**TECHNICAL REPORT**

**Methodology for Adjusting for the Effects of Business Cycles on**

**GPRA Workforce Program Performance Targets**

**Timothy J. Bartik**

**Randall W. Eberts**

**Wei-Jang Huang**

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

**Kalamazoo, MI**

**April 22, 2009**

**TECHNICAL REPORT**

**I. Purpose of the Technical Report**

The U.S. Department of Labor, Employment and Training Administration issued TEGL \_\_\_\_\_ on April, 2009, which revises the GPRA performance measures for federal workforce programs to take into account the effect of the recession on participants’ labor market and educational outcomes. The revisions are based on the analysis carried out as part of a study conducted by the W. E. Upjohn Institute for Employment Research for the Department of Labor. The purpose of this technical report is to describe the methodology used to adjust the GPRA performance measures.

The goal of the federal workforce programs is to provide effective services that enhance the employment opportunities and careers of participants. These services include reemployment services and remedial and skill training, among others. While such services are important in helping people obtain and retain jobs, the condition of the local labor market is also a critical factor. Areas that experience high unemployment have fewer job prospects, and the likelihood of an individual, even a highly qualified and motivated person, finding a job is diminished. Consequently, the performance of WIA programs is affected by economic conditions, particularly in this current severe economic downturn.

Despite this obvious relationship between local labor market conditions and the ability to find and retain employment, little empirical research has been conducted to estimate the relationship between them. A strong empirical basis is necessary to understand how the current economic situation affects the performance of workforce programs and thus how to set goals for these programs in the near term.

The study conducted by the Upjohn Institute provides estimates of the relationship between unemployment rates and performance measures included in the GPRA targets. The estimates are based on the outcomes of individual participants of the workforce programs as they search for employment within their local labor markets.

**II. Overview of the Methodology and Results**

The study derives direct estimates of the effects of unemployment rates on performance measures for various programs using detailed data of participants of WIA, ES, and TAA programs. As a result, the estimates capture actual relationships between changes in unemployment rates and performance. These estimates are then applied to the 2010 Budget assumptions of national unemployment rates through 2014 to adjust the GPRA performance targets for expected changes in unemployment rates.

**A. Data**

 Estimates are based on the experience of individual participants in the local labor markets in which they are searching for employment. Using data at the local level provides a much stronger correspondence between the labor market outcomes of program participants and the economic conditions they are facing. As data becomes more aggregated, such as at the state or national levels, the alignment weakens since the economic conditions of local labor markets vary widely from the state and national averages.

The conditions faced by an individual looking for work in Detroit, Michigan are much different from those seeking employment in Grand Rapids, Michigan, just as the conditions are much different, on average, for those in Illinois versus Texas. Using individual participant data also provides the ability to control for differences in the demographic characteristics of individuals. To isolate the effects of unemployment rates on performance, it would be ideal to place an identical person in each of the labor markets to observe his or her outcomes.

 Controlling for differences in educational attainment, prior employment history, and perceived barriers to employment through statistical means move the analysis closer to that ideal situation. The data used to estimate these relationships are obtained from the WIASRD, TAA administrative records, and ES administrative records for selected states. Data are obtained quarterly from the years 2000 through 2008, depending upon the program and performance measure.

**B. Estimation**

 Direct estimates are obtained for the following programs: WIA Adult, WIA Dislocated Worker, WIA Youth, Wagner-Peyser ES, and TAA. The estimates of the effect of unemployment rates on performance measures are robust across the various programs and appear reasonable in the magnitude of their impact. Results reveal a negative relationship between unemployment rates and both entered employment rate and retention rate, which are statistically significant.

For these two performance measures, estimates range from a reduction of 1.0 percentage points to 1.8 percentage points for an increase of one percentage point change in unemployment rates. This can be interpreted in the following way. An estimate of -1.8 means that a one percentage point change in the unemployment rate, say from 6 percent to 7 percent, is expected to reduce the entered employment rate by 0.018 percentage points. If the entered employment rate was 0.70 at an unemployment rate of 6 percent, then an increase in the unemployment rate from 6 to 7 percent would lower the expected entered employment rate from 0.70 percent to 0.682 percent.[[1]](#footnote-1)

**C. Performance Adjustment**

These estimates are used to adjust the performance measures of their respective programs: WIA, ES and TAA. For all other workforce programs for which detailed participant data are not readily available for direct estimation, estimates for the WIA Adult program are used to adjust their performance measures, with a few exceptions. WIA Adult estimates are used for: SCSEP, MSFW, INA, WIG, Prisoner Re-Entry Initiative, and NEG. WIA Dislocated Worker estimates are used to adjust the retention measure for the Apprenticeship program. The justification for using WIA Adult estimates is the similarity in the characteristics of the participants of the WIA Adult program and the other programs.

 Using these estimates, performance targets for each program are adjusted by the estimated effects of the change in unemployment rate from year to year. Budget 2010 unemployment rate assumptions were used in the calculations. The calculations start in PY2007 (FY2007 for TAA) and extend through PY2014. The actual performance rate was used as the base in PY2007. The adjusted target for the following year was calculated by multiplying the previous year’s performance target by the change in unemployment rates times the appropriate estimate of the effect of the unemployment rate change on the performance measure. This adjustment factor is then added to previous target.

**III. Estimation Methodology**

Estimates of the relationship between program outcomes and business cycles were conducted at the local labor market level, as defined by either the WIB service area or the county, depending upon the program. A separate model is estimated for each performance measure in each program. The estimation equation is written generally as:

(1) Yisq = Bo + B1\*Xisq + B2\*Dsq + error term,

where Y is the outcome variable for individual i in WIBs (counties) in year-quarter q, X denotes the individual attributes for person, and D is the local unemployment rate in WIBs (counties) during year-quarter q. The Bs represent the estimated coefficients.

 Of specific interest is the estimated coefficient B2, which shows the statistical relationship between unemployment rates (D) and the performance-related outcomes (Y). In order to account for the possibility that the effects are not contemporaneous, we tested several lag structures. We settled on a lag structure that enters the unemployment rates in the quarter in which the performance target is recorded. For example, retention rate is measured the second and third quarter after exit. Therefore, for the estimation of the effect of unemployment rates on retention rates, we entered the unemployment rates that corresponded with the second and third quarter after exit for each individual. In addition, since retention represents a change in status from holding a job to not holding one, we used the change in unemployment rates from quarter to quarter to reflect the changing labor market conditions on keeping a job.

 For the average earnings measure, which is defined as the earnings in the second and third quarters after exit, the unemployment rates are entered for those two quarters plus the first quarter after exit since the participant had to be employed the first quarter to be counted in this measure.[[2]](#footnote-2) For credentials and employment, the effects over four quarters, from the quarter of exit through the third quarter after exit, are used to estimate the effect of unemployment rates. Therefore, for performance measures that span more than one quarter, the full effect of unemployment rates on the measure is computed by adding up the coefficients on the unemployment rates for each relevant quarter. The statistical significance is estimated using a t-test for the combined effects of the relevant coefficients.

 The dependent variable is a dichotomous variable that takes on the value of 1 if the outcome is achieved and 0 if not. For example, entered employment is defined as having positive earnings in the first quarter after exit. The dependent variable takes a value of 1 for individuals for whom positive earnings are observed in their wage record for that quarter, and 0 otherwise. Thus, the samples include two types of outcomes—1 or 0—and not a continuous range of percentages. Therefore, the effect of unemployment rates on entered employment is estimated as the effect of unemployment rates on the probability of finding employment (e.g., achieving a 1).

Aggregating the effects across the sample of individuals included in the analysis translates the results from the effect on the probability of getting a job to the effect on the percentage of people entering employment, which is the performance measure for the WIA system.

 In addition to the unemployment rate as an explanatory variable in the estimation equation, individual characteristics of participants, as denoted by the Xs, are also included in the equation. These variables include measures of education, age, race/ethnicity, disability, gender, and employment history prior to registration. Most of these variables are entered as categorical variables. Since characteristics affect the performance measures and these characteristics may change over a business cycle, it is important to control for these variables in order to isolate the net effect of business cycles on performance.

 For simplicity and speed and because of the large number of models estimated, the models are estimated using linear probability models, even when the dependent variable is a zero-one variable.[[3]](#footnote-3) Logit and probit estimation techniques are generally recommended for estimating equations with a zero-one dependent variables.

 However, using logit or probit makes it more difficult to interpret results and creates some complexities in calculating adjustments. For example, because logit and probit are non-linear models, the adjustment factor cannot be calculated using sample means of local areas but rather requires calculating probabilities for all observations using the full set of data. Econometricians have shown that the drawbacks of linear probability models, compared with logit and probit techniques, may be minimal.[[4]](#footnote-4)

A fixed effects model is estimated by including zero-one variables for each of the WIBs (in the case of WIA programs) and for each state (in the case of ES and TAA programs). The fixed effects model controls for idiosyncratic differences between each of the units (e.g., WIBs or states). By including these zero-one variables, the estimation captures the response of program participants to changes in unemployment rates over time and not the long-run differences across local labor markets (as represented by WIB service areas or states).

This response to short-run changes in unemployment rates over time is the response we are trying to predict during the next few years as the economy moves through this business cycle.

 Zero-one variables indicating the year and quarter are also included to control for national time trends. Zero-one variables indicating the quarter (regardless of year) are entered to capture seasonal variation in the performance measures that may be due to regular occurrences throughout the year such as shopping patterns and plant closings to retool for new products.

 The primary interest in this analysis is the effect of unemployment rates on participant outcomes. Although the data base includes tens of thousands of participants (generating variation in the dependent variable), the unemployment rate varies only at the WIB or county level. Therefore, in all cases, more than one individual participant experiences the same unemployment rate at the same time in the same local labor market.

In addition, because these individuals are within one labor market (one grouping of individuals), there may be intra-group correlation. With the possible presence of intra-group correlation and fewer relevant observations (than the total), the typical computation of standard errors of the coefficients may be biased. To correct for this we use cluster sandwich estimators, a standard procedure in the statistical analysis package that we use.[[5]](#footnote-5) We, however, do not take into consideration the possibility of spatial correlation between the geographical units, which could arise due to inter-regional linkages of industries (supply chains) and household commuting patterns.

**IV. Data Sources and Variable Definitions**

The program outcome data come from administrative records for the various workforce programs analyzed by this project.

**A. Data Sources**

**1. WIA Programs**

 For the WIA programs, participant outcomes and attributes are derived from the WIASRD data. This allows us to consider the program outcomes from the third quarter of 2000, which is the beginning of PY2001, to the most recent data available, third quarter 2007. Because of the short time period allowed to complete the study, a sub-sample was created. It included 11 states, which comprised roughly 60 percent of the participants in the WIA programs. The states included: California, Florida, Georgia, Illinois, Michigan, North Carolina, New Jersey, New York, Ohio, Pennsylvania, and Texas. For each of the 11 states, unemployment rates were collected from Bureau of Labor Statistics sources at the WIB or county level for each quarter from 2000 to 2008.

**2. Trade Adjustment Assistance (TAA)**

 Data for the Trade Adjustment Assistance (TAA) program are also available at the individual participant level. The data are derived from the program’s administrative records, and the analysis includes all participants nationwide during the period from the third quarter of 2000 through the second quarter of 2007. Since TAA, unlike WIA, is on a fiscal year, this time period includes FY2001 through FY2007. Unemployment rates are collected quarterly at the county level for all states during this period.

3. Wagner-Peyser Employment Service

 The Wagner-Peyer Employment Service does not compile information on individual participants for the nation. Each state collects and manages their own administrative data. Therefore, there is no one source to go to for these data, as there is for the WIA and TAA programs. The analysis uses data from two large states to estimate the effect of unemployment rates on ES participants. These data include the same detailed information about program participants. Individual participants are also linked to UI wage records so that the outcomes can be computed the same way that they are for the WIA and TAA programs.[[6]](#footnote-6)

**B. Variable Definitions**

The variable definitions were taken from the administrative records of the various programs. For the most part, the variables are comparable across programs. Obviously, some programs do not include participants with certain characteristics; for example, the WIA Youth program obviously does not include middle-aged individuals.

 Personal characteristics are self-reported by the participant; outcome variables are determined through UI wage records, which are reported to the state unemployment agency by the participant’s employer.[[7]](#footnote-7)

 Table 1 indicates the performance measures from the various programs that are directly estimated in the analysis. Table 2 provides the definitions of these performance measures.[[8]](#footnote-8) The dependent variables (e.g., the performance measures) follow the definitions put forth by the U.S. Department of Labor and which are followed by all workforce agencies for reporting their aggregate performance.

Table 1: Performance Measures Directly Estimated in the Analysis

|  |  |
| --- | --- |
|  | **Program** |
| WIA | TAA | ES |
| **Performance Measure** | Adult | Dislocated Worker | Older Youth | Youth |  |  |
| Entered Employment  | ✓ | ✓ | ✓ |  | ✓ | ✓ |
| Retention | ✓ | ✓ | ✓ |  | ✓ | ✓ |
| Average earnings | ✓ | ✓ | ✓ |  | ✓ | ✓ |
| Credential and Employment (Adult) | ✓ | ✓ | ✓ |  |  |  |
| Credential or employment (youth) |  |  |  | ✓ |  |  |
| Attainment of degree or certificate |  |  |  | ✓ |  |  |
| Literacy and numeracy gain (youth) |  |  |  | ✓ |  |  |

Table 2: Dependent Variable Description

|  |  |
| --- | --- |
| Dependent Variable | Description of Coding |
|  |  |
| Entered Employment  | =1 if participant is employed (positive earnings) in the first quarter after exit and was not employed at registration |
| Retention | =1 if participant is employed (positive earnings) in the first quarter after exit and in both the second and third quarters after exit |
| Average earnings | Summation of earnings in the second and third quarter after exit for those employed in those quarters plus the first quarter |
| Credential and Employment (Adult) | =1 if attained a credential after exit and employment in the first quarter after exit |
| Credential or employment (youth) | =1 if participant entered postsecondary education, advanced  training, military service, or a qualified apprenticeship or entered employment the first quarter after exit |
| Attainment of degree or certificate | =1 if participant entered postsecondary education, advanced  training, or military service on or before the third quarter after exit |
| Literacy and numeracy gain (youth) | =1 if there is at least one post test with a functioning level greater  than the corresponding pretest function level and the pretest  function level was between 0 and 6 |

|  |  |
| --- | --- |
| **Explanatory Variables** | **Description of coding** |
| **female** | =1 if participant is female, 0 otherwise |
| **black\_female** | =1 if participant is female and black |
| **age26\_35** | =1 if participant is between the ages of 26 and 35 |
| **age36\_45** | =1 if participant is between the ages of 36 and 45 |
| **age46\_55** | =1 if participant is between the ages of 46 and 55 |
| **age56\_65** | =1 if participant is between the ages of 56 and 65 |
| **agegt65** | =1 if participant is over the age of 65 |
| **hispanic** | =1 if participant indicates that he/she is a person of Cuban, Mexican,  Puerto Rican, South or Central American, or other Spanish  culture in origin regardless of race  |
| **asian** | =1 if participant’s origin is any of the original peoples of the Far East, Southeast Asia, India, etc. |
| **black** | =1 if participant indicates that he/she is a person having origins in  any of the black racial groups of Africa |
| **hi\_pacific** | =1 if participant indicates that he/she is a person having origins in any of the original peoples of Hawaii, or other Pacific Islands |
| **indian** | =1 if participant indicates that he/she is a person having origins in any of the original peoples of North and South America and who maintains culture identification through tribal affiliation or  community recognition |
| **multi-racial** | =1 if participant indicates more than one ethnic/race category,  except Hispanic |
| **white** | =1 if participant indicates that he/she is a person having origins in any of the original peoples of Europe, the Middle East, or North Africa |
| **lths** | =1 if participants completed none or some elementary/secondary school grades but did not receive a high school diploma or GED |
| **highschool** | =1 if participant indicates that he/she attained a high school diploma  |
| **ba** | =1 if participate indicates that he/she received a Bachelor’s degree  or equivalent |
| **beyondba** | =1 if participant indicates that he/she received a degree beyond a Bachelor’s degree, such as a Master’s, Ph.D. or professional  degree |
| **somecoll** | =1 if participant indicates the he/she attained completed some  college but did not receive a degree  |
| **ged** | =1 if participant indicates that he/she attained a GED or equivalent |
| **cert** | =1 if participant indicates that he/she attained certificate of  completion or attendance |
| **otherpostdegcert** | =1 if participant indicates that he/she attained other post-secondary  degree or certification |
| **assoc** | =1 if participate indicates that he/she attained Associates Diploma or Degree |
| **disabled** | =1 if participant indicates that he/she has any disability such as a  physical or mental impairment that substantially limits one or more of the person’s life activities, as defined in Americans with Disability Act of 1990 |
| **veteran** | =1 if participant served in the active U.S. military and who was released with other than a dishonorable discharge or a spouse of any U.S. military personnel who died, or is missing in action,  forcibly detained, or has a total permanent disability |
| **empreg11** | =1 if participant is employed (positive wage record quarterly earnings) in both the second and third quarters before registration |
| **wp** | =1 if participant is co-enrolled in ES (for those in WIA programs) |
| **empreg10** | =1 if participant is employed (positive wage record quarterly  earnings) in second quarter but not third quarter before  registration |
| **empreg01** | =1 if participant is employed (positive wage record quarterly earnings) in the third but not the second quarter before registration |
| **unemp** | The unemployment rate by WIB or county by quarter entered as a percentage (eg., 6.5) |

 .

**V. Unemployment rates**

 The purpose of the analysis is to estimate the effect of local labor market conditions on the labor market (and educational) outcomes of workforce participants. In keeping with this goal we focus on the conditions of the local labor markets within which participants seek employment. For WIA and ES programs, we use the workforce investment area as the geographical definition of local labor markets. For TAA, we use the county.[[9]](#footnote-9)

 The purpose of this section is two fold. The first is to describe the variation in unemployment rates at the county level, and consequently the WIB level, over time. The reason for this discussion is to show that even though our time period for the analysis spans roughly eight years, and includes only one national business cycle, unemployment rates are much more variable at the county level and provides a much richer experience in terms of frequency and depth of business cycles than is apparent when focused only on the national average.

 The second objective of this section is to estimate the effect of unemployment rates on broader labor market outcomes. Specifically, we examine the effect of unemployment rate on new hire rates and new hire earnings. These estimates provide a useful perspective on how workforce performance measures, which are related to the labor market outcomes of new hires, may be related to unemployment rates.

**A. County-level Unemployment Rates**

 Unemployment rates were collected monthly at either the WIB level or county level from 2000 to the first quarter of 2008. During that time, the national unemployment rates varied from or 4.0 (2000) to 6.0 (2003) on an annual basis and from 3.6 (October 2000) to 6.5 (January and June 2003) on a seasonally unadjusted monthly basis. It was not until December 2008 that the monthly seasonally unadjusted unemployment rate exceeded the rates posted during 2003.

 However, this variation at the national level does not reflect the breadth of experience in local labor conditions across the thousands of counties and the hundreds of WIBs. During that time, unemployment rates among counties with total employment of more than 100,000 ranged from a 1.1 percent to 14.9 percent.[[10]](#footnote-10) Including all counties regardless of employment size, the range of unemployment rates expands to a low of 0.7 percent and a high of 28.9 percent, as shown in Figure 1. Therefore, despite the relatively tight band of unemployment rates at the national, the estimates of the effect of unemployment rates on labor market outcomes of program participants are based on a broad range of unemployment rates and at levels that are more than double what we are currently experiencing in this deep recession.

**B. The Effect of Unemployment Rates on New Hires**

 The primary focus of this study is to estimate the effect of unemployment rates on performance measures of various workforce programs. However, the outcomes of program participants should reflect the outcomes of the general labor force in local labor markets. Therefore, to offer perspective on local labor market dynamics that may affect workforce programs, we consider the effect of unemployment rates on the rate of new hires in local labor markets in Michigan, in which case the local labor markets are defined by the geographical jurisdiction of WIBs.[[11]](#footnote-11) Using a similar model that was specified for workforce programs, as described in Section III (except not including personal characteristics since these are not available), we find that the unemployment rate at the WIB level is negatively and statistically significantly related to the rate of new hires.

More precisely, a one percentage point increase in the local unemployment rate reduces the rate of new hires by 0.0028 points or 2.8 percent (-0.0044/0.146). Since the performance measure of entered employed requires the participant to be one of the new hires in the local labor market, the two outcomes should be related, with the additional factor of the difference in qualifications of program participants versus the general workforce. There appears to be no statistically significant effect between local unemployment rates and the average earnings of new hires, however. The results are only for Michigan and the results may change as more states are added to the analysis.

**VI. Estimation**

Each performance measure for each program listed in Table 1 is estimated in separate equations. The equations are similar with respect to the explanatory variables included, except for the way in which the unemployment variables are entered. The full results are reported by major program, and the effect of unemployment rates on the performance measures are summarized in Table 16.

A. WIA

**1. Adult**

Four performance measures are included in the analysis for the WIA Adult worker program. The means and standard deviations of the variables are displayed in Table 4 for each of the performance measures. The reason for the slight difference in sample statistics is that the performance measure definitions do not include the same participants. This is due to the number of quarters of earnings required to construct the performance measure and the definition itself.

 For example, entered employment and retention are computed from different groups of individuals, for several reasons. Entered employment requires that the participant not have worked at the time of registration; retention includes both those who worked and did not work. Retention requires wage record information for two quarters after exit; entered employment requires only one quarter after exit. Thus, retention cannot be computed at the same time as entered employment for the same set of individuals, since the second quarter earnings have not yet been determined.

Table 5: Estimates of the Effect of Unemployment Rates and other Factors on the

 WIA Adult Program Performance Measures

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **WIA Adult** | **(1)** | **(2)** | **(3)** | **(4)** |
|  | **Entered Employment** | **Retention** | **Average Earnings** | **Credential and Employment**  |
|  |  |  |  |  |
| **female** | 0.000542 | 0.0167\*\*\* | -2653.4\*\*\* | -0.0218\*\*\* |
|  | (0.25) | (9.22) | (-23.27) | (-6.95) |
| **black\_female** | 0.0157\*\*\* | 0.0252\*\*\* | 1484.3\*\*\* | 0.0184\*\*\* |
|  | (4.65) | (7.29) | (19.04) | (3.95) |
| **age26\_35** | -0.00345 | 0.00948\*\*\* | 1456.8\*\*\* | 0.0116\*\*\* |
|  | (-1.53) | (5.53) | (34.75) | (4.29) |
| **age36\_45** | -0.0137\*\*\* | 0.00743\*\*\* | 1744.9\*\*\* | 0.00128 |
|  | (-5.13) | (3.60) | (26.52) | (0.33) |
| **age46\_55** | -0.0330\*\*\* | 0.00619\* | 1605.6\*\*\* | -0.0140\*\* |
|  | (-10.54) | (2.20) | (13.53) | (-3.00) |
| **age56\_65** | -0.0854\*\*\* | -0.0194\*\*\* | 513.9\*\* | -0.0447\*\*\* |
|  | (-19.55) | (-4.95) | (2.86) | (-6.29) |
| **agegt65** | -0.202\*\*\* | -0.0806\*\*\* | -3229.4\*\*\* | -0.0832\*\*\* |
|  | (-18.28) | (-7.45) | (-13.43) | (-5.59) |
| **hispanic** | 0.0205\*\*\* | 0.0136\*\*\* | -1312.7\*\*\* | -0.0289\*\*\* |
|  | (8.22) | (6.05) | (-15.44) | (-4.62) |
| **asian** | 0.0193\*\* | 0.0388\*\*\* | -608.7\*\*\* | 0.0266\* |
|  | (3.24) | (10.33) | (-4.47) | (2.27) |
| **black** | -0.0283\*\*\* | -0.0394\*\*\* | -3344.9\*\*\* | -0.0657\*\*\* |
|  | (-9.15) | (-12.81) | (-33.34) | (-10.47) |
| **hi\_pacific** | 0.0267\* | 0.0263\* | -401.6 | 0.0120 |
|  | (2.03) | (2.39) | (-1.42) | (0.85) |
| **indian** | -0.0491\*\*\* | -0.0274\*\*\* | -712.7\*\*\* | -0.0350\*\*\* |
|  | (-5.67) | (-3.62) | (-3.84) | (-3.71) |
| **multi** | -0.0130\* | -0.0167\*\* | -1942.5\*\*\* | -0.00650 |
|  | (-2.04) | (-2.65) | (-10.42) | (-0.56) |
| **lths** | -0.0488\*\*\* | -0.0505\*\*\* | -1483.8\*\*\* | -0.0436\*\*\* |
|  | (-12.09) | (-21.96) | (-26.86) | (-13.40) |
| **ba** | 0.0218\*\*\* | 0.0258\*\*\* | 4164.5\*\*\* | -0.0153 |
|  | (6.37) | (10.19) | (34.74) | (-1.63) |
| **beyondba** | 0.0123\* | 0.0113\* | 6665.3\*\*\* | -0.0348\*\*\* |
|  | (2.06) | (2.29) | (18.76) | (-4.31) |
| **somecoll** | 0.0130\*\*\* | 0.0139\*\*\* | 1675.5\*\*\* | 0.00334 |
|  | (5.55) | (8.53) | (29.57) | (1.05) |
| **ged** | -0.0195\*\*\* | -0.0398\*\*\* | -877.9\*\*\* | -0.0153\*\* |
|  | (-6.41) | (-14.97) | (-11.47) | (-2.94) |
| **cert** | -0.0239 | -0.0436 | -1412.7 | 0.000824 |
|  | (-0.62) | (-0.90) | (-1.86) | (0.02) |
| **otherpostdegcert** | -0.0282\* | 0.0174\* | 3159.2\*\*\* | 0.0428 |
|  | (-2.10) | (2.55) | (10.03) | (0.85) |
| **assoc** | 0.00414 | 0.0191\*\* | 1516.7\*\*\* | -0.0699\*\*\* |
|  | (0.62) | (3.23) | (8.06) | (-5.29) |
| **disabled** | -0.0960\*\*\* | -0.0291\*\*\* | -1918.2\*\*\* | -0.0351\*\*\* |
|  | (-17.39) | (-8.24) | (-20.71) | (-5.99) |
| **veteran** | -0.00735 | -0.0139\*\*\* | 155.6 | 0.00302 |
|  | (-1.80) | (-4.15) | (1.06) | (0.60) |
| **empreg11** | 0.140\*\*\* | 0.0868\*\*\* | 1563.6\*\*\* | 0.0322\*\*\* |
|  | (44.64) | (46.36) | (31.33) | (11.04) |
| **empreg10** | 0.0740\*\*\* | 0.0226\*\*\* | -160.2\*\* | -0.00419 |
|  | (23.43) | (8.57) | (-3.02) | (-1.34) |
| **empreg01** | 0.0690\*\*\* | 0.0260\*\*\* | 263.2\*\*\* | 0.00622\* |
|  | (23.42) | (10.26) | (4.19) | (1.96) |
| **wp** | 0.00671 | 0.00510 | -72.24 | -0.0232\*\*\* |
|  | (1.57) | (1.66) | (-0.71) | (-3.52) |
| **exit\_wib\_ur** |  |  |  | -0.000246 |
|  |  |  |  | (-0.05) |
| **f1\_wib\_ur** | -0.0180\*\*\* |  | -111.0 | -0.0114 |
|  | (-5.75) |  | (-1.71) | (-1.90) |
| **f2\_wib\_ur** |  |  | -104.2 | -0.00645 |
|  |  |  | (-1.63) | (-1.11) |
| **f3\_wib\_ur** |  |  | -50.41 | -0.0170\*\* |
|  |  |  | (-0.83) | (-2.81) |
| **diff12** |  | -0.00417\*\* |  |  |
|  |  | (-3.22) |  |  |
| **diff23** |  | -0.00347\*\* |  |  |
|  |  | (-2.81) |  |  |
|  |  |  |  |  |
| **\_cons** | 0.860\*\*\* | 0.760\*\*\* | 11108.5\*\*\* | 0.687\*\*\* |
|  | (31.43) | (30.88) | (19.99) | (10.83) |
|  |  |  |  |  |
| **N** | 429329 | 400523 | 310066 | 395240 |
| **adj. R-sq** | 0.073 | 0.035 | 0.198 | 0.275 |
|  |  |  |  |  |
| **Combined UR**  | -0.0180\*\*\* | -0.008\*\* | -265.7\*\* | -0.352\*\*\* |
| **Effect** | (-5.75) | (-3.98) | (3.16) | (-4.51) |

Source: Authors’ analysis of WIASRD data and BLS unemployment rates.

Note: Asterisks indicate statistical significance in which p<0.05 (\*), p<0.01 (\*\*), and p<0.001 (\*\*\*). Year-quarter time dummy variables, quarter time dummy variables, and WIB dummy variables are also included in the estimation, but the coefficient estimates are not shown to conserve space.

 Estimates of the factors that are expected to affect the four performance measures are displayed in Table 5. Most of the coefficients are statistically significant and have the expected sign, including the unemployment rates. For example, the estimated relationship between entered employment and unemployment rates is -0.018. An estimate of -0.018 means that a one percentage point change in the unemployment rate, say from 6 percent to 7 percent, is expected to reduce the entered employment rate by 0.018 percentage points. If the entered employment rate was 0.70 (the dependent variable is measured as a rate (0.70), not as a percentage (70.0%)) at an unemployment rate of 6 percent, then an increase of the unemployment rate was 6 to 7 percent would lower the expected entered employment rate from 0.70 percent to 0.682 percent. If the unemployment rate doubled, then entered employment rate would fall by -0.036 points (2 times -0.018).

 A similar relationship is found for retention. In this case the unemployment rate is entered as a change from one quarter to the next, as indicated by the variables **diff12,** change in unemployment rates from the first quarter after exit to the second quarter after exit**,** and **diff2**, the change in unemployment rates from the second quarter after exit to the third quarter after exit.

 Since the performance measure for retention spans two quarters, the full effect of unemployment rates is estimated by adding together the two coefficients. The sum of the two coefficients is shown at the bottom of the table along with the statistical significance, which is estimated using a t-test that the combined estimated is different from zero. For retention, unemployment rates have a negative and statistically significant effect, reducing the retention rate by nearly one point.

 For average earnings, the effect of unemployment rates is derived by adding the coefficients associated with the three quarters of unemployment rates, **f1\_wib\_ur, f2\_wib\_ur,** and **f3\_wib\_ur.**  The total effect is a reduction of $266 on an average base of $11, 643. The estimate is statistically significant.

 The credentials and employment performance measure follows a similar pattern but exhibits a larger effect from an increase in unemployment rates than was found for the other performance measures. In this case, a one percentage point increase in unemployment rates reduces the rate of attaining credentials and employment by 0.036 points.

The estimate is obtained by summing the coefficients over four quarters: exit\_wib\_ur (the quarter of exit) through **f3\_wib\_ur** (the third quarter after exit). The estimate of the combined effect is statistically significant. With the mean rate of credentialing and employment at 0.54, this effect results in a 6.7 percent reduction in that performance measure.

 The estimated relationships between participant characteristics and performance measures offer a broad perspective on the ability of participants with different backgrounds and employment barriers to achieve the outcomes defined by the performance measures. For example, the results suggest that participants who are black, older, disabled, and have less than a high school education and an inconsistent work history are less likely to find and retain employment. For those who find work, they earn less and find it more difficult to attain credentials and employment. The single largest positive effect on all four performance measures is a person’s past employment history. Individuals who have positive earnings for both quarters before registration are much more successful in finding and retaining and job and in obtaining higher earnings than those with no prior employment during that period.

 For example, a person with prior employment in those two quarters experienced an entered employment rate that is 0.14 points higher than someone without employment during that same period, holding all other characteristics constant. If the entered employment rate is 0.70 for those without prior employment, the rate for those with prior employment is 0.84—a sizeable difference. Furthermore, we find that 45% of the participants in the entered employment group have two quarters of prior employment.

 The largest negative effect relates to older workers. Those participants older than 65 are far less likely to find a job than those in 18-to-25 age range. However, very few participants fall into the over-65 age range.

2. Dislocated Worker Program

 The results for the WIA Dislocated Worker program yield patterns of effects similar to those found for the Adult WIA program, shown in Table 7. Unemployment rates have a negative and statistically significant effect on all four performance measures. The magnitude of the effects are slightly smaller than found for the WIA Adult program participants, but in the same general range.

For example, a one percentage point increase in unemployment rates lowers the entered employment rate by 0.008 points compared with 0.018 points for the Adult WIA program participants. As seen in Table 6, which displays the mean characteristics of the Dislocated Worker participants, dislocated workers are better educated and more strongly attached to the workforce. These traits may explain their ability to weather economic downturns a little better. As with the WIA Adult program, prior employment and age exhibited the largest effect on the performance measures.

Table 6: Means and Standard Deviations of Variables used in the Estimation of WIA

 Dislocated Worker Program

|  |  |
| --- | --- |
|  | **WIA Dislocated Worker** |
|  | **Entered** |  |  |  |  | **Employment and** |
|  | **Employment** | **Retention** | **Average Earnings** | **Credential** |
|  | **mean** | **sd** | **mean** | **sd** | **mean** | **sd** | **mean** | **sd** |
|  |  |  |  |  |  |  |  |  |
| **Dependent Variable** | 0.822 | 0.383 | 0.887 | 0.317 | 14328 | 9434 | 0.563 | 0.496 |
|  |  |  |  |  |  |  |  |  |
| **female** | 0.514 | 0.500 | 0.513 | 0.500 | 0.518 | 0.500 | 0.505 | 0.500 |
| **black\_female** | 0.119 | 0.323 | 0.117 | 0.322 | 0.119 | 0.323 | 0.115 | 0.320 |
| **age20** |  |  |  |  |  |  |  |  |
| **age21** |  |  |  |  |  |  |  |  |
| **age26\_35** | 0.232 | 0.422 | 0.240 | 0.427 | 0.242 | 0.428 | 0.243 | 0.429 |
| **age36\_45** | 0.319 | 0.466 | 0.326 | 0.469 | 0.329 | 0.470 | 0.327 | 0.469 |
| **age46\_55** | 0.277 | 0.447 | 0.275 | 0.446 | 0.274 | 0.446 | 0.267 | 0.443 |
| **age56\_65** | 0.090 | 0.286 | 0.077 | 0.267 | 0.073 | 0.261 | 0.080 | 0.271 |
| **agegt65** | 0.007 | 0.085 | 0.004 | 0.066 | 0.004 | 0.060 | 0.006 | 0.076 |
| **hispanic** | 0.207 | 0.405 | 0.206 | 0.404 | 0.206 | 0.405 | 0.196 | 0.397 |
| **asian** | 0.048 | 0.213 | 0.045 | 0.207 | 0.045 | 0.207 | 0.050 | 0.219 |
| **black** | 0.205 | 0.403 | 0.200 | 0.400 | 0.200 | 0.400 | 0.201 | 0.401 |
| **hi\_pacific** | 0.002 | 0.049 | 0.002 | 0.049 | 0.002 | 0.048 | 0.003 | 0.050 |
| **indian** | 0.005 | 0.070 | 0.005 | 0.069 | 0.005 | 0.069 | 0.005 | 0.072 |
| **multi** | 0.009 | 0.096 | 0.009 | 0.095 | 0.009 | 0.094 | 0.006 | 0.076 |
| **lths** | 0.109 | 0.312 | 0.105 | 0.306 | 0.101 | 0.302 | 0.102 | 0.303 |
| **ba** | 0.120 | 0.325 | 0.117 | 0.321 | 0.116 | 0.321 | 0.118 | 0.323 |
| **beyondba** | 0.033 | 0.180 | 0.031 | 0.172 | 0.030 | 0.170 | 0.033 | 0.178 |
| **somecoll** | 0.229 | 0.420 | 0.231 | 0.422 | 0.232 | 0.422 | 0.235 | 0.424 |
| **ged** | 0.043 | 0.203 | 0.044 | 0.204 | 0.043 | 0.204 | 0.044 | 0.205 |
| **cert** | 0.000 | 0.012 | 0.000 | 0.012 | 0.000 | 0.012 | 0.000 | 0.009 |
| **otherpostdegcert** | 0.005 | 0.071 | 0.005 | 0.071 | 0.005 | 0.072 | 0.002 | 0.050 |
| **assoc** | 0.015 | 0.123 | 0.014 | 0.116 | 0.014 | 0.116 | 0.007 | 0.086 |
| **disabled** | 0.101 | 0.302 | 0.110 | 0.313 | 0.109 | 0.312 | 0.083 | 0.276 |
| **veteran** | 0.086 | 0.281 | 0.086 | 0.281 | 0.084 | 0.278 | 0.088 | 0.283 |
| **empreg11** | 0.742 | 0.437 | 0.755 | 0.430 | 0.767 | 0.423 | 0.736 | 0.441 |
| **empreg10** | 0.039 | 0.193 | 0.039 | 0.193 | 0.037 | 0.188 | 0.037 | 0.190 |
| **empreg01** | 0.067 | 0.251 | 0.064 | 0.244 | 0.062 | 0.241 | 0.068 | 0.253 |
| **wp** | 0.348 | 0.476 | 0.340 | 0.474 | 0.342 | 0.474 | 0.259 | 0.438 |
| **exit\_wib\_ur** |  |  |  |  |  |  | 6.119 | 1.924 |
| **f1\_wib\_ur** | 5.970 | 1.863 |  |  | 5.953 | 1.816 | 6.160 | 1.919 |
| **f2\_wib\_ur** |  |  |  |  | 5.969 | 1.824 |  |  |
| **f3\_wib\_ur** |  |  |  |  | 5.942 | 1.835 |  |  |
| **diff12** |  |  | 0.021 | 0.804 |  |  |  |  |
| **diff23** |  |  | -0.026 | 0.802 |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| **Number** | 408234 |  | 322098 |  | 266915 |  | 311452 |  |

Table 7: Estimates of the Effect of Unemployment Rates and other Factors on the WIA

 Dislocated Worker Program Performance Measures

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Dislocated Worker** | **(1)** | **(2)** | **(3)** | **(4)** |
|  | **Entered Employment** | **Retention** | **Average Earnings** | **Credentials/****Employment** |
|  |  |  |  |  |
| **female** | -0.00392\* | 0.00634\*\*\* | -3861.5\*\*\* | -0.0352\*\*\* |
|  | (-2.25) | (4.76) | (-65.96) | (-15.05) |
| **black\_female** | 0.0189\*\*\* | 0.0118\*\*\* | 1649.4\*\*\* | -0.00344 |
|  | (5.31) | (4.04) | (19.73) | (-0.78) |
| **age26\_35** | 0.000243 | 0.0119\*\*\* | 1707.8\*\*\* | 0.0187\*\*\* |
|  | (0.10) | (4.97) | (30.08) | (4.61) |
| **age36\_45** | -0.00823\*\* | 0.0137\*\*\* | 2154.0\*\*\* | 0.0106\* |
|  | (-3.13) | (5.86) | (35.81) | (2.51) |
| **age46\_55** | -0.0224\*\*\* | 0.00710\*\* | 1622.9\*\*\* | -0.00374 |
|  | (-8.12) | (2.91) | (24.73) | (-0.82) |
| **age56\_65** | -0.108\*\*\* | -0.0227\*\*\* | 13.06 | -0.0311\*\*\* |
|  | (-28.92) | (-6.86) | (0.14) | (-5.86) |
| **agegt65** | -0.277\*\*\* | -0.110\*\*\* | -4181.1\*\*\* | -0.0712\*\*\* |
|  | (-26.83) | (-9.41) | (-15.90) | (-6.30) |
| **hispanic** | 0.0213\*\*\* | 0.00549\*\* | -1572.8\*\*\* | -0.0160\*\*\* |
|  | (9.60) | (2.66) | (-22.69) | (-4.19) |
| **asian** | -0.0258\*\*\* | 0.00709\* | -540.2\*\*\* | 0.0164\* |
|  | (-7.29) | (2.16) | (-4.30) | (2.15) |
| **black** | -0.00603\* | -0.0179\*\*\* | -3526.8\*\*\* | -0.0253\*\*\* |
|  | (-1.98) | (-7.09) | (-38.06) | (-5.26) |
| **hi\_pacific** | -0.00205 | 0.0146 | -671.8 | -0.0281 |
|  | (-0.18) | (1.20) | (-1.85) | (-1.78) |
| **indian** | -0.0341\*\*\* | -0.0112 | -1004.8\*\*\* | -0.0271\* |
|  | (-3.72) | (-1.31) | (-4.38) | (-2.11) |
| **multi** | 0.00438 | -0.0139 | -1770.1\*\*\* | -0.00960 |
|  | (0.48) | (-1.87) | (-9.24) | (-0.83) |
| **lths** | -0.0323\*\*\* | -0.0252\*\*\* | -1618.0\*\*\* | -0.0381\*\*\* |
|  | (-13.08) | (-10.52) | (-31.68) | (-9.11) |
| **ba** | -0.00127 | 0.0000558 | 5115.2\*\*\* | -0.0222\*\*\* |
|  | (-0.58) | (0.03) | (58.41) | (-4.83) |
| **beyondba** | -0.0261\*\*\* | -0.0120\*\* | 9812.3\*\*\* | -0.0308\*\*\* |
|  | (-6.70) | (-3.26) | (41.70) | (-3.93) |
| **somecoll** | -0.00249 | -0.00144 | 1440.9\*\*\* | -0.00821\*\* |
|  | (-1.65) | (-1.02) | (33.68) | (-3.17) |
| **ged** | -0.00297 | -0.0159\*\*\* | -517.3\*\*\* | -0.000521 |
|  | (-0.92) | (-5.60) | (-7.39) | (-0.09) |
| **cert** | -0.0413 | 0.0437 | -496.2 | -0.0369 |
|  | (-0.86) | (1.06) | (-0.56) | (-0.34) |
| **otherpostdegcert** | -0.0119 | 0.00390 | 3429.9\*\*\* | 0.00300 |
|  | (-1.40) | (0.45) | (9.35) | (0.11) |
| **assoc** | -0.0265\*\*\* | -0.00393 | 2086.3\*\*\* | -0.0357\*\* |
|  | (-4.27) | (-0.73) | (7.96) | (-3.25) |
| **disabled** | -0.0532\*\*\* | -0.0281\*\*\* | -1332.8\*\*\* | -0.0412\*\*\* |
|  | (-11.74) | (-6.93) | (-10.80) | (-4.85) |
| **veteran** | -0.0103\*\*\* | -0.0114\*\*\* | 181.8\* | -0.00298 |
|  | (-4.42) | (-5.20) | (2.57) | (-0.92) |
| **empreg11** | 0.0743\*\*\* | 0.0434\*\*\* | 745.4\*\*\* | 0.0145\*\*\* |
|  | (24.08) | (20.43) | (12.92) | (3.68) |
| **empreg10** | 0.0560\*\*\* | 0.00356 | -107.2 | 0.00791 |
|  | (13.19) | (0.95) | (-0.99) | (1.41) |
| **empreg01** | 0.0293\*\*\* | 0.0110\*\*\* | -4.378 | -0.00896 |
|  | (7.68) | (3.49) | (-0.05) | (-1.79) |
| **wp** | 0.0142\*\*\* | -0.000527 | -74.17 | 0.0155\*\* |
|  | (3.86) | (-0.26) | (-0.89) | (2.72) |
| **exit\_wib\_ur** |  |  |  | -0.00169 |
|  |  |  |  | (-0.37) |
| **f1\_wib\_ur** | -0.00983\*\*\* |  | 28.42 | -0.00484 |
|  | (-3.63) |  | (0.48) | (-0.89) |
| **f2\_wib\_ur** |  |  | -166.7\* | -0.00391 |
|  |  |  | (-2.33) | (-0.76) |
| **f3\_wib\_ur** |  |  | 14.97 | -0.00643 |
|  |  |  | (0.29) | (-1.13) |
| **diff12** |  | -0.00582\*\*\* |  |  |
|  |  | (-4.65) |  |  |
| **diff23** |  | -0.00429\*\*\* |  |  |
|  |  | (-3.39) |  |  |
|  |  |  |  |  |
| **\_cons** | 0.876\*\*\* | 0.806\*\*\* | 14682.2\*\*\* | 0.668\*\*\* |
|  | (27.17) | (34.71) | (25.92) | (9.55) |
|  |  |  |  |  |
| **N** | 408234 | 322098 | 266915 | 311452 |
| **adj. R-sq** | 0.058 | 0.019 | 0.196 | 0.210 |
|  |  |  |  |  |
| **Combined UR**  | -0.00983\*\*\* | -0.010\*\*\* | -123.33\*\* | -0.017\*\* |
| **Effect** | (-3.63) | (-5.16) | (-2.34) | (-2.55) |

Source: Authors’ analysis of WIASRD data and BLS unemployment rates.

Note: Asterisks indicate statistical significance in which p<0.05 (\*), p<0.01 (\*\*), and p<0.001 (\*\*\*). Year-quarter time dummy variables, quarter time dummy variables, and WIB dummy variables are also included in the estimation, but the coefficient estimates are not shown to conserve space.

**3. Older Youth**

Results for the WIA Older Youth program are in the range of estimates established by the two previously described programs. The means and standard deviations of the variables used in the estimation are displayed in Table 10. Unemployment rates negatively affect the four performance measures. However, only entered employment exhibits a statistically significant relationship. As with the two adult programs, prior employment history has the largest effect on the four performance measures, increasing significantly the likelihood of finding and retaining and job and in holding a job with higher earnings. Unlike the two adult programs, age is not a large factor, but education is important. Those without a high school degree, which is nearly half the participants, are at a significant disadvantage in their employment prospects.

Table 8: Means and Standard Deviations of Variables used in the Estimation of the

 WIA Older Worker Program

|  |  |
| --- | --- |
|  | **Older Youth** |
|  | **Entered** |  |  |  |  | **Employment and** |
|  | **Employment** | **Retention** | **Average Earnings** | **Credential** |
|  | **mean** | **sd** | **mean** | **sd** | **mean** | **sd** | **mean** | **sd** |
|  |  |  |  |  |  |  |  |  |
| **Dependent Variable** | 0.727 | 0.445 | 0.811 | 0.392 | 6970.891 | 5300.685 | 0.582 | 0.493 |
|  |  |  |  |  |  |  |  |  |
| **female** | 0.591 | 0.492 | 0.603 | 0.489 | 0.618 | 0.486 | 0.593 | 0.491 |
| **black\_female** | 0.252 | 0.434 | 0.247 | 0.432 | 0.246 | 0.431 | 0.247 | 0.431 |
| **age20** | 0.320 | 0.467 | 0.324 | 0.468 | 0.322 | 0.467 | 0.320 | 0.467 |
| **age21** | 0.227 | 0.419 | 0.237 | 0.425 | 0.243 | 0.429 | 0.228 | 0.420 |
| **age26\_35** |  |  |  |  |  |  |  |  |
| **age36\_45** |  |  |  |  |  |  |  |  |
| **age46\_55** |  |  |  |  |  |  |  |  |
| **age56\_65** |  |  |  |  |  |  |  |  |
| **agegt65** |  |  |  |  |  |  |  |  |
| **hispanic** | 0.306 | 0.461 | 0.311 | 0.463 | 0.330 | 0.470 | 0.298 | 0.457 |
| **asian** | 0.026 | 0.159 | 0.024 | 0.152 | 0.023 | 0.151 | 0.028 | 0.164 |
| **black** | 0.416 | 0.493 | 0.392 | 0.488 | 0.377 | 0.485 | 0.405 | 0.491 |
| **hi\_pacific** | 0.003 | 0.058 | 0.003 | 0.057 | 0.004 | 0.060 | 0.004 | 0.060 |
| **indian** | 0.006 | 0.080 | 0.006 | 0.076 | 0.005 | 0.074 | 0.007 | 0.081 |
| **multi** | 0.010 | 0.100 | 0.010 | 0.100 | 0.009 | 0.096 | 0.009 | 0.096 |
| **lths** | 0.472 | 0.499 | 0.409 | 0.492 | 0.366 | 0.482 | 0.457 | 0.498 |
| **ba** | 0.001 | 0.037 | 0.002 | 0.042 | 0.002 | 0.044 | 0.002 | 0.041 |
| **beyondba** | 0.000 | 0.018 | 0.001 | 0.024 | 0.000 | 0.022 | 0.001 | 0.023 |
| **somecoll** | 0.044 | 0.205 | 0.058 | 0.234 | 0.068 | 0.251 | 0.046 | 0.210 |
| **ged** | 0.037 | 0.189 | 0.041 | 0.197 | 0.039 | 0.194 | 0.036 | 0.187 |
| **cert** | 0.002 | 0.041 | 0.001 | 0.036 | 0.001 | 0.036 | 0.002 | 0.041 |
| **otherpostdegcert** | 0.001 | 0.032 | 0.002 | 0.042 | 0.002 | 0.048 | 0.000 | 0.020 |
| **assoc** | 0.000 | 0.020 | 0.001 | 0.027 | 0.001 | 0.028 | 0.000 | 0.013 |
| **disabled** | 0.165 | 0.371 | 0.160 | 0.367 | 0.155 | 0.362 | 0.165 | 0.371 |
| **veteran** | 0.004 | 0.064 | 0.005 | 0.070 | 0.005 | 0.073 | 0.005 | 0.068 |
| **empreg11** | 0.323 | 0.467 | 0.407 | 0.491 | 0.454 | 0.498 | 0.350 | 0.477 |
| **empreg10** | 0.104 | 0.305 | 0.108 | 0.310 | 0.106 | 0.308 | 0.104 | 0.305 |
| **empreg01** | 0.108 | 0.310 | 0.104 | 0.305 | 0.102 | 0.303 | 0.103 | 0.304 |
| **wp** | 0.292 | 0.455 | 0.288 | 0.453 | 0.297 | 0.457 | 0.260 | 0.438 |
| **exit\_wib\_ur** |  |  |  |  |  |  | 6.392 | 2.195 |
| **f1\_wib\_ur** | 6.386 | 2.171 |  |  | 6.306 | 2.166 | 6.428 | 2.200 |
| **f2\_wib\_ur** |  |  |  |  | 6.313 | 2.195 |  |  |
| **f3\_wib\_ur** |  |  |  |  | 6.293 | 2.209 |  |  |
| **diff12** |  |  | 0.012 | 0.858 |  |  |  |  |
| **diff23** |  |  | -0.019 | 0.853 |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| **Number** | 73488 |  | 57610 |  | 38657 |  | 80326 |  |

Source: Authors’ analysis of WIASRD data and BLS unemployment rates.

Note: Asterisks indicate statistical significance in which p<0.05 (\*), p<0.01 (\*\*), and p<0.001 (\*\*\*). Year-quarter time dummy variables, quarter time dummy variables, and WIB dummy variables are also included in the estimation, but the coefficient estimates are not shown to conserve space.

Table 9: Estimates of the Effect of Unemployment Rates and other Factors on WIA

 Older Youth Program Performance Measures

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Older Youth** | **(1)** | **(2)** | **(3)** | **(4)** |
|  | **Entered Employment** | **Retention** | **Average Earnings** | **Credentials/****Employment** |
|  |  |  |  |  |
| **female** | -0.0269\*\*\* | -0.00582 | -839.3\*\*\* | 0.0268\*\*\* |
|  | (-6.15) | (-1.40) | (-10.98) | (5.43) |
| **black\_female** | 0.0470\*\*\* | 0.0173\* | 314.6\*\* | -0.00203 |
|  | (6.86) | (2.44) | (2.73) | (-0.27) |
| **age20** | -0.000806 | -0.00692 | 330.4\*\*\* | -0.00224 |
|  | (-0.21) | (-1.84) | (5.57) | (-0.59) |
| **age21** | 0.000126 | -0.00230 | 724.6\*\*\* | 0.00518 |
|  | (0.03) | (-0.57) | (10.44) | (1.20) |
| **hispanic** | 0.0325\*\*\* | 0.0268\*\*\* | 271.8\*\* | -0.00751 |
|  | (5.66) | (4.75) | (3.08) | (-1.17) |
| **asian** | 0.00519 | 0.0251 | -108.6 | -0.00640 |
|  | (0.35) | (1.94) | (-0.58) | (-0.47) |
| **black** | -0.0468\*\*\* | -0.0327\*\*\* | -1155.0\*\*\* | -0.0553\*\*\* |
|  | (-6.71) | (-4.75) | (-10.52) | (-7.46) |
| **hi\_pacific** | 0.000369 | 0.0168 | -134.6 | -0.00589 |
|  | (0.01) | (0.56) | (-0.39) | (-0.19) |
| **indian** | -0.0239 | -0.0139 | -281.7 | -0.0561\* |
|  | (-1.11) | (-0.60) | (-0.62) | (-2.50) |
| **multi** | -0.0252 | -0.0278 | -550.0\* | -0.0289 |
|  | (-1.64) | (-1.57) | (-2.28) | (-1.66) |
| **lths** | -0.100\*\*\* | -0.0776\*\*\* | -1138.1\*\*\* | -0.0203\*\*\* |
|  | (-24.61) | (-19.38) | (-17.56) | (-4.25) |
| **ba** | -0.00655 | 0.000401 | 3629.0\*\*\* | 0.0147 |
|  | (-0.19) | (0.01) | (4.23) | (0.49) |
| **beyondba** | 0.0566 | 0.0215 | 3530.3\* | -0.0000878 |
|  | (0.93) | (0.39) | (2.42) | (-0.00) |
| **somecoll** | 0.0451\*\*\* | 0.0305\*\*\* | 1273.4\*\*\* | 0.0327\*\*\* |
|  | (6.05) | (4.90) | (9.87) | (3.50) |
| **ged** | -0.0393\*\*\* | -0.0442\*\*\* | -708.0\*\*\* | -0.0330\*\*\* |
|  | (-4.59) | (-5.34) | (-5.54) | (-3.32) |
| **cert** | -0.149\*\* | -0.0510 | -2384.9\*\*\* | -0.0908\* |
|  | (-3.06) | (-0.93) | (-5.87) | (-2.03) |
| **otherpostdegcert** | 0.0599 | 0.0712\*\* | 1700.5\* | 0.0303 |
|  | (1.64) | (3.12) | (2.06) | (0.34) |
| **assoc** | 0.0420 | -0.0510 | 6731.1\* | -0.0141 |
|  | (0.75) | (-0.80) | (2.23) | (-0.13) |
| **disabled** | -0.0740\*\*\* | -0.000386 | -1291.5\*\*\* | 0.00578 |
|  | (-9.10) | (-0.06) | (-13.86) | (0.74) |
| **veteran** | 0.0315 | 0.0356 | 512.6 | -0.0156 |
|  | (1.33) | (1.82) | (1.37) | (-0.63) |
| **empreg11** | 0.146\*\*\* | 0.0791\*\*\* | 833.1\*\*\* | 0.0170\*\*\* |
|  | (35.31) | (21.78) | (13.57) | (4.39) |
| **empreg10** | 0.0872\*\*\* | 0.0275\*\*\* | 33.25 | -0.00903 |
|  | (15.42) | (4.63) | (0.38) | (-1.64) |
| **empreg01** | 0.0754\*\*\* | 0.0246\*\*\* | 50.53 | 0.00129 |
|  | (13.28) | (4.30) | (0.65) | (0.23) |
| **wp** | 0.0394\*\*\* | -0.0103\* | -272.4\*\* | 0.0346\*\*\* |
|  | (5.66) | (-1.96) | (-3.04) | (3.67) |
| **exit\_wib\_ur** |  |  |  | -0.0231\*\* |
|  |  |  |  | (-2.85) |
| **f1\_wib\_ur** | -0.0174\*\*\* |  | -50.38 | 0.00893 |
|  | (-4.91) |  | (-1.07) | (1.12) |
| **f2\_wib\_ur** |  |  | -43.49 | -0.00977 |
|  |  |  | (-0.84) | (-1.24) |
| **f3\_wib\_ur** |  |  | -7.105 | 0.00902 |
|  |  |  | (-0.15) | (1.14) |
| **diff12** |  | -0.00400 |  |  |
|  |  | (-1.57) |  |  |
| **diff23** |  | -0.00213 |  |  |
|  |  | (-0.87) |  |  |
|  |  |  |  |  |
| **\_cons** | 0.732\*\*\* | 0.774\*\*\* | 7453.1\*\*\* | 0.398\*\*\* |
|  | (19.94) | (28.53) | (12.64) | (3.79) |
|  |  |  |  |  |
| **N** | 73488 | 57610 | 38657 | 80326 |
| **adj. R-sq** | 0.088 | 0.039 | 0.092 | 0.164 |
|  |  |  |  |  |
| **Combined UR** | -0.0174\*\*\* | -0.006 | -101 | -0.0142 |
|  | (-4.91) | (-1.64) | (-1.87) | (-1.86) |

Source: Authors’ analysis of WIASRD data and BLS unemployment rates.

Note: Asterisks indicate statistical significance in which p<0.05 (\*), p<0.01 (\*\*), and p<0.001 (\*\*\*). Year-quarter time dummy variables, quarter time dummy variables, and WIB dummy variables are also included in the estimation, but the coefficient estimates are not shown to conserve space.

4. Youth

The WIA Youth program uses three performance measures that differ from the two adult programs and the older worker program. For youth, the performance measures include 1) placement in employment or education, 2) attainment of a degree or certificate, and 3) literacy and numeracy gains.[[12]](#footnote-12) The means are standard deviations for the variables used in the estimation are shown in Table 10. The analysis finds negative and statistically significant relationships between unemployment rates and all three performance measures for which OMB assigns targets, as displayed in Table 11. The results show that youths facing depressed labor markets, as measured by unemployment rates, are less successful in finding employment, entering an educational program, attaining a degree or certificate, or achieving gains on literacy and numeracy tests.

For placement in education or employment, a one percentage point increase in the unemployment rate is associated with a 0.014 point decline in the percentage of participants placed in education or employment the quarter after exiting the program. For degree or certificate attainment, a one percentage point increase in the unemployment rate reduces the percentage of participants attaining a degree or certificate by an estimated 0.021 points. For literacy and numeracy gains, a one percentage point increase in the unemployment rate reduces the percentage of participants recording a gain by 0.024 points.

While the results are similar to those found for performance measures of the other WIA programs, understanding the results for WIA Youth requires additional explanation. The major difference between success in achieving the performance measures for WIA Youth and for the adult WIA programs is the greater dependency that youth may have on their family circumstances. Except for placement in employment, which is only one component of the first performance measure, success in achieving the three performance measures depends to a large extent on the family providing a supportive environment for the youth participant. Similarly, participants’ employment prospects are greater when they are members of families with experience in the labor force and skills to find and retain a job.

In particular, research findings from several studies point to the importance of parents’ employment status and income on the academic achievement of their children. Income, which is highly correlated with employment, is strongly associated with youths’ neighborhood environment, including their peers, level of violence, opportunities to engage in learning activities such as proximity to libraries and after-school programs, and the stability of their living arrangements. The literature has found that all of these factors significantly affect student achievement.

 For example, a recent study reviews the large literature on the effects of these various factors on adolescent student achievement and behavior.[[13]](#footnote-13) This same study also uses a large longitudinal dataset, which over-represents low-income and ethnic youth, to estimate the relationship between these factors and academic achievement of youth between the ages of 14 and 21. The authors conclude that “economic conditions in middle childhood have strong correlations with the math and reading achievement measures” (p. 9).

The New Hope project in Milwaukee offers additional evidence of the influence of parental employment on the achievement and behavior of adolescents. The New Hope project was an innovative program designed to address the problems facing low-wage families. The premise was that people who work full time can not only raise their financial status but also improve the well-being of their families.

 The demonstration project was evaluated using a random assign design in which randomly selected families from two inner-city areas in Milwaukee were given benefits, such as wage supplements to raise them out of poverty, health insurance coverage and child care. For those unable to find work, job search assistance and even subsidized employment were offered. The evaluation covered a wide range of behavioral attributes and family activities, as well as outcomes such as student achievement, measured both by teacher and parent perceptions and actual test scores.

The findings support the premise that employment that raises families out of poverty is associated with several positive behaviors and activities that lead to higher student achievement. Specifically, the evaluation found that families in the treatment group were more likely to be employed and to receive higher income. Youth in the treatment group exhibited more positive social behavior and a more optimistic attitude. They engaged more fully in school activities and structured after-school programs, and possessed a more positive outlook toward work and a career.

 According to the evaluators, one of the more striking findings from the evaluation was the positive effects on student achievement within a few years after the project began. Compared with the control group, teachers and parents rated youth in the treatment group as possessing higher academic skills, and youth in the treatment group scored higher on standardized achievement tests.[[14]](#footnote-14)

The evidence points to the positive effects of parental employment on the academic outcomes of their children. Conversely, for youth whose parents have not found work or who have lost their jobs because of a weak labor market, research points to the increased likelihood that their academic success will decline. Therefore, as unemployment increases, one would expect their attainment of degrees and certification and their scores on numeracy and literacy tests to decline, as seen in the regression results for WIA Youth.

However, it should be recognized that family circumstances may not be the only factors that affect the performance of participants in WIA Youth programs. The employment status of youth may also play a role. Results reveal that upwards of 60 percent of participants in WIA Youth programs have had some employment the first two quarters before registering for the program, with more than 30 percent employed both quarters. Results also show that higher unemployment rates reduce the likelihood of employment by one to two percentage points.

Employment may have a detrimental effect on youth academic achievement and prospects of entering education, since time on the job takes away time for homework and other out-of-school activities as well as reduces the time for sleep, which are all important factors for academic achievement. However, a recent study shows that there is only a small tradeoff between work time and homework time. Estimates based on the American Time Use Surveys show that working 60 additional minutes reduces the amount of time spent on homework by only 5 minutes. An additional hour of work cuts into only 10 minutes of sleep. The largest tradeoff is watching television, which is reduced by 24 minutes for every 60 additional minutes on the job.[[15]](#footnote-15) Therefore, even though higher unemployment rates could lead indirectly to more time for homework, since the likelihood of working is reduced, the positive effects on student achievement would probably be quite small and outweighed by negative effects of parents losing their jobs.

Therefore, the literature appears to support the negative relationships found in this study between unemployment rates and the three performance measures for WIA Youth.

Table 10: Means and Standard Deviations of the Variables used in the Estimation of the

 WIA Youth Program

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Placement in Employment or Education** | **Attainment of a Degree or Certificate** | **Literacy and Numeracy Gains** |
|  | **mean** | **sd** | **mean** | **sd** | **mean** | **sd** |
|  |  |  |  |  |  |  |
| **Independent Variable** | 0.773877 | 0.418332 | 0.450648 | 0.497582 | 0.244755 | 0.429985 |
|  |  |  |  |  |  |  |
| **female** | 0.589126 | 0.492007 | 0.623171 | 0.484614 | 0.588212 | 0.492206 |
| **black\_female** | 0.247766 | 0.431728 | 0.269084 | 0.443504 | 0.242757 | 0.428792 |
| **age20** | 0.309388 | 0.462255 | 0.299282 | 0.457965 | 0.31968 | 0.466399 |
| **age21** | 0.224092 | 0.416995 | 0.216423 | 0.411825 | 0.239161 | 0.426614 |
| **hispanic** | 0.305501 | 0.460633 | 0.309069 | 0.462131 | 0.372428 | 0.4835 |
| **asian** | 0.025415 | 0.157386 | 0.022929 | 0.149683 | 0.020779 | 0.142659 |
| **black** | 0.404781 | 0.490864 | 0.405723 | 0.491054 | 0.4004 | 0.490028 |
| **hi\_pacific** | 0.003365 | 0.057916 | 0.003169 | 0.056207 | 0.003796 | 0.061502 |
| **indian** | 0.007195 | 0.084521 | 0.006711 | 0.081648 | 0.007992 | 0.089049 |
| **multi** | 0.014796 | 0.12074 | 0.015752 | 0.124519 | 0.012587 | 0.111496 |
| **lths** | 0.45358 | 0.497855 | 0.555411 | 0.496943 | 0.4 | 0.489947 |
| **ba** | 0.001451 | 0.038061 | 0.004008 | 0.063183 | 0.001798 | 0.042371 |
| **beyondba** | 0.000522 | 0.022847 | 0.001585 | 0.039776 | 0.0004 | 0.019988 |
| **somecoll** | 0.033364 | 0.179591 | 0.064219 | 0.245153 | 0.028771 | 0.16718 |
| **ged** | 0.039167 | 0.193997 | 0.038028 | 0.191272 | 0.034166 | 0.181673 |
| **cert** | 0.001277 | 0.035707 | 0.001212 | 0.03479 | 0.002597 | 0.050904 |
| **otherpostdegcert** | 0.002031 | 0.045021 | 0.009321 | 0.096096 | 0.001399 | 0.037376 |
| **assoc** | 0.00058 | 0.024082 | 0.001864 | 0.043137 | 0.0002 | 0.014135 |
| **disabled** | 0.087327 | 0.282322 | 0.089477 | 0.285445 | 0.06993 | 0.255055 |
| **veteran** | 0.002495 | 0.04989 | 0.002703 | 0.051922 | 0.001598 | 0.039952 |
| **empreg11** | 0.314959 | 0.464513 | 0.341225 | 0.474143 | 0.388012 | 0.487346 |
| **empreg10** | 0.106185 | 0.308084 | 0.098145 | 0.297525 | 0.11009 | 0.313033 |
| **empreg01** | 0.101369 | 0.301826 | 0.093671 | 0.291385 | 0.095105 | 0.293389 |
| **wp** | 0.657596 | 0.474528 | 0.657191 | 0.474671 | 0.725674 | 0.446218 |
| **f1\_wib\_ur** | 5.590768 | 2.023818 | 5.144113 | 1.521858 | 6.070886 | 2.226985 |
| **f2\_wib\_ur** |  |  | 5.225524 | 1.672888 |  |  |
| **f3\_wib\_ur** |  |  | 5.32956 | 1.737144 |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
| **N** | 17234 |  | 10729 |  | 5005 |  |

Table 11: Estimates of the Effect of Unemployment Rates and other Factors on the

 WIA Youth Program Performance Measures

|  |  |  |  |
| --- | --- | --- | --- |
| **Youth** | **(1)** | **(2)** | **(3)** |
|  | **Placement in Employment or Education** | **Attainment of a Degree or Certificate** | **Literacy and Numeracy Gains** |
|  |  |  |  |
| **female** | -0.0282\*\*\* | 0.00162 | 0.0338 |
|  | (-3.33) | (0.12) | (1.80) |
| **black\_female** | 0.0641\*\*\* | -0.00483 | -0.0217 |
|  | (4.54) | (-0.23) | (-0.87) |
| **age20** | -0.00987 | -0.0144 | -0.0120 |
|  | (-1.30) | (-1.32) | (-0.84) |
| **age21** | -0.00427 | 0.0112 | -0.000103 |
|  | (-0.54) | (0.87) | (-0.01) |
| **hispanic** | 0.0201 | -0.0371\* | 0.0437 |
|  | (1.64) | (-2.27) | (1.17) |
| **asian** | 0.0477 | -0.0453 | 0.123 |
|  | (1.93) | (-1.28) | (1.91) |
| **black** | -0.0510\*\*\* | -0.0788\*\*\* | -0.0281 |
|  | (-3.70) | (-3.93) | (-1.04) |
| **hi\_pacific** | -0.0618 | -0.0516 | -0.0338 |
|  | (-0.99) | (-0.80) | (-0.37) |
| **indian** | -0.0130 | 0.0111 | -0.0412 |
|  | (-0.36) | (0.15) | (-0.50) |
| **multi** | 0.00305 | -0.0261 | -0.0578 |
|  | (0.11) | (-0.68) | (-1.16) |
| **lths** | -0.0846\*\*\* | 0.120\*\*\* | 0.00813 |
|  | (-11.49) | (6.29) | (0.57) |
| **ba** | 0.0381 | -0.0545 | -0.186\*\*\* |
|  | (0.69) | (-0.72) | (-4.12) |
| **beyondba** | 0.00601 | -0.190\*\* | 0.321 |
|  | (0.06) | (-2.80) | (1.21) |
| **somecoll** | 0.0648\*\*\* | 0.0128 | -0.0436 |
|  | (4.40) | (0.61) | (-1.16) |
| **ged** | -0.0455\*\* | -0.121\*\*\* | 0.0279 |
|  | (-2.85) | (-4.17) | (0.75) |
| **cert** | -0.132 | -0.139 | 0.255 |
|  | (-1.41) | (-0.90) | (1.57) |
| **otherpostdegcert** | 0.175\*\*\* | 0.402\*\*\* | -0.0518 |
|  | (3.98) | (7.65) | (-0.37) |
| **assoc** | 0.111 | 0.111 | -0.202\*\*\* |
|  | (1.12) | (1.42) | (-3.66) |
| **disabled** | -0.0409\*\* | 0.0271 | -0.0729\* |
|  | (-2.63) | (1.20) | (-2.49) |
| **veteran** | 0.0334 | 0.142 | -0.112 |
|  | (0.58) | (1.75) | (-0.84) |
| **empreg11** | 0.132\*\*\* | 0.0360\*\* | 0.0330 |
|  | (15.59) | (3.13) | (1.92) |
| **empreg10** | 0.0660\*\*\* | 0.000644 | 0.00982 |
|  | (6.41) | (0.04) | (0.48) |
| **empreg01** | 0.0742\*\*\* | 0.0149 | 0.0128 |
|  | (6.85) | (0.93) | (0.60) |
| **wp** | 0.0558\*\*\* | 0.0232 | 0.0141 |
|  | (3.85) | (1.32) | (0.48) |
| **f1\_wib\_ur** | -0.0141\*\*\* | -0.00303 | -0.0241\*\* |
|  | (-4.27) | (-0.21) | (-3.29) |
| **f2\_wib\_ur** |  | -0.0247 |  |
|  |  | (-1.54) |  |
| **f3\_wib\_ur** |  | 0.00820 |  |
|  |  | (0.67) |  |
| **\_cons** | 0.880\*\*\* | 0.276\*\*\* | 0.397\*\*\* |
|  | (31.51) | (5.32) | (5.02) |
|  |  |  |  |
| **N** | 17234 | 10729 | 5005 |
| **adj. R-sq** | 0.064 | 0.125 | 0.048 |
|  |  |  |  |
| **Combined UR** | -0.0141\*\*\* | -0.0241\*\* | -0.0241\*\* |
| **Effect** | (-4.27) | (-3.61) | (-3.29) |

Source: Authors’ analysis of WIASRD data and BLS unemployment rates.

Note: Asterisks indicate statistical significance in which p<0.05 (\*), p<0.01 (\*\*), and p<0.001 (\*\*\*). Year-quarter time dummy variables, quarter time dummy variables, and WIB dummy variables are also included in the estimation, but the coefficient estimates are not shown to conserve space.

**B. TAA**

The Trade Adjustment Assistance program provides training and other assistance to dislocated workers whose companies have been impacted adversely by foreign competition. While the participants of TAA and WIA Dislocated Worker programs share the fact that they both have been displaced from employment, they differ in other characteristics, as shown in Table 12. For example, TAA participants appear to have lower educational attainment than WIA Dislocated Worker participants, as evidenced by double the percentage of high school dropouts and half the percentage of those with BA degrees. In addition, TAA participants are older and less diverse.

 The effects of unemployment rates on the three performance measures are similar to what was found for the WIA Dislocated Worker program, with one exception related to retention. As shown in Table 13, entered employment is negatively and statistically significantly affected by unemployment rates, with a one percentage point increase in unemployment rates reducing entered employment by 0.0142 points. Earnings are also negatively affected, with a one percentage point increase in unemployment rates reducing earnings by $377 or 2.8 percent from the mean.

 Retention, on the other hand, shows no statistically significant relationship to unemployment rates. It is not clear why the coefficient is not statistically different from zero, as it is for WIA Dislocated Worker participants. Both programs provide training for workers to find jobs in industries other than ones from which they were displaced if jobs are not available in those industries. It could be that the training is more intense for TAA participants, since income support is available for TAA participants and not WIA Dislocated Worker participants, and thus they are more qualified for the jobs they find. However, there is no evidence to support this possibility. Therefore, in the performance adjustment calculations, we use the retention estimates from the WIA Dislocated Worker program instead of the estimates obtained directly from the analysis of TAA participants.

Table 12: Means and Standard Deviations of the Variables used in the Estimation of

 the TAA program

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Entered** |  |  |  |  |
| **TAA** | **Employment** | **Retention** | **Earnings** |
|  | **mean** | **sd** | **mean** | **sd** | **mean** | **sd** |
|  |  |  |  |  |  |  |
| **Dependent Variable** | 0.636281 | 0.481073 | 0.626661 | 0.483694 | 13641.18 | 9696.994 |
|  |  |  |  |  |  |  |
| **female** | 0.463642 | 0.49868 | 0.464196 | 0.49872 | 0.465356 | 0.498804 |
| **black\_female** | 0.061978 | 0.241116 | 0.062274 | 0.241654 | 0.064751 | 0.246088 |
| **age26\_35** | 0.165421 | 0.371563 | 0.16623 | 0.372289 | 0.190512 | 0.392709 |
| **age36\_45** | 0.276499 | 0.44727 | 0.276796 | 0.447417 | 0.307555 | 0.461486 |
| **age46\_55** | 0.332119 | 0.470977 | 0.332263 | 0.471028 | 0.34264 | 0.474597 |
| **age56\_65** | 0.178029 | 0.38254 | 0.176828 | 0.381526 | 0.116034 | 0.320269 |
| **agegt65** | 0.012258 | 0.110038 | 0.012073 | 0.109212 | 0.003425 | 0.05842 |
| **hispanic** | 0.10085 | 0.301131 | 0.099322 | 0.299096 | 0.102693 | 0.303561 |
| **indian** | 0.004651 | 0.068038 | 0.004674 | 0.068206 | 0.00437 | 0.065962 |
| **asian** | 0.022447 | 0.148133 | 0.022211 | 0.147369 | 0.020589 | 0.142006 |
| **black** | 0.110379 | 0.313364 | 0.110684 | 0.313742 | 0.110446 | 0.313448 |
| **hi\_pacific** | 0.001707 | 0.041281 | 0.001685 | 0.041017 | 0.001702 | 0.041218 |
| **white** | 0.754469 | 0.430404 | 0.755987 | 0.429503 | 0.754801 | 0.43021 |
| **multi** | 0.005498 | 0.073941 | 0.005437 | 0.073539 | 0.005399 | 0.073283 |
| **lths** | 0.211807 | 0.408591 | 0.209216 | 0.406752 | 0.179062 | 0.383408 |
| **ba** | 0.046507 | 0.210581 | 0.046185 | 0.209888 | 0.046641 | 0.21087 |
| **beyondba** | 0.011613 | 0.107138 | 0.011481 | 0.106531 | 0.011345 | 0.105908 |
| **somecoll** | 0.144372 | 0.351469 | 0.144638 | 0.351738 | 0.156015 | 0.362873 |
| **ged** | 0.048012 | 0.213793 | 0.048779 | 0.215407 | 0.051347 | 0.220706 |
| **cert** | 0.000968 | 0.031094 | 0.000948 | 0.030774 | 0.00103 | 0.032069 |
| **otherpostdegcert** | 0.006895 | 0.082752 | 0.006846 | 0.082458 | 0.007038 | 0.083599 |
| **assoc** | 0.011707 | 0.107566 | 0.011467 | 0.106471 | 0.012837 | 0.112571 |
| **disabled** | 0.032367 | 0.176973 | 0.033454 | 0.17982 | 0.028342 | 0.165948 |
| **veteran** | 0.07597 | 0.264952 | 0.077204 | 0.266916 | 0.075675 | 0.264481 |
| **empreg11** | 0.836864 | 0.369492 | 0.83144 | 0.374366 | 0.85262 | 0.354488 |
| **empreg10** | 0.022178 | 0.147263 | 0.025147 | 0.156571 | 0.024644 | 0.155039 |
| **empreg01** | 0.066319 | 0.248841 | 0.066553 | 0.249247 | 0.058931 | 0.235498 |
| **f1\_cnty\_ur** | 5.63034 | 1.757357 |  |  | 5.533694 | 1.644392 |
| **f2\_cnty\_ur** |  |  |  |  | 5.461679 | 1.60002 |
| **f3\_cnty\_ur** |  |  |  |  | 5.486224 | 1.597555 |
| **diff12\_ur** |  |  | -0.08288 | 0.767769 |  |  |
| **diff23\_ur** |  |  | 0.021319 | 0.836418 |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
| **N** | 74398 |  | 75955 |  | 47598 |  |

Table 13: Estimates of the Effect of Unemployment Rates and other Factors

 on the TAA Program Performance Measures

|  |  |  |  |
| --- | --- | --- | --- |
| **TAA** | **(1)** | **(2)** | **(3)** |
|  | **Entered Employment** | **Retention** | **Earnings** |
|  |  |  |  |
| **female** | 0.000714 | 0.00417 | -4296.2\*\*\* |
|  | (0.16) | (0.94) | (-38.36) |
| **black\_female** | 0.0405\*\*\* | 0.0654\*\*\* | 987.8\*\*\* |
|  | (3.50) | (5.50) | (3.81) |
| **age26\_35** | 0.0119 | 0.0150 | 1701.6\*\*\* |
|  | (1.11) | (1.37) | (10.42) |
| **age36\_45** | -0.0132 | -0.00743 | 2336.4\*\*\* |
|  | (-1.22) | (-0.69) | (11.96) |
| **age46\_55** | -0.0580\*\*\* | -0.0549\*\*\* | 1941.8\*\*\* |
|  | (-4.96) | (-5.04) | (10.16) |
| **age56\_65** | -0.259\*\*\* | -0.275\*\*\* | 40.31 |
|  | (-20.19) | (-22.72) | (0.16) |
| **agegt65** | -0.441\*\*\* | -0.471\*\*\* | -3053.0\*\*\* |
|  | (-21.85) | (-26.26) | (-5.37) |
| **hispanic** | -0.00707 | -0.000367 | 23.68 |
|  | (-0.19) | (-0.01) | (0.04) |
| **indian** | -0.0636 | -0.0486 | 0 |
|  | (-1.43) | (-0.97) | . |
| **asian** | -0.0583 | -0.0634 | 1620.4\*\* |
|  | (-1.60) | (-1.42) | (2.94) |
| **black** | -0.0132 | -0.0292 | 600.4 |
|  | (-0.36) | (-0.65) | (1.06) |
| **hi\_pacific** | 0 | 0 | 555.2 |
|  | . | . | (0.55) |
| **white** | -0.000460 | 0.0131 | 1850.1\*\*\* |
|  | (-0.01) | (0.30) | (3.87) |
| **multi** | -0.0252 | -0.0188 | 808.2 |
|  | (-0.58) | (-0.38) | (1.03) |
| **lths** | -0.0450\*\*\* | -0.0589\*\*\* | -831.9\*\*\* |
|  | (-7.77) | (-9.78) | (-5.58) |
| **ba** | -0.0169\* | -0.0109 | 6191.1\*\*\* |
|  | (-2.01) | (-1.16) | (19.07) |
| **beyondba** | -0.0249 | 0.0000467 | 10106.0\*\*\* |
|  | (-1.55) | (0.00) | (9.03) |
| **somecoll** | 0.00326 | 0.0156\*\* | 1777.8\*\*\* |
|  | (0.63) | (3.08) | (8.79) |
| **ged** | 0.0133 | -0.00157 | -446.6\*\* |
|  | (1.56) | (-0.19) | (-2.73) |
| **cert** | -0.0131 | 0.0346 | -277.7 |
|  | (-0.26) | (0.69) | (-0.35) |
| **otherpostdegcert** | -0.0367 | -0.0243 | 3491.8\*\*\* |
|  | (-1.73) | (-1.10) | (5.10) |
| **assoc** | -0.000124 | 0.0353 | 2921.1\*\*\* |
|  | (-0.01) | (1.89) | (7.90) |
| **disabled** | -0.108\*\*\* | -0.122\*\*\* | -766.0\*\* |
|  | (-10.23) | (-9.30) | (-2.59) |
| **veteran** | 0.00409 | 0.0173\* | 469.4 |
|  | (0.63) | (2.42) | (1.52) |
| **empreg11** | 0.104\*\*\* | 0.141\*\*\* | 978.7\*\*\* |
|  | (9.99) | (14.34) | (4.84) |
| **empreg10** | 0.0633\*\*\* | 0.0814\*\*\* | -143.0 |
|  | (3.53) | (4.72) | (-0.47) |
| **empreg01** | 0.0559\*\*\* | 0.0685\*\*\* | -54.30 |
|  | (4.92) | (6.19) | (-0.25) |
| **f1\_cnty\_ur** | -0.0142\*\*\* |  | -69.81 |
|  | (-4.07) |  | (-0.64) |
| **f2\_cnty\_ur** |  |  | -4.401 |
|  |  |  | (-0.03) |
| **f3\_cnty\_ur** |  |  | -302.9\*\* |
|  |  |  | (-3.13) |
| **diff12\_ur** |  | 0.00139 |  |
|  |  | (0.19) |  |
| **diff23\_ur** |  | 0.00738 |  |
|  |  | (0.96) |  |
|  |  |  |  |
| **\_cons** | 0.756\*\*\* | 0.507\*\*\* | 22704.6\*\*\* |
|  | (9.70) | (5.57) | (8.62) |
|  |  |  |  |
| **N** | 74398 | 75955 | 47598 |
| **adj. R-sq** | 0.118 | 0.088 | 0.134 |
|  |  |  |  |
| **Combined UR** | -0.0142\*\*\* | 0.009 | -377.11\*\*\* |
| **Effect** | (-4.07) | (0.67) | (-7.48) |

Source: Authors’ analysis of TAA administrative files and BLS unemployment rates.

Note: Asterisks indicate statistical significance in which p<0.05 (\*), p<0.01 (\*\*), and p<0.001 (\*\*\*). Year-quarter time dummy variables, quarter time dummy variables, and WIB dummy variables are also included in the estimation, but the coefficient estimates are not shown to conserve space.

**C. Wagner-Peyser Employment Service**

Unlike the WIA and TAA programs, the Wagner-Peyser Employment Service does not benefit from a national administrative data set that includes the outcomes and personal characteristics of individual participants. Each state maintains its own information system, and it is not reported to the Federal government or compiled in any way. Therefore, in order to estimate the effect of unemployment rates on performance targets for the ES system, we relied on access to the administrative records of two states. The three performance measures—entered employment, retention, and earnings—were computed using the UI wage records for each individual. The wage records were then linked to information regarding personal characteristics obtained through the ES application process. Estimates of the effect of unemployment rates on the performance measures were obtained using the same linear probability method employed for the WIA and TAA programs. However, since the administrative records of two different states were used, we estimated each state separately and combined the estimates by weighting each state’s estimates by the number of participants.

 As shown in Table 14, there are many similarities in estimates between the two states, as well as a few differences. As with the other programs, age, gender, and education are important factors in obtaining and retaining a job. These factors also matter in the level of earnings received. Prior employment is also the factor with the largest impact on entered employment and retention. However, some differences are evident. For instance, high school dropouts have more difficulty finding a job in State B than in State A, with the coefficient in State A not statistically significantly different from zero.

 Unemployment rates follow patterns of influence that are similar to those found for the other programs. For instance, in State A a one percentage point increase in unemployment rates reduces entered employment by 0.0194 percentage points, while in State B the reduction is only 0.005 percentage points. The magnitude of the effects of unemployment are opposite between the two states for retention. For State A the effect is -0.0026 percentage points (or -0.005 percent, i.e, -0.0026/0.522), and for State B the effect is -0.019 percentage points (or -0.024 i.e., -0.019/0.82). The cumulative effect of unemployment rates on earnings is -$643 for State A and -$921 for State B. Because of the differences between the two states, we computed the participant-weighted average of the estimates, which yielded the results shown in Table 15.

Table 14: Estimates of the Effect of Unemployment Rates and other Factors on

 Wagner-Peyser ES Program Performance Measures

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |
|  | State A | State B |
|  | (1) | (2) | (3) | (4) | (5) | (6) |
|  | Entered | Retention | Earnings | Entered | Retention | Earnings |
|  | Employment |  |  | Employment |  |  |
| female | -0.0230\*\*\* | -0.0146\*\*\* | -1922.0\*\*\* | -0.00576\* | -0.00537\* | -4115.3\*\*\* |
|  | (-8.09) | (-4.93) | (-61.38) | (-2.04) | (-2.19) | (-71.85) |
| black\_female | 0.00468 | 0.0513\*\*\* | 1240.1\*\*\* | 0.000846 | 0.0297\*\*\* | 2444.2\*\*\* |
|  | (0.86) | (8.43) | (22.70) | (0.20) | (8.23) | (28.77) |
| age26\_35 | -0.0243\*\*\* | -0.00710\* | 1301.2\*\*\* | -0.0217\*\*\* | 0.0286\*\*\* | 2756.6\*\*\* |
|  | (-6.90) | (-2.25) | (51.96) | (-7.30) | (11.27) | (45.70) |
| age36\_45 | -0.0427\*\*\* | -0.0132\*\*\* | 1772.1\*\*\* | -0.0361\*\*\* | 0.0476\*\*\* | 4131.4\*\*\* |
|  | (-11.48) | (-4.01) | (61.25) | (-11.88) | (18.36) | (67.37) |
| age46\_55 | -0.0600\*\*\* | -0.0327\*\*\* | 1896.8\*\*\* | -0.0649\*\*\* | 0.0508\*\*\* | 4136.6\*\*\* |
|  | (-13.61) | (-8.25) | (47.21) | (-19.60) | (17.53) | (60.65) |
| age56\_65 | -0.123\*\*\* | -0.123\*\*\* | 1307.8\*\*\* | -0.143\*\*\* | 0.0343\*\*\* | 3321.8\*\*\* |
|  | (-22.33) | (-24.17) | (25.00) | (-31.78) | (8.01) | (33.02) |
| agegt65 | -0.205\*\*\* | -0.229\*\*\* | -393.9\*\* | -0.245\*\*\* | -0.00393 | -899.0\*\*\* |
|  | (-23.28) | (-24.28) | (-3.13) | (-25.10) | (-0.36) | (-3.38) |
| hispanic | 0.0254\*\*\* | 0.0284\*\*\* | 390.2\*\*\* | -0.0186\*\*\* | 0.00919\* | 763.5\*\*\* |
|  | (3.93) | (4.60) | (5.49) | (-3.93) | (2.06) | (7.19) |
| black | -0.000340 | -0.0441\*\*\* | -1519.0\*\*\* | 0.0173\*\*\* | -0.0341\*\*\* | -3321.1\*\*\* |
|  | (-0.08) | (-7.24) | (-28.67) | (5.89) | (-13.44) | (-55.38) |
| multi |  |  |  | 0.0128 | -0.0349\*\*\* | -1763.0\*\*\* |
|  |  |  |  | (1.16) | (-3.68) | (-7.80) |
| othrace | 0.0109 | -0.00957 | -346.5\*\*\* |  |  |  |
|  | (1.51) | (-1.16) | (-5.76) |  |  |  |
| hsdrop | -0.00478 | -0.0813\*\*\* | -817.8\*\*\* | -0.0606\*\*\* | -0.0681\*\*\* | -2647.8\*\*\* |
|  | (-1.16) | (-26.48) | (-27.74) | (-21.31) | (-25.53) | (-40.81) |
| somecoll | -0.0124\*\*\* | 0.0189\*\*\* | 599.8\*\*\* | 0.00584 | 0.00580 | -431.5\*\* |
|  | (-4.79) | (7.27) | (24.14) | (0.76) | (0.93) | (-2.94) |
| assoc deg |  |  |  | -0.0457\*\*\* | 0.00189 | 10605.4\*\*\* |
|  |  |  |  | (-6.66) | (0.28) | (68.67) |
| baplus | -0.0234\*\*\* | 0.0208\*\*\* | 1652.2\*\*\* |  |  |  |
|  | (-5.39) | (4.89) | (33.30) |  |  |  |
| disabled | -0.0682\*\*\* | -0.105\*\*\* | -1094.3\*\*\* | -0.101\*\*\* | -0.0452\*\*\* | -968.3\*\*\* |
|  | (-13.88) | (-21.12) | (-18.58) | (-18.04) | (-8.00) | (-7.13) |
| veteran | 0.00253 | 0.00600 | 336.3\*\*\* | -0.0118\*\*\* | 0.00586\* | 1548.6\*\*\* |
|  | (0.74) | (1.77) | (8.08) | (-3.69) | (2.04) | (23.01) |
| empreg11 | 0.133\*\*\* | 0.270\*\*\* | 1287.5\*\*\* | 0.214\*\*\* | 0.116\*\*\* | 1166.1\*\*\* |
|  | (28.06) | (63.86) | (44.45) | (87.69) | (48.59) | (20.06) |
| empreg10 | 0.126\*\*\* | 0.149\*\*\* | 245.3\*\*\* | 0.164\*\*\* | 0.0392\*\*\* | -332.4\*\*\* |
|  | (21.52) | (27.93) | (6.18) | (39.53) | (10.11) | (-3.52) |
| empreg01 | 0.0932\*\*\* | 0.0879\*\*\* | 130.3\*\* | 0.0873\*\*\* | 0.00957\* | -192.6 |
|  | (17.26) | (16.61) | (3.13) | (20.07) | (2.24) | (-1.82) |
| f1\_cnty\_ur | -0.0194\*\* |  | -140.6\* | -0.00517\*\*\* |  | -218.8\* |
|  | (-2.77) |  | (-2.20) | (-6.25) |  | (-2.31) |
| f2\_cnty\_ur |  |  | -222.0\*\*\* |  |  | -54.10 |
|  |  |  | (-3.93) |  |  | (-0.47) |
| f3\_cnty\_ur |  |  | -280.4\*\*\* |  |  | -648.6\*\*\* |
|  |  |  | (-4.05) |  |  | (-6.05) |
| diff12 |  | -0.0105\* |  |  | -0.0180\*\*\* |  |
|  |  | (-2.10) |  |  | (-4.56) |  |
| diff23 |  | 0.00788 |  |  | -0.00132 |  |
|  |  | (1.44) |  |  | (-0.32) |  |
| \_cons | 0.569\*\*\* | 0.455\*\*\* | 6893.5\*\*\* | 0.575\*\*\* | 0.730\*\*\* | 13867.1\*\*\* |
|  | (14.95) | (16.70) | (13.12) | (114.85) | (194.54) | (115.17) |
|  |  |  |  |  |  |  |
| N | 252041 | 252041 | 131611 | 198301 | 180197 | 147807 |
| adj. R-sq | 0.030 | 0.076 | 0.208 | 0.057 | 0.026 | 0.174 |

Source: Authors’ analysis of administrative files and BLS unemployment rates of two states.

Note: Asterisks indicate statistical significance in which p<0.05 (\*), p<0.01 (\*\*), and p<0.001 (\*\*\*). Year-quarter time dummy variables, quarter time dummy variables, and county dummy variables are also included in the estimation for State A but not for State B, but the coefficient estimates are not shown to conserve space.

Table 15: Combined Estimated Effects of Unemployment Rates on ES Performance

 Outcomes

|  |  |  |  |
| --- | --- | --- | --- |
|  | Entered Employment | Retention | Earnings |
| Percentage point | -0.013 | -0.010 | -790 |
| Percent | -0.025 | -0.013 | -0.070 |

Note: the effects are computed by weighting the coefficients obtained from estimates from each state by the number of participants. The percent is obtained by dividing the percentage point change by the mean performance outcome.

D. Summary of the Estimates

 Table 16 summaries the estimates of the effects of unemployment rates on the performance outcomes of the various programs. Both the point change and the percentage change are included. The point change is the estimated effect of a one percentage point change in unemployment rates on the performance target level. For example, for entered employment in the WIA Adult program, a one percentage point change in the unemployment rate lowers the entered employment rate by 1.8 points. Note that the point changes related to rates, such as entered employment rate or retention rate, displayed in the previous tables have been multiplied by 100 to be consistent with the way in which USDOL typically lists performance outcomes and targets, as percentages—that is, listed as 76.0% instead of 0.76.

Table 16: Summary of Estimated Effects of Unemployment Rates on Performance

 Outcomes

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Performance Target** |  | WIA  | TAA | ES |
|  |  | Adult | Dislocated  | Older Youth | Youth |   |   |
| Entered Employment | point chg | -1.8 | -0.98 | -1.74 |  | -1.42 | -1.31 |
| % chg | -2.36% | -1.19% | -2.41% |   | -2.24% | -2.50% |
|  |  |  |  |  |  |  |  |
| Retention | point chg | -0.76 | -1.01 | -0.61 |  | 0\* | -0.96 |
| % chg | -0.91% | -1.14% | -0.75% |   | 0.00% | -1.30% |
|  |  |  |  |  |  |  |  |
| Earnings | point chg | -266 | -123 | -101 |  | -377 | -790 |
| % chg | -2.28% | -0.86% | -1.45% |   | -2.76% | -7.00% |
|  |  |  |  |  |  |  |  |
| Credentials/ Employment | point chg | -3.52 | -1.69 | -1.42 |  |  |  |
| % chg | -6.59% | -3.00% | -2.44% |  |  |  |
|  |  |  |  |  |  |  |  |
| Placement in Education or Employment | point chg |  |  |  | -1.42 |  |  |
| % chg |  |  |  | -1.83% |  |  |
|  |  |  |  |  |  |  |  |
| Attainment of a Degree or Certificate | point chg |  |  |  | -2.14 |  |  |
| % chg |  |  |  | -4.75% |  |  |
|  |  |  |  |  |  |  |  |
| Literacy and Numeracy Gains | point chg |  |  |  | -2.41 |  |  |
| % chg |  |  |  | -9.84% |  |  |
|  |  |  |  |  |  |  |  |

**VII. Performance Adjustment Procedure**

Using the estimates reported in the previous section, performance targets for each of these programs are adjusted by the estimated effects of the change in unemployment rate from year to year. Budget 2010 unemployment rate assumptions are used in the calculations. The calculations start in PY2007 (FY2007 for TAA) and extend through PY2014. The actual performance rate was used as the base in PY2007. The adjusted target for the following year was calculated by multiplying the previous year’s performance target by the change in unemployment rates times the appropriate estimate of the effect of the unemployment rate change on the performance measure. This adjustment factor is then added to previous target. Using WIA Adult entered employment rate as an example, the calculation for PY2008 is the following:

EER(PY2008) = EER(PY2007) + EER(PY2007)\*(-1.8/76.2)\*(URPY2008-URPY2007).

The estimated effects are converted into percentage changes (-1.8/76.2 in this case) so that their effect is proportional to the magnitude of the target, which varies by program. The procedure is repeated for each year.

As an example, this procedure yields the entered employment performance targets for the WIA Adult program, as shown in Table \_\_\_. The row labeled “Flatline” are the GPRA targets for this program. The row labeled “UR Adjustment” is the target adjusted for unemployment rates, using the percentage change estimate, as displayed in Table \_\_\_, and the unemployment rate assumptions from the 2010 budgets. The adjustments referred to in the TEGL are computed in a similar fashion.

Table 17: Example of Adjustment Procedure for WIA Adult Entered

 Employment

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| WIA Adult Entered Employment |  |  |  |  |  |  |
|  | **PY2007** | **PY2008** | **PY2009** | **PY2010** | **PY2011** | **PY2012** | **PY2013** | **PY2014** |
|  | 4.9 | 7.2 | 8.1 | 7.6 | 6.6 | 5.5 | 5.0 | 5.0 |
| Flatline |  | 70 | 70 | 70 | 71 | 72 | 73 |  |
| UR adjustment | 70.0 | 66.2 | 64.8 | 65.6 | 67.1 | 68.8 | 69.7 | 69.7 |

1. [↑](#footnote-ref-1)
2. . [↑](#footnote-ref-2)
3. . [↑](#footnote-ref-3)
4. . [↑](#footnote-ref-4)
5. [↑](#footnote-ref-5)
6. Unlike the WIA and TAA programs, we are not able to include federal employment records and UI wage records from other states. Therefore, we may be missing a small group of individuals who live in the states but work outside the state and those on certain federal payrolls. The purpose of using the data is to estimate the response of individuals who participated in the ES program to unemployment rates, and not to obtain a full accounting of all those who participated. Having a representative sample for the two states, which we believe we have, ensures that the estimates are representative. [↑](#footnote-ref-6)
7. See WIASRD Data File Public Use, Including Data Quality Revision, Record Layout, Selected years, prepared by Social Policy Research Associates for the Office of Performance and Technology, Employment and Training Administration, U.S. Department of Labor. [↑](#footnote-ref-7)
8. More precise coding instructions are found in WIASRD Data File Public Use, Including Data Quality Revision, Record Layout, Selected years, prepared by Social Policy Research Associates for the Office of Performance and Technology, Employment and Training Administration, U.S. Department of Labor. [↑](#footnote-ref-8)
9. [↑](#footnote-ref-9)
10. [↑](#footnote-ref-10)
11. [↑](#footnote-ref-11)
12. The first performance measure is similar to the employment and credential performance measure adopted for the other three programs, except that for the adult program and older youth the participants must obtain both employment and credential not one or the other. [↑](#footnote-ref-12)
13. Magnuson, Katherine, Greg Duncan, and Ariel Kalil, “The Contribution of Middle Childhood Contexts to Adolescent Achievement and Behavior,” Working Paper, Northwestern University, June 2, 2003. [↑](#footnote-ref-13)
14. Miller, Cynthia, et al. *New Hope for the Working Poor: Effects after Eight Years for Families and Children*, MDRC, July 2008. [↑](#footnote-ref-14)
15. Kalenkoski, Charlene, and Sabrina Pabilonia, “Time to Work or Time to Play: the Effect of Student Employment on Homework, Screen Time and Sleep, Working Paper, Ohio University and Bureau of Labor Statistics, March 2009. [↑](#footnote-ref-15)