# Steps in panel data Analysis

1. First of all, we include dummy variables for each firm
2. We then test the dummy variables with *testparm* command, if the p-value of the test is **less than .05**, it means that there are fixed effects and **we cannot run simple OLS** i.e. we cannot run pooled regression. And if the p-value is greater than .05, then we shall use simple OLS i.e. *reg Y X1 X2 X3 X4*
3. In case we cannot run OLS, then we have to choose between fixed and random effects models. In that case, we first run fixed effects model by ***xtreg Y X1 X2 X3 X4, fe***
4. The we store the estimates by ***estimates store fixed***
5. The we run random effects model by ***xtreg Y X1 X2 X3 X4, re***
6. The we store the estimates by ***estimates store random***
7. Finally we run the Hausman test to choose between random and fixed effects models by ***hausman fixed random***
8. If P-value of the Hausman test is less than .05, then fixed effects model will be our preferred model, And if p-value is greater than .05 then we shall use random effects model