Attachment II:

Executive Summary

Statistical Adjustment Model Methodology

The Workforce Innovation and Opportunity Act (WIOA) section 116, Performance Accountability System, requires the use of a statistical adjustment model when setting levels of performance. WIOA requires that levels of performance be negotiated for each of the primary indicators of performance at the State level. State-level actual performance outcomes are a function of (a) the characteristics of the participants being served, as well as (b) the labor market conditions in which those participants are being served. WIOA specifically requires that factors of both types be accounted for, and the use of a statistical model when negotiating levels of performance is intended to account for variation in factors of both types. A properly specified statistical model will appropriately adjust performance goals for States serving harder-to-serve populations and/or in economies facing more difficult labor market conditions. The statistical model objectively quantifies how, and to what extent, each of these factors affects levels of performance—i.e., actual outcomes. The goal of the statistical approach is to account for these factors, and separate them from those factors that program administrators are able to control.

The Department of Labor's Chief Evaluation Office (CEO), in collaboration with the Department's Employment and Training Administration (ETA), as well as the Department of Education's Office of Career, Technical, and Adult Education (OCTAE), and the Rehabilitative Services Administration (RSA), conducted extensive research and statistical analysis regarding the development of an appropriate statistical adjustment model. Additionally, the Chief Evaluation Office, ETA, OCTAE, and RSA consulted with workforce system professionals and external experts in the statistical and economics fields about the approach taken to develop the statistical model.

The Chief Evaluation Office and ETA conducted analyses using data from individual records of participants served by the Workforce Investment Act (WIA) title I-B, and Wagner-Peyser (WP) title III programs. These records contain detailed information about each program participant's characteristics, program activities, and outcomes. States have submitted these records quarterly, and each quarterly submission file contains the ten most recent quarters of information on all participants who received funded services during that time span. WIA records from Program Year (PY) 2005 (July 1, 2005 through June 30, 2006) to PY 2014 (July 1, 2014 through June 30, 2015) and WP records from PY 2012 (July 1, 2012 through June 30, 2013 to PY 2014 were used to calculate outcomes for the WIOA performance indicators: Employment Rate 2nd quarter after exit, Employment Rate 4th quarter after exit, and Median Earnings in the 2nd quarter after exit for each year from 2005 to 2014. The Employment Rate 4th quarter after exit for WP was estimated using proxy data from the 3rd quarter after exit. The Credential Attainment Rate within 4 quarters after exit was estimated using proxy WIA data extending only to the 3rd quarter after exit. The Youth Employment or Placement in Education indicators for the 2nd and 4th quarters after exit were estimated using WIA data for the 1st and 3rd quarters after exit, respectively.

The Department of Labor's Chief Evaluation Office has recommended that the statistical adjustment model include all of the variables expected to explain changes in the performance outcomes (i.e., explanatory variables) as required by WIOA sec. 116, and specified in Tables 1 and 2, with a few exceptions. Certain variables that do not apply to Youth programs (those in Table 1 that are not marked with an 'x' in the Youth column) also were removed from the Youth specific target estimation models. The variables for male exiters, exiters with education beyond a bachelor's degree, and the economic variable for trade, transportation, and utility related employment also were omitted to avoid the loss of model precision that can occur when two or more explanatory variables are highly correlated to one another. The variable representing *exiters who received training* was also removed from Credential Attainment models for Adult, Dislocated Worker, and Youth programs on account of correlation with other Credential Attainment variables. The individual-level data were also aggregated to the State level on a quarterly basis, and each variable is presented as the percent of total exiters except for those representing youth education level, pre-test scores, and post-test scores, which were expressed as averages.

To produce targets for each State, CEO recommended estimating the coefficients for the participant characteristics (also known as the impact each individual characteristic imposes on a given performance outcome), and economic conditions using a fixed effects model. This type of model will allow the Departments to estimate the program effect of each State that does not change over time; in other words, this is the fixed effect estimator for each State. The average State fixed effect will be used when projecting targets based on the participant characteristics and economic conditions. Under this approach, the targets reflect the outcome the State should have achieved after adjusting only for the measureable changes in the characteristics of exiters actually served during the program year as captured by the explanatory variables and the actual condition of the local economies, as measured by the economic variables. The State fixed effects are treated as program specific effects that program administrators can largely control.

Initial WIOA performance targets (those targets set prior to the beginning of the program year must be negotiated with consideration of the most recent available data at the time of model estimation. At the end of the program year, the data from the initial model will be updated with the most current data to reflect the actual participant characteristics and economic conditions during that program year. The model will then yield new targets based on the updated data.

This current initial model will be used in the negotiation process between ETA's regional offices and States to negotiate levels of performance for WIOA title I Adult, Dislocated Worker, and Youth programs and the title III Wagner-Peyser Employment Service, for the following performance indicators: 1) employment in the second quarter after exit; 2) employment in the fourth quarter after exit; 3) median earnings in the second quarter; and 4) credential attainment rate. This statistical model also must be used by States to negotiate levels of performance with the local areas.

Once States and grantees begin reporting on the WIOA primary indicators of performance, the Departments of Labor and Education will use those outcomes to begin building and refining the statistical models for the remaining indicators. The model will continue to be refined with each set of data that is reported in addition to factoring in the economic conditions.

The tables below provide a description of each explanatory variable. As discussed, WIOA requires the statistical adjustment model to account for variation in participant characteristics as well as local labor market conditions. Table 1 contains the descriptions of the explanatory variables based on participant characteristics. Table 2 contains the information on the economic variables including unemployment rate, and industrial structures (employment level). All statistical adjustment modeling used the economic variables as explanatory variables. The data described in Table 2 were obtained from the Bureau of Labor Statistics[1]. It is important to note that because the performance measures derived from the WIA data were not adjusted for seasonal changes, the unemployment rate used here also is not seasonally adjusted. The non-seasonally adjusted unemployment rate is used to maintain consistency with the outcome data. The economic data are aligned with the characteristic data elements by State and time period. For example, the unemployment rate for Alabama in the 2nd quarter of calendar year 2013 is aligned with the characteristics of Alabama's exiters in the 2nd quarter of calendar year 2013.

Table 1. Explanatory Variables on Participant Characteristics

Variable Description	Adult	DW	Youth	WP
Female	x	x	x	x
14<=Age<=15			x	
16<=Age<=17			x	
Age=18			x	
19<=Age<=20			x	
26<=Age<=35	x	x		x
36<=Age<=45	x	x		x
46<=Age<=55	x	x		x
56<=Age<=65	x	x		x
66<=Age	x	x		x
Hispanic ethnicity	x	x	x	x
Race: Asian (not Hispanic)	x	x	x	x
Race: Black (not Hispanic)	x	x	x	x
Race: Hawaiian/Pacific Islander (not Hispanic)	x	x	x	x
Race: American Indian or Native Alaskan (not Hispanic)	x	x	x	x
Race: More than one (not Hispanic)	x	x	x	x
Highest grade completed: Less than High School graduate	x	x	x	x
Highest grade completed: High school equivalency	x	x	x	x
Highest grade completed: Some college	x	x	x	x
Highest grade completed: Certificate or Other Post-Secondary Degree	x	x	x	x
Highest grade completed: Associate degree	x	x		x
Highest grade completed: Bachelor degree	x	x		x
Employed at participation	x	x	x	

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[1] Unemployment rate: http://www.bls.gov/lau; Employment: http://www.bls.gov/cew/datatoc.htm; Seasonal adjustment: http://www.bls.gov/cps/seasfaq.htm.

Variable Description	Adult	DW	Youth	WP
Individual with a disability	x	x	x	
Veteran	x	x		
Had earnings in 2nd and 3rd preprogram quarters	x	x		x
Had earnings in 3rd preprogram quarter	x	x		x
Had earnings in 2nd preprogram quarter	x	x		x
Received services financially assisted under the Wagner-Peyser Act	x	x	x	
Limited English-language proficiency	x	x	x	
Single parent	x	x		
Low income	x	x	x	
TANF recipient	x	x	x	
Other public assistance recipient	x	x	x	
Homeless	x	x	x	
Offender	x	x	x	
Unemployment insurance claimant, non-exhaustee	x	x	x	
Unemployment insurance claimant, exhaustee	x	x	x	
Received supportive services	x	x		
Received needs-related payments	x	x		
Received intensive services	x	x		
Received training services	x	x		
Established Individual Training Account (ITA)	x	x		
Pell grant recipient	x	x	x	
Received pre-vocational activity services	x	x		
Pregnant or parenting youth			x	
Youth who needs additional assistance			x	
Youth enrolled in education at or during program participation			x	
Youth enrolled in education at exit			x	
Youth enrolled in education at participation			x	
Youth with basic literacy skills deficiency (at or below 8th grade)			x	
Youth that is or was in foster care			x	
Youth that received educational achievement services			x	
Youth that received employment opportunities			x	
Youth participated in an alternative school			x	
Average educational functioning level for Youth participants			x	
Average standardized pre-test score			x	
Average standardized post-test score			x	

Table 2. Explanatory Variables on Economic Conditions

Economic Variable	Definition
UnempRate	Not seasonally adjusted quarterly unemployment rate
NatResEmp	Percentage of total employment in NAICS 1133-Logging, and Sector 21-Mining
ConstEmp	Percentage of total employment in Sector 23-Construction
ManfEmp	Percentage of total employment in Sectors 31, 32, 33-Manufacturing
TechEmp	Percentage of total employment in Sector 51-Information, Sector 52-Finance and Insurance, Sector 53-Real Estate and Rental and Leasing, Sector 54-Professional, Scientific, and Technical Services, Sector 55-Management of Companies and Enterprises, and Sector 56-Administrative and Waste Services
EdHealthEmp	Percentage of total employment in Sector 61-Eductaional Services, and Sector 62-Health Care and Social Assistance
LeisHospEmp	Percentage of total employment in Sector 71-Arts, Entertainment, and Recreation, and Sector 71-Accommodations and Food Services
OtherServEmp	Percentage of total employment in Sector 81-Other Services
PublicAdminEmp	Percentage of total employment in Federal, State, and Local Government