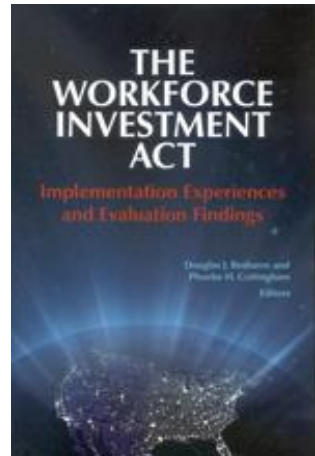

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Phoebe H. Cottingham
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9

Recent Advances in Performance Measurement of Federal Workforce Development Programs

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The purpose of performance measurement is to enable federal, state, and local workforce agencies to track the progress of program participants in achieving the core goals of programs under WIA: finding a job, retaining a job, and receiving adequate earnings. Performance measures are also used to hold management accountable for the effectiveness of the services delivered to help participants achieve those goals. The ETA has established three measures to capture these three goals for adult and youth programs: 1) entered employment, 2) job retention, and 3) earnings levels. Each state negotiates with the USDOL to set state targets, and the states in turn negotiate with each of the roughly 600 local Workforce Investment Boards (WIBs) to determine local performance targets.

As this practice of setting standards evolved over the past decade, states and WIBs increasingly found that negotiations were not taking into account factors that affected their performance but were beyond their control and not related to the services they provided. These factors include the conditions of the local labor market and the personal characteristics and work history of participants in their programs. Without accounting for differences in these factors across states and across WIBs, those entities with more favorable labor market conditions or more capable participants are likely to have higher outcomes, and those for which these factors are unfavorable can expect lower outcomes. Differences in these outcomes are not the result of how well service providers have met the needs of their customers, but of factors outside

their control and extraneous to the effectiveness of their service delivery. Therefore, the measures are not fulfilling their intent of measuring the value added of the workforce system, and may even distort decisions by administrators of whom to enroll in workforce programs.

In response to these concerns about the measurement and setting of performance goals, the ETA has contracted with the W.E. Upjohn Institute for Employment Research to adjust national performance targets for differences (actual and forecasted) in unemployment rates. To make adjustments, the Institute estimated the relationship between individual participants' performance outcomes and local unemployment rates. These adjustments are incorporated in President Obama's annual budget request and the national performance targets.¹

In addition, the ETA, through the help of the Upjohn Institute, is exploring procedures to adjust state and local WIA performance targets for factors that affect performance outcomes but are outside the control of state and local administrators. This procedure provides a systematic, transparent, and objective method to set WIA performance targets; it helps to level the playing field by making the targets neutral with respect to the observed characteristics of WIA participants and of the local labor market conditions in which they seek employment. It also provides a more accurate measure of the value added of WIA programs at both state and local levels by controlling for observed factors that affect outcomes but are unrelated to the services provided by the workforce development system.

The purpose of this chapter is to describe the two procedures of adjusting performance targets for economic conditions and personal characteristics. The first procedure adjusts the national performance targets for changes in unemployment rate, and the second adjusts state and local performance targets for differences in local market conditions and personal characteristics. The contribution of both sets of factors is estimated using one general model that relates performance outcomes (the common measures) to unemployment rates and personal attributes. The chapter is divided into two major parts. The first part describes the general methodology and then provides estimates of these effects for each of the common measures for each of the three WIA programs. The second part demonstrates how these estimates can be used to adjust performance outcomes at the national and state levels for differences in these factors.

ACCOUNTING FOR DIFFERENCES IN LABOR MARKET CONDITIONS AND PERSONAL ATTRIBUTES

Adjusting for differences in labor market conditions and personal characteristics is not new for the workforce system programs. WIA's immediate predecessor, JTPA, used statistical analysis to adjust performance targets for a list of factors which were deemed outside the control of administrators. The adjustment procedure that the ETA has adopted to adjust national performance measures and that the ETA is considering to adjust state and local performance targets is similar in many respects to what was followed under JTPA.² For each program and performance measure, a state's targets are set according to the extent to which the values of participant characteristics and of local labor market measures at the state level differ from those at the national level. The difference for each factor is weighted by each factor's contribution to the respective performance outcome. The summation of the weighted differences constitutes the adjustment factor. Adding the adjustment factor to the national target yields the adjusted performance target for each state. Consequently, under this procedure, a state serving a hard-to-serve population would be given a lower performance standard than a state serving a less hard-to-serve population, all else the same. Although the targets for these two states are set at different levels, it presumably takes the same level of effort on the part of each state to meet their respective standards. Thus, local administrators are not penalized for serving a harder-to-employ group of participants. The major differences between this procedure and that used under JTPA are the way in which the weights are estimated and the consistent framework that allows the local workforce investment areas (LWIAs) and state targets to add up to the national target. JTPA adjustments were based on data aggregated at the local workforce board level; the current procedure is based initially on the outcomes of individual participants of the workforce programs, as they search for employment within their local labor markets.

METHODOLOGY AND RESULTS

The study derives direct estimates of the effects of unemployment rates on performance measures for various programs using detailed data of WIA participants.³ As a result, the estimates capture actual relationships between changes in unemployment rates and performance. 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 become more aggregated, such as at the state or national level, the alignment weakens, since the economic conditions of local labor markets vary widely from the state and national averages. The conditions faced by individuals 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 individuals in Illinois versus those in 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 moves the analysis closer to that ideal situation. The data used to estimate these relationships are obtained from the WIA Standardized Record Data (WIASRD). Data are obtained quarterly from the years 2000–2008. The exact length of time depends upon the program and performance measure.

Estimation methodology

Separate estimates are obtained for the following programs within WIA: Adult, Dislocated Worker, and Youth. 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 point to a reduction of 1.8 percentage points for an increase of a 1.0-percentage-point change in unemployment rates. This can be interpreted in the following way: an estimate of -1.8 means that a 1.0-percentage-point change in the unemployment rate, say, from 6 percent to 7 percent, is expected to reduce the entered employment rate by 1.8 percentage points. If the entered employment rate was 70 percent 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 70.0 percent to 68.2 percent.⁴

Estimates of the relationship between program outcomes and business cycles were conducted at the local labor market level, as defined by the Workforce Investment Board (WIB) service area. A separate model is estimated for each performance measure in each program. The estimation equation is written generally as

$$(9.1) \quad Y_{isq} = B_0 + B_1 * X_{isq} + B_2 * D_{sq} + \text{error term},$$

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

Of specific interest is the estimated coefficient B_2 , 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 quarters 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.⁵ For the “credentials and employment” performance measure, 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 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.⁶

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 *X*s, 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 ease of computation, the models are estimated using linear probability models, even when the dependent variable is a 0-1 variable.⁷ Logit and probit estimation techniques are generally recommended for estimating equations with 0-1 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 nonlinear 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.⁸ A fixed-effects model is estimated by including 0-1 variables for each of the WIBs. The fixed-effects model controls for idiosyncratic differences between each of the units (e.g., WIBs or states). By including these 0-1 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.⁹

Although the database includes tens of thousands of participants (generating variation in the dependent variable), the unemployment rate varies only at the WIB 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 intragroup correlation. With the possible presence of intragroup 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 employ.¹⁰ However, we do not take into consideration the possibility of spatial correlation between the geographical units, which could arise from interregional linkages of industries (supply chains) and household commuting patterns.

Data sources and variable definitions

For the WIA programs, participant outcomes and attributes are derived from the WIASRD. 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.

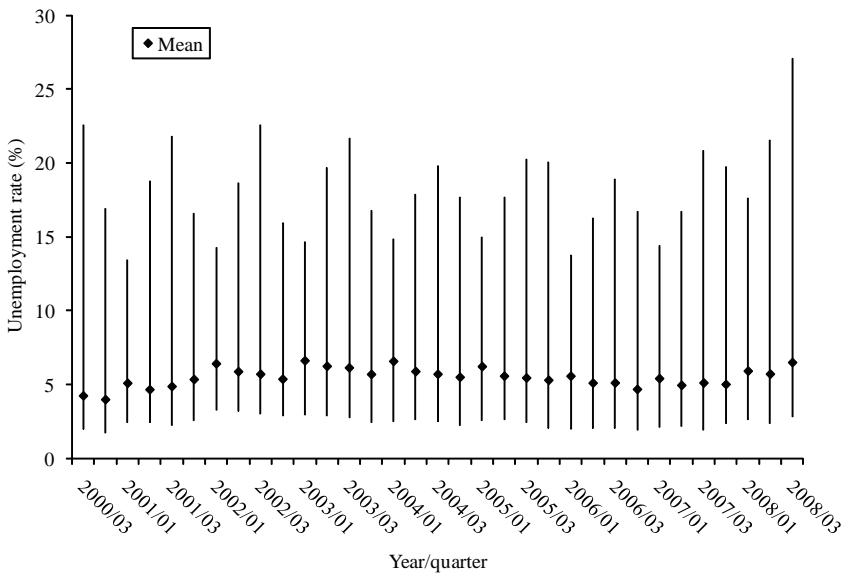
The variable definitions, taken directly from WIASRD, are displayed in Appendix 9A (see Social Policy Research Associates [2008]). WIASRD includes for each WIA participant a host of personal characteristics, employment outcomes, and educational outcomes (e.g., credentials and attainment of degree or certification). It also includes a selected set of services received through the workforce programs and participation in other non-WIA programs, such as cash assistance and unemployment insurance.

Unemployment rates were collected monthly at either the WIB level or the county level from the first quarter of 2000 to the first quarter of 2008. During that time, the national unemployment rates varied from 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 1.1 to 14.9 percent, as shown in Figure 9.1.¹¹ Therefore, despite the relatively tight band of unemployment rates at the national level, 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 occur at levels that are more than double what we experienced in the recent deep recession.

ESTIMATION

Each performance measure for each WIA program was estimated by separate regressions. 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. For the sake of brevity, the results for the WIA Adult program

Figure 9.1 Range of Unemployment Rates for All U.S. Counties, 2000–2008 Quarterly



NOTE: The bold dot is the median unemployment rate for all counties for each quarter.
SOURCE: Bureau of Labor Statistics, various years.

are explained in detail and the results from the other two programs are displayed in Appendix 9B.¹²

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 9.1 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 to the definitions themselves. 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 those who did not work. Retention requires wage record information for two quarters after exit; entered

Table 9.1 Means and Standard Deviations of Variables Used in WIA Adult Estimation

	WIA Adult			
	Entered employment	Retention	Average earnings	Credential and employment
Dependent variable	0.762 (0.426)	0.838 (0.369)	11,643 (8,306)	0.534 (0.499)
female	0.554 (0.497)	0.573 (0.495)	0.586 (0.493)	0.571 (0.495)
black_female	0.191 (0.393)	0.188 (0.391)	0.190 (0.392)	0.193 (0.394)
age20				
age21				
age26_35	0.288 (0.453)	0.300 (0.458)	0.303 (0.459)	0.300 (0.458)
age36_45	0.249 (0.432)	0.245 (0.430)	0.245 (0.430)	0.244 (0.430)
age46_55	0.158 (0.365)	0.147 (0.354)	0.148 (0.355)	0.143 (0.350)
age56_65	0.049 (0.217)	0.043 (0.202)	0.041 (0.199)	0.043 (0.202)
agegt65	0.007 (0.083)	0.005 (0.068)	0.004 (0.063)	0.005 (0.073)
hispanic	0.229 (0.420)	0.224 (0.417)	0.226 (0.418)	0.215 (0.411)
asian	0.036 (0.186)	0.035 (0.184)	0.037 (0.188)	0.037 (0.188)
black	0.342 (0.475)	0.317 (0.465)	0.308 (0.462)	0.326 (0.469)
hi_pacific	0.003 (0.052)	0.003 (0.054)	0.003 (0.055)	0.003 (0.056)
indian	0.006 (0.080)	0.007 (0.081)	0.006 (0.079)	0.008 (0.088)
multi	0.015 (0.123)	0.013 (0.114)	0.013 (0.113)	0.008 (0.088)
lths	0.178 (0.382)	0.150 (0.357)	0.137 (0.343)	0.159 (0.366)
ba	0.067 (0.250)	0.070 (0.254)	0.073 (0.260)	0.063 (0.243)
beyondba	0.016 (0.126)	0.016 (0.125)	0.016 (0.126)	0.015 (0.120)

Table 9.1 (continued)

	WIA Adult			
	Entered employment	Retention	Average earnings	Credential and employment
somecoll	0.176 (0.381)	0.193 (0.395)	0.200 (0.400)	0.180 (0.384)
ged	0.064 (0.245)	0.061 (0.240)	0.057 (0.232)	0.065 (0.247)
cert	0.000 (0.019)	0.000 (0.016)	0.000 (0.015)	0.000 (0.014)
otherpostdegcert	0.008 (0.088)	0.007 (0.081)	0.007 (0.083)	0.003 (0.053)
assoc	0.013 (0.115)	0.011 (0.103)	0.012 (0.107)	0.006 (0.075)
disabled	0.118 (0.323)	0.118 (0.323)	0.115 (0.319)	0.095 (0.294)
veteran	0.071 (0.256)	0.064 (0.245)	0.062 (0.241)	0.062 (0.242)
empreg11	0.452 (0.498)	0.550 (0.498)	0.586 (0.493)	0.513 (0.500)
empreg10	0.076 (0.264)	0.074 (0.261)	0.070 (0.256)	0.073 (0.260)
empreg01	0.091 (0.288)	0.081 (0.273)	0.078 (0.268)	0.082 (0.274)
wp	0.363 (0.481)	0.343 (0.475)	0.349 (0.477)	0.261 (0.439)
exit_wib_ur				6.294 (2.096)
f1_wib_ur	6.182 1.989		6.052 (1.951)	6.360 (2.085)
f2_wib_ur			6.045 (1.974)	
f3_wib_ur			6.009 (1.985)	
diff12		0.000 (0.819)		
diff23		-0.034 (0.794)		
<i>N</i>	429,329	400,523	310,066	395,240

SOURCE: WIASRD and Bureau of Labor Statistics.

employment requires such information for 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.

Estimates of the factors that are expected to affect the four performance measures are displayed in Table 9.2. 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 1.0-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 percent]) at an unemployment rate of 6 percent, then an increase of the unemployment rate from 6 to 7 percent would lower the expected entered employment rate from 0.70 to 0.682. If the unemployment rate doubled, then the entered employment rate would fall by -0.036 points (2×-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*, the change in unemployment rates from the first quarter after exit to the second quarter after exit, and *diff23*, 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 *t*-test result that the combined estimate 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

Table 9.2 Estimates of the Effect of Unemployment Rates and Other Factors on the WIA Adult Program Performance Measures

	(1) Entered employment	(2) Retention	(3) Average earnings	(4) Credential and employment
female	0.000542 (0.25)	0.0167*** (9.22)	-2653.4*** (-23.27)	-0.0218*** (-6.95)
black_female	0.0157*** (4.65)	0.0252*** (7.29)	1484.3*** (19.04)	0.0184*** (3.95)
age26_35	-0.00345 (-1.53)	0.00948*** (5.53)	1456.8*** (34.75)	0.0116*** (4.29)
age36_45	0.0137*** (-5.13)	0.00743*** (3.60)	1744.9*** (26.52)	0.00128 (0.33)
age46_55	-0.0330*** (-10.54)	0.00619* (2.20)	1605.6*** (13.53)	-0.0140** (-3.00)
age56_65	-0.0854*** (-19.55)	-0.0194*** (-4.95)	513.9** (2.86)	-0.0447*** (-6.29)
agegt65	-0.202*** (-18.28)	-0.0806*** (-7.45)	-3229.4*** (-13.43)	-0.0832*** (-5.59)
hispanic	0.0205*** (8.22)	0.0136*** (6.05)	-1312.7*** (-15.44)	-0.0289*** (-4.62)
asian	0.0193** (3.24)	0.0388*** (10.33)	-608.7*** (-4.47)	0.0266* (2.27)
black	-0.0283*** (-9.15)	-0.0394*** (-12.81)	-3344.9*** (-33.34)	-0.0657*** (-10.47)
hi_pacific	0.0267* (2.03)	0.0263* (2.39)	-401.6 (-1.42)	0.0120 (0.85)
indian	-0.0491*** (-5.67)	-0.0274*** (-3.62)	-712.7*** (-3.84)	-0.0350*** (-3.71)
multi	-0.0130* (-2.04)	-0.0167** (-2.65)	-1942.5*** (-10.42)	-0.00650 (-0.56)
lths	-0.0488*** (-12.09)	-0.0505*** (-21.96)	-1483.8*** (-26.86)	-0.0436*** (-13.40)
ba	0.0218*** (6.37)	0.0258*** (10.19)	4164.5*** (34.74)	-0.0153 (-1.63)
beyondba	0.0123* (2.06)	0.0113* (2.29)	6665.3*** (18.76)	-0.0348*** (-4.31)

(continued)

Table 9.2 (continued)

	(1) Entered employment	(2) Retention	(3) Average earnings	(4) Credential and employment
somecoll	0.0130*** (5.55)	0.0139*** (8.53)	1675.5*** (29.57)	0.00334 (1.05)
ged	-0.0195*** (-6.41)	-0.0398*** (-14.97)	-877.9*** (-11.47)	-0.0153** (-2.94)
cert	-0.0239 (-0.62)	-0.0436 (-0.90)	-1412.7 (-1.86)	0.000824 (0.02)
otherpostdegcert	-0.0282* (-2.10)	0.0174* (2.55)	3159.2*** (10.03)	0.0428 (0.85)
assoc	0.00414 (0.62)	0.0191** (3.23)	1516.7*** (8.06)	-0.0699*** (-5.29)
disabled	-0.0960*** (-17.39)	-0.0291*** (-8.24)	-1918.2*** (-20.71)	-0.0351*** (-5.99)
veteran	-0.00735 (-1.80)	-0.0139*** (-4.15)	155.6 (1.06)	0.00302 (0.60)
empreg11	0.140*** (44.64)	0.0868*** (46.36)	1563.6*** (31.33)	0.0322*** (11.04)
empreg10	0.0740*** (23.43)	0.0226*** (8.57)	-160.2** (-3.02)	-0.00419 (-1.34)
empreg01	0.0690*** (23.42)	0.0260*** (10.26)	263.2*** (4.19)	0.00622* (1.96)
wp	0.00671 (1.57)	0.00510 (1.66)	-72.24 (-0.71)	-0.0232*** (-3.52)
exit_wib_ur				-0.000246 (-0.05)
f1_wib_ur	-0.0180*** (-5.75)		-111.0 (-1.71)	-0.0114 (-1.90)
f2_wib_ur			-104.2 (-1.63)	-0.00645 (-1.11)
f3_wib_ur			-50.41 (-0.83)	-0.0170** (-2.81)
diff12		-0.00417** (-3.22)		
diff23		-0.00347** (-2.81)		

Table 9.2 (continued)

	(1)	(2)	(3)	(4)
	Entered employment	Retention	Average earnings	Credential and employment
_cons	0.860*** (31.43)	0.760*** (30.88)	11,108.5*** (19.99)	0.687*** (10.83)
<i>N</i>	429,329	400,523	310,066	395,240
adj. <i>R</i> ²	0.073	0.035	0.198	0.275
Combined unemployment rate Effect	-0.0180*** (-5.75)	-0.008** (-3.98)	-265.7** (3.16)	-0.352*** (-4.51)

NOTE: *t*-statistics are in parentheses. 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, to conserve space, the coefficient estimates are not shown.

SOURCE: Authors' analysis of WIASRD data and Bureau of Labor Statistics unemployment rates.

case, a 1.0-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 0.53, this effect results in a 6.6 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, have less than a high school education, and have an inconsistent work history are less likely to find and retain employment. For those who do 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 a job and in obtaining higher earnings than those with no prior employment during that period. For exam-

ple, a person with prior employment in those two quarters experienced an entered employment rate that was 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 sizable difference. Furthermore, we find that 45 percent of the participants in the entered employment group have two quarters of prior employment.

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

PERFORMANCE ADJUSTMENT PROCEDURES

Adjusting National Performance Targets

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. The unemployment rate assumptions of the President’s FY 2010 Budget Request are used in the calculations. The calculations start in PY 2007 (FY 2007 for Trade Adjustment Assistance [TAA]) and extend through PY 2014. The actual performance rate was used as the base in PY 2007. 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 the previous target.

Using the WIA Adult entered employment rate as an example, the calculation for PY 2008 is

$$EER_{(PY\ 2008)} = EER_{(PY\ 2007)} + EER_{(PY\ 2007)} \times (-1.8/76.2) \times (UR_{PY\ 2008} - UR_{PY\ 2007}).$$

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. Repeating this procedure each year

thereafter yields the entered employment performance targets for the WIA Adult program, as shown in Table 9.3. This procedure is also used to adjust performance targets for retention and earnings levels.

Displaying the adjusted performance targets along with the unemployment rate assumptions, Figure 9.2 shows how the targets adjust with changes in the unemployment rates. As the unemployment rate assumptions increase from PY 2007 to PY 2008, the adjusted target declines, reflecting the experience (as estimated in the analysis) that it is more difficult to find a job in tougher economic times. As the unemployment rate assumptions begin to fall after PY 2009, the performance targets gradually increase but do not return to their PY 2007 levels because the unemployment rate assumption remains slightly higher in PY 2014 than in the base period of PY 2007. Notice that the GPRA targets are considerably higher than the adjusted targets throughout this period.

Figures 9.3 and 9.4 show similar patterns for the other two adjusted performance measures because they are all driven by the unemployment rate assumptions. The only difference among the three measures in the change from year to year is related to the weights derived from the estimates, which are different for each performance measure.

Adjusting State Performance Targets

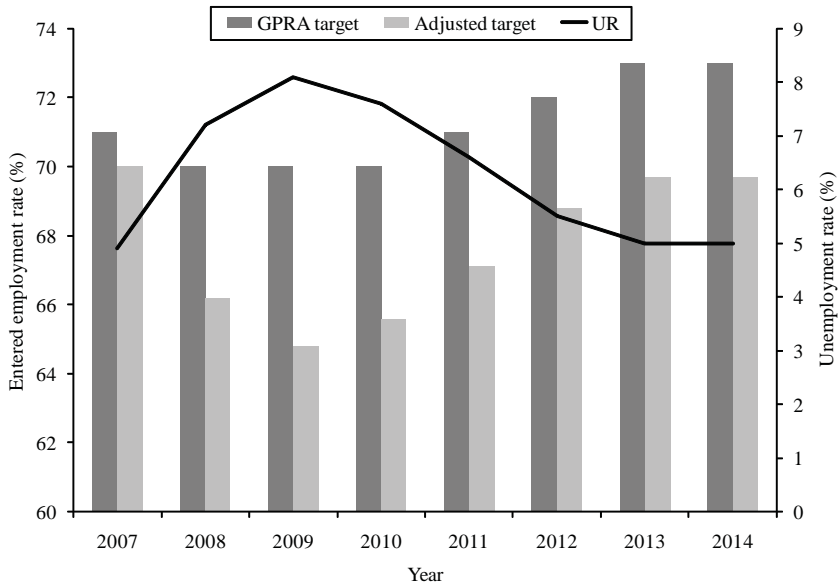
The second step uses the national adjusted target as the departure point for setting state performance targets. A state's ability to meet the national target depends upon the effectiveness of its services as well as the characteristics of its participants and the labor market conditions, both relative to the national average. Therefore, a state's target should be adjusted by the weighted difference in participant characteristics and labor market conditions. The weights are the contribution of each factor to participant outcomes. States with participants who have characteristics more favorable to finding and retaining jobs will be expected to achieve higher rates of entered employment and retention, and the adjustment procedure raises the targets for these measures accordingly. Such characteristics that lead to higher performance levels are higher educational attainment, more work experience, and younger in age, to name a few. States whose participants are less likely to have these attributes will be less likely to achieve such high performance levels and the procedure lowers targets accordingly.

Table 9.3 Example of Adjustment Procedure for WIA Adult Program

WIA Adult program	Program year							
	2007	2008	2009	2010	2011	2012	2013	2014
UR assumptions (%)	4.9	7.2	8.1	7.6	6.6	5.5	5.0	5.0
Entered employment (%)								
GPR target		70	70	70	71	72	73	
Unemployment rate adjusted target	70.0	66.2	64.8	65.6	67.1	68.8	69.7	69.7
Retention rate (%)								
GPR target		84.0	84.0	84.0	85.0	86.0	87.0	
Unemployment rate adjusted target	84.0	81.7	80.8	81.3	82.3	83.3	83.8	83.8
Earnings (\$)								
GPR target		13,575	13,575	13,575	13,914	14,262	14,619	
Unemployment rate adjusted target	13,575	12,862	12,597	12,741	13,032	13,360	13,512	13,512

NOTE: GPR = Government Performance and Results Act.

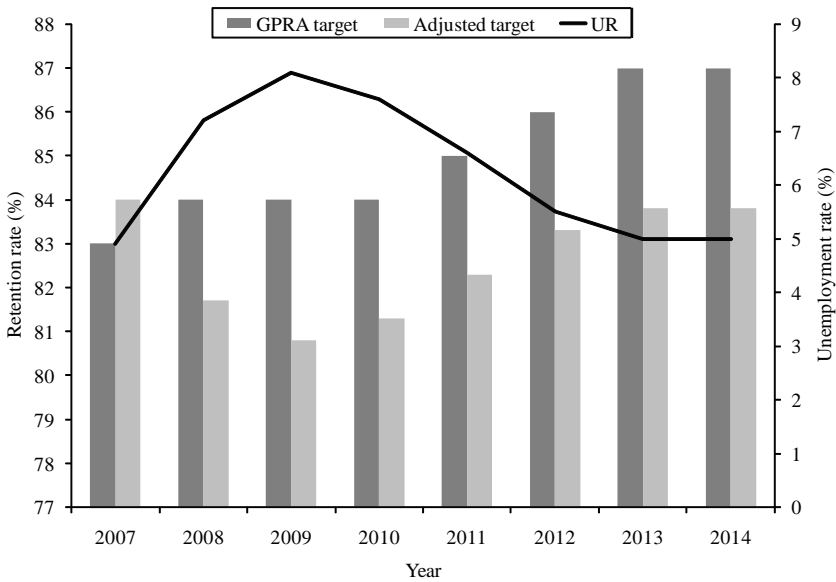
SOURCE: Unemployment rate assumptions are from the President's FY 2010 Budget Request, GPR targets are based on published guidance from the Office of Management and Budget, and unemployment rate-adjusted targets are derived from the analysis.

Figure 9.2 WIA Adult Entered Employment Performance Adjustment

SOURCE: Unemployment rate assumptions are from the President's FY 2010 Budget Request, GPRA targets are based on published guidance from the Office of Management and Budget, and unemployment rate-adjusted targets are derived from the analysis.

Thus, using the adjusted target rather than an unadjusted target offers a better measure of the value added of a state's WIA program. Without the adjustment, a state may be credited with higher value added when in fact the difference between actual performance and the unadjusted target was due to factors that were outside the control of the state and local administrators and so happened to be favorable to the outcomes. Conversely, state performance outcomes may fall short of their targets not because of their value added but because of the unfavorable attributes or local labor market conditions that they have experienced. To emphasize the point, it is conceivable that two states with identical value added, in terms of the effectiveness of their programs to the participants they serve, may have entirely different outcomes relative to an unadjusted target for the reasons just described. Adjusting

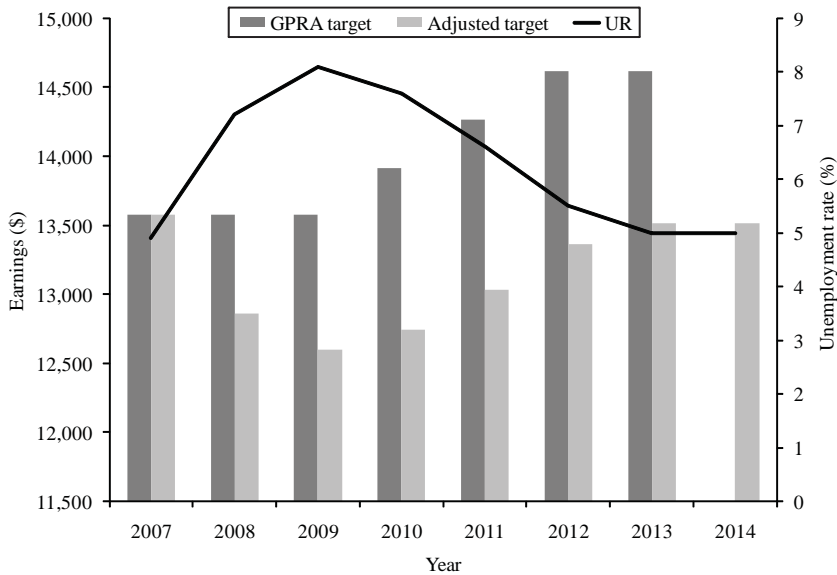
Figure 9.3 WIA Adult Retention Rate Performance Adjustment



SOURCE: Unemployment rate assumptions are from the President’s FY 2010 Budget Request, GPRA targets are based on published guidance from the Office of Management and Budget, and unemployment rate–adjusted targets are derived from the analysis.

the targets reduces this misrepresentation of a state’s performance and provides a more systematic, objective way to scrutinize the reasons for the differences.

The key elements for computing state performance targets are displayed in the worksheet in Table 9.4. To illustrate the steps required to calculate the adjusted performance targets, only a few of the factors actually used to calculate performance targets are displayed in the table. The full set of variables is listed in Appendix 9B. Adjusting state performance targets requires three elements: 1) the state value for each factor (column A); 2) the national value for each factor (column B); and 3) the estimated weights for each factor (column D). The difference in the national and state values (column C) is multiplied by the weight (column E). The weighted differences are summed and added to the national adjusted target.

Figure 9.4 WIA Adult Earnings Level Performance Adjustment

SOURCE: Unemployment rate assumptions are from the President's FY 2010 Budget Request, GPRA targets are based on published guidance from the Office of Management and Budget, and unemployment rate-adjusted targets are derived from the analysis.

To fill out the worksheet, the state will need information about each characteristic for the program year at both the state level and the national level. Obviously, the characteristics of the exiters are not available prior to the beginning of the program year. The most recent data can be used when they become available. At the beginning of the program year, the most recent data are from the previous program year. The actual date of availability depends upon the performance measure. Table 9.5 summarizes the data availability from the WIASRD as of May 2009. Using WIASRD has the advantage of a consistent data set for all three levels: nation, state, and LWIA. To avoid surprises, the adjustments should be updated whenever new data are available. This was the method used under JTPA. Under that program, the actual end-of-year performance standards were not computed until the end-of-year data were finally available.

Table 9.4 Hypothetical Example of Computing Adjusted Performance Target for State A

WIA Adult entered employment (%)	State A	National	Difference (A-B)	Effect on EE	Adjustment: weighted difference (C × D)
Unemployment rates	12.6	8.3	+4.3	-1.8	-7.74
High school dropout	10.3	4.6	+5.7	-0.049	-0.279
BA degree	7.6	1.8	+5.8	+0.022	+0.128
Disabled	6.4	4.9	+1.5	-0.096	-0.144
Work experience	39.0	64.0	-25.0	+0.14	-3.50
Total adjustment (add column E)					-11.5%
Adjusted national EE rate					64.8%
Adjusted performance target for State A					53.3%

NOTE: For purposes of illustration, only a few of the many factors included in the estimation are displayed in the table. The actual state adjustments shown in Table 9.6 include all variables used in the regressions.

Table 9.5 Data Requirements and Availability as of May 2009

		PY07 (7/1/07-6/30/08)	PY08 (7/1/08-6/30/09)	PY09 (7/1/09-6/30/10)
Unemployment rates	National	Actual	Actual (3 qtrs.)	Assumed
	State	Actual	Actual (3 qtrs.)	N/A: S/N Diff
	WIB	Actual	Actual (3 qtrs.)	N/A: W/S Diff
Personal characteristics	National	W07 (1st qtr.)	N/A: W07	N/A: W07
	State	W07 (1st qtr.)	N/A: W07	N/A: S/N Diff
	WIB	W07 (1st qtr.)	N/A: W07	N/A: S/N Diff

NOTE: W07 denotes PY 2007 data from WIASRD; N/A indicates that current data are not available for that program year; the data source after the N/A indicates the suggested source; S/N Diff indicates that historical differences between a state and the nation will be used; W/S Diff indicates that historical differences between a WIB and its state nation will be used.

Table 9.6 displays the actual, negotiated, and adjusted performance measures for entered employment for the Adult WIA program for PY 2006. PY 2006 is the latest year for which complete data are available from WIASRD. The adjusted performance targets are calculated using the characteristics displayed in Table 9A.1. We find that the difference between the actual level and the adjusted performance target has a wider spread between the maximum difference and the minimum than the difference between the negotiated target and the actual performance level. However, the number of states in which the target is greater or less than the actual level is the same for the negotiated level and the adjusted level.

Adjusting Performance Targets at the Local WIB Level

The third step follows the same procedure as the second, except that it is for each local WIB instead of each state. The reference point is the state and the differences in characteristics are between the state and each local WIB. The same weights are used for local WIB performance target calculations as for the state performance target calculations. By using the same weights for each approach and the same weights as for the state and national performance adjustments, all targets from the WIB to the state to the nation easily add up. If the data come from different data sources, for whatever reason, then targets will not add up. Also, if different weights are estimated for each state (or even for each ETA administrative region), the targets will not add up.

SUMMARY

The procedure for adjusting performance targets at the national, state, and local levels provides a systematic, transparent, and objective way to set national, state, and WIB performance targets for WIA programs. Using the same information that is collected and compiled for WIA performance monitoring along with measures of local labor market conditions, targets can be adjusted for factors that are outside the control of state and local administrators. The adjustment factors, since they relate to factors that are familiar and understandable to administra-

Table 9.6 Comparison of Actual, Negotiated, and Adjusted Performance Measures for Entered Employment in the Adult WIA Program, PY 2006

State	ETA report		Negotiated minus actual	Adjusted target	Adjusted target minus actual
	Negotiated level	Actual level			
Nation	79.2	70.2	9.0	79.2	9.0
Alabama	73.0	71.3	1.7	79.6	8.3
Alaska	74.0	72.2	1.8	74.7	2.5
Arkansas	89.0	92.0	-3.0	80.2	-11.8
Arizona	76.0	81.6	-5.6	79.2	-2.4
California	74.0	79.3	-5.3	76.6	-2.7
Colorado	82.0	82.6	-0.6	78.6	-4.0
Connecticut	79.0	80.5	-1.5	79.5	-1.0
DC	68.5	77.5	-9.0	66.4	-11.1
Delaware	82.0	82.4	-0.4	81.3	-1.1
Florida	71.0	82.9	-11.9	83.3	0.4
Georgia	84.0	76.1	7.9	78.6	2.5
Hawaii	76.0	71.9	4.1	84.2	12.3
Idaho	87.0	96.5	-9.5	81.5	-15.0
Iowa	83.0	79.0	4.0	78.7	-0.3
Illinois	75.0	77.3	-2.3	77.0	-0.3
Indiana	82.0	86.8	-4.8	79.5	-7.3
Kansas	76.0	82.1	-6.1	81.4	-0.7
Kentucky	78.0	88.7	-10.7	77.4	-11.3
Louisiana	82.0	67.4	14.6	77.1	9.7
Maine	88.0	72.2	15.8	80.2	8.0
Maryland	91.0	78.3	12.7	81.5	3.2
Massachusetts	79.0	79.7	-0.7	77.5	-2.2
Michigan	85.0	86.2	-1.2	74.8	-11.4
Minnesota	86.0	87.5	-1.5	80.6	-6.9
Missouri	80.0	88.6	-8.6	78.7	-9.9
Mississippi	77.0	62.4	14.6	74.9	12.5
Montana	82.0	85.6	-3.6	82.4	-3.2
Nebraska	86.0	78.2	7.8	81.2	3.0
Nevada	76.0	77.5	-1.5	79.1	1.6

Table 9.6 (continued)

State	ETA report		Negotiated minus actual	Adjusted target	Adjusted target minus actual
	Negotiated level	Actual level			
New Hampshire	80.0	69.2	10.8	80.8	11.6
New Jersey	82.0	83.7	-1.7	80.6	-3.1
New Mexico	78.0	84.5	-6.5	80.4	-4.1
New York	65.0	62.1	2.9	80.2	18.1
North Carolina	80.0	75.9	4.1	78.5	2.6
North Dakota	74.5	75.8	-1.3	80.2	4.4
Ohio	75.0	79.4	-4.4	77.5	-1.9
Oklahoma	85.0	71.1	13.9	82.3	11.2
Oregon	83.0	85.6	-2.6	79.5	-6.1
Pennsylvania	82.5	76.3	6.2	80.1	3.8
Puerto Rico	78.0	91.0	-13.0	66.2	-24.8
Rhode Island	82.0	81.7	0.3	78.1	-3.6
South Carolina	83.0	80.4	2.6	76.6	-3.8
South Dakota	78.0	80.6	-2.6	79.8	-0.8
Tennessee	83.0	84.2	-1.2	80.9	-3.3
Texas	82.0	75.1	6.9	80.2	5.1
Utah	66.0	66.6	-0.6	80.2	13.6
Vermont	83.0	77.3	5.7	75.2	-2.1
Virginia	77.5	78.0	-0.5	80.6	2.6
Washington	81.8	81.5	0.3	78.9	-2.6
West Virginia	80.0	72.2	7.8	80.2	8.0
Wisconsin	74.0	76.8	-2.8	78.8	2.0
Wyoming	89.0	81.7	7.3	77.8	-3.9
		min		-13.0	-24.8
		max		15.8	18.1
		mean		0.7	-0.1
		#Target>Actual		23	23
		#Target<Actual		30	30

SOURCE: Authors' calculations and ETA annual performance reports.

tors, can be easily scrutinized by all parties in order to better understand how they affect their programs' outcomes and what might happen if they change. For example, the effects on performance of a mass layoff event triggering a spike in a WIB's unemployment rate or an influx of disadvantaged workers with lower educational attainment can be assessed by using this procedure. The adjusted performance targets also provide a more accurate measure of the value added of the WIA programs.

Notes

The first part of this chapter was extracted from Bartik, Eberts, and Huang (2009). The assistance of Wei-Jang Huang and Phyllis Molhoek is greatly appreciated.

1. The USDOL's Employment and Training Administration issued Training and Employment Guidance Letter 09-08 Change 1 on June 5, 2009. This guidance letter revises the Government Performance and Results Act performance measures for federal workforce development programs to take into account the effect of the recession on participants' labor market and educational outcomes. As described in the guidance letter, the performance targets of the various workforce development programs have been developed for use for the years PY 2008 through PY 2010. They are intended to be used for PY 2009 performance target negotiations and are included in the President's Budget Request for FY 2010.
2. For a detailed description of the JTPA adjustment procedures, see Social Policy Research Associates (1999).
3. Adjustments in performance targets were estimated and computed for all 13 federal workforce development programs, including WIA, Wagner-Peyser Employment Service, and Trade Adjustment Assistance programs.
4. For the analysis, the performance measures are expressed as rates, not percentages. That means that instead of entered employment being expressed as 70 percent, for example, we express it as 0.70. The explanatory variables are also expressed as rates. However, for the performance adjustment calculations, we follow the standard approach of the USDOL and describe the performance targets in percentage terms.
5. Retention rate is also contingent on being employed the first quarter after exit, but since it is capturing the ability to retain a job, we looked at the change from quarter to quarter, encompassing the first three quarters after exit.
6. We also explored whether or not the unemployment rate exerts different effects on performance measures depending upon the magnitude of the unemployment rate. That is, we addressed the possibility that unemployment rates might have a nonlinear effect on performance measures. We introduced this possibility by specifying unemployment rates in two different ways. First, we entered unemployment rates as a quadratic, and second, we entered unemployment rates as

a set of categorical variables, each capturing different ranges of unemployment rates. In both cases, we could not reject the fact that unemployment rates have a linear effect on performance measures. Therefore, a 1.0-percentage-point change in unemployment rates produces the same point change in performance measures (or dollar change in earnings) no matter the level of unemployment rates.

7. Two problems associated with the linear probability model are heteroscedasticity and the predicted values extending beyond the limits of 0 and 1.
8. Wooldridge (2002) states in his textbook that the linear probability model “often seems to give good estimates of the partial effects on the response probability near the center of the distribution of x ” (p. 455). He adds that “if the main purpose is to estimate the partial effect of x on the response probability, averaged across the distribution of x , then the fact that some predicted values are outside the unit interval may not be very important” (p. 455). In order to test the sensitivity in the estimates when using a linear probability model instead of the preferred logit estimation technique, we ran both techniques for entered employment and retention performance measures for the WIA Adult program. Our particular focus was on the coefficient estimates related to unemployment rates. We found that the two techniques yielded virtually identical estimates. Using the linear probability model, the estimated coefficient on the unemployment rate for entered employment was -0.018 with a t -statistic of -5.75 ; using the logit technique, the estimated coefficient was -0.0178 with a z -statistic of -5.66 . For the retention rate, the combined estimated coefficient on the unemployment rates was -0.0076 using the linear probability technique and -0.0075 using the logit technique. Therefore, these results help to assuage concerns about the linear probability approach yielding biased estimates, and they are consistent with the position expressed by Wooldridge and others.
9. A reviewer of the draft suggested that we consider the possibility of spatial dependence in the estimation. This could arise for several reasons and as a consequence may bias the estimate or affect the statistical significance of the coefficient estimates. Spatial dependence basically recognizes that some local labor markets may be interdependent because of linkages among regions. These linkages could be due to commuting patterns, commodity flows, or similarity in industrial or occupational mix in that they compete regionally or nationally for workers with similar qualifications. Spatial dependence is a complex issue with no straightforward approach, since different regions across the country may be related in different ways. Therefore, we do not attempt to address this issue in the analysis and have no clear intuition whether it may bias the estimates or by how much.
10. We use STATA to estimate the model. The procedure to calculate standard errors is found in Rogers (1993).
11. In our sample, 102 counties had total employment that surpassed 100,000 at any time during the period considered in the analysis.
12. The estimates described in this section and in Appendix 9B are derived from a sample of 11 of the largest U.S. states. These estimates were used to adjust national targets, which were included in the President’s 2010 Budget Request. A sample of states was used because of the need to derive estimates quickly in order to meet the deadline of submitting the president’s budget. Since then, we have reestimated

the models including all states and Puerto Rico. The results are qualitatively the same, and these estimates are used for the state target adjustments, shown in the next section.

Appendix 9A

Variable Definitions

Table 9A.1 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 posttest with a functioning level greater than the corresponding pretest function level and the pretest function level was between 0 and 6

SOURCE: Definition of variables as described in WIASRD public use document, selected years.

Table 9A.2 Explanatory Variable Definitions

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 cultural 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 participant completed no or some elementary/secondary school grades and 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 participant 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, PhD, or professional degree.

Table 9A.2 (continued)

Explanatory variables	Description of coding
somecoll	= 1 if participant indicates the he/she 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 a certificate of completion or attendance.
otherpostdegcert	= 1 if participant indicates that he/she attained other postsecondary degree or certification.
assoc	= 1 if participant indicates that he/she attained an associate's 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 the Americans with Disabilities Act of 1990.
veteran	= 1 if participant served in the active U.S. military and was released with other than a dishonorable discharge, or if participant was a spouse of any U.S. military personnel who died or is missing in action, was 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 coenrolled 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 (e.g., 6.5).

SOURCE: Definition of variables as described in WIASRD public use document, selected years, and as defined and derived by the authors using the WIASRD variables.

Appendix 9B

Estimation Results for WIA Dislocated Workers and Youth Programs

DISLOCATED WORKER PROGRAM

The results for the WIA Dislocated Worker program, shown in Table 9B.2, yield patterns of effects similar to those found for the Adult WIA program, shown in Table 9.2. Unemployment rates have a negative and statistically significant effect on all four performance measures. The magnitude of the effects is slightly smaller than that found for the WIA Adult program participants but is in the same general range. For example, a 1.0-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 9.6, 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 effects on the performance measures.

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 9B.3. Unemployment rates negatively affect the four performance measures, but they are found to be statistically significant only for entered employment, as shown in Table 9B.4. 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 a job and of 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—nearly half the participants—are at a significant disadvantage in their employment prospects.

Table 9B.1 Means and Standard Deviations of Variables Used in the Estimation of WIA Dislocated Worker Program

	WIA Dislocated Worker			
	Entered employment	Retention	Average earnings	Employment and credential
Dependent variable	0.822 (0.383)	0.887 (0.317)	14,328 (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)

Table 9B.1 (continued)

	WIA Dislocated Worker			
	Entered employment	Retention	Average earnings	Employment and credential
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)		
<i>N</i>	408,234	322,098	266,915	311,452

SOURCE: WIASRD and Bureau of Labor Statistics.

Table 9B.2 Estimates of the Effect of Unemployment Rates and Other Factors on the WIA Dislocated Worker Program Performance Measures

	(1) Entered employment	(2) Retention	(3) Average earnings	(4) Credentials/ employment
female	-0.00392* (-2.25)	0.00634*** (4.76)	-3861.5*** (-65.96)	-0.0352*** (-15.05)
black_female	0.0189*** (5.31)	0.0118*** (4.04)	1649.4*** (19.73)	-0.00344 (-0.78)
age26_35	0.000243 (0.10)	0.0119*** (4.97)	1707.8*** (30.08)	0.0187*** (4.61)
age36_45	-0.00823** (-3.13)	0.0137*** (5.86)	2154.0*** (35.81)	0.0106* (2.51)
age46_55	-0.0224*** (-8.12)	0.00710** (2.91)	1622.9*** (24.73)	-0.00374 (-0.82)
age56_65	-0.108*** (-28.92)	-0.0227*** (-6.86)	13.06 (0.14)	-0.0311*** (-5.86)
agegt65	-0.277*** (-26.83)	-0.110*** (-9.41)	-4181.1*** (-15.90)	-0.0712*** (-6.30)
hispanic	0.0213*** (9.60)	0.00549** (2.66)	-1572.8*** (-22.69)	-0.0160*** (-4.19)
asian	-0.0258*** (-7.29)	0.00709* (2.16)	-540.2*** (-4.30)	0.0164* (2.15)
black	-0.00603* (-1.98)	-0.0179*** (-7.09)	-3526.8*** (-38.06)	-0.0253*** (-5.26)
hi_pacific	-0.00205 (-0.18)	0.0146 (1.20)	-671.8 (-1.85)	-0.0281 (-1.78)
indian	-0.0341*** (-3.72)	-0.0112 (-1.31)	-1004.8*** (-4.38)	-0.0271* (-2.11)
multi	0.00438 (0.48)	-0.0139 (-1.87)	-1770.1*** (-9.24)	-0.00960 (-0.83)
lths	-0.0323*** (-13.08)	-0.0252*** (-10.52)	-1618.0*** (-31.68)	-0.0381*** (-9.11)
ba	-0.00127 (-0.58)	0.0000558 (0.03)	5115.2*** (58.41)	-0.0222*** (-4.83)
beyondba	-0.0261*** (-6.70)	-0.0120** (-3.26)	9812.3*** (41.70)	-0.0308*** (-3.93)

Table 9B.2 (continued)

	(1) Entered employment	(2) Retention	(3) Average earnings	(4) Credentials/ employment
somecoll	-0.00249 (-1.65)	-0.00144 (-1.02)	1440.9*** (33.68)	-0.00821** (-3.17)
ged	-0.00297 (-0.92)	-0.0159*** (-5.60)	-517.3*** (-7.39)	-0.000521 (-0.09)
cert	-0.0413 (-0.86)	0.0437 (1.06)	-496.2 (-0.56)	-0.0369 (-0.34)
otherpostdegcert	-0.0119 (-1.40)	0.00390 (0.45)	3429.9*** (9.35)	0.00300 (0.11)
assoc	-0.0265*** (-4.27)	-0.00393 (-0.73)	2086.3*** (7.96)	-0.0357** (-3.25)
disabled	-0.0532*** (-11.74)	-0.0281*** (-6.93)	-1332.8*** (-10.80)	-0.0412*** (-4.85)
veteran	-0.0103*** (-4.42)	-0.0114*** (-5.20)	181.8* (2.57)	-0.00298 (-0.92)
empreg11	0.0743*** (24.08)	0.0434*** (20.43)	745.4*** (12.92)	0.0145*** (3.68)
empreg10	0.0560*** (13.19)	0.00356 (0.95)	-107.2 (-0.99)	0.00791 (1.41)
empreg01	0.0293*** (7.68)	0.0110*** (3.49)	-4.378 (-0.05)	-0.00896 (-1.79)
wp	0.0142*** (3.86)	-0.000527 (-0.26)	-74.17 (-0.89)	0.0155** (2.72)
exit_wib_ur				-0.00169 (-0.37)
f1_wib_ur	-0.00983*** (-3.63)		28.42 (0.48)	-0.00484 (-0.89)
f2_wib_ur			-166.7* (-2.33)	-0.00391 (-0.76)
f3_wib_ur			14.97 (0.29)	-0.00643 (-1.13)
diff12		-0.00582*** (-4.65)		
diff23		-0.00429*** (-3.39)		

(continued)

Table 9B.2 (continued)

	(1) Entered employment	(2) Retention	(3) Average earnings	(4) Credentials/ employment
_cons	0.876*** (27.17)	0.806*** (34.71)	14682.2*** (25.92)	0.668*** (9.55)
<i>N</i>	408,234	322,098	266,915	311,452
adj. <i>R</i> ²	0.058	0.019	0.196	0.210
Combined UR Effect	-0.00983*** (-3.63)	-0.010*** (-5.16)	-123.33** (-2.34)	-0.017** (-2.55)

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, to conserve space, the coefficient estimates are not shown.

SOURCE: Authors' analysis of WIASRD data and BLS unemployment rates.

Table 9B.3 Means and Standard Deviations of Variables used in the Estimation of the WIA Older Youth Program

	Older Youth			
	Entered employment	Retention	Average earnings	Employment and credential
Dependent variable	0.727 (0.445)	0.811 (0.392)	6970 (5,300)	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)
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)

(continued)

Table 9B.3 (continued)

	Older Youth			
	Entered employment	Retention	Average earnings	Employment and credential
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)		
<i>N</i>	73,488	57,610	38,657	80,326

SOURCE: WIASRD and Bureau of Labor Statistics.

Table 9B.4 Estimates of the Effect of Unemployment Rates and Other Factors on WIA Older Youth Program Performance Measures

	(1) Entered employment	(2) Retention	(3) Average earnings	(4) Credentials/ employment
female	-0.0269*** (-6.15)	-0.00582 (-1.40)	-839.3*** (-10.98)	0.0268*** (5.43)
black_female	0.0470*** (6.86)	0.0173* (2.44)	314.6** (2.73)	-0.00203 (-0.27)
age20	-0.000806 (-0.21)	-0.00692 (-1.84)	330.4*** (5.57)	-0.00224 (-0.59)
age21	0.000126 (0.03)	-0.00230 (-0.57)	724.6*** (10.44)	0.00518 (1.20)
hispanic	0.0325*** (5.66)	0.0268*** (4.75)	271.8** (3.08)	-0.00751 (-1.17)
asian	0.00519 (0.35)	0.0251 (1.94)	-108.6 (-0.58)	-0.00640 (-0.47)
black	-0.0468*** (-6.71)	-0.0327*** (-4.75)	-1155.0*** (-10.52)	-0.0553*** (-7.46)
hi_pacific	0.000369 (0.01)	0.0168 (0.56)	-134.6 (-0.39)	-0.00589 (-0.19)
indian	-0.0239 (-1.11)	-0.0139 (-0.60)	-281.7 (-0.62)	-0.0561* (-2.50)
multi	-0.0252 (-1.64)	-0.0278 (-1.57)	-550.0* (-2.28)	-0.0289 (-1.66)
lths	-0.100*** (-24.61)	-0.0776*** (-19.38)	-1,138.1*** (-17.56)	-0.0203*** (-4.25)
ba	-0.00655 (-0.19)	0.000401 (0.01)	3629.0*** (4.23)	0.0147 (0.49)
beyondba	0.0566 (0.93)	0.0215 (0.39)	3530.3* (2.42)	-0.0000878 (-0.00)
somecoll	0.0451*** (6.05)	0.0305*** (4.90)	1,273.4*** (9.87)	0.0327*** (3.50)
ged	-0.0393*** (-4.59)	-0.0442*** (-5.34)	-708.0*** (-5.54)	-0.0330*** (-3.32)
cert	-0.149** (-3.06)	-0.0510 (-0.93)	-2384.9*** (-5.87)	-0.0908* (-2.03)
otherpostdegcert	0.0599 (1.64)	0.0712** (3.12)	1700.5* (2.06)	0.0303 (0.34)

Table 9B.4 (continued)

	(1) Entered employment	(2) Retention	(3) Average earnings	(4) Credentials/ employment
assoc	0.0420 (0.75)	-0.0510 (-0.80)	6731.1* (2.23)	-0.0141 (-0.13)
disabled	-0.0740*** (-9.10)	-0.000386 (-0.06)	-1,291.5*** (-13.86)	0.00578 (0.74)
veteran	0.0315 (1.33)	0.0356 (1.82)	512.6 (1.37)	-0.0156 (-0.63)
empreg11	0.146*** (35.31)	0.0791*** (21.78)	833.1*** (13.57)	0.0170*** (4.39)
empreg10	0.0872*** (15.42)	0.0275*** (4.63)	33.25 (0.38)	-0.00903 (-1.64)
empreg01	0.0754*** (13.28)	0.0246*** (4.30)	50.53 (0.65)	0.00129 (0.23)
wp	0.0394*** (5.66)	-0.0103* (-1.96)	-272.4** (-3.04)	0.0346*** (3.67)
exit_wib_ur				-0.0231** (-2.85)
f1_wib_ur	-0.0174*** (-4.91)		-50.38 (-1.07)	0.00893 (1.12)
f2_wib_ur			-43.49 (-0.84)	-0.00977 (-1.24)
f3_wib_ur			-7.105 (-0.15)	0.00902 (1.14)
diff12		-0.00400 (-1.57)		
diff23		-0.00213 (-0.87)		
_cons	0.732*** (19.94)	0.774*** (28.53)	7453.1*** (12.64)	0.398*** (3.79)
<i>N</i>	73,488	57,610	38,657	80,326
adj. <i>R</i> ²	0.088	0.039	0.092	0.164
Combined UR	-0.0174***	-0.006	-101	-0.0142
Effect	(-4.91)	(-1.64)	(-1.87)	(-1.86)

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, to conserve space, the coefficient estimates are not shown.

SOURCE: Authors' analysis of WIASRD data and BLS unemployment rates.

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