**Mixtape SSIV Workshop: Coding Lab**

This lab will walk through some basic SSIV analyses using data from Autor, Dorn, and Hanson (ADH, 2013). As discussed in lecture, ADH use a shift-share instrument aggregating Chinese import shocks across 397 manufacturing instruments with exposure weights calculated as the economy-wide share of (baseline) industry employment. We will use three cleaned datasets from their setup:

* *adh\_shocks.dta*: an industry-by-year dataset of the shocks
* *adh\_shares.dta*: a location-by-industry-by-year dataset of the shares
* *adh\_noIV.dta*: a location-by-year dataset of the main outcome (manufacturing employment growth, *y*), treatment (local growth of China import exposure, *x*), and other useful variables – excluding the ADH instrument

Exercises:

1. Construct the ADH (location-by-year) instrument by appropriately combining the data on shocks and shares. Merge this into the *adh\_noIV* dataset, and estimate an IV regression of the outcome onto the treatment which controls for year (i.e. the *post* variable) and weights by baseline total employment (the *weight* variable), clustering by *state*. Then estimate the exact same IV regression replacing the outcome *y* with the lagged outcome *y\_lag*, capturing growth in manufacturing employment that took place before the ADH “China Shock” quasi-experiment. Comment on the difference in the two IV regression coefficients.

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| --- | --- |
| *Main IV Estimate:* | *Standard Error:* |
| *Lag Outcome IV Estimate:* | *Standard Error:* |

*Comments:*

1. Construct the “sum-of-shares” control from the *adh\_shares* dataset and add this control to both of the previous IV regressions. Comment on how the main IV estimate changes.

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| --- | --- |
| *Main IV Estimate:* | *Standard Error:* |
| *Lag Outcome IV Estimate:* | *Standard Error:* |

*Comments:*

1. Interact the “sum-of-shares” control with year and add this control to both of the previous IV regressions. Comment on how both IV estimates change. Can you see why the interaction control is important?

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| --- | --- |
| *Main IV Estimate:* | *Standard Error:* |
| *Lag Outcome IV Estimate:* | *Standard Error:* |

*Comments:*

1. Use the *ssaggregate* command to run both of the previous IV regressions at the shock level. You should control for year fixed effects in the shock-level IV regressions. The coefficients should be identical to the previous estimates, but the standard errors will be different. Comment on the change.

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| --- | --- |
| *Main IV Estimate:* | *Standard Error:* |
| *Lag Outcome IV Estimate:* | *Standard Error:* |

*Comments:*