

Syllabus

DIW Graduate Center Masterclass: Panel Data Analysis

German Institute for Economic Research
Winter term 2013, 10 – 11 October

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1. Objectives

The objective of the course is to prepare a solid ground for empirical research using advanced econometric techniques for analyzing micro- and macroeconomic panel data sets. During the course empirical applications are considered using Stata, EViews and Matlab.

2. Contents

1st class (October 10th, afternoon):

1. Analysis of microeconomic panel data

1.1 Linear static panel data models

- a) Interactive fixed-effects models
- b) Random effects: Mixed and hierarchical models
- c) Analysing treatment effects

1.2 Nonlinear models:

- a) Incidental parameter problem
- b) Mundlak-Chamberlain approach
- c) ML based approaches

1.3 Dynamic panel data models

- a) GMM based estimators (Arellano-Bond, system estimator)
- b) Bias-corrected estimators
- c) ML based estimators

2nd class (October 11th, morning):

2. Analysis of Macroeconomic Panel Data

2.1 Dynamic models with $N \approx T$

- a) Asymptotic bias of WG and GMM estimators
- b) Bias-corrected estimator
- c) Predetermined Regressors

2.2 Cross-section dependence

- a) weak vs. cross-section dependence
- b) tests for cross-section correlation
- c) panel-corrected standard errors and SUR estimation

2.3 Factor-augmented panel data models

- a) Pesaran's CCE estimator
- b) Principal Components based estimators

2.4 Unit roots and cointegration

- a) Tests for unit roots and cointegration
- b) Spurious regressions and panel cointegration

Reading:

- Baltagi, B., *The Econometric Analysis of Panel Data*, 2005, New York: John Wiley, 3rd ed.
- Cameron, A.C. und Trivedi, P.K. *Microeconometrics: Methods and Applications*, 2005, Cambridge University Press, Chapter V.
- Wooldridge, J.M. *Econometric Analysis of Cross Section and Panel Data*, 2002, Cambridge: MIT Press
- Beitung, J. (2013), *The Analysis of Macroeconomic Panel Data*, forthcoming in: *Oxford Handbooks: Panel Data Analysis*, B. Baltagi (ed.), Chapter 15.
- Beitung, J., and M. H. Pesaran (2008). *Unit Roots and Cointegration in Panels*. In Matyas, L., and P. Sevestre (Eds.), *The Econometrics of Panel Data*, 279-322. Kluwer Academic Publishers.
- Greene, W. (2013), *Panel data models for discrete choice*, forthcoming in: *Oxford Handbooks: Panel Data Analysis*, B. Baltagi (ed.), Chapter 6.
- Lechner, M. (2013), *Treatment effects and panel data models*, forthcoming in: *Oxford Handbooks: Panel Data Analysis*, B. Baltagi (ed.), Chapter 9.