

CLANSES - MICROECONOMETRIA - VARIAZIONI 3E

PANEL 1. DTA

FE (FIXED EFFECTS)

$$COST_{it} = \alpha_i + \beta OUTPUT_{it} + U_{it} \quad i = 1 \dots N = 4$$

$$t = 1 \dots T = 10$$

TSSET FIRM TIME

XTIMEB COST OUTPUT, FE

SCALAR SIMPLU = el_{SIMPLU_E})

SCALAR SIMPLU² = SIMPLU² ↳ COSTANTE

EST STO FISSI

XTPMED MITT, U



XTPRED COSTHAT

$$\left[\text{cost}(u_i, X^B) = \text{cost}(\hat{\mu}_i, \underbrace{(X^B)}_{\text{VALUATION}}) = \right. \\ \left. = \text{cost}(\hat{\mu}_i, \text{COSTHAT}) \right]$$

CAR THAT COSTS

INSTANTANEOUS FLS

$$r = 1 - \frac{\sigma_w}{\sigma_1}$$

$$\text{DAYS } \sigma_1 \approx \sigma_w + \sigma_u \quad \checkmark$$

BETWEEN

$$\text{cost}_{it} = \alpha + \rho \text{cost}_{it} + (\mu_i + \nu_{it})$$

← RE

$$\left[\text{cost}_{i0} = \alpha + \rho \text{cost}_{i0} + (\mu_i + \nu_{i0}) \quad i = 1 \dots N \right.$$

↳ Variability "BETWEEN"

$$\sqrt{\text{Var}(U_i + \mu_i)} \equiv \text{SD}(U_i + \text{AVG} \dots)$$

$$\text{Var}(U_i + \mu_i) = \tilde{\sigma}_\mu + \frac{1}{T^2} T \tilde{\sigma}_u =$$

$$= \tilde{\sigma}_\mu + \frac{\tilde{\sigma}_u}{T}$$

$$T \text{VAR}(U_i + \mu_i) = T \tilde{\sigma}_\mu + \tilde{\sigma}_u$$

XTRACT COST OUTPUT, BE

$$\text{SCALAR SIGMA}_{12} = 10 * e(\text{RMSE})^{\wedge} 2$$

$$\text{SCALAR THETA}_{11} = 1 - \text{SIGMA}_{11} / \text{SQRT}(\text{SIGMA}_{12})$$

XTNELY COST OUTPUT, RE THETA

$$\hat{\sigma}_\eta^2 = T \hat{\sigma}_\mu^2 + \hat{\sigma}_u^2$$

$$\hat{\sigma}_\mu^2 = \frac{\hat{\sigma}_\eta^2 - \hat{\sigma}_u^2}{T}$$

SCALEN SIMAM = SQRT ((SIGMA12 - SIGMAU2) / T)
XTPNEO NIHAT_GLS, U

XTFESTIP

HAUMAN FISSI

$K-1=1$

$$HAUMAN TEST = \frac{(\hat{\beta}_{FE} - \hat{\beta}_{RE})^2}{\widehat{VAR}(\hat{\beta}_{FE}) - \widehat{VAR}(\hat{\beta}_{RE})} \underset{H_0}{\sim} \chi^2(1)$$

H_0 : No Causal Impact Effect Individually in Regression.

S_0, H_0 , FE \in RE Consistent
RE \Rightarrow Efficiency

S_0, H_1 , FE Consistent
RE Inconsistent