

1-11-2010

## Net Impact Evaluation of Moving Men and Women to Economic Independence in Michigan, Within Reach Program: Year 1 and Year 2 Cohorts

Randall W. Eberts

*W.E. Upjohn Institute for Employment Research, eberts@upjohn.org*

Jason M. Preuss

*W.E. Upjohn Institute for Employment Research*

Follow this and additional works at: <https://research.upjohn.org/presentations>

---

### Citation

Eberts, Randall W. and Jason M. Preuss. 2010. "Net Impact Evaluation of Moving Men and Women to Economic Independence in Michigan, Within Reach Program: Year 1 and Year 2 Cohorts." Prepared for the Detroit Career Center.

<https://research.upjohn.org/presentations/2>

This title is brought to you by the Upjohn Institute. For more information, please contact [repository@upjohn.org](mailto:repository@upjohn.org).

*Net Impact Evaluation of*  
Moving Men and Women to Economic Independence  
in Michigan,  
Within Reach Program:  
*Year 1 and Year 2 Cohorts*

*January 11, 2010*

**Randall W. Eberts**

**Jason Preuss**

**W.E. Upjohn Institute for Employment Research**

# Table of Contents

	Page		Page
Executive Summary	3		
I. Introduction	8	V. Year-Two Participants	51
I.1 Purpose	9	V.I Pilot Group Outcomes	52
I.2 Program Description	11	1. Employment	53
1. Program Services	12	2. Workforce Attachment	54
II. Evaluation Methodology	13	3. Employment Duration	56
II.1 Comparison Groups	14	4. Industry and Job Tenure	57
II.2 Difference in Means	17	5. Earnings	60
II.3 Additional Methods	18	V.2 Net Impact Analysis Results	62
II.4 Data	19	1. Variable Means	63
III. Presentation of Results	20	2. Employment	64
IV. Year-One Participants	22	3. Workforce Attachment	70
IV.1 Pilot Program Outcomes	23	4. Employment Duration	73
1. Employment	23	5. Earnings	74
2. Workforce Attachment	25	VI. Differences in Employment between two cohorts	77
3. Employment Duration	28	VII. Benefit Cost Analysis	79
4. Industry and Job Tenure	29	VIII. Summary	80
5. Earnings	32	Appendix: Glossary	82
IV.2 Net Impact Analysis Results	34		
1. Variable Means	35		
2. Employment	36		
3. Workforce Attachment	42		
4. Employment Duration	45		
5. Earnings	46		

This report was prepared by the Upjohn Institute for the Goodwill Industries of Greater Detroit. We thank the staff of Goodwill, the Michigan Department of Human Services and the Department of Energy, Labor and Economic Growth for their cooperation and assistance in the course of conducting this analysis.

# Executive Summary

- Goodwill Industries of Greater Detroit has initiated a model program that targets individuals with employability challenges including learned dependence on entitlements, inadequate environmental supports, and underdeveloped socialization skills. Referred to as “Moving Men and Women to Economic Independence” this program provides initial assessment, development of a service plan, and case coordination, followed by a combination of classroom activities, work experience and problem-solving discussion groups. Participants also have access to remedial education training and job search assistance.
- The Upjohn Institute was engaged to conduct a net impact evaluation of the “Within Reach” component of the program, which focuses on disadvantaged adults. The net impact evaluation estimates the contribution of the program to the employment outcomes of the participants. It does this by constructing comparison groups of individuals who are similar to the program participants, but who did not participate in the program. Subtracting the outcomes of the comparison group from the outcome of the program participants nets out as much as possible factors that influence employment outcomes but are not related to the “Within Reach” program.
- The net impact analysis focuses on three employment-related outcomes: finding a job, retaining a job (workforce attachment), and earnings. Both year-one and year-two participants were included in the analysis, and separate net impact analyses were estimated for each cohort.
- In general, results of the net impact analysis show that:
  - Goodwill pilot participants exhibited higher employment rates than those in the two comparison groups and the differences were statistically significant;
  - Goodwill pilot participants also had a greater number of quarters of employment than their counterparts in the comparison groups, suggesting a greater attachment to the workforce;
  - The differences in earnings of those employed between the pilot participants and the two comparison groups were not statistically significant, suggesting that Goodwill participants had not sacrificed earnings to increase their likelihood of obtaining a job;

# Executive Summary

- Because of the higher likelihood of finding and retaining a job, total earnings (including all exiters employed or not) over the four-quarter period of Goodwill participants in the first-year cohort were higher than those of their counterparts. Total earnings of the second-year cohorts were not statistically significant.

More specifically, the analysis yielded the following results.

- Employment:
  - First-year pilot participants experienced higher employment rates than control group members, ranging from 11 to 21 percentage points (ppts.) higher depending upon the methodology and the comparison group used in the analysis. (Employment was defined as positive earnings in any one of eight quarters after exit.)
  - Second-year pilot participants were also more likely to be employed than their comparison group counterparts, with the difference ranging from 9.4 to 13.0 percentage points higher depending upon the methodology and the comparison group used in the analysis. (Employment was defined as positive earnings in any one of four quarters after exit.)
- Workforce Attachment:
  - First-year pilot participants were more likely to have five or more quarters of employment (not necessarily consecutively) than their comparison group counterparts. The difference was 20.2 ppts. for the self-selected comparison group and 24.4 ppts. for the matched comparison group. Conversely the likelihood of not having a job in any of the eight quarters was lower for the pilot participants by 10.9 ppts. and 18.3 ppts. compared with the self-selected and matched comparison groups, respectively.

# Executive Summary

- Second-year pilot participants were also more likely to have four or more quarters of employment (not necessarily consecutively) than their comparison group counterparts. The difference was 8.9 pts. for the self-selected comparison group and 11.6 pts. for the matched comparison group. Conversely the likelihood of not having a job in any of the four quarters was lower for the pilot participants by 11.0 pts. and 11.6 pts. compared with the self-selected and matched comparison groups, respectively. The pilot participants were also more likely to have continuous employment quarter after quarter than those in the two comparison groups. For example, the difference in the percentage with four consecutive quarters of employment after exit was 9.4 pts. when compared with the self-selected group and 6.9 pts. when compared with the matched group.
- Earnings:
  - Employed first-year pilot participants did not earn any more per quarter than their counterparts in the two comparison groups, suggesting that they do not sacrifice earnings to increase their chance of getting a job. However, the fact that the pilot participants were more likely to be employed than their comparison group counterparts raised their earnings for the first four quarters after exit by a much as \$2,000 per all exiters over that received by those in the comparison groups.
  - Employed second-year pilot participants also did not earn any more per quarter than their counterparts in the two comparison groups. When all exiters were considered, the differences in total earnings between the treatment group and the two comparison groups averaged around \$1,100 per exiter. However, unlike for the first-year cohort, earnings were not statistically different even when the likelihood of employment was taken into consideration.

# Executive Summary

- Benefit-Cost Analysis
  - The total earnings of all exiters in each cohort provides a simple measure of the monetary value of benefits to the exiters generated by the program. For cohort 1, this difference is \$1900 per exiter for the first four quarters after exit; for cohort 2, the difference is approximately \$1,100 per exiter. Multiplying the difference by the number of exiters yields a total benefit for the first four quarters of \$405,000 for the 213 exiters in cohort one and \$208,000 for the 189 exiters in cohort two. It should be noted that the difference in total earnings per exiter was statistically significant only for the first cohort. In both cases, however, the positive difference for the pilot participants was due to their greater likelihood of finding employment. The value of increased total earnings per exiter remains the same, if not slightly higher, for the four subsequent quarters after exit (quarters 5 through 8), according to analysis of the following four quarters for cohort 1. Therefore, it appears that the benefits continue at the same level for at least two years after exiting the program.
  - Although no cost data have been provided to the evaluators, comparing the benefits generated over two years (at least) with the costs of providing services to each of the cohorts provides a means to determine the efficacy of the program. For example, over two years, the contribution of the program to total earnings of first-year participants amounted to \$810,000. If this number is greater than the cost for the first-year cohort during their enrollment and for follow-up services, then the program is considered effective in that benefits are greater than costs. Benefits may extend to additional years, but we do not have the data to confirm that possibility at this point. Benefits to the second-year cohort appear to be about half the amount of the first-year cohort.

# Executive Summary

- Differences in the employment outcomes of the two cohorts
  - The lower employment outcomes of the second-year cohort appear to be explained by differences in the characteristics of the participants. Seventy-seven percent of the difference in employment outcomes is explained by differences in characteristics, such as age, educational attainment, and prior work history. The second-year cohort was slightly older and had less work experience, which were the two largest factors reducing their probability of employment.



# I. Introduction

# I.1 Purpose of the Study

- The purpose of this study is to conduct a net impact evaluation of the performance of the Goodwill Industries' Pilot: *Moving Men and Women to Economic Independence in Michigan* (pilot). While the pilot serves three groups of individuals, the evaluation focuses only on the "Within Reach" program, which assists the chronically unemployed from economically disadvantaged backgrounds.
- A net impact evaluation compares labor market outcomes that participants in the Goodwill pilot attain to outcomes that they would have experienced if they had not participated in the pilot. In short, net impact evaluations estimate the contribution of the program on the participants. It addresses the question: "Did the program make a difference in helping participants find and retain jobs?"
- Obviously, the same person cannot participate in two programs at the same time. The approach pursued in this evaluation is to construct appropriate comparison groups by identifying individuals who are as similar as possible to those in the Goodwill program but did not participate in the program. Comparing the outcomes of the Goodwill pilot with those of the comparison group(s) yields the net impact of the pilot on those who participated in the pilot program.
- A net impact evaluation is critical for evaluating a program's contribution in assisting participants achieve stated objectives. Looking only at the outcomes of the pilot participants, even over time, does not isolate the contribution of the program from other factors that may also contribute to the employment outcomes of participants but are not related to the program. Without following appropriate net impact evaluation methodologies, the success of a program may be confused with factors not related to the program, such as the innate abilities of those in the program, favorable or unfavorable economic conditions, or the effect of other services.
- Constructing the proper counterfactual (the comparison group) is a critical component of net impact analysis. Two comparison groups are constructed for each of the two cohorts in order to establish the proper counterfactual for the net impact evaluation of the program.

- It is important to understand that the net impact evaluation cannot separate out the effects of the individual program elements, nor can it separate out the effects of the overall design of the program, the quality of service delivery, and the leadership of the programs and the organization. All of these elements, which are important to the success of the program, are considered as part of the entire bundle of screening, services, and timing and quality of the delivery of services. Therefore, in interpreting the results of the net impact evaluation, we can say only whether participants of the program experienced more favorable employment outcomes than similar individuals who did not participate in the program, as represented by the two carefully constructed comparison groups.
- It may also be the case that individuals who did not receive services through the Within Reach Pilot received similar services from other sources, such as from Department of Human Services (DHS) offices or Michigan Works offices. This may mitigate the estimated value-added of the program to the participants.
- The evaluation considers the first- and second-year cohorts of the *Within Reach* program.
  - The first-year participants were enrolled from October 1, 2005 through September 30, 2006. According to Goodwill records, Department of Human Services sent letters to 4,476 individuals inviting them to consider the *Within Reach* program and attend orientation. Of those who were mailed letters, 1,472 attended orientation, 605 participated in the eligibility processing, and 240 met the eligibility criteria and elected to pursue the program. A total of 213 enrollees completed the program. Using administrative records from the UI system, we followed the employment outcomes of these 213 exiters for eight quarters beginning the first quarter of 2006.
  - The second-year participants were enrolled from October 1, 2006 through September 30, 2007. DHS sent assignment letters to 2,905 individuals, of which 1,249 attended orientation, and 261 met the eligibility criteria and elected to pursue the program. A total of 189 completed the program, and we followed their employment outcomes for four quarters, beginning the first quarter of 2007.
  - The number of quarters of administrative data was not sufficient to evaluate cohort 3.

## I.2 Description of the *Within Reach* Pilot

- Goodwill Industries of Greater Detroit has worked to find innovative solutions to help the chronically unemployed find jobs and move out of poverty. The *Moving Men and Women to Economic Independence in Michigan* initiative has three components:
  - *Within Reach*—assists the chronically unemployed from economically disadvantaged backgrounds
  - *New Start*—targets people exiting the criminal justice system
  - *Flip the Script*—works with low-income, young, minority men
- The net impact evaluation focuses only on the *Within Reach* program, which targets the population typically served through the Department of Human Services, currently through its JET program and formerly through WorkFirst programs.
- Participants who are eligible to enter the *Within Reach* program must meet the following criteria:
  - Able and available to work
  - Demonstrate a commitment to the program (attendance and active participation)
  - At least eighteen years of age
  - Basic literacy skills at the 4.5 grade level or above
  - Submit to alcohol/drug screening before enrollment and randomly throughout the length of the program
  - Stable living arrangements
  - Referred by the Department of Human Services.

# 1. Program Services

- The *Within Reach* Program provides participants with the following services:
  - Intake and Assessment—including attitudinal evaluation, criminal background check, drug screening, academic aptitude and career interests
  - Coaching—each individual paired with a coach who provides ongoing support, service coordination, and plan development
  - Work Identity and Soft Skills Development—specific modules customized for participants
  - Hard Skills Development—occupational skills training programs delivered through Goodwill Career Center provides business computer training
  - Academic preparation—remedial education, GED preparation, and increase basic math and reading skills
  - Transitional employment opportunities—each participant can receive paid transitional employment
  - Job Development and Placement Services—centralized placement unit
  - Post-Placement Support and Retention Services—all participants placed in services receive active, ongoing retention support
  - Partnerships with Employers—employer engagement providing job opportunities

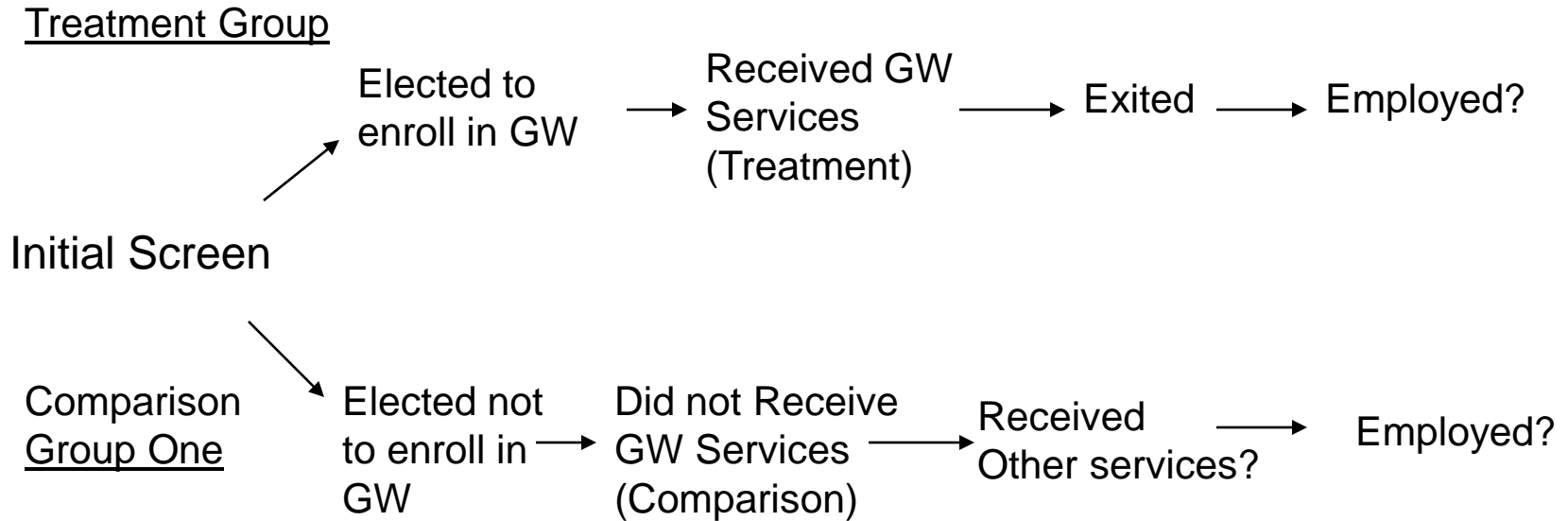
## II. Evaluation Methodology

- Net outcomes are those outcomes of program participants that can be attributed only to the intervention, in this case the services offered by the pilot program. Unfortunately, we do not directly observe net outcomes. For instance, we observe the employment status of a person after exiting the program, which we refer to as “gross” outcomes. However, a person’s ability to find a job at that time may depend not only on the services received while participating in the program but also on his or her innate personal abilities (unrelated to any contribution from the program) and current economic conditions. Therefore, we must purge the observed outcomes of those extraneous factors in order to estimate “net” outcomes. That is,
  - Net outcome = Gross outcome – extraneous effects.
- Ideally, we would like to observe the expected outcome of the treated individuals were they not treated, but this is not possible since we cannot observe the same person in two different circumstances at the same time.
- The primary way of purging gross outcomes of extraneous factors is first to construct a group of individuals who are not participating in the program but are as close as possible in characteristics and motivation to those participating in the program.
- Random assignment is considered the “Gold Standard” for constructing comparison groups. In this case, individuals are randomly assigned to the group receiving services (treatment group) and to the group not receiving services (control or comparison group). By construction, the aggregate observed and unobserved characteristics of the two groups are identical, with sufficiently large number of people in each group. Comparing the outcomes of the treatment group to those of the comparison group purges the observed (gross) outcomes of all extraneous factors and is an ideal estimate of the net effects of the program.
- Unfortunately, random assignment is not possible given the design of the pilot program.

# 1. Comparison Groups

- Therefore, we follow the next best methodology, which is to construct comparison groups by identifying individuals who are as similar as possible to those in the treatment group with respect to observed demographic characteristics and workforce experience but who did not participate in the pilot program. In the absence of random assignment, no single comparison group can be considered the best and only comparison group to use in a net impact evaluation. Therefore, we consider two comparison groups in the evaluation and compare the results of each to those of the treatment group.
  - Comparison Group one (self-selected): Use participants with similar characteristics who received a letter of invitation to join the program, attended orientation, may or may not have been screened by the Goodwill pilot, and did not elect to receive services or may have not passed the appropriate screens to be admitted to the program.
  - Comparison Group two (matched): Matched the characteristics of individuals with those who participated in the Detroit DHS programs (within the same region) but did not participate in the *Within Reach* pilot. In this respect, the second comparison group contrasts the relative contribution of the pilot relative to typical DHS programs.
- Participants of the *Within Reach* pilot and members of the two comparison groups are not the same people, and may differ in the following ways, which could affect the evaluation:
  - abilities that we cannot measure and cannot control for
  - motivations and personalities
  - family circumstances
  - labor market conditions
  - Pilot participants may be more or less motivated because they know they are part of a pilot program
  - Pilot program staff may be more or less motivated because they know they are part of an innovative program.
- The more we can purge extraneous factors, such as those listed above, from gross outcomes the closer we come to estimating the true contribution of the program.

# 1. Treatment vs. Comparison Group One (Self-Selected)

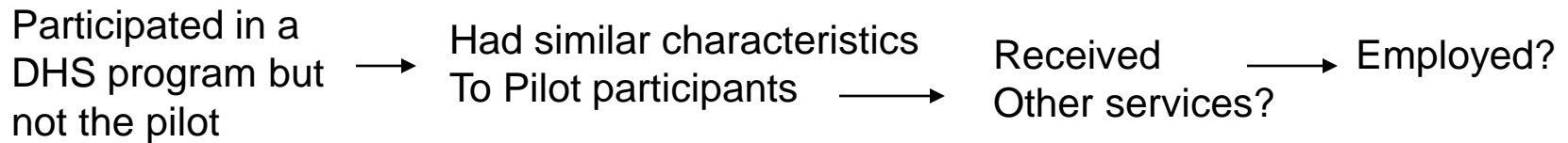
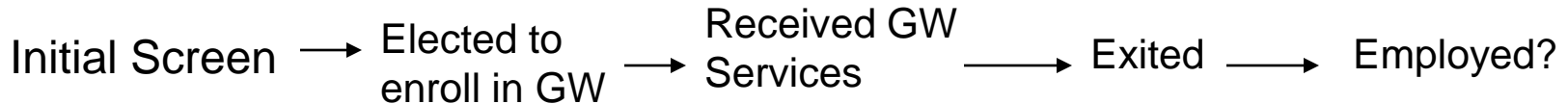


The treatment group includes participants who responded to the letter of invitation, attended orientation, went through the various screens and then entered the Goodwill program. The comparison group includes individuals who responded to the letter of invitation, attended orientation, may or may not have gone through the various screens (including a drug test), and did not elect to enter the program or did not pass the appropriate screens to be admitted into the program. Some members of the comparison group could have received services from DHS programs. (We controlled for this possibility in the regression analysis.) Selecting a comparison group in this way helps to include individuals who may have similar characteristics and motivation as those in the treatment group. Individuals included in this comparison group were identified by Goodwill staff.



# 1. Treatment vs. Comparison Group Two (Matched)

## Treatment Group

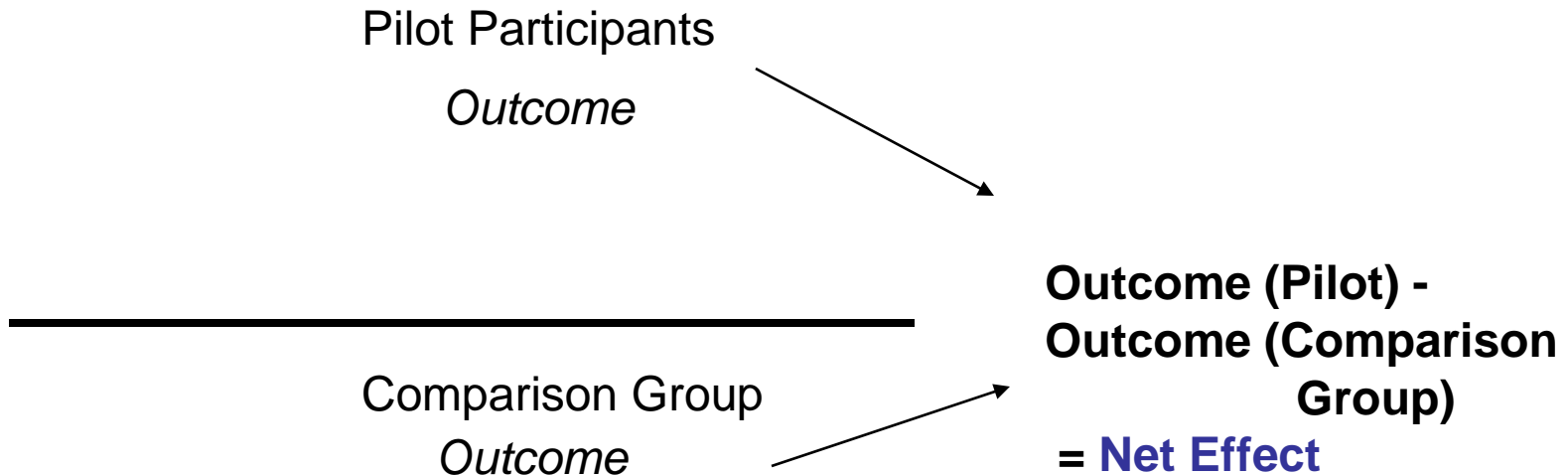


## Comparison Group Two

The treatment group, of course, includes the same participants as before. The comparison group is different. Members of comparison group two are individuals who live in the same area of Detroit as the pilot participants. They participated in DHS programs at the same time that the treatment group members participated in the pilot program. However, this comparison group did not receive a letter of invitation, did not attend orientation, and were not subject to various screens, including a drug test. We used propensity score matching to select these individuals based on age, gender, race/ethnicity, family structure, educational attainment, months on TANF and past employment history. The characteristics of these individuals are compared with the first comparison group in a table on page 34 for cohort 1 and page 62 for cohort 2. There is no overlap between the two comparison groups in that no individual is found in both groups.

## 2. Net Impact Analysis Framework: *Difference in Means*

The net impact analysis framework can be visualized in the following diagram, which shows that the net effect of the pilot is the difference in the average outcome (e.g., employment) of the pilot participants (the treatment group) and the average outcome of members of the comparison group.



The outcomes of participants of the Pilot and those from a comparison group are observed simultaneously. The difference in the outcomes of the two groups is attributed to the net contribution of the Pilot programs to the Pilot participants' outcomes.

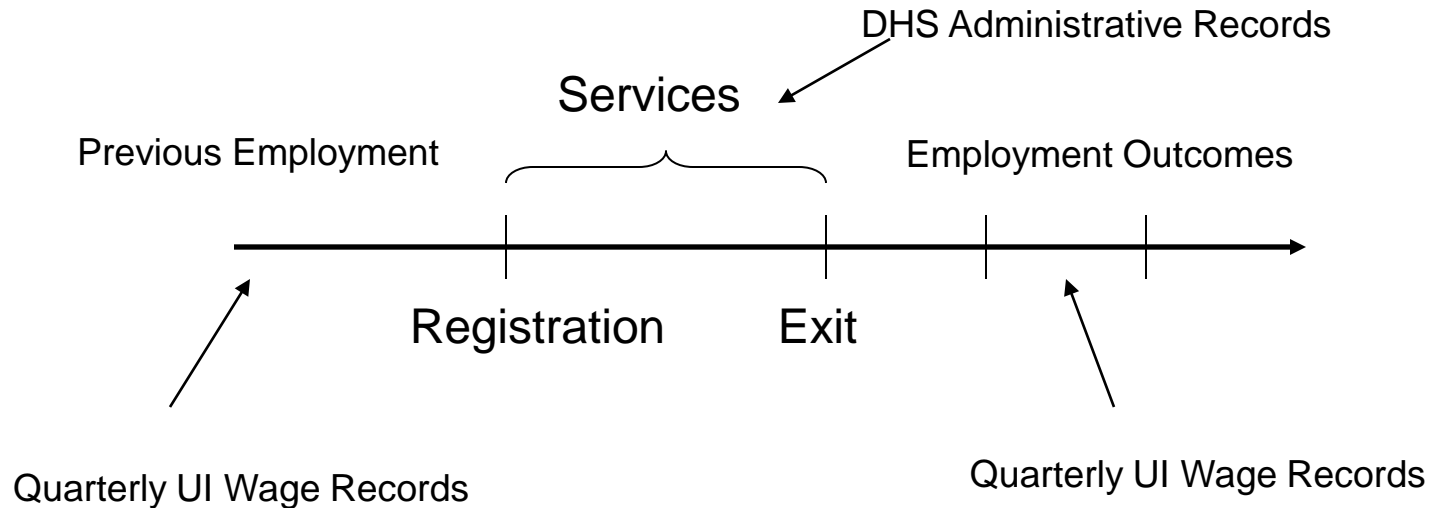
**Net Effect:** Differences out the effects of extraneous factors (personal characteristics and economic conditions if participants of Pilot group are similar to participants of comparison group)

### 3. Two Additional Methods

- If one were assured that the individuals in the treatment group and the comparison group were identical along all dimensions, including motivation and other intangibles, comparing the difference in outcomes between the treatment and comparison groups would typically be sufficient to estimate the net impact of the program. However, without random assignment, members of the treatment group and the comparison group may differ in key aspects.
- Therefore, we pursue two other methods to purge from the observed outcomes additional extraneous, non-program factors that could influence observed outcomes.
- The first method is to use regression analysis to control for factors, such as personal characteristics and employment history. Regression analysis is a statistical technique that relates outcomes to factors that may influence those outcomes. By including observed factors (such as demographic characteristics and employment history) that are not related to the program, as well as factors that are (in this case their participation in the pilot), we can isolate the effects of the program from extraneous factors.
- The second method is to use the difference-in-differences technique to examine the difference in behavior between the two groups of individuals before and after the treatment group entered the pilot program. This approach subtracts out factors that persist over time that are unrelated to the program, such as motivation perhaps and innate abilities of individuals in the two groups.
- The results of each of the two methods are displayed and discussed separately. To summarize the results, the net impact estimates are qualitatively the same regardless of the methodology used, which suggests that the two comparison groups are quite similar to the treatment group.

## 4. Data

Longitudinal files are constructed for each individual. The files include their employment history, services received, and employment outcomes. Quarterly UI wage records are combined with DHS administrative records. The wage records allow us to follow individuals, both treatment and comparison group, for several quarters after the pilot participants exit from the program.



UI wage records are compiled by the state Unemployment Insurance system for the purpose of recording the earnings each quarter of everyone who is employed in a job covered by the UI system, which is nearly all jobs except for self-employment. The earnings are reported by a worker's employer. We define employment in any quarter in which positive earnings are recorded. This is the basic definition used by the government when using these data to record employment. (See the glossary at the end of the report.)

# III. Presentation of Results

- The evaluation examines the employment and earnings of both year-one and year-two cohorts. The results for each cohort are considered in separate sections of this report.
- The results of the analysis are reported in the following sequence.
  - **Gross outcomes of the treatment group.** We look first at the gross outcomes of the treatment group before estimating the net impact by comparing them with the gross outcomes of the comparison groups. We consider the following employment outcomes.
    - **Employment patterns by quarters:** Examines the percentage finding employment of those who exited the program by quarter. For the first year cohort, we track their employment for eight quarters. For the second year cohort, we track at most six quarters because the most recent data available allows only six quarters of observations for the first group of exiters and only one quarter for the last group of exiters.
    - **Employment patterns conditional on being employed in the previous quarter:** Examines the duration of employment from the time the participant exited, which provides a perspective on the likelihood of staying employed and attached to the workforce.
    - **Industry of employment:** Provides a breakdown of the industries in which participants find jobs.
    - **Attachment to employers:** Displays the number of quarters of employment the participant is with the same employer. This provides a perspective on job tenure, which is important for gaining experience, access to employer-provided training, and promotion.
    - **Earnings patterns by quarter:** Examines the level of quarterly earnings received from the employer(s) of record. This allows us to see whether there is a earnings progression over time.

# Presentation of Results

- **Net Impact Analysis:** The net impact analysis compares the gross outcomes of the treatment group with that of a comparison group. Several approaches are used to estimate the contribution of the pilot program to the outcomes of the pilot participants.
  - **Compare the observed characteristics of treatment group participants with members of each of the two comparison groups:** This gives us a sense of the similarity in characteristics and employment history of the three groups, which is important for establishing the credibility of the comparison groups.
  - **Compute the difference in the employment percentages by quarter between the treatment group and each comparison group:** The difference provides an estimate of the contribution of the pilot program to the outcomes of the treatment group.
  - **Estimate regression-adjusted differences:** Regression adjusted differences help to account for differences in the characteristics of members of the treatment and comparison group that were not netted out with the difference-in-means approach.
  - **Use a difference-in-differences approach:** This approach takes the difference in outcomes of the treatment group and comparison group before and after the pilot was initiated. Since we are including differences in outcomes of the same people within each group before and after the time of the treatment, this approach offers an additional way to control for extraneous factors.
- Detailed results for the two cohorts are presented separately.

# IV. Year-One Participants

Summary of net impact estimates:

- **Employed in any eight quarters:** Pilot participants experienced higher employment rates than control groups, ranging from 11 to 21 percentage points (ppts.) higher depending upon the methodology and the comparison group used in the analysis. The matched group yields the highest results, with a regression-adjusted estimate of 17 ppts. However, the difference-in-differences result for the self-selected group yields an estimate of 15 ppts. The percentage of the treatment with employment at any time during the first eight quarters after exit is 83.1.
- **Workforce Attachment:** Pilot participants were more likely to have five or more quarters of employment (not necessarily consecutively) than their comparison group counterparts. The difference was 20.2 ppts. for the self-selected comparison group and 24.4 ppts. for the matched comparison group. Conversely the likelihood of not having a job in any of the eight quarters was lower for the pilot participants by 10.9 ppts. and 18.3 ppts. compared with the self-selected and matched comparison groups, respectively. The pilot participants were also more likely to have continuous employment quarter after quarter than the those in the two comparison groups. For example, the difference in the percentage with four consecutive quarters of employment after exit was 10.4 ppts. when compared with the self-selected group and 14.9 ppts. when compared with the matched group. The percentage of those in the treatment group with four consecutive quarters of employment was 29.1 percent, so the differences are quite large.
- **Earnings:** Employed pilot participants did not earn any more per quarter than their counterparts in the two comparison groups, suggesting that they do not sacrifice earnings to increase their chance of getting a job. The differences in earnings between the treatment group and the two comparison groups were not statistically significant. However, the fact that the pilot participants were more likely to be employed than their comparison group counterparts raises the annual average earnings for all exiters by an average of \$1900 for the four-quarter period over that received by those in the comparison groups. This difference is calculated as the average of the estimates from the two comparison groups.

# IV.1 Pilot Group Employment Outcomes

## 1. Employment by Quarter

- The table on the following page displays the employment rate of those who exited the pilot program sometime between 2006:Q1 and 2007:Q2. The exiters are grouped according to the quarter in which they exited. For example, of the 67 people who exited the program in 2006:Q3, 34 or 50.7% were employed the first quarter after exit; 33 or 49.3% were employed the second quarter after exit, and 33 or 49.3% were employed the third quarter after exit. Note that not all the same people may be employed in each of these three quarters. It may be the case that a person was not employed the first two quarters but found employment in the third quarter after exit, and vice versa.
- For the three quarters that saw the largest number of exiters (2006:Q2-2006:Q4), the employment rate is fairly consistent over the time period covered in the analysis. The employment rates range from 45% to 60%. The other exit groups display a higher degree of variation, which may be due to small sample size.



## Pattern of Employment by Quarter

		Number (%) Employed, Quarters after Exit							
Exited in:	No. of exiters	1	2	3	4	5	6	7	8
2006:Q1	8	5 (62.5)	4 (50.0)	3 (37.5)	4 (50.0)	2 (25.0)	4 (50.0)	4 (50.0)	4 (50.0)
2006:Q2	55	25 (45.5)	29 (52.7)	29 (52.7)	33 (60.0)	32 (58.2)	31 (56.4)	26 (47.3)	28 (50.9)
2006:Q3	67	34 (50.7)	33 (49.3)	33 (49.3)	39 (58.2)	38 (56.7)	40 (59.7)	36 (53.7)	31 (46.3)
2006:Q4	66	32 (48.5)	36 (54.5)	40 (60.6)	41 (62.1)	40 (60.6)	33 (50.0)	37 (56.1)	
2007:Q1	14	4 (28.6)	4 (28.6)	5 (35.7)	5 (35.7)	4 (28.6)	5 (35.7)		
2007:Q2	3	1 (33.3)	1 (33.3)	2 (66.7)	2 (66.7)	1 (33.3)			
<b>Total</b>	<b>213</b>	<b>101 (47.4)</b>	<b>107 (50.2)</b>	<b>112 (52.6)</b>	<b>124 (58.2)</b>	<b>117 (54.9)</b>			

## 2. Workforce Attachment

Workforce attachment is important for economic success. Workers with sustained spells of employment have more opportunities for promotion, training, and the ability to find other possibly higher paying jobs.

A simple way to look at workforce attachment is to consider the number of quarters of employment. In the table below, we see that the majority of participants were employed five quarters or more, with the rest of the participants relatively equally distributed from one to four quarters of employment. Considering only those who found employment at any time during this period, 64% were employed five or more quarters. An even stronger notion of workforce attachment is to consider the number of consecutive quarters in which participants were employed, which is explored on the next page.

	Number of Quarters of Employment, including exit quarter, Year 1					
(% individuals)	0	1	2	3	4	5 or more
<b>Pilot (Treatment)</b>	<b>16.9%</b>	<b>8.4%</b>	<b>7.5%</b>	<b>7.5%</b>	<b>6.1%</b>	<b>53.5%</b>

## 2. Workforce Attachment

Another approach is to consider consecutive quarters employed by pilot participants. Employment could start at any time within the eight quarters after exiting the program. Obviously, those who find a job closer to the time they exit have a greater chance of being employed for more quarters. Since workers may have different spells of employment during the eight-quarter period, we consider the longest consecutive spell of employment.

We find that the number of consecutive quarters of employment that occurred the most was eight, at 20.0%. The next highest percentage was for those employed only one quarter, at 13.6%. The percentages do not add to 100, since we are looking only at those who had employment. Also, in the first panel we included all those who exited from the program, but for some who exited most recently there are not enough quarters of data available to observe eight quarters of employment.

An alternative approach is to include only those who exited in quarters that allowed eight possible quarters of observations. This approach leaves out of the analysis those who exited during the last three quarters—2006:Q4-2007:Q2, totaling 83 participants. The results, shown in the second panel, are similar to those using the first approach in which we find that the largest percentage was employed eight consecutive quarters.

Percentage Employed in Consecutive Quarters of various Lengths (all participants)								
	One Quarter only	2 cons. only	3 cons. only	4 cons. Only	5 cons. only	6 cons. only	7 cons. only	8 cons. only
<b>Pilot</b>	13.6% 213	11.3 213	10.3 213	8.9 213	10.8 213	7.1 210	9.7 196	20.0 130
Percentage Employed in Consecutive Quarters of various Lengths (participants with eight possible quarters only)								
<b>Pilot</b>	13.9% 130	10.0 130	10.0 130	10.0 130	10.0 130	6.9 130	3.9 130	20.0 130

## 2. Relationship between the Two Workforce Attachment Measures

To understand the relationship between the two workforce attachment measures, it is helpful to examine the relationship between the number of quarters of employment and the number of consecutive quarters. The two endpoints are the most straightforward and are a good starting point for discussing the table below. For those with only one quarter of employment during the eight-quarter period, we would expect that the number of consecutive quarters would be no greater than one. Conversely, for those with eight quarters of employment, they would have to be employed eight consecutive quarters within this eight-quarter time frame. For the number of quarters between these two endpoints, a wider combination of consecutive quarters of employment exists. For example, for those with five quarters of employment, nine have the longest consecutive string of quarters possible (5), whereas one has two consecutive quarters. That person presumably obtains five quarters of employment by piecing together the two consecutive quarters with other combinations to total five quarters of employment. Other patterns can be readily seen in the table below.

Number of Consecutive Quarters	Number of Quarters of Employment								Total	Percentage
	1	2	3	4	5	6	7	8		
1	15	3	0	0	0	0	0	0	18	16.4%
2	0	5	5	2	1	0	0	0	13	11.8%
3	0	0	3	5	3	2	0	0	13	11.8%
4	0	0	0	7	2	2	2	0	13	11.8%
5	0	0	0	0	9	3	1	0	13	11.8%
6	0	0	0	0	0	8	1	0	9	8.2%
7	0	0	0	0	0	0	5	0	5	4.5%
8	0	0	0	0	0	0	0	26	26	23.6%
Total	15	8	8	14	15	15	9	26	110	100.0%
Percentage	13.6%	7.3%	7.3%	12.7%	13.6%	13.6%	8.2%	23.6%	100.0%	

### 3. Employment Duration

A third approach of looking at workforce attachment is to follow the employment of those participants who found a job the first quarter after exit. This approach limits the sample to only those who were successful immediately after completing the program, so the results may be somewhat biased in favor of those who may be considered most successful by finding employment right away. However, even for those individuals we find that less than half were able to retain a job throughout the entire period of eight quarters.

During the first quarter after exit, 47.4% of the 213 were employed. Of the 101 employed in the first quarter, 82 remained employed in the second quarter. Of the 82 employed in the second quarter, 70 were employed in the third quarter. After following these individuals for six quarters, the duration of employment is cut in half. Of the 213 who completed the program, 23.3% were employed for all six quarters since exiting the program, and 20.0% were employed for all eight quarters. Of the 101 who exited and found a job the next quarter, 43 or 42.2% still held a job after eight quarters.

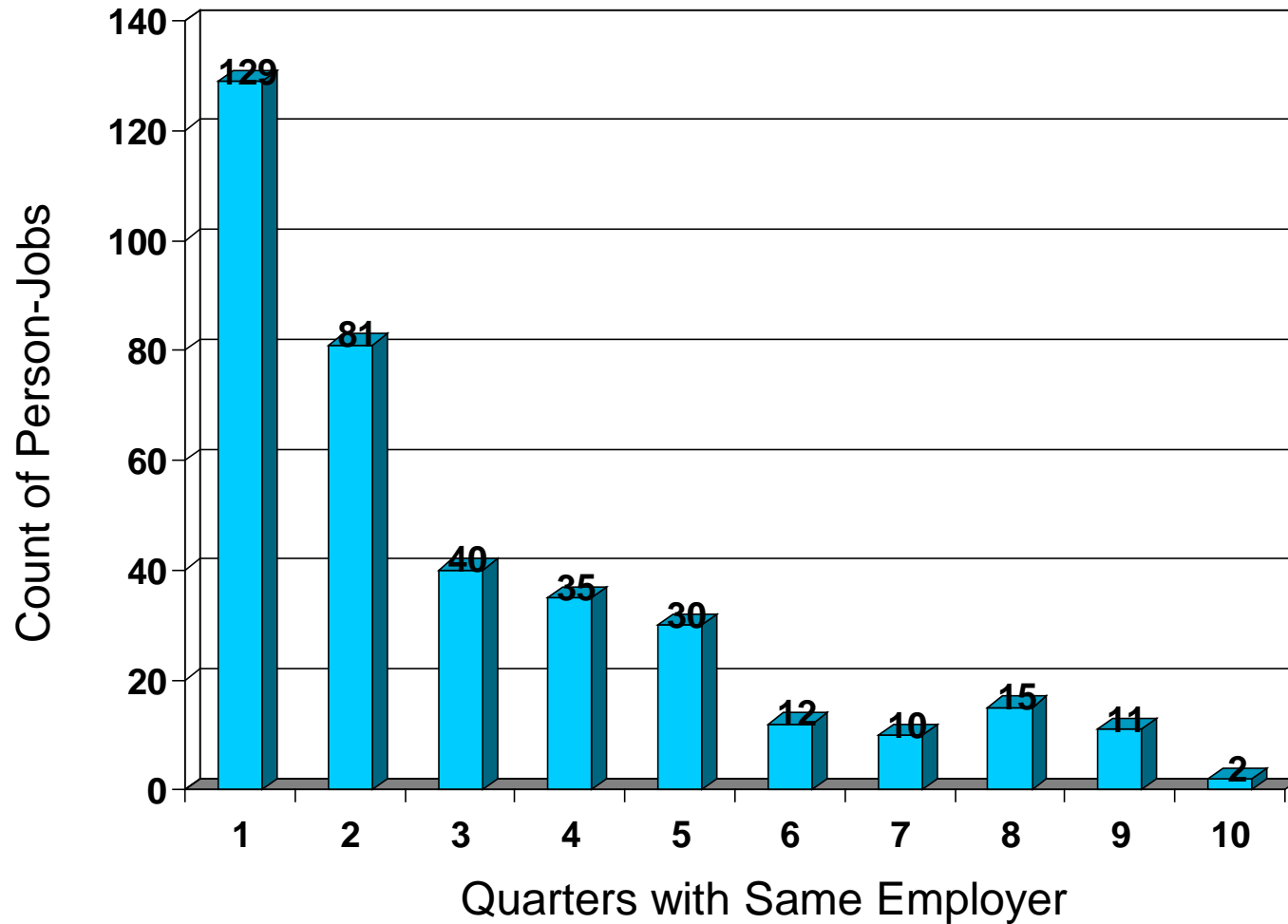
	Employment Duration, Year 1 (Percentage employment conditional on being employed the previous quarter)							
	1	2	3	4	5	6	7	8
<b>Pilot</b>	47.4% 213	38.5% 213	32.9% 213	29.1% 213	25.8% 213	23.3% 210	21.4% 196	20.0% 130
	Percentage (number) employed of those employed the previous quarter							
<b>Pilot</b>	100% (101)	81.2% (82)	69.4% (70)	61.4% (62)	54.4% (55)	47.1% (47)	45.1% (46)	42.2% (43)

## 4. Employment by Industry and Tenure

- The next two pages show the distribution of jobs by industry and the number of quarters with the same employer. Generally, current and future earnings potential depends upon the industry of employment and the length of time with the same employer.
- The table on the following page shows that pilot participants found jobs primarily in three industries: retail (23.9%), administrative and support and waste management (31.0%), and accommodation and food services (10.6%).
  - The numbers are person-jobs, which counts the number of jobs are held. Since a person may hold more than one job during the eight-quarter period and the jobs may be in different industries, the count is larger than the number of pilot participants who found a job during that time period.
- The chart on the following page shows the number of quarters with the same employer. While we saw in a previous table that the large majority of participants were employed for two consecutive quarters, the chart indicates that many found employment with more than one employer during that period. 130 person-jobs were with the same employer for only one quarter, whereas only 80 person-jobs were with the same employer for two quarters.

Description of Industry Of Job Holders, Year One Pilot	Count of Person- jobs	%
Construction	3	0.8
Manufacturing	8	2.2
Wholesale Trade	3	0.8
Retail	88	23.9
Transportation and Warehousing	3	0.8
Information	3	0.8
Finance and Insurance	2	0.5
Real Estate and Rental and Leasing	4	1.1
Professional, Scientific and Technical	6	1.6
Management of Companies and Entertainment	1	0.3
Administrative and Support and Waste Management	114	31.0
Educational Services	13	3.5
Health Care and Social Assistance	41	11.1
Arts, Entertainment and Recreation	7	1.9
Accommodation and Food Services	39	10.6
Other Services, ex. Public administration	5	1.4
Public administration	3	0.8
Unknown	25	6.8

## Attachment to Employers: Year One Pilot Participants





## 5. Earnings

Quarterly earnings of pilot participants are shown in the table below. Earnings are averaged over those participants who have a job during that quarter. One can see that earnings increase steadily each quarter after exit until peaking the fifth quarter at \$3,653.

The increase may occur for three reasons. First, those who continue to be employed each consecutive quarter receive earnings increases from the same employer or to find another job that pays more. Second, participants may work longer hours, perhaps moving from a part-time position to a full-time one. Third, those who do not find a job the first quarter or so after exit, may find one later on that is a better fit with respect to qualifications and could possibly pay more. At the peak, the quarterly earnings translate into roughly \$14,400 a year, which is the poverty level for a family of two.

The next page shows quarterly earnings by quarter of exit. The fifth quarter is the quarter of highest earnings. For the group exiting 2006:Q3, earnings peak at \$4,662, which equates to \$18,648 a year.

Quarterly Earnings of Those Employed, Year 1									
Quarters after Exit									
(nominal dollars)									
	0	1	2	3	4	5	6	7	8
<b>Pilot</b>	\$1447	2279	2602	2794	2902	3653	3139	3226	3126

## Pattern of Earnings by Quarter: Year One Pilot Participants

		Average Quarterly Earnings, Quarters after Exit								
Exited in:	No.	1	2	3	4	5	6	7	8	
2006:Q1	8	\$1722	2401	2315	2131	4538	3778	2874	2475	
2006:Q2	55	1795	2210	2125	2454	2462	2655	2682	2543	
2006:Q3	67	2479	2556	3510	3027	4662	3038	3417	3738	
2006:Q4	66	2527	2943	2770	3226	3527	3629	3461		
2007:Q1	14	2811	2678	2985	2912	4099	3196			
2007:Q2	3	323	3622	1725	2715	4968				

(Earnings are in nominal dollars)

## IV.2 Net Impact Analysis Results

- The net impact analysis is performed by comparing the employment outcomes of the participants of the pilot with those of two comparison groups. The difference in outcomes is attributed to the effectiveness of the program on the participants.
- We consider three outcomes: 1) any employment, 2) number of consecutive quarters of employment, and 3) quarterly earnings.
- Two comparison groups are used: 1) those who went through the initial screening but elected not to continue with the pilot (self-selected), and 2) those matched to pilot participants by observed characteristics (matched).
- We first look at the observed characteristics of the three groups, as shown on the next page. As previously mentioned, it is important that the characteristics of members of the three groups be similar in order to net out extraneous factors that could bias the net impact analysis. The shaded areas for the two comparison groups indicate the characteristics that are statistically significantly different from the pilot participants.
  - For example, the percentage of female participants in the treatment group is statistically significantly different from the percentage of female members of the first comparison group (self-selected, but not of the second comparison group (matched)).
  - Only the percentage female for the self-selected comparison group and two-parent household for the matched comparison group are statistically significantly different from the treatment group.
  - As expected the percentage of pilot group participants receiving key services is much higher than for those in the two comparison groups.

# 1. Treatment and Comparison Groups Variable Means: Cohort 1

Variable	Goodwill pilot	Self-selected	Matched
Employed In any quarter	.831	.707	.620
Employed 1 quarter after exit	.474	.352	.335
Female	.977	.923	.981
Black	.953	.981	.859
Less than HS	.380	.421	.380
HS Grad	.460	.399	.446
Some college	.066	.062	.047
BA	.038	.062	.042
Age	30.9	31.6	30.1

Variable	Goodwill pilot	Self-selected	Matched
Single parent child <6	.268	.231	.282
Single parent child >6	.700	.703	.681
Two parent household	.033	.065	.038
Job search assistance	1.0	.623	.592
Work experience	.723	.033	.005
Vocational training	.131	.029	.042
Employed 1 quarter before registration	.291	.256	.296
Employed 2nd quarter before registration	.319	.275	.333

## 2. Percent Employed in any of Eight Quarters Net Impact Analysis Framework: *Difference in Means*

Year One: (October 1, 2005-September 30, 2006)  
(Exited 2006:Q1 – 2007:Q2)



Goodwill Pilot participants have a higher employment rate than individuals in the first comparison group (self-selected). The 12.4 percentage point difference is statistically significant. Employment is defined in this case as having positive earnings in any of the 8 quarters after exit from the program. For the matched comparison group, the net effect is 21.1 percentage points, since the employment rate of the matched group is lower than the self-selected comparison group (72.8% versus 62.0%).

## 2. Percent Employment in any of Eight Quarters

- The next step in the net impact analysis is to determine whether including additional controls alters the estimates obtained from taking the simple difference in means of the pilot and each of the comparison groups, as shown on the previous page.
- On the next two pages, we add controls using regression analysis. Each column adds more controls. For instance the first column (A) includes only indicator variables for the quarter in which the pilot participant exited the program. These indicators are included in all four columns. The second column (B) adds personal characteristics; the third (C) includes prior employment history; and the fourth (D) includes one of the services—vocational training.
- The variable of interest is the indicator variable on the first line of the table, which indicates the difference between the pilot and the comparison group of the percent employed in any quarter.
- For the self-selected comparison group, note that the value of the coefficient (13.5 ppts., when multiplied by 100 to convert from rate to percent) is close to what we found on the previous page (12.4 ppts.). The difference is controlling for the time of exit, using the quarterly indicator variables. As before, the net difference in employment percentage between the pilot and the comparison groups is statistically significant. We also find that no matter how many control variables are added to the regression, the coefficient value does not change appreciably, and all are statistically significant at a reasonable level of confidence.
- The same is true for the results using the matched comparison group, found in the next table. The net effect of 17.3 percentage points is lower than the simple difference of 21.1 ppts, due to controlling for the effect of the quarters in which participants exited the program. Similar to the results from the first comparison group, the net effect is consistent across the various models that control for different outside factors. Controlling for the quarter of exit from the program also brings the net effects from the two comparison groups closer together.

## 2. Employed any of the Eight Quarters: Adjusted Employment Net Outcomes Self-selected Comparison Group

% Employed	A	B	C	D
Year 1 Pilot Group	.135***	.123***	.110**	.113**
Control Variables				
Female		.145	.139	.139
Black		.124	.107	.109
Single Parent with child<6		.046	.040	.041
Two parent		-.008	.012	.013
Less than HS		-.072*	-.061	-.061
Some college		.079	.068	.067
College grad		.072	.053	.051
Age 16-25		.032	.033	.031
Age 36-55		-.015	-.025	-.026
Age 56-65		-.861***	-.773**	-.773**
Employed 1 qtr before registration			.121**	.120**
Employed 2 <sup>nd</sup> qtr before registration			.120**	.122**
Vocational training				-.021
Adj R-squared	.025	.044	.091	.090

\*\*\* (\*\*, \*) indicates statistical significance at the 0.001, (0.05, 0.10) level

## 2. Employed any of the Eight Quarters: Adjusted Employment Net Outcomes Matched Comparison Group

% Employed	A	B	C	D
Year 1 Pilot Group	.173***	.175***	.173***	.177***
Control Variables				
Female		.292**	.282*	.278*
Black		.057	.075	.074
Single Parent with child<6		.059	.052	.052
Two parent		.010	-.010	-.008
Less than HS		-.053	-.040	-.041
Some college		-.021	-.019	-.020
College grad		.035	.030	.027
Age 16-25		.047	.044	.041
Age 36-55		-.064	-.051	-.053
Age 56-65		-.821***	-.763**	-.763**
Employed 1 qtr before registration			-.005	-.004
Employed 2 <sup>nd</sup> qtr before registration			.152***	.153***
Vocational training				-.029
Adj R-squared	.073	.093	.112	.110

\*\*\* (\*\*, \*) indicates statistical significance at the 0.001, (0.05, 0.10) level



## 2. Employed: Difference-in-Differences Approach: Self-selected Comparison Group

- A third approach of estimating the net impact of the Goodwill Pilot is to use the difference-in-differences methodology to purge further the estimates of extraneous factors.
  - So far, we have constructed comparison groups of individuals who are similar in characteristics and employment history to those in the pilot program. The self-selected comparison group members may also be similar in their motivation for responding to the letter of invitation and the willingness to go through initial screening, even though they ultimately declined to receive services.
- The difference-in-differences approach includes the outcomes of the same individuals before and after they entered the pilot program. We look at the difference in their employment outcomes four quarters before they entered the program with their outcomes four quarters after they exited the program. We then do the same for individuals in the comparison group. Comparing the difference in the difference of the pre- and post-outcomes allows us to control for unobserved characteristics that have not changed over that time period. The approach is shown diagrammatically on the next page.
- Net impact results for employment in any of the four quarters using the difference-in-differences approach are consistent with the previous results. The net impact of 15.0 ppts for the self-selected comparison group is similar to the 12.4 and 13.5 ppts found using the previous two methods. The estimate of 15.0 ppts. is statistically significant using a simple t-test.
- We also adjusted the difference-in-differences estimate by including in a regression the same factors as used previously (results not shown). The result of 15.0 ppts was unchanged and was statistically significant.
- Therefore, since the three approaches yield similar estimates, we will report the difference in simple means for the remaining outcomes and note when the regression adjustment approach yields different results.

## 2. Net Impact Analysis Framework Difference-in-Differences Self-Selected Comparison Group

Pilot Group

Entered Pilot

Pre-Pilot Period

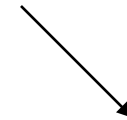
Post-Pilot Exit

*Outcome (Pilot, Post-exit)* —

*Outcome (Pilot, Pre)=18.3*

*Outcome  
(Pilot participants):  
56.8%*

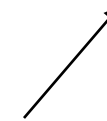
*Outcome  
(Pilot participants):  
75.1%*



**Net Effect=15.0 ppts**

*Outcome  
(Self-selected):  
52.8%*

*Outcome  
(Self-selected):  
56.1%*



*Outcome (self-selected, Post)* —

*Outcome (self-selected, Pre)=3.3*

Self-selected Group

### 3. Workforce Attachment

- The next two tables consider the difference in attachment to their jobs between the pilot participants and members of the two comparison groups.
- In all cases, year-one pilot participants have greater attachment than their comparison group counterparts.
  - The pilot participants were more likely to have five or more quarters of employment (not necessarily consecutively) than their comparison group counterparts. The difference was 20.2 ppts. for the self-selected comparison group and 24.4 ppts. for the matched comparison group. Conversely the likelihood of not having a job in any of the eight quarters was lower for the pilot participants by 10.9 ppts. and 18.3 ppts. compared with the self-selected and matched comparison groups, respectively.
  - A higher percentage of Pilot participants have consecutive quarters of employment than their comparison group counterparts for most of the combinations of quarters, which also reflects the fact that the pilot group is more likely to find employment than the comparison groups.
- Workforce attachment (shown in the table on page 41), measured by percentage obtaining consecutive quarters of employment since exiting from the pilot program, is higher for the pilot participants than for either of the comparison group members.

	Number of Quarters of Employment, including exit quarter, Year 1 (% individuals)					
	0	1	2	3	4	5 or more
<b>Pilot (Treatment)</b>	16.9%	8.4%	7.5%	7.5%	6.1%	53.5%
<b>Self-selected comp. group</b>	27.8%	10.3%	10.3%	8.1%	10.3%	33.3%
<b>Percentage point difference, self-selected</b>	-10.9 Pr(.0044)	-1.8 Pr(.5009)	-2.7 Pr(.2964)	-0.5 Pr(.8241)	-4.2 Pr(.1026)	20.2 Pr(.0000)
<b>Matched comp. group</b>	35.2%	12.7%	10.8%	7.0%	5.2%	29.0%
<b>PPD, matched</b>	-18.3 Pr(.0000)	-4.2 Pr(.1567)	-3.3 Pr(.2406)	0.5 Pr(.8525)	0.9 Pr(.6752)	24.4 Pr(.0000)

### 3. Workforce Attachment

	Percentage Employed in Consecutive Quarters of various Lengths							
	One Quarter only	2 cons. only	3 cons. only	4 cons. only	5 cons. only	6 cons. only	7 cons. only	8 cons. only
<b>Pilot (Treatment)</b>	13.6% 213	11.3 213	10.3 213	8.9 213	10.8 213	7.1 210	9.7 196	20.0 130
<b>Self-selected comp. group</b>	13.6% 273	13.6 273	10.6 273	8.8 273	7.3 273	2.2 273	4.4 273	10.3 273
<b>Percentage point Difference, Self-selected</b>	0.1 Pr(.984)	-2.3 Pr(.4515)	-0.3 Pr(.9166)	.1 Pr(.961)	3.5 Pr(.1818)	4.3 Pr(.0082)	5.3 Pr(.0227)	9.7 Pr(.0072)
<b>Matched comp. group</b>	18.2% 209	12.7 204	7.7 195	7.2 194	5.2 191	3.7 188	5.5 182	7.3 165
<b>PPD, Matched</b>	-4.6 Pr(.200)	-1.5 Pr(.6434)	2.6 Pr(.3555)	1.7 Pr(.5306)	5.6 Pr(.0416)	3.4 Pr(.1368)	4.2 Pr(.1260)	12.9 Pr(.0011)

## 4. Employment Duration

The table below shows the employment rate in each quarter for those employed the previous quarter (except for the first quarter). For example, under column 2, 38.5 percent were employed the first two quarters after exiting the program. The rate falls to 32.9 percent for those employed the first three quarters after exit and so forth. The difference between this table and the previous one is that this table shows the employment rate for consecutive quarters beginning the quarter after exit. The previous table includes any consecutive quarters, regardless of when the first quarter of employment began. The shaded rows show the differences in employment rates between the pilot participants and members of the two comparison groups. The positive numbers indicate that pilot participants retain employment longer than their counterparts.

	Employment duration: percentage employed conditional on being employed the previous quarter							
	1	2	3	4	5	6	7	8
<b>Pilot (Treatment)</b>	47.4% 213	38.5% 213	32.9% 213	29.1% 213	25.8% 213	23.3% 210	21.4% 196	20.0% 130
<b>Self-selected comp. group</b>	35.2% 273	28.9% 273	22.0% 273	18.7% 273	15.8% 273	12.8% 273	12.1% 273	10.3% 273
<b>Percentage point difference, self selected</b>	12.3 Pr(.0063)	9.6 Pr(.0263)	10.9 Pr(.0071)	10.4 Pr(.0069)	10.1 Pr(.0060)	10.5 Pr(.0025)	9.3 Pr(.0064)	9.7 Pr(.0072)
<b>Matched comp. group</b>	33.5% 209	24.0% 204	17.4% 195	14.9% 194	14.1% 193	12.8% 188	10.4% 182	7.3% 165
<b>PPD, matched</b>	13.9 Pr(.0035)	14.5 Pr(.0014)	15.4 Pr(.0003)	14.2 Pr(.0006)	11.7 Pr(.0035)	10.6 Pr(.0065)	11.0 Pr(.0036)	12.7 Pr(.0011)

## 5. Earnings

- Observing that a higher percentage of pilot participants gained and retained employment than their comparison group counterparts, we turn next to their earnings levels. We examine the earnings levels of those who held a job, and estimate the difference between the earnings levels of the pilot participants and those in the comparison groups.
- As shown in the table on the next page, the pilot participants have higher earnings (compared with both comparison groups) but in most cases the difference is not statistically significant.

	Quarterly Earnings of Those Employed							
	Year 1							
	Quarters after Exit							
	1	2	3	4	5	6	7	8
<b>Pilot (Treatment)</b>	\$2279	2602	2794	2902	3653	3139	3226	3126
<b>Self-selected comp. group</b>	\$1977	2594	2673	2785	2528	2706	2767	2965
<b>Difference, Self selected</b>	\$302 Pr(.2997)	7 Pr(.9876)	121 Pr(.7948)	117 Pr(.7589)	1125 Pr(.0168)	433 Pr(.1581)	459 Pr(.2073)	161 Pr(.7115)
<b>Matched comp. group</b>	\$2011	2212	3550	3306	3018	3415	3693	4320
<b>Difference, matched</b>	\$267 Pr(.3525)	390 Pr(.2466)	-757 Pr(.1041)	-405 Pr(.3440)	635 Pr(.2828)	-276 Pr(.4932)	-467 Pr(.2449)	-1193 Pr(.0429)



## 5. Earnings

- The next two pages display results of adjusting the net impact analysis for personal characteristics and employment history. They confirm the general results from the net impact analysis on the previous page. The difference in earnings between pilot participants and either comparison group is not statistically significant for most quarters.
- Adjusting for characteristics does not alter the overall results. The difference in earnings of those employed, averaged over the eight quarters, between the pilot group and the self-selected group is not statistically significant. The same result is found for the matched comparison group. This set of results suggests that pilot participants are able to find and retain employment without sacrificing earnings.
- However, when the earnings are totaled over the first four quarters after exit, the pilot group generates an additional \$1900 per exiter in earnings over that amount generated by the comparison groups and the difference is statistically significant. The \$1900 difference is the average of the estimates from the two comparison groups. Total earnings for the treatment group is defined as the total earnings per exiter generated by all exiters. It is constructed the same way for the two comparison groups. The difference between the two earnings measures is that total earnings takes into account the likelihood of being employed, and average earnings includes the earnings of only those who hold a job at the time. Therefore, the difference between average earnings and total earnings is due to the greater employment rates of the pilot group participants relative to the comparison group members.

## Adjusted Earnings using Demographics and Past Earnings: Self-Selected Comparison Group

Earnings	Quarter 1 after exit	Quarter 2 after exit	Quarter 3 after exit	Average over 4 quarters	Total over 4 quarters
Year 1 Pilot	443.1	-109.3	703.8	410.8	1819.9***
Control Variables					
Female	-1325.1	-2157.8	1716.8	-3708.8	1717.0
Black	740.3	-2113.7	50495.9	-611.6	1156.1
Single Parent with child<6	236.5	-50.3	28.9	102.2	780.7
Two parent	88.2	-19.8	3501.2***	1046.7	2155.4
Less than HS	-463.3	-1046.6**	465.6	-118.8	-922.8
Some college	-452.1	-887.5	-861.2	-1617.6**	-835.5
College grad	81.4	-1010.4	-816.5	-566.6	-187.5
Age 16-25	165.8	-723.2	-448.9	-300.2	-806.6
Age 36-55	487.1	-305.8	389.4	40.7	409.1
Earnings 1 qtr before registration	.008	-.342	-.200	-.313	1.019**
Earnings 2nd qtr before registration	.221	.936***	1.272***	.961***	2.585***
Vocational training	536.2	-1226.1	-594.0	455.0	-1947.1*
Adj R-squared	.0184	.1297	.3399	.4805	.2855

\*\*\* (\*\*, \*) indicates statistical significance at the 0.001, (0.05, 0.10) level

## Adjusted Earnings using Demographics and Past Earnings: Matched Comparison Group

Earnings	Quarter 1 after exit	Quarter 2 after exit	Quarter 3 after exit	Average over 4 quarters	Total over 4 quarters
Year 1 Pilot	174.9	718.7*	-335.6	-82.4	2016.0***
Control Variables					
Female		2292.0	697.9		2109.4
Black	833.0	-411.7	-3351.8***	353.2	-1199.3
Single Parent with child<6	-165.9	-28.6	-48.8	31.6	512.6
Two parent	-513.7	116.6	694.2	-706.9	1175.9
Less than HS	161.3	-409.4	720.6	543.9	-59.6
Some college	443.6	169.1	-37.3	113.8	690.4
College grad	-376.4	-1272.7	-267.4	331.6	220.4
Age 16-25	102.0	-110.1	-26.4	-353.7	-555.7
Age 36-55	253.3	335.8	732.4	470.2	1111.2
Earnings 1 qtr before registration	.067	.177	-.255	.074	.787
Earnings 2nd qtr before registration	.251	.438***	.358	.271	1.700***
Vocational training	280.2	-942.3	-351.0	-942.2	-2711.1**
Adj R-squared	-.0089	.1015	.0560	-.0588	.1325

\*\*\* (\*\*, \*) indicates statistical significance at the 0.001, (0.05, 0.10) level

# V. Year-Two Participants

Summary of net impact estimates:

- **Employed in any four quarters:** Pilot participants experienced higher employment rates than control groups, ranging from 9.4 to 13.0 percentage points (ppts.) higher depending upon the methodology and the comparison group used in the analysis. The matched group yields the highest results, with a regression-adjusted estimate of 13.0 ppts. However, the difference-in-differences result for the self-selected group yields an estimate of 9.4 ppts. The percentage of the treatment with employment at any time during the first four quarters after exit is 65.6.
- **Workforce Attachment:** Pilot participants were more likely to have four or more quarters of employment (not necessarily consecutively) than their comparison group counterparts. The difference was 8.9 ppts. for the self-selected comparison group and 11.6 ppts. for the matched comparison group. Conversely the likelihood of not having a job in any of the four quarters was lower for the pilot participants by 11.0 ppts. and 11.6 ppts. compared with the self-selected and matched comparison groups, respectively. The pilot participants were also more likely to have continuous employment quarter after quarter than the those in the two comparison groups. For example, the difference in the percentage with four consecutive quarters of employment after exit was 9.4 ppts. when compared with the self-selected group and 6.9 ppts. when compared with the matched group. The percentage of those in the treatment group with four consecutive quarters of employment was 26.3 percent, so the differences is relative large.
- **Earnings:** Employed pilot participants did not earn any more per quarter than their counterparts in the two comparison groups, suggesting that they did not sacrifice earnings to increase their chance of getting a job. The differences in earnings between the treatment group and the two comparison groups were not statistically significant. The difference in total earnings over the first four quarters after exit ranged from \$800 to \$1400 per exiter, or an average of \$1100. This range is roughly half that found for cohort 1. However, unlike for cohort 1, the difference was not statistically significant. The reasons are the two quarters in which earnings for the treatment group were less than for the comparison groups and the smaller difference in the likelihood of employment between the treatment and comparison groups.

# V.1 Pilot Group Outcomes

- We estimated the net impact of employment and earnings outcomes for Year-Two pilot participants using the same approaches we used for the Year-One participants.
- Year-Two pilot participants exited the pilot program between 2007:Q1 and 2008:Q2. We therefore observe the outcomes from 2007:Q2 to 2008:Q3. Because of the shorter time period available to observe employment outcomes for Year-Two participants, we examine only four quarters of outcomes instead of the eight quarters for Year-One participants.

## 2. Pattern of Employment by Quarter

The table below displays the employment rate of those who exited the pilot program. The exiters are grouped according to the quarter in which they exited. For example, for the 55 people who exited the program in 2007:Q1, 20 or 36.4% were employed the first quarter after exit; 24 or 43.6% were employed the second quarter after exit, and 26 or 47.3% were employed the third quarter after exit. Note that not all the same people may be employed in each of these three quarters. It may be the case that a person was not employed the first two quarters but found employment in the third quarter after exit, and vice versa. The percentages for the year-two participants are slightly lower than for those of the year one participants, except for 2007:Q3 exiters.

Exited in:	No. of exiters	Number (%) Employed, Quarters after Exit					
		1	2	3	4	5	6
2007:Q1	55	20 (36.4)	24 (43.6)	26 (47.3)	28 (50.9)	26 (47.3)	23 (41.8)
2007:Q2	28	13 (46.4)	11 (39.3)	11 (39.3)	10 (35.7)	8 (26.6)	
2007:Q3	35	22 (62.9)	21 (60.0)	21 (60.0)	20 (57.1)		
2007:Q4	64	30 (46.9)	26 (40.6)	25 (39.1)			
2008:Q1	5	1 (20.0)	3 (60.0)				
2008:Q2	2	1 (50.0)					
<b>Total</b>	<b>189</b>	<b>87 (46.0)</b>					

## 2. Workforce Attachment

We follow the same definitions as we used for the year-one participants. In the first panel, we see that the majority of participants were employed five quarters or more, with a relatively equal distribution of participants from one to four quarters of employment. The second panel shows the number of consecutive quarters of employment. Similar to the year-one participants, the largest percentage was exhibited by those with the longest duration of employment—four quarters. The last panel shows the same distribution but includes those who are observed for four quarters.

	Number of Quarters of Employment, including exit quarter , Year 2				
% individuals	0	1	2	3	4 or more
Pilot	30.2%	16.4%	14.8%	14.3%	23.3%
	Percentage Employed in Consecutive Quarters of various Lengths				
	One Quarter only	2 consecutive quarters only	3 consecutive quarters only	4 consecutive quarters only	
Pilot	17.5% 189	16.4 187	16.5 182	26.3 118	
	Percentage Employed in Consecutive Quarters of various Lengths (participants with four possible quarters only)				
	15.7% 83	15.7 83	10.9 83	22.9 83	

## 2. Relationship between the Two Measures of Workforce Attachment

The table below relates the two measures of workforce attachment for the year-two participants. As before, the two endpoints are the most straightforward and are a good starting point in discussing the graph below. For those with only one quarter of employment during the five-quarter period, we would expect that the number of consecutive quarters would be no greater than one. Conversely, for those with five quarters of employment, they would have to be employed five consecutive quarters within this five-quarter time frame. For the number of quarters between these two endpoints, a wider combination of consecutive quarters of employment exists. For example, for those with three quarters of employment, five have the longest consecutive string of quarters possible (3), whereas eight have two consecutive quarters. Those eight presumably obtain three quarters of employment by piecing together the two consecutive quarters with combinations of one additional quarter to add up to a total of three quarters of employment. Other patterns can be readily seen in the table below. Since we are examining the number of consecutive quarters of employment, we include only the earliest exiters in order to have a span of the maximum quarters of employment attainable.

Number of Consecutive Quarters	Number of Quarters of Employment					Total	%
	1	2	3	4	5		
1	8	5	0	0	0	13	24.1%
2	0	5	8	0	0	13	24.1%
3	0	0	5	4	0	9	16.7%
4	0	0	0	3	16	19	35.2%
5	0	0	0	0	0	0	0.0%
<b>Total</b>	8	10	13	7	16	54	100.0%
<b>%</b>	14.8%	18.5%	24.1%	13.0%	29.6%	100.0%	%



### 3. Employment Duration

A third approach of looking at workforce attachment is to follow the employment of those participants who found a job the first quarter after exit. This approach limits the sample to only those who were successful immediately after completing the program, so the results may be somewhat biased in favor of those who may be considered most successful by finding employment right away. However, even for those individuals we find that slightly more than half were able to retain a job throughout the entire period of four quarters.

During the first quarter after exit, 46.0% of the 189 were employed. Of the 87 employed in the first quarter, 69 remained employed in the second quarter. Of the 69 employed in the second quarter, 65 were employed in the third quarter. After following these individuals for four quarters, the duration of employment is 57.2%.

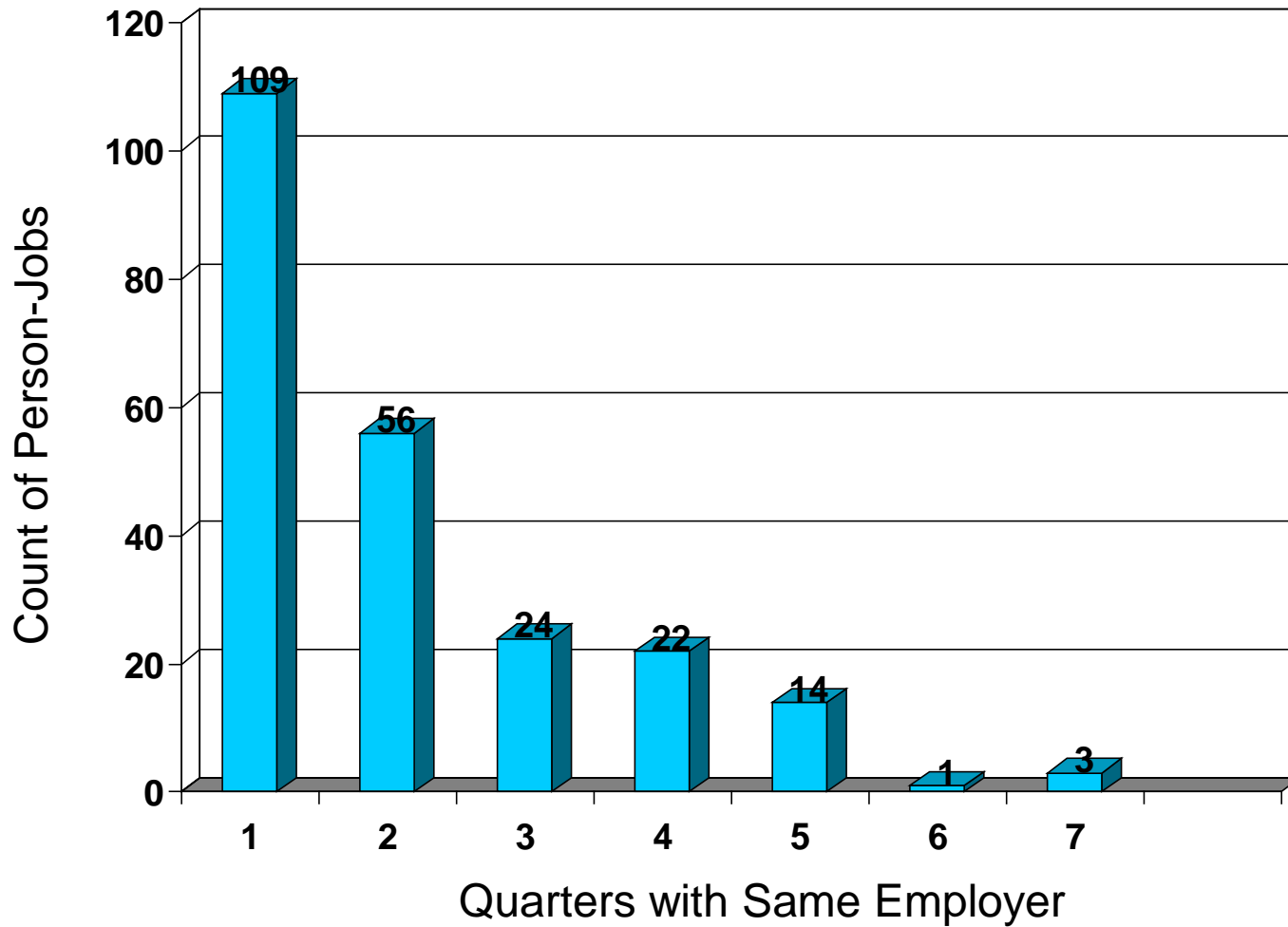
	Percentage employed conditional on being employed the previous quarter			
	1	2	3	4
<b>Pilot</b>	<b>46.0%</b> <b>189</b>	<b>36.4%</b> <b>187</b>	<b>29.7%</b> <b>182</b>	<b>26.3%</b> <b>118</b>
	Percentage (number) employed of those employed the previous quarter			
<b>Pilot</b>	<b>100%</b> <b>(87)</b>	<b>79.1%</b> <b>(69)</b>	<b>64.6%</b> <b>(65)</b>	<b>57.2%</b> <b>(50)</b>

## 4. Employment by Industry and Tenure

- The next two pages show the distribution of jobs by industry and the number of quarters with the same employer.
- The table on the following page shows that pilot participants found jobs primarily in three industries: retail (21.3%), administrative and support and waste management (38.3%), and accommodation and food services (12.2%). Compared with the Year One cohort, a higher percentage of year-two participants found jobs in administrative and support
  - The numbers are person-jobs, which counts the number of jobs are held. Since a person may hold more than one job during the eight-quarter period and the jobs may be in different industries, the count is larger than the number of pilot participants who found a job during that time period.
- The chart on the following page shows the number of quarters with the same employer. While we saw in a previous table that the large majority of participants were employed for two consecutive quarters, the chart indicates that many found employment with more than one employer during that period. 110 person-jobs were with the same employer for only one quarter, whereas only 55 person-jobs were with the same employer for two quarters.

<b>Description of Industry Of Job Holders, Year Two Pilot</b>	<b>Count of Person- jobs</b>	<b>%</b>
<b>Construction</b>	<b>3</b>	<b>1.3</b>
<b>Manufacturing</b>	<b>9</b>	<b>3.9</b>
<b>Wholesale Trade</b>	<b>1</b>	<b>0.4</b>
<b>Retail</b>	<b>49</b>	<b>21.3</b>
<b>Transportation and Warehousing</b>	<b>0</b>	<b>0.0</b>
<b>Information</b>	<b>2</b>	<b>0.9</b>
<b>Finance and Insurance</b>	<b>0</b>	<b>0.0</b>
<b>Real Estate and Rental and Leasing</b>	<b>0</b>	<b>0.0</b>
<b>Professional, Scientific and Technical</b>	<b>10</b>	<b>4.3</b>
<b>Management of Companies and Entertainment</b>	<b>0</b>	<b>0.0</b>
<b>Administrative and Support and Waste Management</b>	<b>88</b>	<b>38.3</b>
<b>Educational Services</b>	<b>1</b>	<b>0.4</b>
<b>Health Care and Social Assistance</b>	<b>23</b>	<b>10.0</b>
<b>Arts, Entertainment and Recreation</b>	<b>1</b>	<b>0.4</b>
<b>Accommodation and Food Services</b>	<b>28</b>	<b>12.2</b>
<b>Other Services, ex. Public administration</b>	<b>5</b>	<b>2.1</b>
<b>Public administration</b>	<b>1</b>	<b>0.4</b>
<b>Unknown</b>	<b>9</b>	<b>3.9</b>

# Attachment to Employers



## 5. Earnings

Quarterly earnings of pilot participants are shown in the table below. Earnings are averaged over those participants who have a job during that quarter. One can see that earnings increase steadily each quarter after exit until peaking the third quarter at \$3,394, roughly \$300 below the peak earnings of the year-one participants.

The next page shows quarterly earnings by quarter of exit. Earnings peak at \$4,237 in the third quarter for those who exited 2007:Q4. (The earnings of \$6,309 are biased since only one person holds a job in that quarter.)

	Quarterly Earnings of Those Employed Year 2 Quarters after Exit			
	1	2	3	4
Pilot	\$2447	2692	3394	2747

(Earnings are in nominal dollars)

## 5. Pattern of Earnings by Quarter

		Average Quarterly Earnings, Quarters after Exit					
Exited in:	No. of exiters	1	2	3	4	5	6
2007:Q1	55	\$2503	2526	3446	2573	2710	2834
2007:Q2	28	2194	3599	3155	2407	3570	
2007:Q3	35	2527	2313	2328	3160		
2007:Q4	64	2407	3002	4237			
2008:Q1	5	199	669				
2008:Q2	2	6309					

(Earnings are in nominal dollars)

## V.2. Net Impact Analysis Results

- The net impact analysis is conducted by comparing the employment outcomes of the participants of the pilot with those of two comparison groups. The difference in outcomes is attributed to the effectiveness of the program on the participants.
- We consider three outcomes: 1) any employment, 2) number of consecutive quarters of employment, and 3) quarterly earnings.
- Two comparison groups are used: 1) those who went through the initial screening but elected not to continue with the pilot (self-selected), and 2) those matched to pilot participants by observed characteristics (matched).
- We first look at the observed characteristics of the three groups, as shown on the next page. As previously mentioned, it is important that the characteristics of members of the three groups be similar in order to net out extraneous factors that could bias the net impact analysis. The shaded areas for the two comparison groups indicate the characteristics that are statistically significantly different from the pilot participants.
- Only one characteristic included in the table is statistically significant different between either of the two comparison groups and the pilot group. The age of those in the matched comparison is statistically significantly different from participants in the pilot group. All the other characteristics are not statistically significantly different. Even the employment history of the comparison groups and the pilot group are not statistically different.
- As expected the percentage of pilot group participants receiving key services is much higher than for those in the two comparison groups.

# 1. Treatment and Comparison Groups Variable Means: Cohort 2

Variable	Goodwill Pilot	Self-Selected	Matched
Employed In any quarter	.656	.551*	.540
Employed 1 quarter after exit	.460	.336	.346
Female	.947	.925	.931
Black	.984	1.0	.984
Less than HS	.354	.439	.354
HS Grad	.487	.467	.481
Some college	.074	.047	.058
BA	.042	.037	.042
Age	32.5	33.2	30.0

Variable	Goodwill Pilot	Self-Selected	Matched
Single parent child <6	.190	.215	.233
Single parent child >6	.794	.766	.746
Two parent household	.016	.019	.021
Job search assistance	.989	.692	.497
Work experience	.884	.037	.000
Vocational training	.127	.047	.021
Employed 1 quarter before registration	.228	.308	.270
Employed 2nd quarter before registration	.249	.299	.275



## 2. Percent Employed in any of Four Quarters Net Impact Analysis Framework: *Difference in Means*

Year Two: Exited 20076:Q1 – 2008:Q2



Goodwill Pilot participants have a higher employment rate than individuals in the first comparison group (self-selected). The 10.5 percentage point difference is statistically significant at the 10 percent level. Employment is defined in this case as having positive earnings in any of the 4 quarters after exit from the program. For the matched comparison group, the net effect is 11.6 percentage points, which is nearly the same as the result from the self-selected group. This difference is also statistically significant at the 10 percent level.

## 2. Percent Employment in any of Four Quarters

- The next step in the net impact analysis is to determine whether including additional controls alters the estimates obtained from taking the simple difference in means of the pilot and each of the comparison groups, as shown on the previous page.
- On the next two pages, we add controls using regression analysis. Each column adds more controls. For instance the first column (A) includes only indicator variables for the quarter in which the pilot participant exited the program. These indicators are included in all four columns. The second column (B) adds personal characteristics; the third (C) includes prior employment history; and the fourth (D) includes one of the services—vocational training.
- The variable of interest is the indicator variable on the first line of the table, which indicates the difference between the pilot and the comparison group of the percent employed in any quarter.
- Note that the value of the coefficient (9.6 ppts., when multiplied by 100 to convert from rate to percent) is close to what we found on the previous page (10.5 ppts,) for the self-selected comparison group. The difference is the inclusion of the quarterly indicator variables. As before, the net difference in employment percentage between the pilot and the comparison group is statistically significant. We also find that no matter how many control variables are added to the regression, the coefficient value does not change appreciably, and all are statistically significant at a reasonable level of confidence.
- The same is true for the results using the matched comparison group, found in the next table. The net effect of 13.0 percentage points is higher than the simple difference of 11.6 ppts, due to controlling for the effect of the quarter in which participants exited the program. Similar to the results from the first comparison group, the net effect is consistent across the various models that control for different outside factors.

## Adjusted Employment Outcomes using Demographics and Past Employment: Self-Selected Comparison Group

% Employed	A	B	C	D
Year 2 Pilot=1	.096*	.110*	.115**	.099*
Control Variables				
Female		.166	.171	.169
Black		-.073	-.137	-.092
Single Parent with child<6		.003	-.005	.003
Two parent		-.347*	-.341*	-.325*
Less than HS		-.076	-.060	-.054
Some college		-.108	-.062	-.044
College grad		-.429***	-.364***	-.372***
Age 16-25		-.063	-.052	-.047
Age 36-55		-.038	-.041	-.038
Age 56-65		-	-	-
Employed 1 qtr before registration			.140*	.133*
Employed 2 <sup>nd</sup> qtr before registration			.171**	.181**
Vocational training				.169*
Adj R-squared	-.004	.020	.074	.090

\*\*\* (\*\*, \*) indicates statistical significance at the 0.001, (0.05, 0.10) level

## Adjusted Employment Outcomes using Demographics and Past Employment: Matched Comparison Group

% Employed	A	B	C	D
Year 2 Pilot=1	.130**	.136**	.146***	.124**
Control Variables				
Female		.144	.152	.147
Black		-.199	-.242	-.216
Single Parent with child<6		.006	.005	.015
Two parent		-.041	-.010	.010
Less than HS		-.084	-.063	-.053
Some college		-.073	-.041	-.018
College grad		-.351***	-.291**	-.295**
Age 16-25		-.007	.008	.013
Age 36-55		-.017	-.028	-.022
Age 56-65				
Employed 1 qtr before registration			.086	.083
Employed 2 <sup>nd</sup> qtr before registration			.219***	.227***
Vocational training				.219**
Adj R-squared	.014	.064	.123	.087

\*\*\* (\*\*, \*) indicates statistical significance at the 0.001, (0.05, 0.10) level

## 2. Employment: Difference-in-Differences Approach: Self-Selected Group

- A third approach of estimating the net impact of the Goodwill Pilot is to use the difference-in-differences methodology to purge further the estimates of extraneous factors.
- The difference-in-differences approach includes the outcomes of the same individuals before and after they entered the pilot program. We look at the difference in their employment outcomes four quarters before they entered the program with their outcomes four quarters after they exited the program. We then do the same for individuals in the self-selected comparison group. Comparing the difference in the difference of the pre- and post-outcomes allows us to control for unobserved characteristics that have not changed over that time period. The approach is shown diagrammatically on the next page.
- Net impact results for employment in any of the four quarters are consistent with the previous results. The net impact of the pilot is 9.4 ppts, using the self-selected comparison group. This estimate is similar to the 10.5 and 9.6 ppts found using the previous two methods. However, the estimate of 9.4 is not statistically significant.
- We also adjusted the difference-in-differences estimate by including in a regression the same factors as used previously. The result was virtually unchanged and still not statistically significant.
- Therefore, since the three approaches yield similar estimates, we will report the difference in simple means for the remaining outcomes and note when the regression adjustment approach yields different results.

## Net Impact Analysis Framework: Year Two *Difference-in-Differences*

Pilot

Entered Pilot

Pre-Pilot Period

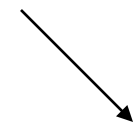
Post-Pilot Exit

*Outcome (Pilot, Post-exit) —*

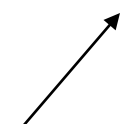
*Outcome (Pilot, Pre)=17.8*

*Outcome  
(Pilot participants):  
51.7%*

*Outcome  
(Pilot participants):  
69.5%*



**Net Effect=9.4 ppts**



*Outcome (Self-selected, Post) —*

*Outcome (Self-selected, Pre)=8.4*

*Outcome  
(Self-selected  
members):  
46.7%*

*Outcome  
(Self-selected  
members):  
55.1%*

Self-selected

The net effect is not statistically significant.

### 3. Workforce Attachment

- The next two tables consider the difference in attachment to their jobs between the pilot participants and members of the two comparison groups.
- In all cases, year-two pilot participants have greater attachment than their comparison group counterparts.
  - The pilot participants were more likely to be employed for four quarters (not necessarily consecutively) than their comparison group counterparts. The difference was 8.9 pts. for the self-selected comparison group and 11.6 pts. for the matched comparison group. Conversely the likelihood of not having a job in any of the four quarters was lower for the pilot participants by 11.0 pts. and 11.6 pts. compared with the self-selected and matched comparison groups, respectively.
- A higher percentage of pilot participants have three or four consecutive quarters of employment than their comparison group counterparts, which also reflects the fact that the pilot group is more likely to find employment than the comparison group.
- Workforce attachment, measured by percentage obtaining consecutive quarters of employment since exiting from the pilot program, is higher for the pilot participants than for members of either comparison group.

### 3. Workforce Attachment

	Number of Quarters of Employment, including exit quarter , Year 2 (% individuals)					
	0	1	2	3	4	5
<b>Pilot (Treatment)</b>	<b>30.2%</b>	<b>16.4%</b>	<b>14.8%</b>	<b>14.3%</b>	<b>16.4%</b>	<b>7.9%</b>
<b>Self-selected Comparison Group</b>	<b>41.1%</b>	<b>15.0%</b>	<b>15.9%</b>	<b>7.5%</b>	<b>7.5%</b>	<b>13.1%</b>
<b>Percentage point difference, self-selected</b>	<b>-11.0 Pr(.0563)</b>	<b>1.4 Pr(.7442)</b>	<b>-1.1 Pr(.8057)</b>	<b>6.8 Pr(.0818)</b>	<b>8.9 Pr(.0292)</b>	<b>5.1 Pr(.1534)</b>
<b>Matched Comparison Group</b>	<b>41.8%</b>	<b>12.7%</b>	<b>11.6%</b>	<b>15.9%</b>	<b>4.8%</b>	<b>13.2%</b>
<b>PPD, matched</b>	<b>-11.6 Pr(.0183)</b>	<b>3.7 Pr(.3085)</b>	<b>3.2 Pr(.3637)</b>	<b>-1.6 Pr(.6673)</b>	<b>11.6 Pr(.0002)</b>	<b>-5.3 Pr(.0950)</b>



### 3. Workforce Attachment

	Percentage (Number) Employed in Consecutive Quarters of various Lengths			
	One Quarter only	2 consecutive quarters only	3 consecutive quarters only	4 consecutive quarters only
<b>Pilot</b>	<b>17.5%</b> <b>(189)</b>	<b>16.0</b> <b>(187)</b>	<b>16.5</b> <b>(182)</b>	<b>26.3</b> <b>(118)</b>
<b>Self-selected Comp. group</b>	<b>19.6</b> <b>(107)</b>	<b>10.3</b> <b>(107)</b>	<b>8.4</b> <b>(107)</b>	<b>16.8</b> <b>(107)</b>
<b>Percentage point Difference, self selected</b>	<b>-2.2</b> <b>Pr(.6443)</b>	<b>5.8</b> <b>Pr(.1711)</b>	<b>8.1</b> <b>Pr(.0527)</b>	<b>9.4</b> <b>Pr(.0871)</b>
<b>Matched comp. group</b>	<b>17.6</b>	<b>15.6</b>	<b>6.7</b>	<b>17.1</b>
<b>PPD, matched</b>	<b>-0.1</b> <b>Pr(.9811)</b>	<b>0.5</b> <b>Pr(.9052)</b>	<b>9.7</b> <b>Pr(.0039)</b>	<b>9.2</b> <b>Pr(.0614)</b>

## 4. Employment Duration

The table below shows that pilot participants consistently exhibit higher employment rates throughout the four-quarter period than their counterparts in the two comparison groups. However, only the differences between the pilot group and the self-selected comparison group are statistically significant and that occurs only for the first two quarters after exit. None of the differences between the matched comparison group and the pilot group is statistically significant. These results are similar to those for the first-year pilot participants, but the results are not as strong in terms of statistical significance.

	Employment duration: percentage employed conditional on being employed the previous quarter			
	1	2	3	4
<b>Pilot (Treatment)</b>	<b>46.0%</b> <b>189</b>	<b>36.4%</b> <b>187</b>	<b>29.7%</b> <b>182</b>	<b>26.3%</b> <b>118</b>
<b>Self-selected comp. group</b>	<b>33.6%</b> <b>107</b>	<b>24.3%</b> <b>107</b>	<b>22.4%</b> <b>107</b>	<b>16.8%</b> <b>107</b>
<b>Percentage point difference, self selected</b>	<b>12.4</b> <b>Pr(.0379)</b>	<b>12.1</b> <b>Pr(.0329)</b>	<b>7.2</b> <b>Pr(.1818)</b>	<b>9.4</b> <b>Pr(.0871)</b>
<b>Matched comp. group</b>	<b>34.6%</b> <b>188</b>	<b>25.3%</b> <b>186</b>	<b>19.1%</b> <b>178</b>	<b>17.1%</b> <b>164</b>
<b>PPD, matched</b>	<b>11.5</b> <b>Pr(.0233)</b>	<b>11.1</b> <b>Pr(.0203)</b>	<b>10.6</b> <b>Pr(.0196)</b>	<b>9.2</b> <b>Pr(.0614)</b>

## 5. Earnings

- Observing that a higher percentage of pilot participants gained and retained employment than their comparison group counterparts, we turn next to their earnings levels. We examine the earnings levels of those who held a job, and estimate the difference between the earnings levels of the pilot participants and those in the comparison groups.
- As shown in the table below, the pilot participants have higher earnings (compared with both comparison groups) but in most cases the difference is not statistically significant. One notable exception is during the third quarter after exit for the self-selected comparison group, in which the difference is statistically significant. This is the same quarter in which earnings peak for the pilot participants. For the matched comparison group, none of the differences is statistically significant.
- Even after controlling for personal characteristics using regression analysis, as shown in the tables on the next two pages, the results are qualitatively the same. The difference in total earnings per exiter for the four-quarter period, ranging from \$800 to \$1400, is roughly half the amount found for cohort 1, and not statistically significant.

	Quarterly Earnings of Those Employed: Year 2			
	Quarters after Exit			
	1	2	3	4
<b>Pilot (Treatment)</b>	<b>\$2447</b>	<b>2692</b>	<b>3394</b>	<b>2747</b>
<b>Self-selected comp. group</b>	<b>\$2143</b>	<b>2490</b>	<b>2234</b>	<b>3256</b>
<b>Difference, self-selected</b>	<b>\$304</b> Pr(.6181)	<b>202</b> Pr(.6592)	<b>1160</b> Pr(.0285)	<b>-506</b> Pr(.6132)
<b>Matched comp. group</b>	<b>\$2551</b>	<b>2818</b>	<b>2710</b>	<b>2540</b>
<b>Difference, matched</b>	<b>-\$104</b> Pr(.8193)	<b>-126</b> Pr(.7618)	<b>684</b> Pr(.1418)	<b>206</b> Pr(.6409)

## Adjusted Earnings using Demographics and Past Earnings: Self-Selected Comparison Group

Earnings	Quarter 1 after exit	Quarter 2 after exit	Quarter 3 after exit	Average over 4 quarters	Total over 4 quarters
Year 2 Pilot=1	-168.1	176.8	1361.5**	265.6	1479.0
<b>Control Variables</b>					
Female	1081.6	775.5	-275.4	-670.9	3482.2*
Black	120.6	14.0	-3355.0	-2235.6	-6672.2
Single Parent with child<6	1105.0	239.4	65.8	504.6	-1028.7
Two parent	1163.3	-216.5	1612.8	-1558.1	-132.2
Less than HS	90.4	-0.4	576.3	-126.5	-125.2
Some college	-218.3	264.0	818.0	588.1	3633.0*
College grad	6953.9***	-314.5	982.4	566.3	950.0
Age 16-25	-849.7	-532.3	-219.5	-632.5	-109.2
Age 36-55	128.8	316.7	871.1	536.6	837.7
Earnings 1 qtr before registration	-.034	.086	.365	-.248	.579
Earnings 2nd qtr before registration	.171	.018	-.042	.480**	.448
Vocational training	2510.8***	1217.3	-500.8	1254.5	2155.3
Adj R-squared	.1151	-.0496	.0329	.1542	.0541

\*\*\* (\*\*, \*) indicates statistical significance at the 0.001, (0.05, 0.10) level

## Adjusted Earnings using Demographics and Past Earnings: Matched Comparison Group

Earnings	Quarter 1 after exit	Quarter 2 after exit	Quarter 3 after exit	Average over 4 quarters	Total over 4 quarters
Year 2 Pilot=1	-375.7	-137.5	518.8	99.4	811.2
Female	-341.7	705.9	-1102.4	-315.6	858.8
Black	-598.7	221.1	-2094.6	-2666.0	-1856.7
Single Parent with child<6	1041.0*	-171.8	177.2	-189.8	-440.0
Two parent	1559.5	2555.4	-1703.3	2511.1	387.6
Less than HS	263.8	584.2	229.0	-408.7	-564.1
Some college	110.0	116.3	588.6	1676.1	537.0
College grad	5395.9***	449.9	2914.3*	1605.5	975.2
Age 16-25	-931.7*	-450.1	1084.0*	-262.3	-321.5
Age 36-55	392.1	202.1	993.6*	21.0	615.2
Earnings 1 qtr before registration	.129	-.183	.307	.009	.944**
Earnings 2nd qtr before registration	.169	.317*	-.029	.320	1.238***
Vocational training	2442.9***	1041.8	-367.4	414.5	3612.1**
Adj R-squared	.1246	-.0346	.0230	.0391	.1768

\*\*\* (\*\*, \*) indicates statistical significance at the 0.001, (0.05, 0.10) level

# VI. Explaining Differences in Employment Outcomes of Cohort 1 and Cohort 2 Pilot Participants

- The employment rates of cohort 1 pilot participants are higher than those for cohort 2. The percentage employed in any of the first four quarters after exit for cohort 1 is 75.1 compared with 65.6 for cohort 2. The 9.5 percentage point difference between the two cohorts may be the result of several factors.
  - Differences in the observed attributes of participants in these two cohorts;
  - Differences in local labor market conditions;
  - Differences in the effectiveness of the services provided by the Goodwill Pilot vis-à-vis the service providers of the comparison groups.
- We consider the first factor: the extent to which observed participant attributes differ between the two cohorts and differences in their effects on outcomes.
- To do this we add up the difference in all the observed attributes by weighting the difference by each attribute's estimated contribution to employment rates. The results are listed in the table on the following page.
  - The sum of the difference in the means, weighted by the average of the coefficient estimates for cohort 1 and 2, equals -0.073, which indicates that 77 percent of the difference in employment rates between the two cohorts is accounted for by differences in the means of the attributes (-0.073/-0.095). Age and prior employment are the two major factors.
  - In addition, the difference in the coefficients (differences between the two cohorts in the effects of the attributes on outcomes) accounts for another 16 percent (-0.015/-0.095).
  - Combining the two effects explains 93 percent of the difference in the employment rates of the two cohorts.
- Therefore, results show that the primary difference in the employment outcomes of the two cohorts is the difference in their attributes and secondarily in the differences in the effects of the attributes on employment outcomes.

# Explaining Employment Rate Differences Between Cohorts

Characteristics	Means		Difference	Coefficients		C*D	C*E	F*G
	Cohort 1	Cohort 2	Coh2-Coh1	Cohort 1	Cohort 2			
	A	B	C	D	E	F	G	H
Female	.977	.947	-.030	.139	.144	-.004	-.004	.000
African American	.953	.984	.031	.107	-.117	-.004	.003	-.001
Less than HS	.380	.354	-.026	-.061	-.002	.000	.002	-.002
Some college	.066	.074	.008	.068	.229	.002	.001	.001
BA	.038	.042	.004	.053	-.178	-.001	.000	-.001
Age	30.9	32.5	1.6	-.030	-.030	-.048	-.048	.000
Single w/ child <6	.268	.190	-.078	.040	.025	-.002	-.003	.001
Two-parent household	.033	.016	-.017	.012	.045	-.001	.000	-.001
Employment 1 <sup>st</sup> qtr before registration	.291	.228	-.063	.121	.097	-.006	-.008	.002
Employment 2 <sup>nd</sup> qtr before registration	.319	.249	-.070	.120	.229	-.016	-.008	-.008
Employed	.751	.566	-.095		Sum	-.066	-.080	-.015
		Difference =-0.095			Average	-.073		
					Total	-0.073-0.015= -0.088		

# VII. Benefit-Cost Analysis

- A simple measure of the monetary value of the program can be constructed by comparing the total earnings generated by exiters of the program with the total earnings generated by those in the comparison group. For cohort 1, this difference is \$1900 per exiter for the first four quarters after exit; for cohort 2, the difference is approximately \$1100 per exiter. Multiplying the difference by the number of exiters yields a total benefit for the first four quarters of \$405,000 for the 213 exiters in cohort one and \$208,000 for 189 exiters in cohort two. It should be noted that the difference in total earnings per exiter was statistically significant only for the first cohort. In both cases, however, the positive difference for the pilot participants was due to their greater likelihood of finding employment.
- If the benefits of the program for each cohort are greater than the associated costs of providing services to the enrollees, then the program is considered effective. For example, if costs are less than \$405,000 for cohort one, then the program is considered effective. However, even if the costs are greater than \$405,000, the program may be effective because the benefits could extend beyond one year. From further analysis (not shown), we find that the difference in cohort one's total earnings for the second year after exit is even slightly higher than for the first year. A conservative estimate for the two-year period doubles the amount found in the first four quarters, totaling \$810,000. Since the data do not extend beyond eight quarters for either cohort, it is not possible to determine at what point the benefits may begin to diminish. However, so long as the difference between the total earnings of the pilot participants and the comparison group members remains positive, total benefits will continue to increase over time. Costs are incurred before the benefits began, since most of the cost of the program takes place during the period in which participants are enrolled, although there are costs associated with follow-up services. We should also note that this benefit estimate does not take into account the value of health insurance received by some but not all employed exiters, multiplier effects in the local community, taxes paid, or benefits to society of additional gainfully employed individuals, all of which could increase the amount of the benefits. In this simple calculation, benefits are not discounted or adjusted for inflation.



## VIII. Summary

- Net impact analysis assesses the contribution of an intervention by separating out the contribution of the program from those factors that are related to an individual's outcome but unrelated to the program.
- To evaluate Goodwill's pilot program, we constructed two comparison groups. The first comparison group included individuals who went through the screening process for participation in the pilot but did not elect to receive services. The second comparison group was constructed by matching the characteristics of participants of DHS programs (other than the pilot program) with those of the pilot participants. Since the matched group is comprised of similar individuals who received DHS services, comparing the outcomes of the pilot program to those of the matched comparison group helps benchmark the outcomes of the pilot program to those who received DHS services provided in the area.
- Results show that:
  - Goodwill pilot participants exhibited greater employment rates than those in the two comparison groups; the key differences are statistically significant.
  - Goodwill pilot participants also had greater number of quarters of employment than their counterparts in the control groups, suggesting a greater attachment to the workforce.
  - The difference in earnings between the two groups was not statistically significant, suggesting that Goodwill participants had not sacrificed earnings to increase their likelihood of getting a job.
  - Because of the higher likelihood of finding and retaining a job, Goodwill participants' total earnings over an eight-quarter period for year-one participants and over a four-quarter period for second-year participants are higher than their respective comparison groups.
- These results indicate that the Goodwill Pilot has contributed positively to the employment outcomes of its participants, without sacrificing their earnings levels.

# Summary

- A simple benefit calculation shows that the benefits generated by the first-year cohort total \$405,000 for the first year after exit and an equal amount during the second year after exit. The benefits for the second-year cohort are roughly half that of the first-year cohort.
- Employment outcomes are higher for the first-year cohort than the second-year group. Differences in employment outcomes of the two cohorts appear to be explained by the characteristics of the participants. Seventy-seven percent of the difference in employment outcomes is explained by differences in characteristics, such as age, educational attainment, and prior work history, which affect outcomes. The second-year cohort was slightly older and had less work experience, which were the two largest factors reducing their probability of employment. An additional 16 percent of the difference in employment outcomes was explained by differences in the contribution of factors to employment outcomes.

# Appendix: Glossary

- *Treatment Group*: Participants who enrolled in Year One of the DHS component (Within Reach) of the Goodwill Pilot: *Moving Men and Women to Economic Independence in Michigan*
- *Comparison Group*: A constructed group of individuals who did not participate in the program but who were similar to the program participants either by going through some of the initial screening process or by having similar characteristics.
- *Success of the Pilot*: Measured by the employment rate, employment duration, and earnings of those receiving services and exiting from the Goodwill Pilot
- *Earnings*: Obtained for both Pilot group and comparison group participants from the Unemployment Insurance wage records, which are collected quarterly by the UI system from employers who are covered by the UI system, which includes virtually all firms
  - Wage records contain the earnings of each worker, reported by their employer, the employer they worked for, and the industry in which they worked (a worker may work for more than one employer during a quarter)
- *Employment*: Defined as a worker receiving any earnings during a quarter, no matter how small. This is standard procedure used by the U.S. Department of Labor to evaluate the workforce system.
- *Demographic Information*: Personal characteristics are obtained from the Department of Human Services information management system, which is collected from the individual
- *Services*: Two types of services--work experience and vocational training—have been included in the analysis to determine if accounting for them affects the magnitude and sign of the net impact estimates. This would occur if these two services accounted for most of the benefit of the Goodwill Pilot.

# Glossary

- *Regression Analysis*: A statistical tool that relates the variation in an outcome (e.g., employment) to the variation in factors that may account for a portion of that variation. The R-squared is the percent of the variation in the outcome accounted for by the variation in the factors.
- *Statistical Significance*: The difference between the means of two groups is said to be statistically significantly different from zero if there is a low probability that the observed difference could have occurred by chance. Typically, if the probability is lower than 5%, then it is said to be statistically significant. The statistical significance is based on simple t-tests. The bootstrap method was also used, but not reported, for both t-tests and regression analysis and the results were very similar.