



WIOA Performance and the Statistical Adjustment Model

Brian Richard, Ph.D.

April 2020



NORTHERN ILLINOIS UNIVERSITY
**Center for
Governmental Studies**

Outreach, Engagement, and Information Technologies

OVERVIEW

- Review of Performance Negotiation
- Introduction to the WIOA Statistical Adjustment Model
- Regression Example
- SAM Performance Goal Adjustment Process

Performance Negotiations

- LWIAs negotiated performance targets in August 2020
- Four Negotiation Factors for negotiations
 - Compare performance across LWIAs
 - Utilize the Statistical Adjustment Model Estimates (2nd Quarter Measures)
 - Promote continuous improvement and ensure optimal return on investment: tool to use LWIB PY'17 and PY'18 Outcomes rank.
 - Assist State in meeting its goals

Illinois Performance Targets

<u>Adult</u>	<u>PY 2020</u>	<u>PY 2021</u>
Employment Rate 2nd Quarter after Exit	77.0%	77.0%
Employment Rate 4th Quarter after Exit	75.5%	75.5%
Median Earnings 2nd Quarter after Exit	\$6,500	\$6,500
Credential Attainment within 4 Quarters after Exit	70.0%	70.0%
Measurable Skill Gains	39.0%	39.0%

Illinois Performance Targets

<u>Dislocated Worker</u>	<u>PY 2020</u>	<u>PY 2021</u>
Employment Rate 2nd Quarter after Exit	81.0%	81.0%
Employment Rate 4th Quarter after Exit	81.0%	81.0%
Median Earnings 2nd Quarter after Exit	\$9,600	\$9,600
Credential Attainment within 4 Quarters after Exit	71.0%	71.0%
Measurable Skill Gains	43.5%	43.5%

Illinois Performance Targets

<u>Youth</u>	<u>PY 2020</u>	<u>PY 2021</u>
Employment/Education Rate 2nd Quarter after Exit	73.5%	73.5%
Employment/Education Rate 4th Quarter after Exit	73.0%	73.0%
Median Earnings 2nd Quarter after Exit	\$3,275	\$3,275
Credential Attainment within 4 Quarters after Exit	65.0%	65.0%
Measurable Skill Gains	31.0%	31.0%

Statistical Adjustment Model

- Required by WIOA (section 116)
 - *the negotiated local levels of performance applicable to a program year shall be revised to reflect the actual economic conditions experienced and the characteristics of the populations served in the local area during such program year using the statistical adjustment model*
- Department of Labor methodology
 - A statistical test called a Multiple Linear Regression Model with Fixed Effects
 - Predict and adjust performance outcomes for each measure
- Illinois specific model is being created based on DOL methodology

Statistical Adjustment Model

- The WIOA provisions calling for Negotiation Up Front and Adjustment After are intended to ensure that states and locals are held accountable based on factors outside their control
 - Initial Negotiations are based on the ASSUMED case mix & economic conditions
 - Year End Adjustments account for the ACTUAL case mix & economic conditions

Statistical Adjustment Model

- GOAL: Adjust performance goals to account for changes in:
 - Participant characteristics
 - Demographics
 - Barriers to employment
 - Economic conditions
 - Mix of employment sectors
 - Unemployment rate
- The model quantifies how, and to what extent, these factors affect levels of performance
- The goal of the approach is to account for these factors, and separate them from other factors that program administrators are able to control

Statistical Adjustment Model

- Multiple Linear Regression
 - One outcome (performance metrics)
 - Multiple predictor variables
- Each predictor variable has a coefficient attached

Regression Example

- Can we predict a person's weight if we know their height, gender, and age?
- A regression model can do this:
- $\text{Weight} = -74.7 + 3.2(\text{Height}) + 34.0(\text{Gender}) + 1.4(\text{Age})$

Regression Example

- **Weight** = $-74.7 + 3.2(\text{Height}) - 34.0(\text{Gender}) + 1.4(\text{Age})$
- Outcome variable: **Weight**
- Predictor variables: **Height, Gender, Age**
- Coefficients: measurable relationship between Predictor and **Outcome**
- Intercept: outcome when all variables = 0 (no meaning)

Regression Example

- What is the predicted weight for a male who is 72 inches tall and 23 years old?
 - **Weight** = $-74.7 + 3.2(\text{Height}=72) - 34.0(\text{Gender}=0) + 1.4(\text{Age}=23)$
 - **Weight** = 187.9 pounds

- What is the predicted weight for a male who is 72 inches tall and 24 years old?
 - **Weight** = $-74.7 + 3.2(\text{Height}=72) - 34.0(\text{Gender}=0) + 1.4(\text{Age}=24)$
 - **Weight** = 189.3 pounds

DOL SAM Example

Performance Indicator:

Employment Rate 2nd Quarter after Exit

Median Earnings 2nd Quarter after Exit

Employment Rate 4th Quarter after Exit

Credential Attainment Rate

Estimate ₀ (Pre-PY 2019 Predicted Outcome)	Estimate ₁ (Post-PY 2019 Predicted Outcome)	Adjustment Factor
77.22%	80.81%	↑ 3.59%

Model Variable Estimates

Variable Type	Variable	Coefficient	PY Prior	PY Actual	Variable Estimate ₀	Variable Estimate ₁	Adjustment
	Female	0.0751	0.5811	0.5552	4.37%	4.17%	-0.19%
	Age 25 to 44	0.0231	0.5708	0.6164	1.32%	1.43%	0.11%
	Age 45 to 54	-0.0079	0.1630	0.1386	-0.13%	-0.11%	0.02%
	Age 55 to 59	0.0960	0.0580	0.0402	0.56%	0.39%	-0.17%
	Age 60 or more	-0.4201	0.0183	0.0206	-0.77%	-0.86%	-0.10%
	Hispanic Ethnicity	-0.0080	0.1428	0.1417	-0.11%	-0.11%	0.00%
	Race: American Indian	-0.0827	0.0039	0.0069	-0.03%	-0.06%	-0.02%
	Race: Asian	0.1093	0.0381	0.0416	0.42%	0.45%	0.04%
	Race: Black	-0.0229	0.4956	0.5112	-1.14%	-1.17%	-0.04%
	Race: Hawaiian or Pacific Islander	-0.0030	0.0024	0.0022	0.00%	0.00%	0.00%
	Race: Multiple	-0.0576	0.0105	0.0104	-0.06%	-0.06%	0.00%
	Highest Grade Completed: Less than High School Graduate	-0.1843	0.0584	0.0528	-1.08%	-0.97%	0.10%

DOL SAM Example

Variable Type	Variable	Coefficient	PY Prior	PY Actual	Variable Estimate ₀	Variable Estimate ₁	Adjustment
Participant Characteristic	Received Wagner-Peyser Act Services	-0.0119	0.6842	0.0000	-0.81%	0.00%	0.81%
	Limited English Proficiency	0.2420	0.0386	0.0336	0.93%	0.81%	-0.12%
	Single Parent	0.0312	0.3180	0.1912	0.99%	0.60%	-0.40%
	Low Income	-0.0026	0.9076	0.8194	-0.23%	-0.21%	0.02%
	TANF Recipient	-0.0407	0.0360	0.0208	-0.15%	-0.08%	0.06%
	Homeless	-0.0990	0.0231	0.0181	-0.23%	-0.18%	0.05%
	Individual who was Incarcerated	-0.0214	0.1639	0.1514	-0.35%	-0.32%	0.03%
	UI Claimant	0.0065	0.0948	0.0389	0.06%	0.03%	-0.04%
	UI Exhaustee	-0.0708	0.0582	0.0188	-0.41%	-0.13%	0.28%
	Supportive Services Recipient	0.0379	0.5599	0.0029	2.12%	0.01%	-2.11%
	Received Needs-related Payments	-0.0671	0.0011	0.0000	-0.01%	0.00%	0.01%
	Received Individualized Career Services	0.0146	0.9337	0.9996	1.36%	1.46%	0.10%
	Received Training	0.1067	0.6656	0.7566	7.10%	8.08%	0.97%
Established Individual Training Account	-0.0283	0.5717	0.1076	-1.62%	-0.30%	1.31%	

DOL SAM Example

Employment Rate 2nd Quarter after Exit

Median Earnings 2nd Quarter after Exit

Employment Rate 4th Quarter after Exit

Credential Attainment Rate

Estimate ₀ (Pre-PY 2019 Predicted Outcome)	Estimate ₁ (Post-PY 2019 Predicted Outcome)	Adjustment Factor
\$5,649.00	\$6,523.43	↑ \$874.44

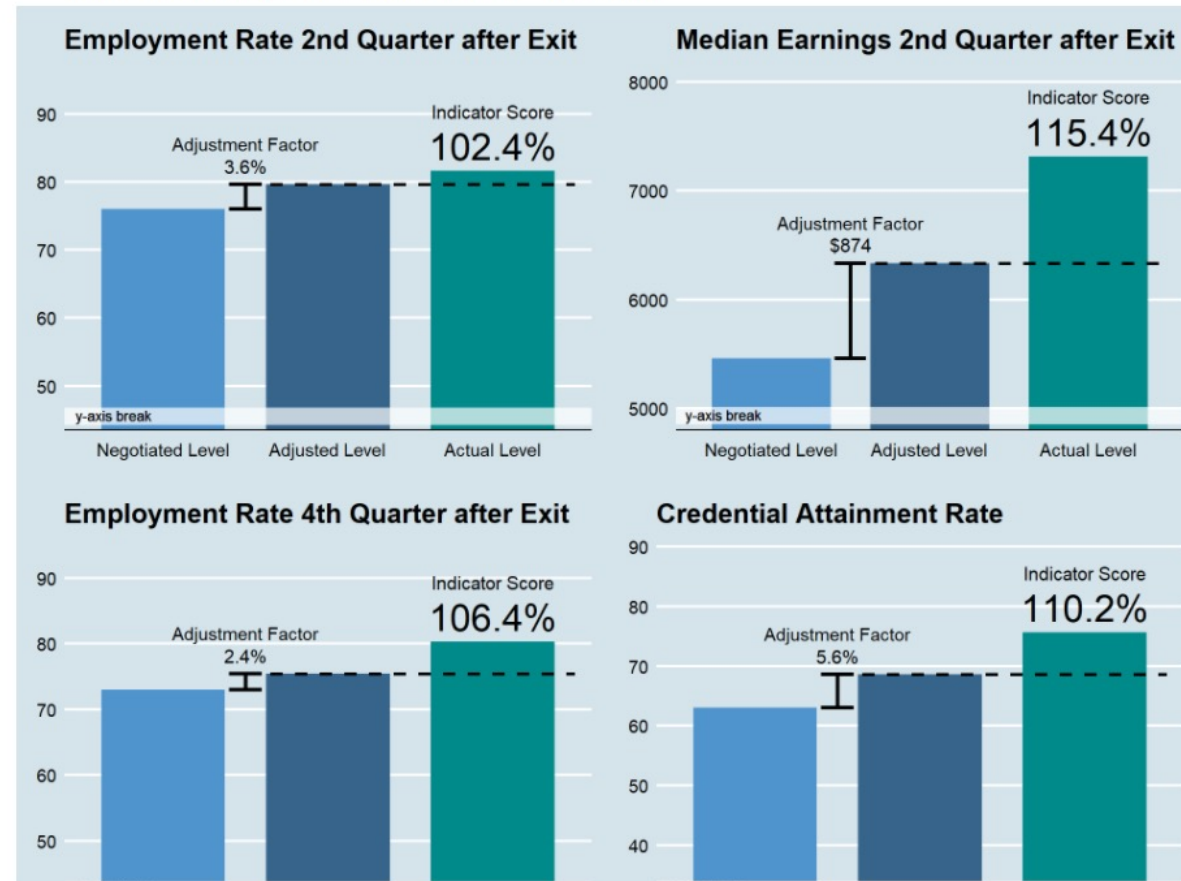
Model Variable Estimates

Variable Type	Variable	Coefficient	PY Prior	PY Actual	Variable Estimate ₀	Variable Estimate ₁	Adjustment
	Female	-1940.2541	0.6063	0.5834	-\$1,176.33	-\$1,131.86	\$44.47
	Age 25 to 44	422.2077	0.5808	0.6206	\$245.23	\$262.02	\$16.79
	Age 45 to 54	-437.4060	0.1532	0.1272	-\$67.01	-\$55.65	\$11.36
	Age 55 to 59	522.6574	0.0509	0.0370	\$26.59	\$19.33	-\$7.26
	Age 60 or more	662.3522	0.0147	0.0167	\$9.73	\$11.09	\$1.36
	Hispanic Ethnicity	-1596.6279	0.1436	0.1442	-\$229.25	-\$230.26	-\$1.01
	Race: American Indian	-2991.1077	0.0040	0.0070	-\$11.84	-\$20.93	-\$9.10
	Race: Asian	1276.3620	0.0331	0.0405	\$42.21	\$51.68	\$9.47
	Race: Black	-817.7831	0.4907	0.5076	-\$401.26	-\$415.13	-\$13.86
	Race: Hawaiian or Pacific Islander	1526.6272	0.0023	0.0025	\$3.45	\$3.82	\$0.36
	Race: Multiple	382.0255	0.0105	0.0100	\$4.00	\$3.82	-\$0.18
	Highest Grade Completed: Less than High School Graduate	-730.1492	0.0540	0.0472	-\$39.42	-\$34.49	\$4.93
	Highest Grade Completed: High School Equivalency	-416.0409	0.5362	0.5791	-\$223.07	-\$240.93	-\$17.86

DOL SAM Example

These figures show details for each of the performance indicators in this program.

- The **negotiated level** of performance is the agreed upon target level of performance for PY 2019 prior to the start of PY 2019.
- The **adjusted level** of performance is the result of re-calculating the negotiated level of performance once PY 2019 ends. It is calculated using model estimates, data on actual program participants in PY 2019, and data on actual economic conditions in which the participants were served.
- The **adjustment factor** is the total amount that the original negotiated level was adjusted.
- The **actual level** of performance shows the actual reported performance results for the indicator and includes the **individual indicator score** (i.e., the actual level divided by the adjusted level).



WIOA Performance and the Statistical Adjustment Model

- Brian Richard
- Questions: brichard@niu.edu