**Okun’s Law Two-Stage Regressions**

Pre = 1964 to 1985. Post = 1986 to 2010.

The variables constantpre and constantpost are estimated the estimated constants and the variables cyclepre and cyclepost are the estimated coefficients from the regression of percentage change in GDP on percentage point change in unemployment rate in each period. The trendpre and trendpost are the negative ratio of the intercept to the beta for each period in each state. The variables Δtrend and Δcycle are the changes between the post and pre periods in the trend and cycle estimates for each state.

The variables Δunionnet and Δmanuf­net are calculated for each state with least squares regression to estimate the slope of unionization rate and manufacturing share of employment versus year. The slope of the regression for each state is multiplied by the number of years over which the regression is performed to provide the values used for Δunionnet and Δmanufnet. The goal of this method is to provide a robust measure of the net change in the union and manufacturing employment shares for each state between 1964 and 2010. The variables unionmean post and manuf­mean post are the mean state-level unionization and manufacturing employment rates in the post period.

**Table A2 Summary Statistics –Two Stage Regressions**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Variable** | **Mean** | **SE** | **Min** | **Max** |
| N = 46 | | | | |
| constantpre | 1.089 | 0.499 | 0.101 | 2.328 |
| constantpost | 0.730 | 0.404 | -0.231 | 1.845 |
|  |  |  |  |  |
| cyclepre | -0.287 | 0.114 | -0.479 | -0.031 |
| cyclepost | -0.234 | 0.113 | -0.470 | 0.032 |
| Δcycle | 0.053 | 0.092 | -0.087 | 0.430 |
|  |  |  |  |  |
| trendpre | 3.854 | 1.029 | 1.827 | 6.214 |
| trendpost | 3.244 | 1.207 | 0.562 | 7.170 |
| Δtrend | -0.611 | 1.417 | -4.630 | 5.343 |
|  |  |  |  |  |
| Δunionnet | -17.000 | 6.813 | -35.000 | -4.872 |
| Δmanufnet | -0.198 | 0.098 | -0.357 | 0.017 |
|  |  |  |  |  |
| unionmean post | 13.290 | 5.792 | 4.220 | 26.840 |
| manuf­mean post | 0.137 | 0.046 | 0.032 | 0.219 |

Notes: Excludes outlier states: Alaska, North Dakota, Louisiana and Wyoming. Regressions performed in R with lm function. See Table 1 notes for a summary of methods for the calculation of the standard errors of the trend estimates.