Advanced Econometrics : Recent advances in Panel Data

Thierry Magnac, T 520, thierry.magnac@tse-fr.eu
Monday, 9:30-11, Thursday 14-15:30
Office hours by appointment

Panel Data: This course aims at reviewing recent advances in panel data estimation.

To pass the course, a student should

- attend classes
- read the required material before class (see Readings). Instructions will be given on required readings as for the next course.
- participate in class discussion
- organize a collective discussion at least once
- write a short essay/referee report/research project on a paper chosen from the list below including an empirical/simulation exercise in R.

References:

General

- Arellano, M., 2003, Panel Data Econometrics, Cambridge UP, Cambridge.
- Chudik and Pesaran, 2015, "Large Panel Data Models with Cross-Sectional Dependence: A Survey" in Baltagi (Ed.), The Oxford Handbook on Panel Data, New York: Oxford University Press.
- Hsiao, C., 2004, Panel Data, Cambridge UP..
- Hsiao, C. (2018). Panel models with interactive effects. *Journal of Econometrics*, *206*(2), 645-673.
- Wooldridge, J. M., 2010, Econometric analysis of cross section and panel data. MIT press.

Readings (required)

Presentation:

- Hsiao : Chapter 3
- Wooldridge : Chapters 10 and 11
- Arellano : Chapters 2, 3 and 5

Factor models:

- Ahn, S. C., Lee, Y. H., & Schmidt, P. (2001). GMM estimation of linear panel data models with time-varying individual effects. Journal of econometrics, 101(2), 219-255.
- Bai, J. (2009). Panel data models with interactive fixed effects. Econometrica, 77(4), 1229-1279.
- Pesaran, M. H. (2006). Estimation and inference in large heterogeneous panels with a multifactor error structure. Econometrica, 74(4), 967-1012.

Random coefficients:

- Arellano, M., & Bonhomme, S. , 2011, Identifying distributional characteristics in random coefficients panel data models. The Review of Economic Studies, 79(3), 987-1020.
- Chamberlain, G., 1992, Efficiency bounds for semiparametric regression. Econometrica: Journal of the Econometric Society, 567-596.
- Graham, B. S., & Powell, J. L., 2012, Identification and estimation of average partial effects in "irregular" correlated random coefficient panel data models. Econometrica, 80(5), 2105-2152.

Other papers

- Ahn, S. C., Lee, Y. H., & Schmidt, P. (2013). Panel data models with multiple time-varying individual effects. Journal of econometrics, 174(1), 1-14.
- Alvarez, J., & Arellano, M. (2003). The time series and cross-section asymptotics of dynamic panel data estimators. Econometrica, 71(4), 1121-1159.
- Alvarez, J., & Arellano, M. (2004). Robust Likelihood Estimation of Dynamic Panel Data models, working paper.
- Bailey, N., Kapetanios, G., & Pesaran, M. H. (2021). Measurement of factor strength: Theory and practice. Journal of Applied Econometrics, 36(5), 587-613.
- Beyhum, J., & Gautier, E. (2019). Square-root nuclear norm penalized estimator for panel data models with approximately low-rank unobserved heterogeneity. *arXiv preprint arXiv:1904.09192*.
- Cahan, E., Bai, J., & Ng, S. (2021). Factor-Based Imputation of Missing Values and Covariances in Panel Data of Large Dimensions. arXiv preprint arXiv:2103.03045.
- Chernozhukov, V., Fernández-Val, I., Hahn, J., & Newey, W. (2013). Average and quantile effects in nonseparable panel models. Econometrica, 81(2), 535-580.
- Chudik, A., Pesaran, M. H., & Tosetti, E. (2011). Weak and strong cross-section dependence and estimation of large panels. *The Econometrics Journal*, *1*(14), C45-C90.

- Chudik, A., Pesaran, M. H., & Yang, J. C. (2018). Half-panel jackknife fixed-effects estimation of linear panels with weakly exogenous regressors. *Journal of Applied Econometrics*, *33*(6), 816-836.
- Dhaene, G., & Jochmans, K. (2015). Split-panel jackknife estimation of fixed-effect models. The Review of Economic Studies, 82(3), 991-1030.
- Fernández-Val, I., & Weidner, M., 2018, Fixed effects estimation of large-t panel data models. Annual Review of Economics.
- Greenaway-McGrevy, R., Han, C., & Sul, D. (2012). Asymptotic distribution of factor augmented estimators for panel regression. *Journal of Econometrics*, *169*(1), 48-53.
- Hahn J., & Kuersteiner, G. (2002). Asymptotically unbiased inference for a dynamic panel model with fixed effects when both n and T are large. Econometrica, 70(4), 1639-1657.
- Hahn, J., & Kuersteiner, G. (2011). Bias reduction for dynamic nonlinear panel models with fixed effects. Econometric Theory, 27(6), 1152-1191
- Juodis, A., & Sarafidis, V. (2021). An incidental parameters free inference approach for panels with common shocks. Journal of Econometrics.
- Karabiyik, H., Urbain, J. P., & Westerlund, J. (2019). CCE estimation of factor-augmented regression models with more factors than observables. *Journal of Applied Econometrics*, *34*(2), 268-284.
- Moon, H. R., & Weidner, M. (2015). Linear regression for panel with unknown number of factors as interactive fixed effects. *Econometrica*, *83*(4), 1543-1579.
- Moon, H. R., & Weidner, M. (2018). Nuclear norm regularized estimation of panel regression models. *arXiv preprint arXiv:1810.10987*.
- Schumann, M., Severini, T. A., & Tripathi, G. (2021). The Role of Score and Information Bias in Panel Data Likelihoods (No. 21-07). Department of Economics at the University of Luxembourg.
- Stauskas, O. (2021). Uniform Theory for CCE under Heterogeneous Slopes and General Unknown Factors (No. 2021: 9).
- Westerlund, J. (2018). CCE in panels with general unknown factors. *The Econometrics Journal*, *21*(3), 264-276.
- Westerlund, J., Petrova, Y., & Norkute, M. (2019). CCE in fixed T panels. Journal of Applied Econometrics.
- Westerlund, J., & Urbain, J. P. (2015). Cross-sectional averages versus principal components. *Journal of Econometrics*, *185*(2), 372-377.