Doctoral Certificate Program and Master Agricultural Economics			
Advanced Applied Econometrics			**3**
Aims	Students - shall understand the basics econometric methods and be able to apply these to real problems, - know to use, understand and interpret -theory based econometric models, - are able to handle data cross section and panel data - are able to work with the econometrics package EViews		
Skills	Methodological competence, quantitative analysis, conceptual thinking		
Teaching forms	CP	Workload (h)	Contents
1 week block seminar with lecture and exercise	3	45	– Econometric Methods – Microeconometric Models
Seminar paper		135	‚Reading exercise' (preparation) and empirical problem set
Total		180	
Examination	*Seminar paper*		
Start	☐ WT ☒ ST		
Language	English		
Lecturers	Prof. Dr. Thomas Heckelei thomas.heckelei@ilr.uni-bonn.de Dr. S. Hüttel silke.huettel@agrar.hu-berlin.de		

Literature

Cameron and Trivedi (2005): Microeconometrics. Cambridge University Press.

Davidson, R. and MacKinnon, J. (2004): Econometric Theory and Methods. Oxford University Press (New York).

Greene, W. (2005): Econometric Analysis. 5th edition, Prentice Hall.

Verbeek, M. (2008)[1]: A Guide to Modern Econometrics. John Wiley & Sons; 3rd Edition edition.

Wooldridge, J. (2001): Econometric Analysis for Cross Section and Panel Data. The MIT Press; 1st edition.

Wooldridge, J. (2006): Introductory Econometrics. A Modern Approach. 3rd edition, Thomson South Western, Mason.

[1] Core textbook for this course.

Outline

1.) The static linear model for cross-section and panel data

- Review: Ordinary Least Squares (OLS) and its properties
  Ch 2 (2.1-2.6) and 5.1
  - The linear regression model
  - The Ordinary Least Squares Estimator (OLSE)
  - Properties of the OLSE (small sample and asymptotic properties)
  - Goodness of fit and hypothesis testing
- Review: Generalised Least Squares
  Ch 4 (4.1-4.3; 4.6)
  - Heteroskedasticity (introduction, implications for the estimator, testing, correction)
  - Autocorrelation (introduction, implications for the estimator, testing)
  - Sum up: GLS, FGLS
- Example GLS: Seemingly Unrelated Regression
- Exercise
- Static linear models for panel data
  Ch 10: 10.1-10.3
  - What is special about panel data, why special models for panel data needed?
  - Accounting for unobserved heterogeneity: the models for correlated and for uncorrelated effects and the respective estimators
  - Testing for unobserved heterogeneity, testing for correlated effects
  - Example: Explaining individual wages (p. 375)
- Exercise (empirical)

2.) Endogenous regressors and dynamic linear models for panel data
Ch 5

- Endogenous regressors: Instrumental Variable (IV) estimation
- Exercise IV (small, theoretical), e.g., parts from 5.1?
- Endogenous regressors and Heteroskedasticity/Autocorrelation: Generalised Methods of Moments (GMM)
- Exercise GMM (small, theoretical), e.g., parts from 5.3?
- Dynamic panel data models
  - Several examples which each illustrate a specific aspect

  Ch 10: 10.4-10.5
- Example and Exercise: dynamic Euler investment equation

3.) Introduction to discrete choice models

- LPM (7.1)
- Probit/Logit (7.1)
- Maximum Likelihood (ML) estimation (only intro)
  Ch 6: 6.1-6.2
- Exercise