

Econometrics II
Panel Data
April 2018

Data

We will use *ajpes dataset.dta*, which contains information on financial corporations in Slovenia in period 2009–2013. We observe the following variables:

| | |
|---------------|---|
| id | Id |
| year | Year |
| Size | Firm size - code |
| region | Region |
| gov_purc | Yearly value of all transactions by public institutions/companies |
| nace2008_2 | 2-digit NACE code (2008) |
| va_emp | Value added per employee |
| capital_labor | Capital to labor ratio |

Questions

1. Produce summary statistics using `sum` and `xtsum`. What is the difference between overall, between and within variation?
2. How would you calculate the between, within and overall variance without the use of `xtsum`?
3. We want to know if firms that receive more transactions by public institutions/companies differ in value added per employee from those that receive less public money. Perform a regression which controls for capital to labor ratio, firm size, region, firm's economic activity and time. Is it reasonable to assume that errors are i.i.d.?
4. Is it reasonable to assume that we got unbiased estimates? Why?
5. How do the Least Square Dummy Variable Estimator, First Difference Estimator and Fixed effects estimator solve the problem?
6. Estimate the same model as above with the three estimators. Do the results differ? Why?
7. Estimate the FE regression without the use of `xtreg` command.