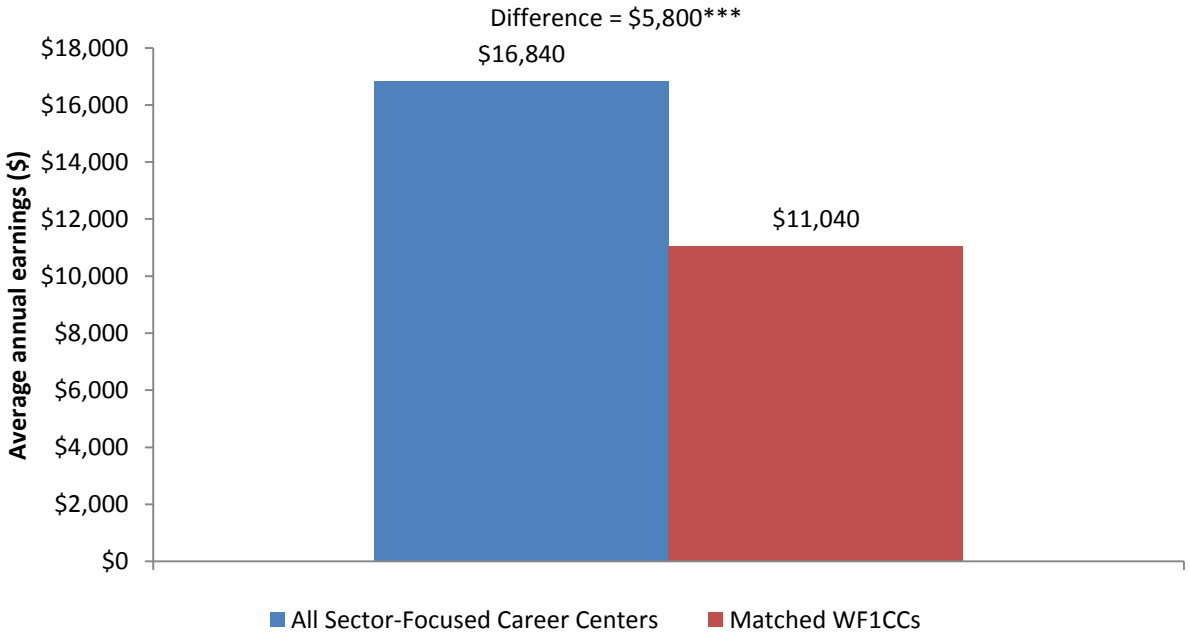
In all quarters after exit, sector-focused career center participants who worked earned about 25 percent more than matched WF1CC participants who worked.

4.2 Effects by Participant Characteristics

A key element of the sector-focused career centers is to create opportunities for individuals who face barriers to entry into the labor market. This section presents estimates of the employment and earnings gains for subgroups of sector-focused career center participants defined on the basis of their characteristics at enrollment. These include gender; age; race/ethnicity; education level; disability status; prior hourly wage; prior hours worked; and prior work history. For each subgroup, we indicate whether the sector-focused career centers had a statistically significant effect on employment or earnings. In addition to indicating whether participation had an effect for each subgroup, we also indicated whether the difference in the effects across subgroups were statistically significant. It is important to note that the three sector-

focused career centers served different populations, so the subgroups are not evenly distributed across the sector-focused career centers. Chapter 5 summarizes the effects of

Figure 4.3. Average Annual Earnings for Sector-Focused Career Center and Matched WF1CC Participants



SOURCES: Westat calculations using New York State unemployment insurance (UI) earnings records.
NOTE: Matches could not be found for 2 sector-focused career center participants. Regression analysis was used to further control for differences between the sector-focused career center and matched WF1CC groups. Statistical significance levels are indicated as ***= p < .001, **= p < .01, and *= p <.05.
The sample size is 13,102.

each of the three sector-focused career centers separately.[27]

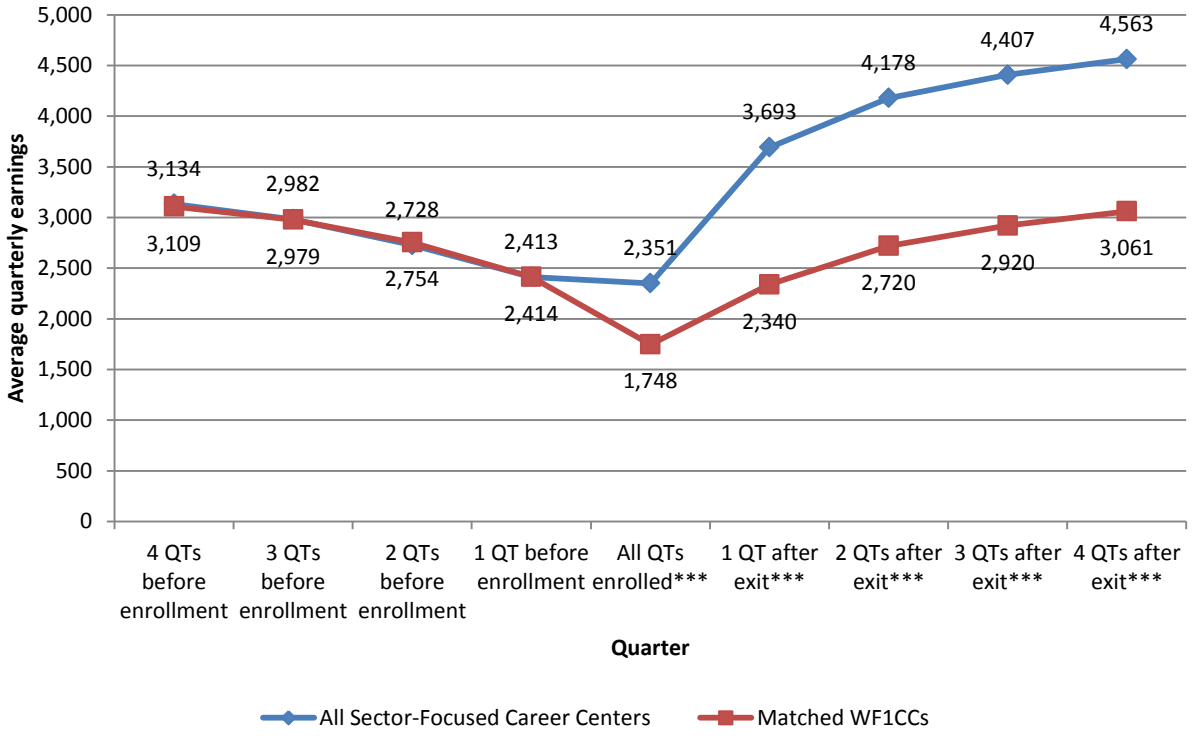
Rather than report on employment status for the entire year, we chose to use the fourth quarter employment rate because it indicates the extent to which the effects of the program are sustained and is a more conservative measure. The employment rate for the fourth quarter indicates the percentage of participants who were employed in the fourth quarter; it does not indicate continuous employment, as some individuals who were employed in the fourth quarter may have been unemployed earlier in the year. Nevertheless, employment in the fourth quarter is a good indicator of the sustained effects of participation.

Table 4.3 shows the effects of sector-focused career center participation on

[27] Although we tried to keep the number of subgroups analyzed to a minimum, it is important to note that when multiple significance tests are conducted, some differences will be significant simply by chance. For example, when testing 50 effects at the 5 percent significance level, we would expect to find 2.5 (50 x .05) effects statistically significant owing to chance and not to a true difference between the groups. Therefore, the likelihood of finding significant effects increases with the number of subgroups considered. There are sophisticated methods for adjusting statistical significance in the presence of multiple testing. However, given the large size of most of the effects, we believe that adopting such more conservative techniques are unlikely to change the overall findings. For this reason, we have chosen to keep the analysis simple, but note the possibility.

employment in the fourth quarter after exit by participant characteristics and enrollment. About two-thirds (65.5 percent) of men in the sector-focused career centers are employed in the fourth quarter after exit compared to 56.0 percent of men in the matched WF1CC group, an increase of 9.5 percentage points or 16.9 percent. Among females in the sector-focused career centers, 68.4 percent were

Figure 4.4. Average Quarterly Earnings for Sector-Focused Career Center and Matched WF1CC Participants



SOURCES: Westat calculations using New York State unemployment insurance (UI) earnings records.
NOTE: Matches could not be found for 2 sector-focused career center participants. Regression analysis was used to further control for differences between the sector-focused career center and matched WF1CC groups. Statistical significance levels are indicated as ***= p < .001, **= p < .01, and *= p <.05.
The sample size is 13,102.

employed in the fourth quarter after exit compared to 55.5 percent of females of the matched WF1CC participants, an increase of 12.9 percentage points or 23.3 percent. Therefore, both men and women experience a gain in fourth quarter employment from participation in the sector-focused career centers. The increase for males of 9.5 percentage points is significantly different from the impact for females of 12.9 percentage points. This indicates that females benefit more than males in terms of the likelihood of employment in the fourth quarter after exit, although the difference is small. Table 4.3 shows that for each subgroup considered, sector-focused career center participants had significant employment gains as compared to matched WF1CC participants. Overall, participation in the sector-focused career centers increased the likelihood of employment for all subgroups, an encouraging finding which suggests that all groups

benefited from the program. In addition, there were no differences in the effects of participation by education level at enrollment, disability, school enrollment status, or employment status at enrollment.

Table 4.3. Effects of Sector-Focused Career Center Participation on Employment in the Fourth Quarter after Exit, by Participant Characteristics at the Time of Enrollment

Characteristic at Enrollment	All Sector-Focused Career Centers	Matched WF1CCs	Difference (Program Effect)	Percentage Change
Gender			†	
Male	65.5	56.0	9.5***	16.9
Female	68.4	55.5	12.9***	23.3
Missing information	67.3	59.4	7.9***	13.2
Age at enrollment			†††	
18 to 24	66.5	62.7	3.8***	6.1
25 to 54	66.7	55.9	10.8***	19.3
55 and older	64.3	47.2	17.1***	36.2
Race and ethnicity			††	
White	64.3	51.1	13.2***	25.8
African American	66.7	55.6	11.1***	20.0
Hispanic	68.1	56.8	11.3***	19.9
Other	64.1	60.9	3.1*	5.1
Missing information	65.7	54.3	11.4***	21.0
Education level at enrollment				
Less than high school	62.4	47.4	15.0***	31.8
High school diploma/GED	66.5	54.9	11.6***	21.2
More than high school	67.0	57.8	9.2***	15.9
Missing information	62.7	49.5	13.2***	26.6
Disability				
Not disabled	53.8	41.0	12.8***	31.2
Disabled	66.7	56.2	10.4***	18.6
Missing information	66.4	54.9	11.5***	20.9
Enrollment status				
Not enrolled	67.6	57.0	10.6***	18.6
Enrolled	66.3	55.4	10.9***	19.6
Missing information	65.9	57.6	8.4***	14.5
Employment status at enrollment				
Unemployed	63.9	52.7	11.2	21.2
Employed	72.5	63.6	8.9	13.9
Prior hourly wage			†††	
Missing information	67.8	60.5	7.3***	12.1
Less than $7.25	61.5	57.1	4.4***	7.7
$7.25 to $10.00	64.3	55.6	8.7***	15.6
$10.01 to $15.00	67.0	55.9	11.2***	20.0
More than $15.00	67.9	52.2	15.7***	30.1

Table 4.3. Effects of Sector-Focused Career Center Participation on Employment in the Fourth Quarter after Exit, by Participant Characteristics at the Time of Enrollment (continued)

Characteristic at Enrollment	All Sector-Focused Career Centers	Matched WF1CCs	Difference (Program Effect)	Percentage Change
Prior hours worked per week			†††	
Less than 35	67.1	54.6	12.6***	23.0
35 or more	66.7	58.7	8.0***	13.7
Missing information	63.9	56.9	7.0	12.3
Prior work experience in home sector			†††	
Did not work in sector	65.1	56.0	9.1	16.2
Worked in sector	72.2	54.8	17.4	31.7
Prior work history			†††	
No work previous 4 quarters	58.9	51.4	7.5***	14.6
Work 1 previous quarter	60.9	48.5	12.5***	25.7
Work 2 previous quarters	61.6	53.8	7.8***	14.5
Work 3 previous quarters	67.3	59.9	7.4***	12.3
Work 4 previous quarters	77.7	62.0	15.7***	25.4

SOURCES: Westat calculations using New York State unemployment insurance (UI) earnings records.
NOTE: Matches could not be found for 2 sector-focused career center participants. Regression analysis was used to further control for differences between the sector-focused career center and matched WF1CC groups. Statistical significance levels are indicated as ***= p < .001, **= p < .01, and *= p <.05.
Percentage change is the difference divided by the matched WF1CC group average.
Distributions may not add to 100 percent because of rounding.
A Wald test was applied to differences among subgroups for each characteristic. Statistical significance levels are indicated as † = p < .05, †† = p < .01, and ††† = p < .001.

There were some differences in the effects of participation on employment across subgroups. Participation in the sector-focused career centers resulted in larger increases in the likelihood of employment in the fourth quarter after exit for older participants than for younger participants; for high-wage workers than for low-wage workers; for part-time workers than for full-time workers; for participants with experience in the target industry than for those without such experience; and for participants with a stable work history than for participants with an unstable work history. There were also differences in the effects by race/ethnicity, however, this difference was driven by the small number of participants of "other" races/ethnicities. There were no differences in the effects among white, African American, or Hispanic participants: all three groups experienced similar effects on the chances of employment in the fourth quarter.

The differences across subgroups in the effects of participation should not underscore the finding that all participants, regardless of their characteristics at enrollment, benefit from participation.

Key Findings on Effects by Participant Characteristics

- **All subgroups of participants experienced significant employment/earnings gains regardless of their characteristics at enrollment**
- **There were no significant differences in employment/ earnings gains by education level, with participants with less than a high school education benefiting just as much as those with higher levels of education**

Table 4.4 shows the effects of sector-focused career center participation on total earnings in the year after exit by participant characteristics at enrollment. As was observed for employment, all subgroups analyzed experience significant earnings gains relative to their matched WF1CC counterparts. These effects on earnings did not differ across education level at enrollment, disability, or employment status at enrollment. The findings of no significant differences by education level suggests that participants with less than a high school education—who might be expected to benefit less from the program—actually do just as well as those with higher levels of education.[28] Likewise, individuals with a disability receive the same benefit as those who do not have a disability.

There were some differences in the effects on earnings across subgroups. These differences were along similar lines to those observed for employment in the fourth quarter after exit. Specifically, participation resulted in larger earnings gains for females than for males; for older participants than for younger participants; for white and Hispanic participants than for African American participants; for participants who were not enrolled in school than for those who were enrolled; for high wage workers than for low-wage workers; for participants who worked part-time than for those who worked full-time; for participants with previous work experience in the target sector; and for participants with a stable work history than for participants with an unstable work history. As was the case for employment in the fourth quarter, it is worth noting that most of the differences in employment and earnings gains by subgroup are small and should not underscore the fact that the sector-focused career centers have positive effects on post-exit labor market experiences for all participants regardless of their characteristics at enrollment.

4.3 Effects of Industry-Specific Training

Provision of industry-specific training is a key hallmark of the sectoral approach to employment. As described earlier, the sector-focused career centers offer industry-specific training at no cost to participants. We examined whether the receipt of training results in greater employment and earnings gains for sector-focused program participants. To examine this issue, we estimated the effects of participation in the sector-focused career centers for individuals who received training and for those who received no training. We compared the employment and earnings gains of participants who received training to those who received no training to determine whether those who received training fared better.

[28] It is worth noting that sector-focused career center participants with less than a high school education experienced the largest gains of any education level group in both employment and earnings. However, these differences were not statistically significant, perhaps owing to the small number of participants with less than a high school education.

Table 4.4. Effects of Sector-Focused Career Center Participation on Total Earnings in the Year after Exit, by Participant Characteristics at the Time of Enrollment

Characteristic at Enrollment	All Sector-Focused Career Centers	Matched WF1CCs	Difference (Program Effect)	Percentage Change
Gender			†††	
Male	16,518	11,417	5,101***	44.7
Female	17,337	10,379	6,958***	67.0
Missing information	17,396	13,731	3,665***	26.7
Age at enrollment			†††	
18 to 24	14,310	11,016	3,294***	29.9
25 to 54	17,354	11,454	5,900***	51.5
55 and older	15,259	8,304	6,955***	83.8
Race and ethnicity			††	
White	18,205	11,722	6,483***	55.3
African American	16,128	10,484	5,644***	53.8
Hispanic	17,195	10,907	6,288***	57.7
Other	16,940	13,210	3,730*	28.2
Missing information	16,548	11,042	5,506***	49.9
Education level at enrollment				
Less than high school	14,933	8,938	5,995***	67.1
High school diploma/GED	16,046	10,604	5,442***	51.3
More than high school	17,600	11,710	5,890***	50.3
Missing information	12,825	10,824	2,001***	18.5
Disability				
Not disabled	12,824	7,776	5,048***	64.9
Disabled	16,857	11,177	5,680***	50.8
Missing information	16,884	10,879	6,005***	55.2
Enrollment status			††	
Not enrolled	16,615	10,185	6,430***	63.1
Enrolled	16,946	11,214	5,732***	51.1
Missing information	15,726	11,601	4,125***	35.6
Employment status at enrollment				
Unemployed	15,472	9,844	5,628***	57.2
Employed	20,133	14,254	5,879***	41.2
Prior hourly wage			†††	
Missing information	17,417	12,067	5,350***	44.3
Less than $7.25	14,348	11,084	3,264***	29.4
$7.25 to $10.00	13,983	10,071	3,912***	38.8
$10.01 to $15.00	16,166	10,726	5,440***	50.7
More than $15.00	20,192	11,731	8,461***	72.1
Prior hours worked per week			†	
Less than 35	16,998	10,959	6,039***	55.1
35 or more	16,144	11,041	5,103***	46.2
Missing information	16,849	11,589	5,260***	45.4

Table 4.4. Effects of Sector-Focused Career Center Participation on Total Earnings in the Year after Exit, by Participant Characteristics at the Time of Enrollment (continued)

Characteristic at Enrollment	All Sector-Focused Career Centers	Matched WF1CCs	Difference (Program Effect)	Percentage Change
Prior work experience in home sector			†††	
Did not work in sector	16,319	11,296	5,023***	44.5
Worked in sector	18,691	10,084	8,607***	85.4
Prior work history			†††	
No work previous 4 quarters	13,642	8,865	4,777***	53.9
Work 1 previous quarter	13,705	8,847	4,858***	54.9
Work 2 previous quarters	14,298	10,277	4,021***	39.1
Work 3 previous quarters	16,159	11,288	4,871***	43.2
Work 4 previous quarters	22,916	14,182	8,734***	61.6

SOURCES: Westat calculations using New York State unemployment insurance (UI) earnings records.
NOTE: Matches could not be found for 2 sector-focused career center participants. Regression analysis was used to further control for differences between the sector-focused career center and matched WF1CC groups. Statistical significance levels are indicated as ***= p < .001, **= p < .01, and *= p <.05.
Percentage change is the difference divided by the matched WF1CC group average.
Distributions may not add to 100 percent because of rounding.
A Wald test was applied to differences among subgroups for each characteristic. Statistical significance levels are indicated as † = p < .05, †† = p < .01, and ††† = p < .001.

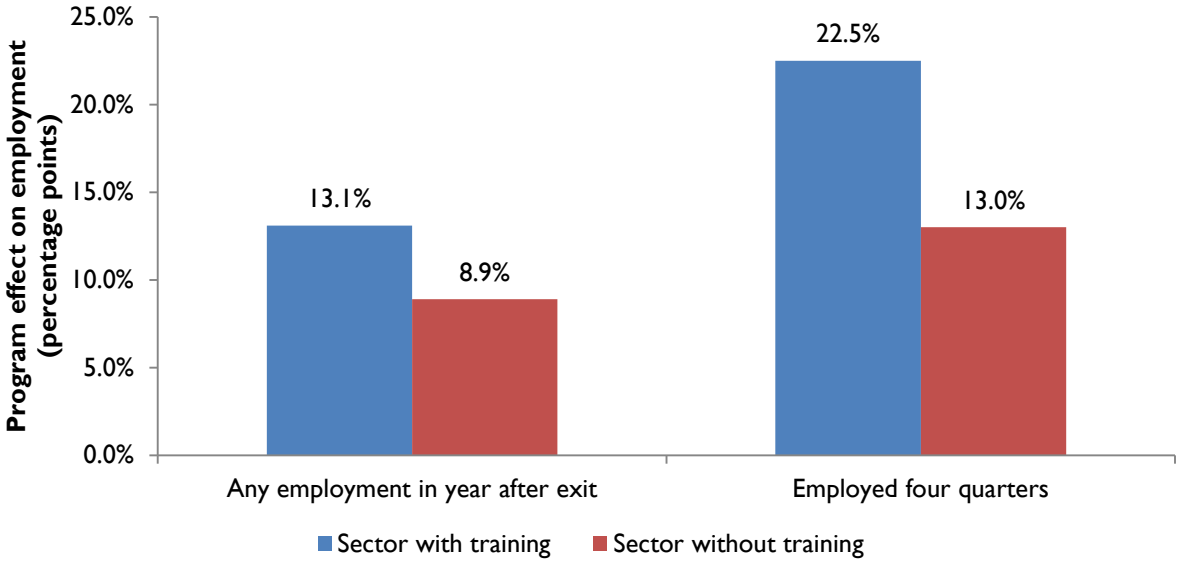
We also explored whether sector-focused program participants who received no training still fare better than WF1CC participants.[29]

A potential problem in using program related variables to assess program effects is selection bias. While the sector-focused career center and WF1CC groups are matched on demographic characteristics and prior work history/earnings, this is not the case for individuals who received and did not receive training. Individuals may be selected to receive training based on perceived abilities or interests. If these characteristics are unmeasured, the estimates of the effects of training may be biased. The sector-focused career centers may select participants for training only if they meet the eligibility criteria for the training, which may include education and past work experience, and if they are good candidates to complete the training. This possible limitation should be kept in mind when interpreting the results of this analysis.

Figure 4.5 shows the effects of sector-focused career center participation on employment experiences in the year after exit by whether participants received training. Training includes receipt of either industry-specific training paid for by CEO or through an ITG. The figure shows the effects on employment status in the year after exit and on employment stability (worked four quarters). The bars show the estimated program effects (difference between sector-focused career center participants and matched WF1CC participants) for sector-focused career center participants who received and did not receive industry-specific training.

[29] Some matched WF1CC participants also received training. However, WF1CC participants did not receive the industry-specific training provided to sector-focused career center participants. The analysis therefore gives the effect of receiving industry-specific training under the sector approach compared to WF1CC participation on average.

Figure 4.5. Effects of Sector-Focused Career Center Training on Employment Experiences in the Year after Exit (sector-focused career center Compared to Matched WF1CC)



SOURCES: Westat calculations using New York State unemployment insurance (UI) earnings records.
NOTE: Matches could not be found for 2 sector-focused career center participants. Regression analysis was used to further control for differences between the sector-focused career center and matched WF1CC groups.
All four program effects are statistically significant at the 1 percent level.
The program effects for the training and no training groups are significantly different from each other at the 1 percent level.

The results indicate that participants in the sector-focused career centers who received training made greater employment gains and had greater employment stability than those who did not receive training. Sector-focused career center participants who received training were 13.1 percentage points more likely to ever be employed in the year after exit than matched WF1CC participants. Sector-focused career center participants who did not receive training were also 8.9 percentage points, a smaller program effect than for those who received training. The difference in the program effect on employment was significantly different for participants with and without training. Appendix Table B-1 provides detailed results of this analysis on the employment rate for each quarter. The results indicate that the relative advantage of participants who received training was observed in the first quarter after exit and was sustained through the fourth quarter after exit. However, even those participants who did not receive training continued to have higher employment rates than matched WF1CC participants in the fourth quarter after exit.

Training also exerted a large effect on employment stability. Sector-focused career center participants who received training were 22.5 percentage points more likely than matched WF1CC participants to work the entire year after exit, net of differences in individual characteristics and employment history at program entry Sector-focused career center participants who did not receive training were also more likely than matched WF1CC participants to work the entire year but the difference was smaller at 13 percentage points. The effect of sector-

focused program participation with training was significantly greater than the effect of sector-focused program participation without training on employment stability.

The benefit of sector-focused program participation for those who received no training may be due to the fact that the sector-focused career centers have connections with employers and are able to place individuals into high quality jobs. However, the impact of sector-focused program participation for those who received no training was less than for those who received training.

Key Findings on Effects of Industry-Specific Training

- **Sector-focused career center participants who received training increased their earnings by $9,071 on average—an increase of 82.2 percent.**
- **Participants who did not receive training also increased their earnings, although the increase was not as great ($5,572—or 50.5 percent)**

Receipt of training by sector-focused career center participants also had significant effects on earnings as shown in Figure 4.6. Sector-focused career center participants who received training increased their earnings by $9,071 on average—an increase of 82.2 percent over the matched WF1CC comparison group. In comparison, sector-focused career center participants who did not receive training increased their earnings in the year after exit by $5,572—or 50.5 percent. Although both groups increased their earnings, the earnings gains were significantly larger for those who received training than for those who did not. Appendix Table B-2 shows detailed results for each quarter. The participants who received training continued to have higher earnings than those who did not receive training through the fourth quarter after exit, although both groups continued to fare considerably better than the matched WF1CC participants.[30] For example, in the fourth quarter after exit sector-focused participants who received training earned, on average, $5,303 whereas those who did not receive training received $4,511. In contrast, WF1CC participants earned an average of only $2,243 in the fourth quarter after exit.

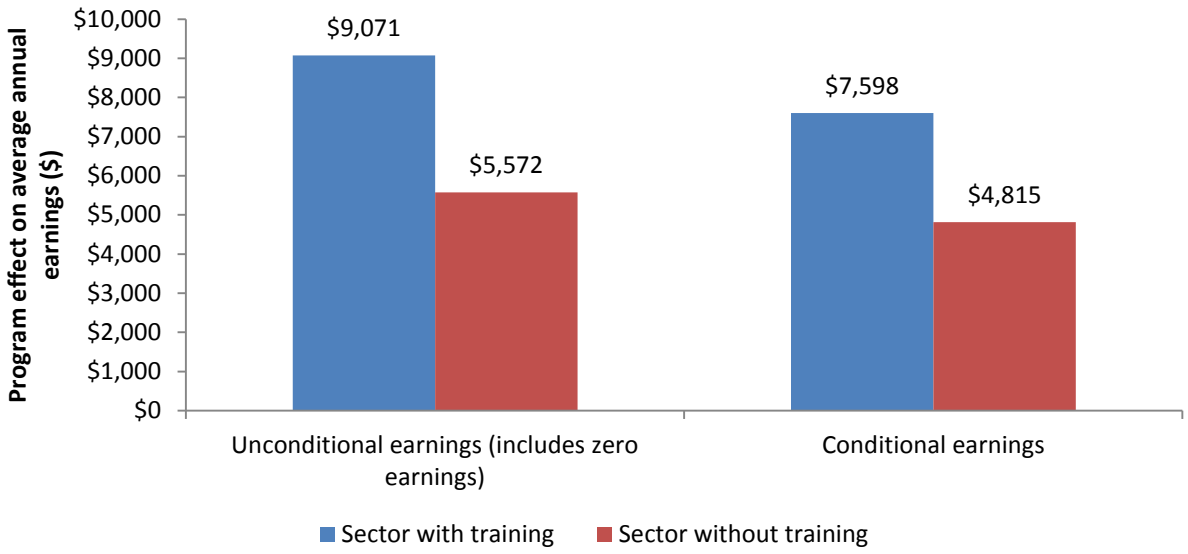
4.4 Summary

Participation in the sector-focused career centers has a positive effect on the employment and earnings experiences of participants. Specifically, participation increases the likelihood of employment and steady employment and boosts earnings. Earnings gains of participants are attributable both to the fact that the sector-focused career centers help participants find jobs and also to the fact that the centers increase earnings of those who work. Overall, participation increased earnings by $5,800 per participant—or by 52.5 percent. The effects of participation were observed in the first quarter after exit from the program and were sustained through the fourth quarter after exit. In addition, sector-focused career center participation results in employment and earnings gains for all subgroups, regardless of gender, age, race/ethnicity, education level, disability status, employment status, prior hourly wage, or prior work history. Although there were some differences between groups

[30] Some of the matched WF1CC participants may also have received training through ITGs. For this reason, we also compared the earnings of sector-focused career center participants to two distinct groups of matched WF1CC participants: those who received training through ITGs and those who did not receive training. Sector-focused career center participants had significantly higher earnings than matched WF1CC participants regardless of whether the WF1CC participants received ITG training. Most notably, sector-focused career center participants without training had higher earnings than WF1CC participants who received training. This underscores the conclusion that the sector approach, even if it does not include industry-specific training, seems to increase earnings.

in the effects of participation, all groups experienced significant gains from the sector-focused career centers. Finally, the provision of training appears to play a role in the positive labor market outcomes of sector-focused career center participants. Specifically, sector-focused career center participants who received industry-specific training experienced greater gains in employment and especially earnings than those who did not receive training. However, even sector-focused program participants who did not receive training fared better than matched WF1CC participants.

Figure 4.6. Effects of Sector-Focused Career Center Training on Earnings in the Year after Exit (Sector-Focused Career Center Compared to Matched WF1CC)



SOURCES: Westat calculations using New York State unemployment insurance (UI) earnings records.
NOTE: Matches could not be found for 2 sector-focused career center participants. Regression analysis was used to further control for differences between the sector-focused career center and matched WF1CC groups.
All four program effects are statistically significant at the 1 percent level.
The program effects for the training and no training groups are significantly different from each other at the 1 percent level.

5. Conclusions and Implications

This report extends previous work on the sector-focused career centers by examining the effects of participation on employment experiences and earnings gains. The results suggest that the sector-based approach holds promise: participation in the sector-focused career centers increases the likelihood of employment and stable employment and raises earnings in the year after exit.

To examine whether participation had an effect on labor market outcomes, we compared the employment and earnings of sector-focused career center participants in the year after exit to a sample of WF1CC participants who were similar on demographic characteristics, prior work history, and prior earnings. We found that sector-focused program participants were more likely to be employed and employed consistently and had higher earnings in the year after exit compared to their matched WF1CC counterparts. Specifically, participation increased earnings in the year after exit by an estimated $5,800—or 53 percent. We observed a positive effect of participation for all subgroups examined, suggesting that a sectoral approach may be beneficial for all participants. Training appeared to play a major role in the employment and earnings of participants at the sector-focused career centers—those who received training experienced significantly greater gains in earnings than those who did not. The results of this analysis should be interpreted with caution, however, since participants who received training may be different from those who did not in ways that may be related to higher earnings.

Effects of Sector-Focused Career Center Participation on Labor Market Outcomes

- Increases the likelihood of employment by 13 percent and steady work by 40 percent
- Increases earnings by an estimated 53 percent or $5,800 per participant
- Participants who receive training experience the greatest earnings gains—an estimated $9,071 per participant
- Earnings gains are sustained up to one year after exit
- Participants benefit from the sector approach regardless of their characteristics at enrollment or prior work history

Limitations and Future Directions

The results of this study should be interpreted with its limitations in mind. While propensity score matching is a well-regarded quasi-experimental method used in program evaluation, it is by no means a panacea to the problem of selection bias. Propensity score matching assumes that all relevant factors have been included in the matching process; the method cannot control for variables that are unobserved and not included in the propensity score model. The strength of this study was the ability to match participants on several of the most important predictors of labor market outcomes: the number of quarters worked in the past year, earnings in the four quarters prior to enrollment, and prior work experience in the target industry. Using historical information on earnings is a particular strength of this study, since earnings immediately prior to enrollment may not accurately reflect participants' usual earnings. However, we did not have detailed information on the type of previous job in the specific sector that a participant held or the extent of their specific skills or training related to the type of job they were seeking.

For example, Healthcare Career Center participants with prior work experience in the healthcare industry may have had more clinical experience or training than matched

WF1CC participants with prior experience in healthcare. Moreover, we did not have information on differences in interest and motivation that might lead individuals to enroll in one type of program over another. In this case, the more positive labor market experiences of the sector-focused career center participants may be due to their preexisting experience and interests in that sector compared to the matched WF1CC participants. This would mean our estimates of the employment and earnings gains would be overstated. Despite this potential limitation, however, our estimated gains in employment and earnings are similar in magnitude to those obtained by a random assignment impact study of sectoral employment among low-income, disadvantaged jobseekers (McGuire et al., 2010).

Additionally, there are limitations to the use of UI earnings records to evaluate the labor market outcomes of participants. First, there is a built in delay of one year in the availability of the UI data. At the time of the writing of this report, the latest quarter of earnings data that was available was the third quarter of 2012. We therefore could not examine the one-year outcomes of participants who enrolled in the program after the third quarter of 2011. The findings are only representative of participants who enrolled during the study period of 2009 to 2011. Second, UI earnings records from NYSDOL do not provide data on individuals who are self-employed or employed in other states, such as New Jersey or Connecticut. To the extent that participants are self-employed or worked in other states, we would underestimate the extent of employment in the samples. Finally, the UI data does not contain information on the number of hours worked—only the earnings in each quarter. It is therefore impossible to determine participants' hourly wages. Participants with low earnings may represent those with a low hourly wage who worked many hours or those with a high hourly wage who worked fewer hours. Despite these limitations, however, the use of UI earnings data is major improvement over a prior report on the sector-focused career centers that used SBS data on self-reported job placement and wages to evaluate the these initiatives.

Future research should continue to assess the effects of a sectoral employment approach on participants' employment and earning outcomes. Specifically, there is a need for more controlled studies that examine participants' labor market outcomes over a longer period of time than the one year follow up considered in this study to determine whether gains are sustained or diminish. In addition, more research is needed on the specific aspects of the sectoral approach to employment—such as the provision of industry-specific training—that explain the more positive labor market outcomes of participants.

References

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

Conway, M. and Rademacher, I. (2003). *Industry-Specific Workforce Development: Key Research Findings and Implications for the Workforce Investment Act*. Washington, DC: The Aspen Institute.

Conway, M., Blair, A., Dawson, S., and Dworak-Munoz, L. (2007). *Sector Strategies for Low-Income Workers: Lessons from the Field*. Washington, DC: The Aspen Institute.

Elliott, M. and King, E. (1999). *Labor Market Leverage: Sectoral Employment Field Report*. Philadelphia, PA: Public-Private Ventures.

Elliott, M. King, E., Roder, A. and Stillman, J. (2001). *Gearing Up: An Interim Report on the Sectoral Employment Initiative*. Philadelphia, PA: Public-Private Ventures.

Henderson, K.., MacAllum, C. and Karakus, M. (2010). *Workforce Innovations: Outcome Analysis of Outreach, Career Advancement and sector-focused career centers*. Technical report prepared for NYC's Center for Economic Opportunity.

Kohli, Martin. (2009). Healthcare Industries and the New York City Labor Market. *Monthly Labor Review* 132: 3-20. http://www.bls.gov/opub/mlr/2009/09/art1full.pdf

Labor Market Information Services (2008). Employment in New York City's Transportation Sector. http://www.urbanresearch.org/about/news/docs/lmis_pubs/NYCLMIS percent20Transportation percent20Report percent20Technical.pdf

Maguire, S., Freely, J., Clymer, C. Conway, M., and Schwarz, D. (2010). *Tuning in to local labor markets: Findings from the Sectoral Employment Impact Study*. Philadelphia, PA: Public-Private Ventures.

National Employment Law Project (2012). *The Low-Wage Recovery and Growing Inequality*. http://www.nelp.org/page/-/Job_Creation/LowWageRecovery2012.pdf?nocdn=1

Roder, A., Clymer, C., and Wyckoff, L. (2008). *Targeting Industries, Training Workers, and Improving Opportunities: Final Report of the Sectoral Employment Initiative*. Philadelphia, PA: Public-Private Ventures.

Rosenbaum, P. and Rubin, D. (1983). "The central role of the propensity score in observational studies for causal effects." *Biometrika* 70 (1): 41-55.

U.S. Bureau of Labor Statistics. (2013). *Local Area Unemployment Statistics*. https://www.bls.gov/lau.

U.S. Bureau of Labor Statistics. (2013). *Usual Weekly Earnings of Wage and Salary Workers: First Quarter of 2013*. http://www.bls.gov/news.release/pdf/wkyeng.pdf.

U.S. Bureau of Labor Statistics. (2014). *Industries at a Glance:* http://www.bls.gov/iag/

Appendix A. Definitions of Service Categories

Table A.1. Definitions of Service Categories

Measure	Definition/Operationalization
Assessment	Any type of assessment or screening used to evaluate a jobseeker's skills (basic and job-specific) and employment readiness
Computer skills	Training that is specific to computer-related skills, ranging from basic computer skills and typing lessons to MS Office, internet, and e-mail training
Counseling	Individual and group counseling sessions that focus on career development, career coaching, goal setting, and retention services
Facilities	Physical resources that are made available to jobseekers to assist with their search, including access to: computers, phones, copiers, e-mail, internet, fax machines, media, study/workspaces, and resource rooms
Financial services	Services that help jobseekers with their personal finances, such as account set-up and management, debt management counseling, credit report access, and financial goal-setting
Interview skills	Services that help jobseekers develop interview skills and prepare for specific interviews
Training	Receipt of CEO-paid industry specific training or an Individual Training Grant
Job readiness	Services that help prepare jobseekers for daily life in the workplace, such as workplace professionalism training, training on proper workplace attire and attitudes and time management skills
Job search	Resources and services that help jobseekers find available jobs, such as referrals to employers, job fairs, staff-assisted (and self-service) job searches, job banks, and other recruiting events
Orientation	Services that acquaint jobseekers to the program and all of the services the program offers, including standard center orientation, recruitment event orientation, and introductory sessions
Referrals	Outside referrals made to other service providers, counselors, and programs
Resume preparation	Services that help jobseekers develop, write, and review resumes, cover letters, and other job application materials
Workshops/Education services	General and job-specific training and skill building that is not related to computers, occupational skills training, customer service training, tutorials, and employer training; education services, including GED and ESL training, adult education classes, and specialized business certifications; workshops, including labor market information workshops, general advancement workshops, and career strategies workshops

Appendix B. Detailed Results of Effects of Sector-Focused Career Center Training on Employment and Earnings

Table B.1. Effects of Sector-Focused Career Center Training on Employment Experiences in the Year after Exit

Outcome	Average Outcome Levels			Training v. Matched WF1CCs		No Training v. Matched WF1CCs		Difference in Effect of Training v. No Training
	Sector with Training	Sector without Training	Matched WF1CCs	Effect of Sector with Training	Percentage Change	Effect of Sector without Training	Percentage Change	
Employment (%)								
Any employment in year after exit	86.3	82.2	73.3	13.1***	17.8	8.9***	12.2	††
1 quarter after exit	71.8	65.7	52.9	18.9***	35.8	12.8***	24.3	†††
2 quarters after exit	72.9	66.7	54.9	18.0***	32.8	11.8***	21.5	†††
3 quarters after exit	73.5	66.3	54.8	18.7***	34.0	11.5***	20.9	†††
4 quarters after exit	73.1	65.9	55.7	17.4***	31.3	10.2***	18.4	†††
Quarters worked after exit (%)								
0 quarters	13.7	17.8	26.8	-13.1***	-48.9	-8.9***	-33.4	††
1 quarter	7.7	9.5	12.1	-4.3	-35.7	-2.6	-21.6	
2 quarters	9.4	10.4	11.3	-1.9	-16.6	-0.9	-7.6	
3 quarters	10.8	13.5	13.6	-2.9	-21.0	-0.1	-0.7	†
4 quarters	57.4	47.8	34.8	22.5***	64.8	13.0***	37.3	†††
Number of participants	863	12,239	13,102					

SOURCES: Westat calculations using New York State unemployment insurance (UI) earnings records.
NOTE: Matches could not be found for 2 sector-focused career center participants. Regression analysis was used to further control for differences between the sector-focused career center and matched WF1CC groups. Statistical significance levels are indicated as ***= p < .001, **= p < .01, and *= p <.05.
Percentage change is the difference divided by the matched WF1CC group average.
Distributions may not add to 100 percent because of rounding.
A Wald test applied to the differences in the program effect between the training and no training groups. Statistical significance levels are indicated as † = p < .05, †† = p < .01, and ††† = p < .001.

Table B.2. Effects of Sector-Focused Career Center Training on Earnings Gains in the Year after Exit

Outcome	Average Outcome Levels			Training v. Matched WF1CCs		No training v. Matched WF1CCs		Difference in effect of training v. no training
	Sector with Training	Sector without Training	Matched WF1CCs	Effect of Sector with Training	Percentage Change	Effect of Sector without Training	Percentage Change	
Average quarterly earnings ($)								
Unconditional								
Total year after exit	20,110	16,611	11,039	9,071***	82.2	5,572***	50.5	†††
1 quarter after exit	4,650	3,626	2,339	2,311***	98.8	1,287***	55.0	†††
2 quarters after exit	4,915	4,126	2,719	2,196***	80.8	1,407***	51.7	†††
3 quarters after exit	5,242	4,348	2,920	2,322***	79.5	1,428***	48.9	†††
4 quarters after exit	5,303	4,511	3,060	2,243***	73.3	1,450***	47.4	†††
Conditional on employment								
Total year after exit	22,726	19,943	15,128	7,598***	50.2	4,815***	31.8	†††
1 quarter after exit	6,192	5,335	4,356	1,837***	42.2	979***	22.5	†††
2 quarters after exit	6,464	6,023	4,876	1,589***	32.6	1,148***	23.5	†††
3 quarters after exit	6,901	6,389	5,253	1,648***	31.4	1,136***	21.6	†
4 quarters after exit	7,056	6,678	5,405	1,651***	30.6	1,273***	23.6	†
Number of participants	863	12,239	13,102					

SOURCES: Westat calculations using New York State unemployment insurance (UI) earnings records.
NOTE: Matches could not be found for 2 sector-focused career center participants. Regression analysis was used to further control for differences between the sector-focused career center and matched WF1CC groups. Statistical significance levels are indicated as ***= p < .001, **= p < .01, and *= p <.05.
Percentage change is the difference divided by the matched WF1CC group average.
Distributions may not add to 100 percent because of rounding.
An F test was applied to the differences in the program effect between the training and no training groups. Statistical significance levels are indicated as † = p < .05, †† = p < .01, and ††† = p < .001.

Appendix C. Effects of Participation by Sector-Focused Career Center

In Chapter 3, we summarized the findings on the overall effects of participation in sector-focused career centers on labor market outcomes. The findings indicated that sector-focused career center participants fared much better than matched WF1CC participants. However, the three SBS-CEO sector-focused career centers differ in the industries to which they have access as well as the populations they serve. Therefore, it is important to consider the effects of the three sector-focused career centers separately. This chapter summarizes findings on the effects of each of the three sector-focused career centers—Transportation, Manufacturing, and Healthcare—on participants' employment and earnings one year after exit. To accomplish this, we used propensity score matching to form three comparison groups of WF1CC participants who were similar in demographic characteristics and prior work history and earnings to participants in each of the three sector-focused career centers.

C.1 Workforce1 Transportation Career Center

Table C.1 shows the post-exit employment experience of Transportation Career Center participants and matched WF1CC participants. The results show that participants in the Transportation Career Centers were significantly more likely to be employed in the year after exit than matched WF1CC participants. Over the year after exit, over 70 percent of both groups were employed at some point. Transportation Career Center participants were significantly more likely than matched WF1CC participants to have ever been employed in the year after exit (82.1 percent versus 72.3 percent)—a difference of 9.9 percentage points or 13.7 percent. Employment rates were significantly higher for the Transportation Career Center participants than the matched WF1CC participants in all four of the quarters after exit. In the first quarter after exit, 66.8 percent of the Transportation Career Center participants were employed compared to 51.6 percent of the matched WF1CC participants, a difference of 15.2 percentage points or 29.5 percent. By the fourth quarter after exit, those in the Transportation Career Center were still more likely to be employed than matched WF1CC participants although the difference diminished slightly over time owing to a decrease in employment among the Transportation Career Center participants and an increase in employment among the matched WF1CC participants. In the fourth quarter after exit, 65.0 percent of Transportation Career Center participants are employed compared to 54.9 percent of matched WF1CC participants, a difference of 10.1 percentage points or 18.4 percent.

Transportation Career Center participants were also significantly more likely to have stable employment in the year after exit than matched WF1CC participants. The percentage of participants across the two groups who worked one to four or no quarters in the year after exit is shown in Table C.1. More than one-quarter (27.7 percent) of the matched WF1CC participants did not work in any quarter in the year after exit compared to only 17.9 percent of the Transportation Career Center participants. Transportation Career Center participants were 14 percent more likely than matched WF1CC participants to work the entire year after exit (47.9 percent versus 33.4 percent).

Table C.1. Effects of Transportation Career Center Participation on Post-Exit Employment Experience

Outcome	Workforce1 Transportation Career Center	Matched WF1CCs	Difference (Program Effect)	Percentage Change
Employment (%)				
Any employment in year after exit	82.1	72.3	9.9***	13.7
1 quarter after exit	66.8	51.6	15.2***	29.5
2 quarters after exit	66.7	53.3	13.4***	25.1
3 quarters after exit	66.0	53.8	12.2***	22.6
4 quarters after exit	65.0	54.9	10.1***	18.4
Quarters worked after exit (%)				
0 quarters	17.9	27.7	-9.9***	-35.6
1 quarter	9.3	12.1	-2.7***	-22.8
2 quarters	10.7	11.4	-0.7	-6.3
3 quarters	13.2	13.8	-0.7	-4.8
4 quarters	47.9	33.4	14.5***	43.4
Industry of employment (%)				
Employment in transportation[1]	62.3	42.4	19.9***	46.9
Number of participants	8,589	8,589		

SOURCES: Westat calculations using New York State unemployment insurance (UI) earnings records.
NOTE: Matches could not be found for 14 Transportation Career Center participants. Regression analysis was used to further control for differences between the Transportation Career Center and matched WF1CC groups. Statistical significance levels are indicated as ***=1 percent, **=5 percent, and *=10 percent.
Distributions may not add to 100 percent because of rounding.
[1] Employment in transportation indicates whether a participant received the majority of his or her earnings in at least one quarter from a job in construction (23), manufacturing (31-33), wholesale trade (42), transportation and warehousing (48-49), administrative and support and waste management and remediation services (56), or other services (81).

Table C.2 shows the post-exit earnings and earnings gains of Workforce1 Transportation Career Center participants and matched WF1CC participants.

The results indicate that participants in the Transportation Career Centers earned significantly more than matched WF1CC participants in the year after exit. Specifically, participants in the Transportation Career Centers earned $5,114—or 48.0 percent—more than matched WF1CC participants in the year after exit ($15,773 versus $10,659). Transportation Career Center participants earned more in the first quarter through the fourth quarter after exit. In the first quarter after exit, Transportation Career Center participants earned $1,293 more than matched WF1CC participants ($3,546 versus $2,253). By the fourth quarter after exit, Transportation Career Center participants earned $1,222 more ($4,194 versus $2,972).

Participants in the Transportation Career Centers who worked in the year after exit earned 28.9 percent more—about $4,260—than matched WF1CC participants who worked ($5,114 versus $4,260). Transportation Career Center participants who worked in each quarter earned significantly more than matched WF1CC participants who also worked. This indicates

Table C.2. Effects of Transportation Career Center Participation on Post-Exit Earnings and Earnings Growth

Outcome	Workforce1 Transportation Career Center	Matched WF1CCs	Difference (Program Effect)	Percentage Change
Average quarterly earnings ($)				
Unconditional				
Total year after exit	15,773	10,659	5,114***	48.0
1 quarter after exit	3,546	2,253	1,293***	57.4
2 quarters after exit	3,927	2,605	1,322***	50.8
3 quarters after exit	4,106	2,830	1,276***	45.1
4 quarters after exit	4,194	2,972	1,222***	41.1
Conditional on employment				
Total year after exit	19,000	14,740	4,260***	28.9
1 quarter after exit	5,184	4,264	920***	21.6
2 quarters after exit	5,755	4,780	975***	20.4
3 quarters after exit	6,080	5,155	925***	17.9
4 quarters after exit	6,313	5,305	1,008***	19.0
Number of participants	8,589	8,589		

SOURCES: Westat calculations using New York State unemployment insurance (UI) earnings records.
NOTE: Matches could not be found for 14 Transportation Career Center participants. Regression analysis was used to further control for differences between the sector-focused career center and matched WF1CC groups. Statistical significance levels are indicated as ***= p < .001, **= p < .01, and *= p <.05.
Distributions may not add to 100 percent because of rounding.

that the higher earnings of Transportation Career Center participants is due both to the fact that participation increases the likelihood of employment and raises earnings among those who are employed.

C.2 Workforce1 Manufacturing Career Center

Table C.3 shows the post-exit employment experience of Workforce1 Manufacturing Career Center participants and matched WF1CC participants. The results show that Manufacturing Career Center participants were significantly more likely to be employed in the year after exit than matched WF1CC participants. Over the year after exit, over 70 percent of both groups were employed at some point. Manufacturing Career Center participants were significantly more likely than matched WF1CC participants to have ever been employed in the year after exit (80.3 percent versus 71.6 percent)—a difference of 8.7 percentage points or 12.1 percent. Employment rates were significantly higher for the Manufacturing Career Center participants than the matched WF1CC participants in all four of the quarters after exit. In the first quarter after exit, 61.9 percent of the Manufacturing Career Center participants were employed compared to 50.0 percent of the matched WF1CC participants, a difference of 11.9 percentage points or 23.7 percent. By the fourth quarter after exit, those in the Manufacturing Career Center were still more likely to be employed than matched WF1CC participants although the difference diminished slightly over time owing to an increase in employment among the matched WF1CC participants. In the fourth quarter

Table C.3. Effects of Manufacturing Career Center Participation on Post-Exit Employment Experience

Outcome	Workforce1 Manufacturing Career Center	Matched WF1CCs	Difference (Program Effect)	Percentage Change
Employment (%)				
Any employment in year after exit	80.3	71.6	8.7***	12.1
1 quarter after exit	61.9	50.0	11.9***	23.7
2 quarters after exit	63.0	52.2	10.8***	20.7
3 quarters after exit	62.0	54.0	8.0***	14.8
4 quarters after exit	62.2	53.6	8.6***	16.0
Quarters worked after exit (%)				
0 quarters	19.8	28.4	-8.7***	-30.5
1 quarter	11.3	11.2	0.1	1.1
2 quarters	11.3	12.5	-1.2	-9.7
3 quarters	12.9	14.6	-1.8	-12.0
4 quarters	43.3	31.4	11.8***	37.6
Industry for employment (%)				
Employment in manufacturing[1]	55.0	40.9	14.1***	34.5
Number of participants	1,638	1,638		

SOURCES: Westat calculations using New York State unemployment insurance (UI) earnings records.
NOTE: Regression analysis was used to further control for differences between the sector-focused career center and matched WF1CC groups. Statistical significance levels are indicated as ***=1 percent, **=5 percent, and *=10 percent.
Distributions may not add to 100 percent because of rounding.
[1] Employment in manufacturing indicates whether a participant received the majority of his or her earnings in at least one quarter from a job in construction (23), manufacturing (31-33), wholesale trade (42), transportation and warehousing (48-49), administrative and support and waste management and remediation services (56), or other services (81).

after exit, 62.2 percent of Manufacturing Career Center participants are employed compared to 53.6 percent of matched WF1CC participants, a difference of 8.6 percentage points or 16.0 percent.

Manufacturing Career Center participants were also significantly more likely to have stable employment in the year after exit than matched WF1CC participants. The percentage of participants across the two groups who worked one to four or no quarters in the year after exit is shown in Table B.3. More than one-quarter (28.4 percent) of the matched WF1CC participants did not work in any quarter in the year after exit compared to only 19.8 percent of the Manufacturing Career Center participants. Manufacturing Career Center participants were 37.6 percent more likely than matched WF1CC participants to work the entire year after exit (43.3 percent versus 31.4 percent).

Table C.4 shows the post-exit earnings and earnings gains of Manufacturing Career Center participants and matched WF1CC participants. The results indicate that participants in the Manufacturing Career Centers earned significantly more than matched WF1CC participants in the year after exit. Specifically, participants in the Manufacturing Career Centers earned $5,521—or 51.9 percent—more than matched WF1CC participants in the year after exit.

Table C.4. Effects of Manufacturing Career Center Participation on Post-Exit Earnings and Earnings Growth

Outcome	Workforce1 Manufacturing Career Center	Matched WF1CCs	Difference (Program Effect)	Percentage Change
Average quarterly earnings ($)				
Unconditional				
Total year after exit	16,161	10,640	5,521***	51.9
1 quarter after exit	3,761	2,051	1,710***	83.4
2 quarters after exit	4,065	2,606	1,459***	56.0
3 quarters after exit	4,095	2,920	1,175***	40.2
4 quarters after exit	4,240	3,063	1,178***	38.4
Conditional on employment				
Total year after exit	20,022	14,970	5,052***	33.7
1 quarter after exit	5,966	4,150	1,816***	43.7
2 quarters after exit	6,335	5,003	1,332***	26.6
3 quarters after exit	6,483	5,410	1,073***	19.8
4 quarters after exit	6,695	5,665	1,031***	18.2
Number of participants	1,638	1,638		

SOURCES: Westat calculations using New York State unemployment insurance (UI) earnings records.
NOTE: Regression analysis was used to further control for differences between the sector-focused career center and matched WF1CC groups. Statistical significance levels are indicated as ***= p < .001, **= p < .01, and *= p <.05.
Distributions may not add to 100 percent because of rounding.

Manufacturing Career Center participants earned more in the first quarter through the fourth quarter after exit. In the first quarter after exit, Manufacturing Career Center participants earned $1,710 more than matched WF1CC participants.

The effects on earnings diminished over time owing to a faster increase in earnings among the matched WF1CC participants. By the fourth quarter after exit, Manufacturing Career Center participants earned $1,178 more than matched WF1CC participants.

Participants in the Manufacturing Career Centers who worked in the year after exit earned 33.7 percent more—about $1,816—than matched WF1CC participants who worked. Manufacturing Career Center participants who worked in each quarter earned significantly more than matched WF1CC participants who also worked. This indicates that the higher earnings of Manufacturing Career Center participants is due both to the fact that participation increases the likelihood of employment and raises earnings among those who are employed. However, the earnings gains experienced by employed Manufacturing Career Center participants diminished somewhat over time owing to a faster increase in earnings among the matched WF1CC participants.

C.3 Workforce1 Healthcare Career Center

Table C.5 shows the post-exit employment experience of Workforce1 Healthcare Career Center participants and matched WF1CC participants. The results show that participants in the Healthcare Career Center were significantly more likely to

Table C.5. Effects of Healthcare Career Center Participation on Post-Exit Employment Experience

Outcome	Workforce1 Healthcare Career Center	Matched WF1CCs	Difference (Program Effect)	Percentage Change
Employment (%)				
Any employment in year after exit	85.1	77.7	7.3***	9.4
1 quarter after exit	66.5	60.1	6.4***	10.6
2 quarters after exit	70.6	60.0	10.7***	17.8
3 quarters after exit	72.1	60.7	11.4***	18.8
4 quarters after exit	73.0	61.7	11.3***	18.3
Quarters worked after exit (%)				
0 quarters	14.9	22.3	-7.3***	-32.9
1 quarter	8.1	10.8	-2.7***	-25.2
2 quarters	8.4	9.8	-1.4	-14.5
3 quarters	14.1	11.7	2.4***	20.1
4 quarters	52.6	42.7	10.0***	23.4
Industry of employment (%)				
Employment in healthcare	65.4	44.9	20.5***	45.7
Number of participants	2,862	2,862		

SOURCES: Westat calculations using New York State unemployment insurance (UI) earnings records.
Regression analysis was used to further control for differences between the sector-focused career center and matched WF1CC groups. Statistical significance levels are indicated as ***=1 percent, **=5 percent, and *=10 percent.
Distributions may not add to 100 percent because of rounding.
[1] Employment in healthcare indicates whether a participant received the majority of his or her earnings in at least one quarter from a job in Healthcare and social assistance (62).

be employed in the year after exit than matched WF1CC participants. Over the year after exit, over 75 percent of both groups were employed at some point.

Healthcare Career Center participants were significantly more likely than matched WF1CC participants to have ever been employed in the year after exit (85.1 percent versus 77.7 percent)—a difference of 7.3 percentage points or 9.4 percent. Employment rates were significantly higher for the Healthcare Career Center participants than the matched WF1CC participants in all four of the quarters after exit. In the first quarter after exit, 66.5 percent of the Healthcare Career Center participants were employed compared to 60.1 percent of the matched WF1CC participants, a difference of 6.4 percentage points or 10.6 percent. The difference in employment between the Healthcare Career Center and matched WF1CC participants increased over time. In the fourth quarter after exit, 73.0 percent of Healthcare Career Center participants are employed compared to 61.7 percent of matched WF1CC participants, a difference of 11.3 percentage points or 18.3 percent.

Healthcare Career Center participants were also significantly more likely to have stable employment in the year after exit than matched WF1CC participants.

The percentage of participants the two groups who worked one to four or no

quarters in the year after exit is shown in Table C.5. Twenty-two percent of the matched WF1CC participants did not work in any quarter in the year after exit compared to only 14.9 percent of the Healthcare Career Center participants.

Healthcare Career Center participants were 23.4 percent more likely than matched WF1CC participants to work the entire year after exit (52.6 percent versus 42.7 percent).

Table C.6 shows the post-exit earnings and earnings gains of Workforce1 Healthcare Career Center participants and matched WF1CC participants. The results indicate that participants in the Healthcare Career Centers earned significantly more than matched WF1CC participants in the year after exit. Specifically, participants in the Healthcare Career Centers earned $7,381—or 58.5 percent—more than matched WF1CC participants in the year after exit. Healthcare Career Center participants earned more in the first quarter through the fourth quarter after exit. In the first quarter after exit, Healthcare Career Center participants earned $1,248 more than matched WF1CC participants. The difference in earnings between the two groups increased over time. By the fourth quarter after exit, Healthcare Career Center participants earned $2,315—or 67.5 percent—more than matched WF1CC participants.

Participants in the Healthcare Career Centers who worked in the year after exit earned 40.4 percent more—about $6,618—than matched WF1CC participants who worked. Healthcare Career Center participants who worked in each quarter earned significantly more than matched WF1CC participants who also worked. This indicates that the higher earnings of Healthcare Career Center participants is due both to the fact that participation increases the likelihood of employment and raises earnings among those who are employed. The earnings gains experienced by employed Healthcare Career Center participants grew over time. In the first quarter after exit, Healthcare Career Center participants who worked earned $1,098—or 24.5 percent—more than matched WF1CC participants. By the fourth quarter after exit, they earned $2,216—or 40.5 percent more—than their matched WF1CC counterparts.

C.4 Summary

Participation in all three sector-focused career centers has a positive effect on the post-exit employment and earnings experiences of participants. Specifically, participation increases the likelihood of employment and steady employment and boosts earnings in the year after exit. Participation in the Healthcare Career Center resulted in somewhat larger gains than the other two centers, although all three centers increased annual earnings in the year after exit by 50 percent or more compared to the matched WF1CC participants. In addition, the effects of participation in the Healthcare Center increased over time, owing to a fast rate of increase in the participants' counterparts.

Table C.6. Effects of Healthcare Career Center Participation on Post-Exit Earnings and Earnings Growth

Outcome	Workforce1 Healthcare Career Center	Matched WF1CCs	Difference (Program Effect)		Percentage Change
Average quarterly earnings ($)					
Unconditional					
Total year after exit	20,008	12,627	7,381	***	58.5
1 quarter after exit	3,991	2,743	1,248	***	45.5
2 quarters after exit	4,890	3,111	1,779	***	57.2
3 quarters after exit	5,382	3,343	2,038	***	61.0
4 quarters after exit	5,745	3,430	2,315	***	67.5
Conditional on employment					
Total year after exit	22,980	16,362	6,618	***	40.4
1 quarter after exit	5,581	4,483	1,098	***	24.5
2 quarters after exit	6,645	5,096	1,549	***	30.4
3 quarters after exit	7,261	5,414	1,847	***	34.1
4 quarters after exit	7,685	5,469	2,216	***	40.5
Number of participants	2,862	2,862			

SOURCES: Westat calculations using New York State unemployment insurance (UI) earnings records.
NOTE: Regression analysis was used to further control for differences between the sector-focused career center and matched WF1CC groups. Statistical significance levels are indicated as ***= p < .001, **= p < .01, and *= p <.05.

Appendix D. Results of Regression Analyses Examining the Relationship among Participant Characteristics, Services Received, and Job Placement Outcomes

In this appendix, we provide a descriptive analysis of the job placement outcomes of sector-focused career center participants, using SBS records, and summarize the results of multivariate regressions analyses to examine the influence of participant characteristics and services received on job placement outcomes. We examine the relations of three outcomes—whether an individual achieved a placement or promotion, the hourly wage of the placement or promotion, and the hours worked at the placement or promotion—to participant demographics, prior work history, and services received. Multivariate regression analysis allows us to assess the independent influence of one or more independent variables on a dependent variable while holding constant or controlling for all other predictors in the model. For example, participants at one of the sector-focused career centers may be more likely to be placed into a job than participants at other sector-focused career centers, but this relationship may be attributable to differences in the characteristics of individuals served by the centers. Multivariate regression analysis allows us to assess these types of relationships. It must be stressed that the results of these analyses are correlational and do not necessarily indicate that a specific factor causes job placement outcomes.

D.1 Job Placement Outcomes

Table D.1 describes the outcomes achieved for participants in the three sector-focused career centers and the WF1CCs. Participants in the Transportation and Manufacturing Career Centers (33.9 percent and 21.9 percent, respectively) had higher rates of success in finding new jobs or receiving promotions than participants in the Healthcare Career Center (15.0 percent) or the WF1CCs (15.8 percent).

A goal of the three sector-focused career centers is to place participants into positions that pay at least $10 per hour, and each program also has goals for placements at $15 per hour. All three programs placed participants into jobs that paid $10 per hour or more.. In addition, more participants in the sector-focused career centers experienced an increase in their hourly wage pre- and post-program compared to participants in the WF1CCs. In the Healthcare Career Center, 41.6 percent experienced an increase from their previous hourly wage to their hourly wage at placement[31], compared with 38.2 percent and 34.9 percent in the Transportation and Manufacturing Career Centers and 26.5 percent in the WF1CCs.

The average hours worked per week was higher for the Transportation and Manufacturing Career Center participants, where the majority of participants worked more than 35 hours per week, than it was for the Healthcare Career Center and WF1CC participants.

Increases in hours worked were largely consistent across the three sector-focused career centers while participants in the WF1CCs were the most likely to experience a decrease in hours.

[31] Missing data on changes in wages and hours worked is due to missing data on previous wages and hours. Because of the large amount of missing data on these variables results should be interpreted with caution.

Table D.1. Job Placement Outcomes for Participants in Each Program

Outcome	All Sector-Focused Career Centers	Workforce1 Transportation Career Center	Workforce1 Manufacturing Career Center	Workforce1 Healthcare Career Center	Workforce1 Career Centers
Placed or promoted (%)	28.2	33.9	21.9	15.0	15.8
Hourly wage at placement (%)					
Less than $7.25	0.2	0.2	0.6	0.0	3.3
$7.25 - $10.00	36.4	38.4	38.0	21.3	59.3
$10.01 - $14.99	39.5	42.1	34.6	25.7	21.9
$15.00 or more	23.9	19.3	26.8	53.0	15.5
Mean wage ($)	13.31	12.21	13.51	20.66	11.59
Standard deviation	6.20	3.79	5.85	11.96	6.76
Change in hourly wage (%)					
Wage increased	38.3	38.2	34.9	41.6	26.5
Wage decreased	40.0	42.0	47.5	19.9	30.6
Wage remained the same	4.9	4.7	2.8	7.7	4.1
Information missing[1]	16.9	15.1	14.8	30.8	38.9
Hours worked per week at placement (%)					
1-19	0.5	0.5	0.0	1.2	1.1
20-34	20.4	14.1	15.1	68.2	61.4
35-49	78.7	85.0	84.9	30.6	37.0
Over 50	0.3	0.4	0.0	0.0	0.5
Information missing	0.0	0.0	0.0	0.0	0.0
Mean hours	37.9	38.4	38.2	34.1	32.2
Standard deviation	5.0	4.6	4.7	5.8	7.7
Change in hours worked (%)					
Hours increased	25.1	24.9	22.6	28.0	19.8
Hours decreased	20.1	19.3	21.8	24.3	27.6
Hours remained the same	39.0	41.8	41.1	18.0	14.3
Information missing[1]	15.9	14.0	14.5	29.7	38.3
Number of participants	3,699	2,913	358	428	40,250

SOURCES: Westat calculations using SBS data.
Distributions may not add to 100 percent because of rounding.
[1] Change is wage or hours worked is missing due to missing data on prior wage or hours.

D.2 Key Findings on the Influence of Demographic Characteristics and Previous Work History

We conducted three sets of multivariate regression analyses. The first set of multivariate regression analyses examined the relationship of participant demographic characteristics and work history on job placement and promotion outcomes. The second set of regressions examined the relationship between the types of services received on job placement outcomes while controlling for participant characteristics that potentially influence job placement outcomes. Finally, the third set examined the relationship between the number of services received and job placement outcomes also controlling for participant characteristics. Table D.1 gives the results from the multivariate regression analyses for the relationship of participant characteristics on job placement outcomes.

A probit regression model was used to predict the likelihood of job placement. The results are reported as marginal effects. Marginal effects are interpreted in relation to a reference group and give the difference in the probability (percentage points) from the reference group. Ordinary least-squares (OLS) regression was used to model hourly wages and hours worked per week at placement. For these models, the coefficients can be interpreted as the difference in wage or hours worked from the reference group. The results of the regressions including demographic characteristics and previous work history are given in Table D.2.

Age was consistently related to job placement or promotion outcomes. Specifically, individuals aged 25 to 54 were more likely to be placed, had higher hourly placement wages, and worked more hours than young adults (ages 18 to 25). Being an adult ages 25 to 54 increases the probability of placement by 2.6 percentage points. Adults ages 25 to 54 earned $2.04 more per hour and worked .98 hours more per week than young adults ages 18 to 24. This finding is not surprising, however, given that youth have more limited skills and work experience and may be more difficult to place.

Gender was related to job placement outcomes. Males were more likely to achieve a placement or promotion than females. The placement rate for males is 2.6 percentage points higher than the placement rate for females, all else being equal. However, among participants who were placed into a job, there was no difference between males and females in hourly wages. Males, however, worked 1.21 more hours per week in their job at placement than females on average.

There were no racial or ethnic differences in the likelihood of being placed into a job. However, among participants who were placed, being white was associated with higher hourly wages and a greater number of hours worked per week compared to African American, Hispanic, and participants of other racial or ethnic groups. White participants earned $2.54 more than African American participants, $1.63 more than Hispanic participants, and $1.25 more than participants of other races. This result is consistent with national data showing that the earnings of African Americans and Hispanics lag behind those of whites (U.S. Bureau of Labor Statistics, 2013).

There were no differences in the likelihood of placement by education level at enrollment. However, among participants who were placed into jobs, participants with more than a high school diploma earned a higher hourly wage ($1.31 more per hour). However, participants with more than a high school diploma worked fewer hours than those with less education (.44 hours less). The exact reason for this finding is uncertain. One

Table D.2. Results of Regression Analyses Examining the Relationship between Participant Demographic Characteristics and Previous Work History and Job Placement Outcomes

Characteristic	Probability of Placement	Hourly Wage	Hours Worked per Week
Age	--	--	--
18 to 24	-0.026*	-2.04***	-0.98**
25 to 54 (omitted)	--	--	--
55 and older	-0.017	-0.20	-0.19
Gender			
Male	0.026**	0.01	1.21***
Female (omitted)	--	--	--
Race/ethnicity			
White, non-Hispanic (omitted)	--	--	--
African American	0.024	-2.54***	-0.63*
Hispanic	0.020	-1.63***	-0.06
Other	-0.027	-1.25*	-0.52
Missing information	0.003	-2.04	-0.56
Education level			
Less than a high school diploma	-0.014	-0.09	0.38
High school diploma or GED (omitted)	--	--	--
More than a high school diploma	0.014	1.31***	-0.44*
Disabled	-0.035	-0.48	-0.72
Enrollment			
Enrolled	-0.013	0.17	-0.39
Missing information	0.011	-0.03	-0.24
Prior work history*			
Worked 0 quarters	-0.001	-1.00***	0.18
Worked 1 quarter	-0.015	-1.41***	-0.13
Worked 2 quarters	-0.003	-1.25***	-0.58*
Worked 3 quarters	-0.029	-0.56	-0.53*
Worked 4 quarters (omitted)	--	--	--
Prior work experience in home sector	0.040***	1.39***	0.85***
Employed at enrollment	0.003	1.28***	0.21
Prior hourly wage			
Less than $7.25	-0.021	-3.63***	-1.00*
$7.25 - $10.00	0.012	-3.97***	-1.13***
$10.01 - $15.00	0.017	-2.43***	-0.44*
$15.00 or more (omitted)	--	--	--
Missing information	-0.038	-2.43**	-0.44
Prior hours worked per week			
Less than 35 (omitted)	--	--	--
35 or more	-0.001	-1.75	-0.32
Missing information	0.038	0.42	0.87

Table D.2. Results of Regression Analyses Examining the Relationship between Participant Demographic Characteristics and Previous Work History and Job Placement Outcomes (continued)

Characteristic	Probability of Placement	Hourly Wage	Hours Worked per Week
Location of residence			
Bronx (omitted)	--	--	--
Queens	-0.049***	0.78**	-0.06
Brooklyn	-0.044***	0.53	0.19
Other[a]	-0.029	1.01**	-0.13
Year enrolled			
2009 (omitted)	--	--	--
2010	0.007	0.34	0.03
2011	-0.086***	1.07***	0.07
Sector-Focused Career Center			
Transportation	0.180***	-7.28***	3.71***
Manufacturing	0.072***	-6.39***	3.35***
Healthcare (omitted)	--	--	--
N=	13,104	3,693	3,698

SOURCES: Westat calculations using SBS data and New York State unemployment insurance (UI) earnings records.
NOTES: The data source for characteristics marked with an asterisk (*) is the New York State unemployment insurance (UI) earnings records.
Otherwise, the data source is the SBS data.
Likelihood of placement is modeled using logistic regression. Hourly wage and hours per week are modeled using ordinary least squares (OLS) regression.
Employment status at enrollment, prior hourly wage, and prior hours worked per week were included in a separate regression model. The results shown for demographic characteristics are from the model that includes the UI earnings data.
Statistical significance levels are indicated as ***= p < .001, **= p < .01, and *= p <.05.
[a] Other location of residence include Manhattan, Staten Island, and locations outside of NYC.

possibility may be that participants with greater education may be more likely to be attending school full-time and unable to work full-time.

Disability status was unrelated to the likelihood of achieving a placement or promotion. Participants with a disability earned the same hourly wage and worked the same hours as those without a disability.

There were no differences in job placement outcomes by school enrollment status. Participants who were enrolled in school were just as likely to be placed as those who were not enrolled.

We also considered the possible influence of prior work history on job placement outcomes. There were two sources of information on prior work history available to us for this study. First, the UI earnings records from NYSDOL provide data on the number of quarters each participant was employed (indicated by the presence of earnings) in the year prior to enrollment in the program as well as whether the participant had work experience in the sector for which they were seeking training in the year before enrollment. Second, the SBS data provided information on employment status at the time of enrollment, prior hourly wage, and prior hours worked. We could not include the prior work history measures from both data sources in the multivariate regression analysis at the same time because they are highly interrelated (e.g. number of quarters worked in the year before enrollment is correlated with

employment status at enrollment). Including both sets of measures in a regression simultaneously would result in results that are difficult to interpret. Therefore, the SBS recent employment situation measures and the UI earnings work history measures were included in separate regressions.

Prior work history was unrelated to the likelihood of placement but strongly predictive of hourly wage among participants who were placed or promoted into a job. Participants who worked all four quarters in the year before to enrollment had higher hourly wages and worked more hours when they were placed into a job than those who worked fewer than four quarters the year before enrollment. Participants who worked the whole year before enrollment earned $1.00 more than those who did not work the entire year; $1.41 more than those who worked one quarter; and $1.25 more than those who worked two quarters. Participants who worked three quarters were similar to those who worked four quarters in their hourly wages at placement.

Having work experience in the "target sector" (e.g., the sector for which the participant was seeking training) was strongly predictive of job placement outcomes. Participants who had the majority of their earnings in at least one quarter from the target sector were 4 percentage points more likely to be placed or promoted. Once placed, participants with experience in the target sector had higher hourly wages ($1.39) and worked more hours (.85 hours) than those who did not have this sector-specific work experience.

We also examined how employment status at enrollment, prior hourly wage, and prior hours worked available in the SBS data were related to placement outcomes. None of these variables were related to the likelihood of achieving a job placement or promotion. However, being employed at enrollment and a high prior hourly wage (>$15) were associated with a higher hourly wage at the placement job. Participants who earned $15 or more per hour at enrollment had a placement wage that was $3.63 more than those who earned below minimum wage at enrollment; $3.97 more than those who earned $7.25 to $10.00; and $2.43 more than those who earned $10.01 to $15.00. In addition, a high prior hourly wage was significantly associated with a greater number of hours worked in the placement job. Those who earned $15 or more per hour at enrollment worked 1 hour more than those who earned below minimum wage at enrollment; 1.13 hours more than those who earned $7.25 to $10.00; and .44 hours more than those who earned $10.01 to $15.00.

There were differences in job placement outcomes by location of residence. Participants who lived in the Bronx had the highest rates of placement. They were significantly more likely to be placed than those in Brooklyn and Queens. The placement rate for participants in the Bronx was 4.9 percentage points higher than for those in Queens and 4.4 percentage points higher than for those in Brooklyn. However, once they were placed, participants in the Bronx had lower hourly wages than those in the other boroughs ($0.78 less than those in Queens and $1.00 less than those Manhattan and State Island).

The year in which a participant enrolled in the sector-focused career centers was related to the likelihood of placement. Specifically, participants who enrolled in 2009 were more likely to be placed or promoted than participants who enrolled in 2010 or 2011. The placement rate in 2011 was 8.6 percentage points lower than in 2009, net of the characteristics of participants served.

Finally, participants who were served by the Transportation Career Center and Manufacturing Career Center were significantly more likely to be placed or

promoted into a job than participants in the Healthcare Career Center, independent of the characteristics of the participants served. The probability of being placed for participants in the Transportation Career Center was 18.0 percentage points higher than the probability for those in the Healthcare Career Center; the probability of placement for those in the Manufacturing Career Center was 7.2 percentage points higher than for those in the Healthcare Career Center. However, once placed, participants in the Transportation and Manufacturing Career Centers earned less than participants in the Healthcare Career Center ($7.28 and $6.39 less, respectively) but worked more hours per week (3.7 and 3.4 hours, respectively). This pattern of earnings is consistent with industry differences nationally (Bureau of Labor Statistics, 2014).

D.3 Key Findings on the Influence of Services Received

We also looked at the relationship between receipt of services and job placement outcomes while controlling for participant characteristics that influence placement outcomes. However, it is not possible to identify the causal effect of a specific service on placement outcomes because participants receive different services depending on prior work experiences, interests, and needs, and not all of these characteristics may be adequately captured in our regression analyses.

Key Findings on Factors Related to Positive Job Placement Outcomes

- **Receipt of training and job search assistance are the two most important drivers of job placement—each is associated with 20 percentage point increase in the probability of job placement**
- **Receipt of 7 or more types of services increases the probability of placement by 6 percentage points**
- **Demographic characteristics such as race/ethnicity, education level, and disability status, are unrelated to job placement, suggesting that the sector centers are equally likely to place participants from a variety of backgrounds**

When we look at the relationship of specific services to job outcomes, we find that receiving training is positively correlated with placement. The results of these regression analyses are summarized in Table D.3. We found that the receipt of job search support and training were by far the two most important drivers of job placement. Receipt of job search support was associated with a 26.4 percentage point increase in the probability of placement and receipt of training led to a 21.2 percentage point increase. Receipt of training was also associated with working more hours (.57 hours per week). Receipt of training was also associated with earning $.55 more per hour, although this difference was not statistically significant. This may be due to the relatively small number of participants who received training—7 percent. Other services positively correlated with one or more positive outcomes (placement, hourly wages, or weekly hours) were access to facilities, counseling, and workshops/education, although the relationships were much weaker than for job search and training. No relationship was found between computer skills and financial services and placement outcomes. Services with a negative relationship to one or more job outcomes include assessment, interview skills, orientation, referrals to social service organizations, and resume preparation.[32] This does not mean that these services produced negative outcomes for participants; rather, it may mean that participants who received these services may

[32] Individuals who are referred to social service organizations for additional services may be more in need and therefore more difficult to place into a job.

Table D.3. Results of Regression Analyses Examining the Relationship between Type of Services Received and Job Placement Outcomes

	Probability of Placement	Hourly Wage	Hours Worked per Week
Services Received			
Assessment	-0.035***	-0.27	-0.75***
Computer skills	0.027	0.10	-0.46
Financial services	0.048	-0.46	-1.29
Facilities	0.064***	-0.88***	-1.77***
Training	0.212***	0.55	0.57*
Interview skills	-0.048***	-0.24	-0.43*
Counseling	0.078***	1.43***	0.82**
Job readiness	-0.045***	-0.06	-0.09
Job search	0.264***	-0.55	0.06
Orientation	-0.042**	0.24	0.08
Referrals	-0.036	-0.60	-1.20
Resume preparation	-0.015	-0.63*	-0.23
Workshops/education	0.019*	-0.19	-0.20
N=	13,104	3,693	3,698

SOURCES: Westat calculations using SBS data and New York State unemployment insurance (UI) earnings records.
NOTES: The data source for characteristics marked with an asterisk (*) is the New York State unemployment insurance (UI) earnings records.
Otherwise, the data source is the SBS data.
Likelihood of placement is modeled using logistic regression. Hourly wage and hours per week are modeled using ordinary least squares (OLS) regression.
All models control for demographic characteristics.
Statistical significance levels are indicated as ***= p < .001, **= p < .01, and *= p <.05.
[a] Other location of residence include Manhattan, Staten Island, and locations outside of NYC.

require more intensive engagement than those who do not.

We also examined the relationship between the number of services received and employment outcomes. The results are shown in Table D.4. We found a positive relationship between the number of services received and the likelihood of achieving a placement or promotion. Participants who received a greater number of services were more likely to be placed. In particular, we found that receiving 7 or more services increased the probability of placement by 6.2 percentage points. Receiving fewer than 7 services did not result in a higher likelihood of placement or higher wages or worked. However, participants who received a greater number of services had lower wages and worked fewer hours. Again, it must be emphasized that these relationships are correlational and should be interpreted as such. It is likely that this finding reflects the possibility that participants who are more difficult to place into a job receive a greater number of needed services. Receipt of more kinds of services many also indicate that the participant had more needs.[33]

[33] In addition to receiving the thirteen different types of services, participants in the sector-focused career centers could receive a single type of service multiple times. We also examined the relationship between the total number of services received of any type and job placement outcomes. We found that receipt of a greater number of total services was significantly associated with a higher likelihood of placement but with lower hourly wages and hours worked at placement. However, this finding should be

interpreted with caution as the programs may vary in how they record multiple services received by participants.

Table D.4. Results of Regression Analyses Examining the Relationship between Number of Services Received and Job Placement Outcomes

	Probability of Placement	Hourly Wage	Hours Worked per Week
Number of services			
1-3 (omitted)	--	--	--
4-6	0.019	-0.15	-0.29
7 or more	0.062***	-0.67**	-1.43***
N=	13,104	3,693	3,698

SOURCES: Westat calculations using SBS data and New York State unemployment insurance (UI) earnings records.
NOTES: The data source for characteristics marked with an asterisk (*) is the New York State unemployment insurance (UI) earnings records.
Otherwise, the data source is the SBS data.
Likelihood of placement is modeled using probit regression. Hourly wage and hours per week are modeled using ordinary least squares (OLS) regression.
All models control for demographic characteristics.
Statistical significance levels are indicated as ***= p < .001, **= p < .01, and *= p <.05.
[a] Other location of residence include Manhattan, Staten Island, and locations outside of NYC.

D.4 Summary

In summary, we draw the following conclusions about factors that influence job placement outcomes at the three sector-focused career centers. Being over age 25, male, a prior high wage, a prior full-time job, a stable work history, and prior work experience in the sector are all associated with more positive job placement outcomes, including achieving a placement and higher wages and hours worked. Participants in the Transportation and Manufacturing Career Centers were more likely to be placed than those in the Healthcare Career Center, even after controlling for differences in the characteristics of participants served. Participants in the Transportation and Manufacturing Centers have lower hourly wages, but work more hours than those in the Healthcare Career Centers. Finally, a number of services, including receipt of training, job search support, and counseling, are associated with positive outcomes at the sector-focused career centers.

Appendix E. Propensity Score Matching Methodology

This appendix describes the use of propensity score matching to estimate the effects of participation in the sector-focused career center program.

Evaluation Design

We used a quasi-experimental design that estimates program impacts by comparing the employment and earnings that occur in sector-focused program participants (treatment group) with the employment and earnings of comparable group of individuals who participated in WF1CCs (comparison group). Each individual has two sets of potential outcomes, those that occur under participation in a sector-focused program and those that occur in the absence of participation. For participants in a sector program, we can only observe the outcomes that occur under participation. The outcomes that would have occurred if they had not participated are unobserved and must be inferred (the counterfactual). To do this we formed another group to represent what the sector-focused career center participants' outcomes would have been had they not participated. Because they are similar, the outcomes of the comparison group should represent what the participants' outcomes would have been if they had not participated in the program.

This study used three treatment groups corresponding to the three sector-focused career centers: transportation, manufacturing, and healthcare. A fourth treatment group included all sector-focused career center participants. The treatment groups included sector-focused program participants who enrolled in the program between January 1, 2009 and September 30, 2011 and who were between the ages of 18 and 64. If an individual was enrolled in a sector-based program more than once during the study period, we focused our attention on the first enrollment.

Separate comparison groups were selected for three sector-based centers because differences exist in the nature of the three programs and in the characteristics of their participants. All three groups consisted of individuals who enrolled in a WF1CC between January 1, 2009 and September 30, 2011, who were between the ages of 18 and 64, and who did not enroll in another specialized employment and training program offered by SBS during the study period. Individuals who enrolled in a WF1CC and were subsequently referred to a sector center were included in one of the treatment groups.

Propensity Score Matching

Propensity score matching has become a popular tool in program evaluation (Rosenbaum and Rubin 1983) when random assignment is impossible or unethical. We used propensity score matching to derive comparison groups that were similar to the sector based center participants. Simple comparisons of sector-based participants and WF1CC participants can lead to biased estimates because the programs have different eligibility criteria and individuals self-select into the different programs based on their individual characteristics, interests, and work history. Propensity score matching addresses this issue by comparing sector-based program participants to WF1CC participants who have a similar propensity for treatment.

There are numerous ways to use propensity scores in an analysis, including stratification, matching, weighting, and covariate adjustment (Stuart 2010). In this study, we chose matching. Specifically, we matched each sector program participant to a similar WF1CC participant who did not participate in a sector program during the

study period. The details of the matching procedure used to form the comparison groups is discussed below.

It is important to note that while propensity score matching is an improvement over standard regression adjustment for estimating program impacts, it does have its limitations. Specifically, propensity score matching addresses only selection on observed characteristics that are available to evaluators are included in the matching process. Unlike a randomized experiment, propensity score matching does not guard against selection on unobserved characteristics. If participants and non-participants differ in ways that are unobserved, the treatment impact estimates may be biased.

Step 1: Select Matching Variables and Estimate Propensity Scores

Propensity score matching entails several steps. The first step in propensity score matching is to estimate the propensity scores. The propensity score is the conditional probability of receiving treatment, which is, in this case, participation in a sector-focused program. The propensity score is estimated with a logistic regression model:

$$Y_i = \beta_1 T_i + \beta_2 X_i,$$

where $T_i = 1$ if individual i participated in a sector-focused program, X_i is a vector of covariates for individual i that predict participation in a sector-focused program and potential confounding variables of the association between the decision to participate and employment and earnings, and β is a vector of parameter estimates for a set of covariates X_i. Four separate propensity score models were estimated for the probability of participation in the sector-based program and each of the three sector centers programs as opposed to a WF1CC.

Several covariates were available in SBS and NYSDOL data that we included in the propensity score model. These included age, gender, race, disability education level, school enrollment status, and earnings in the four quarters prior to program enrollment. Missing data on covariates was imputed using a constant (in this case 0) and including an additional category for "missing."

The results of the logistic regression models predicting propensity scores are given in Tables E-1 through E-4.

Table E.1. Logistic Regression Model Predicting Participation in Sector-Focused Career Centers relative to the WF1CC

Variable	Odds Ratio
Year enrolled	
2009	0.56***
2010 (omitted)	--
2011	1.57***
Age	
18 to 24	0.54***
25 to 54 (omitted)	--
55 and older	0.96
Male	1.94***
Race	
White (omitted)	--
African American	1.00
Hispanic	1.25***
Other	1.10*
Missing information	1.08
Education level	
Less than a high school diploma	0.54***
High school diploma or GED (omitted)	--
More than a high school diploma	1.03
Disabled	0.58***
Enrollment status	
Enrolled in school	1.12***
Missing information	1.11**
Employed at enrollment	2.30***
Current/most recent hourly wage	
Less than $7.25 (omitted)	--
$7.25 to $10.00	0.48***
$10.00 to $15.00	0.70***
$15.00 or higher	1.01
Missing information	0.96
Prior hours worked	
Less than 35 (omitted)	--
35 or more	1.30***
Missing information	0.64***
Location[a]	
Bronx	0.90**
Queens	4.02***
Brooklyn	2.51***
Other location (omitted)	--

Table E.1. Logistic Regression Model Predicting Participation in Sector-Focused Career Centers relative to the WF1CC (continued)

Variable	Odds Ratio
Pre-program earnings*	
1 quarter before enrollment	1.00***
2 quarters before enrollment	1.00***
3 quarters before enrollment	1.00
4 quarters before enrollment	1.00**
Prior work experience in transportation	3.40***
Prior work experience in manufacturing	0.61***
Prior work experience in healthcare	0.59***
N=	267,219

SOURCES: Westat calculations using SBS data and New York State unemployment insurance (UI) earnings records.
NOTES: The data source for characteristics marked with an asterisk (*) is the New York State unemployment insurance (UI) earnings records.
Otherwise, the data source is the SBS data.
Statistical significance levels are indicated as ***= p < .001, **= p < .01, and *= p <.05.
[a] Other location of residence include locations outside of NYC.

Table E.2. Odds Ratios from Logistic Regression Models Predicting Participation in Transportation Career Center Relative to the WF1CC

	Odds Ratio
Year enrolled	
2009	0.99
2010 (omitted)	--
2011	1.69***
Age	
18 to 24	0.56***
25 to 54 (omitted)	--
55 and older	1.00
Male	3.47***
Race	
White (omitted)	--
African American	1.26***
Hispanic	1.44***
Other	1.12*
Missing	1.31***
Education level	
Less than a high school diploma	0.54***
High school diploma or GED (omitted)	--
More than a high school diploma	0.87***
Disabled	0.60***
Enrollment status	
Enrolled in school	0.93
Missing information	1.28***
Employed at enrollment	2.02***
Current/most recent hourly wage	
Less than $7.25 (omitted)	--
$7.25 to $10.00	0.62***
$10.00 to $15.00	0.78***
$15.00 or higher	1.12***
Missing wage	1.02
Prior hours worked	
Less than 35 (omitted)	--
35 or more	1.53***
Missing information	0.74**
Location	
Bronx	0.89**
Queens	4.39***
Brooklyn	2.16***
Other location (omitted)[a]	--

Table E.2. Odds Ratios from Logistic Regression Models Predicting Participation in Transportation Career Center Relative to the WF1CC (continued)

	Odds Ratio
Pre-program earnings*	
1 quarter before enrollment	1.00***
2 quarters before enrollment	1.00***
3 quarters before enrollment	1.00
4 quarters before enrollment	1.00***
Prior work experience in manufacturing	5.01***
N =	262,718

SOURCES: Westat calculations using SBS data and New York State unemployment insurance (UI) earnings records.
NOTES: The data source for characteristics marked with an asterisk (*) is the New York State unemployment insurance (UI) earnings records.
Otherwise, the data source is the SBS data.
Statistical significance levels are indicated as ***= p < .001, **= p < .01, and *= p <.05.
[a] Other location of residence include locations outside of NYC.

Table E.3. Logistic Regression Models Predicting Participation in Manufacturing Career Center Relative to the WF1CC

	Odds Ratio
Year enrolled	
2009	0.02
2010 (omitted)	--
2011	1.17***
Age	
18 to 24	0.41***
25 to 54 (omitted)	--
55 and older	0.99
Male	2.89***
Race	
White (omitted)	--
African American	0.63***
Hispanic	0.94
Other	0.97
Missing	0.53***
Education level	
Less than a high school diploma	0.78**
High school diploma or GED (omitted)	--
More than a high school diploma	1.21**
Disabled	0.58***
Enrollment status	
Enrolled in school	0.95
Missing information	0.68***
Employed at enrollment	1.43***
Current/most recent hourly wage	
Less than $7.25 (omitted)	--
$7.25 to $10.00	0.26***
$10.00 to $15.00	0.50***
$15.00 or higher	0.79***
Missing wage	0.64
Prior hours worked	
Less than 35 (omitted)	--
35 or more	1.47***
Missing information	0.46**
Location[6]	
Bronx	1.39***
Queens	2.78***
Brooklyn	5.12***
Other location (omitted)[a]	--

Table E.3. Logistic Regression Models Predicting Participation in Manufacturing Career Center Relative to the WF1CC (continued)

	Odds Ratio
Pre-program earnings*	
1 quarter before enrollment	1.00***
2 quarters before enrollment	1.00
3 quarters before enrollment	1.00
4 quarters before enrollment	1.00*
Prior work experience in manufacturing	6.27***
N=	255,753

SOURCES: Westat calculations using SBS data and New York State unemployment insurance (UI) earnings records.
NOTES: The data source for characteristics marked with an asterisk (*) is the New York State unemployment insurance (UI) earnings records.
Otherwise, the data source is the SBS data.
Statistical significance levels are indicated as ***= p < .001, **= p < .01, and *= p <.05.
[a] Other location of residence include locations outside of NYC.

Table E.4. Logistic Regression Models Predicting Participation in Healthcare Career Center Relative to the WF1CC

	Odds Ratio
Year enrolled	
2009	0.16***
2010 (omitted0	--
2011	1.64***
Age	
18 to 24	0.63***
25 to 54 (omitted)	--
55 and older	0.78**
Male	0.46***
Race	
White (omitted)	--
African American	0.67***
Hispanic	1.03
Other	1.21*
Missing	0.91
Education level	
Less than a high school diploma	0.34***
High school diploma or GED (omitted)	--
More than a high school diploma	1.76***
Disabled	0.51***
Enrollment status	
Enrolled in school	1.61***
Missing information	0.82*
Employed at enrollment	3.56***
Current/most recent hourly wage	
Less than $7.25 (omitted)	--
$7.25 to $10.00	0.32***
$10.00 to $15.00	0.61***
$15.00 or higher	0.76***
Missing wage	1.13
Prior hours worked	
Less than 35 (omitted)	--
35 or more	0.89*
Missing information	0.58***
Location	
Bronx	0.63***
Queens	3.69***
Brooklyn	2.42***
Other location (omitted)[a]	--

Table E.4. Logistic Regression Models Predicting Participation in Healthcare Career Center Relative to the WF1CC (continued)

	Odds Ratio
Pre-program earnings*	
1 quarter before enrollment	1.00
2 quarters before enrollment	1.00*
3 quarters before enrollment	1.00**
4 quarters before enrollment	1.00
Prior work experience in target sector	2.46***
N =	256,978

SOURCES: Westat calculations using SBS data and New York State unemployment insurance (UI) earnings records.
NOTES: The data source for characteristics marked with an asterisk (*) is the New York State unemployment insurance (UI) earnings records.
Otherwise, the data source is the SBS data.
Statistical significance levels are indicated as ***= p < .001, **= p < .01, and *= p <.05.
[a] Other location of residence include locations outside of NYC.

Step 2: Match Sector Participants to WF1CC Participants

The second step in propensity score matching is to use the predicted probabilities or "propensities" from the logistic regression to match individuals in the treated group to control individuals with similar propensities for treatment but who did not receive treatment. In this case this meant matching sector-focused program participants to WF1CC participants who were similar on the observed characteristics included in the logistic regressions but who did not participate in a sector-focus program. While there are many methods for matching, we used a common method known as one-to-one nearest neighbor matching (Rubin 1973). In nearest neighbor matching, the data are randomly sorted and a "greedy" algorithm is used to find the closest match for a treated (sector participant) individual from the comparison group (WF1CC participant) that meets the matching criteria. A match is chosen for each treated individual one at a time. To ensure close matches, we required matches to have propensity scores within .20 standard deviations of the propensity score of the treatment case to which it was matched. Matching was done without replacement, meaning that once a comparison individual had been chosen as a match, they could not be chosen again as a match for another treated individual. Matching was performed using the SAS GMATCH MACRO maintained by the Mayo Clinic (http://mayoresearch.mayo.edu/mayo/research/biostat/sasmacros.cfm).

Step 3: Check Balance

The goal of propensity score matching is to achieve "balance"—that is, to ensure a similar distribution of measured background characteristics between the treated and control groups. The extent to which matching achieves balance can be assessed by comparing the distribution of the matching covariates before and after matching. To assess balance, we used a measure of standardized bias, as recommended by Rosenbaum and Rubin (1985). The standardized bias is a measure of the standardized difference between the treatment and control group means. Covariates with standardized bias less than .20 are considered to be balanced.

Tables E-5 through E-8 show how covariate balance compares after matching for each sector-based program. Propensity score matching was successful in balancing the background characteristics between the sector and WF1CC participants for all four sector-WF1CC comparisons.

Step 4: Estimate Program Effects

The fourth and final step in propensity score matching is to estimate the program effects. If propensity score matching was successful in forming similar comparison groups, then program effects can be obtained by simply comparing the average outcomes of the sector-based participants and matched WF1CC participants. Another approach is to use regression analysis on the matched data. The regression analysis would include all of the covariates included in matching. Such "doubly robust" estimation (Bang and Robins, 2005) controls for any residual differences that may remain after matching. For each outcome, we estimated a regression model that included a treatment indicator for sector-focus program participation as well as all of the covariates included in the propensity score models. In addition, in order to examine differences in program impacts by participant characteristics, we included interaction terms between the treatment indicator and the participant characteristics (e.g., age, gender).

Table E.5. Comparison of Variables after Propensity Score Matching, Sector-Focused Career Center Participants and Matched WF1CC Participants

	All sector-focused career centers	Matched WF1CCs	Standardized Difference
Year enrolled			
2009	31.9	31.9	0.00
2010	37.9	37.9	0.00
2011	30.3	30.3	0.00
Age			
18 to 24	11.9	11.4	0.01
25 to 54	78.3	78.8	-0.01
55 and older	9.9	9.8	0.00
Gender			
Male	65.7	66.0	-0.01
Female	31.8	33.5	-0.04
Race/ethnicity			
White	10.7	11.1	-0.01
African American	38.7	38.4	0.01
Hispanic	28.0	28.0	0.00
Other	10.5	10.6	-0.01
Missing	12.1	11.8	0.01
Education level			
Less than a high school diploma	8.1	8.0	0.00
High school diploma/GED	35.4	34.6	0.02
More than a high school diploma	55.5	56.0	-0.01
Disabled	1.8	1.7	0.01
Enrollment status			
Enrolled in school	15.4	15.0	0.01
Missing information	8.8	8.7	0.00
Employed at enrollment	29.3	27.2	0.05
Prior hourly wage			
Less than $7.25	4.2	4.3	-0.01
$7.25 to $10.00	25.5	25.4	0.00
$10.00 to $15.00	25.5	25.9	-0.01
$15.00 or higher	25.3	25.1	0.00
Missing information	19.5	19.3	0.00
Prior hours worked			
35 or more	60.7	60.5	0.00
Less than 35	21.1	21.6	-0.00
Missing information	18.3	17.9	0.01
Location			
Bronx	12.9	12.3	0.02
Queens	48.3	48.9	-0.01
Brooklyn	26.3	26.6	-0.01
Other location	12.5	12.2	0.01

Table E.5. Comparison of Variables after Propensity Score Matching, Sector-Focused Career Center Participants and Matched WF1CC Participants (continued)

	All Sector-Focused Career Centers	Matched WF1CCs	Standardized Difference
Pre-program earnings*	$11,815	$10,700	0.07
1 quarter before enrollment	$2,536	$2,292	0.06
2 quarters before enrollment	$2,870	$2,612	0.06
3 quarters before enrollment	$3,130	$2,831	0.07
4 quarters before enrollment	$3,278	$2,965	0.07
Quarters worked before enrollment*			
Worked 0 quarters	31.6	34.0	-0.05
Worked 1 quarter	12.4	11.4	0.03
Worked 2 quarters	11.8	11.4	0.01
Worked 3 quarters	12.5	12.8	-0.01
Worked 4 quarters	31.7	30.4	0.03
Prior work experience in transportation sector	12.0	10.5	0.05
Prior work experience in manufacturing sector	1.5	1.4	0.01
Prior work experience in healthcare sector	6.8	6.2	0.03

SOURCES: Westat calculations using SBS data and New York State unemployment insurance (UI) earnings records.
NOTES: The data source for characteristics marked with an asterisk (*) is the New York State unemployment insurance (UI) earnings records.
Otherwise, the data source is the SBS data.

Table E.6. Comparison of Variables after Propensity Score Matching, Transportation Career Center Participants and Matched WF1CC Participants

	Workforce 1 Transportation Career Center	Matched WF1CCs	Standardized Difference
Year enrolled			
2009	44.5	44.5	0.00
2010	30.0	30.0	0.00
2011	25.5	25.5	0.00
Age			
18 to 24	11.2	9.9	0.04
25 to 54	78.5	79.5	-0.02
55 and older	10.3	10.6	-0.01
Gender			
Male	77.5	78.0	-0.01
Female	19.0	21.6	-0.06
Race/ethnicity			
White	8.8	8.8	0.00
African American	40.8	40.9	0.00
Hispanic	28.4	28.6	0.00
Other	9.3	9.5	-0.01
Missing	12.6	12.3	0.01
Education level			
Less than a high school diploma	9.3	9.4	0.00
High school diploma/GED	40.8	40.3	0.01
More than a high school diploma	49.0	48.8	0.00
Disabled	1.8	1.8	0.00
Enrollment status			
Enrolled in school	12.2	12.5	-0.01
Missing information	10.5	11.1	-0.02
Employed at enrollment	27.9	26.5	0.03
Prior hourly wage			
Less than $7.25	5.0	4.9	0.00
$7.25 to $10.00	26.0	25.7	0.01
$10.00 to $15.00	27.2	27.3	0.00
$15.00 or higher	23.1	23.4	-0.01
Missing wage	18.7	18.7	0.00
Prior hours worked			
35 or more	64.2	64.5	-0.01
Less than 35	18.3	18.0	0.01
Missing information	17.5	17.4	0.00
Location			
Bronx	13.2	12.7	0.02
Queens	51.5	52.8	-0.03
Brooklyn	22.9	22.1	0.02
Other location	12.2	12.4	0.00

Table E.6. Comparison of Variables after Propensity Score Matching, Transportation Career Center Participants and Matched WF1CC Participants (continued)

	Workforce 1 Transportation Career Center	Matched WF1CCs	Standardized Difference
Pre-program earnings*	$11,813	$10,479	0.09
1 quarter before enrollment	$2,435	$2,104	0.09
2 quarters before enrollment	$2,842	$2,508	0.08
3 quarters before enrollment	$3,177	$2,846	0.07
4 quarters before enrollment	$3,359	$3,022	0.07
Quarters worked before enrollment*			
Worked 0 quarters	30.5	32.0	-0.03
Worked 1 quarter	13.0	12.7	0.01
Worked 2 quarters	12.5	12.1	0.01
Worked 3 quarters	13.2	12.5	0.02
Worked 4 quarters	30.8	30.7	0.00
Prior work experience in transportation sector	18.1	15.5	0.07

SOURCES: Westat calculations using SBS data and New York State unemployment insurance (UI) earnings records.
NOTES: The data source for characteristics marked with an asterisk (*) is the New York State unemployment insurance (UI) earnings records.
Otherwise, the data source is the SBS data.

Table E.7. Comparison of Variables after Propensity Score Matching, Manufacturing Career Centers Participants and Matched WF1CC Participants

	Workforce 1 Manufacturing Career Center	Matched WF1CCs	Standardized Difference
Year enrolled			
2009	2.2	2.2	0.00
2010	61.6	61.6	0.00
2011	36.2	36.2	0.00
Age			
18 to 24	8.6	8.7	0.00
25 to 54	79.8	80.9	-0.03
55 and older	11.6	10.4	0.04
Gender			
Male	73.8	74.8	-0.02
Female	25.8	25.0	0.02
Race/ethnicity			
White	16.7	16.3	0.01
African American	34.6	33.1	0.03
Hispanic	30.2	31.0	-0.02
Other	10.9	11.9	-0.03
Missing	7.6	7.7	0.00
Education level			
Less than a high school diploma	10.6	10.7	0.00
High school diploma/GED	30.3	29.5	0.02
More than a high school diploma	58.4	59.0	-0.01
Disabled	2.1	2.0	0.01
Enrollment status			
Enrolled in school	12.4	12.7	-0.01
Missing information	5.3	6.8	-0.06
Employed at enrollment	18.2	16.1	0.06
Prior hourly wage			
Less than $7.25	2.5	3.3	-0.05
$7.25 to $10.00	22.5	21.7	0.02
$10.00 to $15.00	25.3	26.0	-0.02
$15.00 or higher	34.4	33.4	0.02
Missing information	15.3	15.6	-0.01
Prior hours worked			
35 or more	68.6	69.6	-0.02
Less than 35	17.0	15.7	0.02
Missing information	14.4	14.7	-0.01
Location			
Bronx	15.3	15.4	0.00
Queens	30.1	30.8	-0.02
Brooklyn	43.2	41.6	0.03
Other location	11.4	12.2	-0.02

Table E.7. Comparison of Variables after Propensity Score Matching, Manufacturing Career Centers Participants and Matched WF1CC Participants (continued)

	Workforce 1 Manufacturing Career Center	Matched WF1CCs	Standardized Difference
Pre-program earnings*	$9,975	$8,815	0.08
1 quarter before enrollment	$2,034	$1,732	0.09
2 quarters before enrollment	$2,442	$2,214	0.06
3 quarters before enrollment	$2,691	$2,364	0.08
4 quarters before enrollment	$2,808	$2,506	0.07
Quarters worked before enrollment*			
Worked 0 quarters	37.6	40.7	-0.07
Worked 1 quarter	13.1	12.9	0.01
Worked 2 quarters	11.9	10.4	0.05
Worked 3 quarters	11.9	13.0	-0.03
Worked 4 quarters	25.6	23.0	0.06
Prior work experience in manufacturing sector	11.8	11.2	0.02

SOURCES: Westat calculations using SBS data and New York State unemployment insurance (UI) earnings records.
NOTES: The data source for characteristics marked with an asterisk (*) is the New York State unemployment insurance (UI) earnings records.
Otherwise, the data source is the SBS data.

Table E.8. Comparison of Variables after Propensity Score Matching, Healthcare Career Center Participants and Matched WF1CC Participants

	Workforce 1 Health Care Career Center	Matched WF1CCs	Standardized Difference
Year enrolled			
2009	11.0	11.0	0.00
2010	48.0	48.0	0.00
2011	41.0	41.0	0.00
Age			
18 to 24	15.7	15.3	0.01
25 to 54	76.7	77.8	-0.03
55 and older	7.6	6.9	0.03
Gender			
Male	25.4	23.0	0.06
Female	73.9	76.0	-0.05
Race/ethnicity			
White	13.1	13.0	0.00
African American	34.7	35.8	-0.02
Hispanic	25.7	25.8	0.00
Other	13.6	12.8	0.03
Missing	12.8	12.7	0.01
Education level			
Less than a high school diploma	3.3	2.6	0.04
High school diploma/GED	22.2	22.9	-0.02
More than a high school diploma	73.5	74.0	-0.01
Disabled	1.3	1.3	0.00
Enrollment status			
Enrolled in school	26.6	26.2	0.01
Missing information	5.5	5.4	0.01
Employed at enrollment	39.6	37.1	0.05
Prior hourly wage			
< $7.25	2.9	3.0	-0.01
$7.25 to $10.00	25.8	24.8	0.02
$10.00 to $15.00	20.4	22.4	-0.05
$15.00 or higher	26.6	24.8	0.04
Missing wage	24.4	25.0	-0.02
Prior hours worked			
35 or more	45.2	45.1	0.00
Less than 35	31.9	31.7	-0.00
Missing information	23.0	23.2	-0.01
Location			
Bronx	10.4	10.1	0.01
Queens	49.0	50.1	-0.02
Brooklyn	26.8	26.3	0.01
Other location	13.9	13.4	0.01

Table E.8. Comparison of Variables after Propensity Score Matching, Healthcare Career Center Participants and Matched WF1CC Participants (continued)

	Workforce 1 Health Care Career Center	Matched WF1CCs	Standardized Difference
Pre-program earnings*	$12,832	$10,985	0.11
1 quarter before enrollment	$3,114	$2,682	0.10
2 quarters before enrollment	$3,190	$2,718	0.10
3 quarters before enrollment	$3,232	$2,742	0.11
4 quarters before enrollment	$3,295	$2,843	0.10
Quarters worked before enrollment*			
Worked 0 quarters	31.6	31.9	-0.01
Worked 1 quarter	10.3	12.0	-0.05
Worked 2 quarters	9.6	8.2	0.05
Worked 3 quarters	10.8	12.0	-0.04
Worked 4 quarters	37.7	36.0	0.04
Prior work experience in healthcare sector	11.0	11.0	0.07

SOURCES: Westat calculations using SBS data and New York State unemployment insurance (UI) earnings records.
NOTES: The data source for characteristics marked with an asterisk (*) is the New York State unemployment insurance (UI) earnings records.
Otherwise, the data source is the SBS data.