Some Linear Panel Data Estimators in Stata

March 13, 2001

Estimators for the Simple One-Way Linear Model

- First-Differenced Regression: `regress`

- Fixed-Effects Regression: `xtreg ,fe`

- GLS Random-Effects Regression: `xtreg ,re`

- ML Random-Effects Regression: `xtreg ,mle`

Specification Testing with Simple One-Way Linear Model

- Hausman test for FE vs RE: `xthausman`
- Baltagi-Li LM test for RE: `xttest0`
- AR and Heteroskedasticity for FE:
  - Standard LM Tests

Linear Model with AR Disturbances

- Fixed-Effects Estimator with AR(1) disturbances: `xtregar ,fe`

- Random-Effects Estimator with AR(1) disturbances: `xtregar ,re`

- Testing for AR distubances

  - Baltagi-Wu modified Bhargava et al Durbin-Watson

  - Statistic from the Locally Best Invariant test derived by Baltagi-Wu

Linear Model with Endogenous Covariates

- First-Differenced Estimator: `xtivreg, fd`

- Between Estimator: `xtivreg, be`

- Fixed-Effects Estimator: `xtivreg, fe`

- Balestra and Varadharajan-Krishnakumar G2SLS: `xtivreg, re`
  - Passes X though GLS transform

- Baltagi's EC2SLS: `xtivreg, re ec2sls`
  - Uses instruments created by passing X through Q and P

Linear Model with Lagged Dependent Variables

- Anderson-Hsiao Estimator: `xtivreg, fd`

- Arellano-Bond Esimator: `xtabond`
  - One-Step estimator
  - One-Step robust estimator
  - Two-Step Estimator
  - Reports Sargan and AR(m) statistics