Econometric Methods - Part I, WS 2017/18

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Lectures: Fridays 9:30-12:30/13:00, Schumpeter Hall at DIW, starting on 20 October 2017
TA sessions: Mondays 9:00-11:00, Dulles Room (5.2.010) at DIW, starting on 23 October 2017

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  

press Princeton.  

60–69.*  

Theory and Practice of Econometrics.*  

John Wiley and Sons.  

classical and Gibbs-sampling approaches with applications.* The MIT press.
Course Requirements

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