Econometric Methods I - Part I, WS 2018/19

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Lectures: Fridays 9:30-12:30/13:00, HS104, Garystr. 21 at FU Berlin, starting on 19 October 2018
TA sessions: Mondays 9:00-11:00, Popper Room (2.3.020) at DIW Berlin, starting on 22 October 2018

1. The Classical Linear Regression Model
   a) Ordinary Least Squares (OLS) Estimation
   b) Maximum Likelihood (ML) Estimation
   c) Hypothesis Testing
   d) Generalized Least Squares (GLS) Estimation
References: Hayashi (2000, Ch. 1), Judge et al. (1988, Ch. 5,6,8), Greene (2003, Ch. 3,4)

2. Asymptotic Theory
   a) Stochastic Convergence Concepts
   b) Laws of Large Numbers (LLN) and Central Limit Theorems (CLT)
   c) Asymptotic Properties of OLS
   d) Asymptotic Properties of ML
   e) Asymptotic Properties of GLS
References: Hayashi (2000, Ch. 2), Judge et al. (1985, Ch. 5), Hamilton (1994, Ch. 7), Greene (2003, Ch. 5)

3. Single Equation Generalized Method of Moments (GMM)
   a) Instrumental Variables (IV) Estimation
   b) Method of Moments (MM) Estimation
   c) GMM Estimation
   d) Asymptotic Properties of GMM
   e) Related Tests
References: Hayashi (2000, Ch. 3), Hamilton (1994, Ch. 14), Judge et al. (1988, Ch. 13)

4. Multiple Equation Generalized Method of Moments (GMM)
   a) Simultaneous Equations
b) GMM Estimation

c) Uses of Multiple Equation GMM

References: Hayashi (2000, Ch. 4), Hamilton (1994, Ch. 14), Judge et al. (1988, Ch. 11,14,15), Greene (2003, Ch. 14,15)

5. Panel Data

a) Random Effects

b) Fixed Effects

References: Judge et al. (1988, Ch. 11), Greene (2003, Ch. 13), Hayashi (2000, Ch. 5),

6. State-Space Models

a) Time-Varying-Parameter, Unobserved Components, Dynamic Factor and Common Stochastic Trend Models

b) The Kalman Filter

c) Bayesian Estimation

References: Kim & Nelson (1999, Ch. 3, 7), Hamilton (1994, Ch. 13), Judge et al. (1985, Appendix C)

References


Course Requirements

The grading is based on the assignments (20%) and an exam (80%) at the end of each part. Each part of the course is given a 50% weight of the total grade.