1 General information

Course objectives

- This is the first course of a sequence of two courses on structural econometrics offered by the DIW Graduate Center
- Focuses on discrete choice models for cross section and panel data
- Covers simulation-based estimation techniques such as Maximum Simulated Likelihood (MSL), Method of Simulated Moments (MSM), and Indirect Inference
- Applied papers from the fields of labour economics, health economics, industrial organization, and behavioral economics will be discussed
- Exercises will include the use of a software package (Matlab)
- The aim is to equip students with skills allowing them to carry out independent empirical research

Course organization

- The course is taught by Daniel Kemptner
- Credit points: 6 ECTS. 6 sessions (4 hours)
- Prerequisites: skills in advanced econometric methods (Master or Ph.D. level)
- All sessions in this course take place at DIW from 2 to 5:30 pm
- First session: 10.4.2019; final session: 22.5.2019

Grading

- The overall grade will be determined by
  - 2 problem sets (to be completed in groups of max. 2 participants), weighted 1/4 each, and
  - a final exam, weighted 1/2.

Main textbook

2 Introduction to choice models (10.4.; Karl Popper room)
   - Train, K.E. (2009), chapters 1, 2
   - Properties of choice models
   - Binary choice models
   - Non-linear models and panel data; Wooldridge, J.M. (2005); Akay, A. (2011)

3 Logit model (17.4.; Karl Popper room)
   - Train, K.E. (2009), chapter 3
   - Properties, power, limitations, and estimation

4 Unobserved heterogeneity (24.4.; Karl Popper room)
   - Train, K.E. (2009), chapters 4–6
   - Probit model, taste variation and panel data
   - Simulation of choice probabilities

5 Extensions (8.5.; Karl Popper room)
   - Train, K.E. (2009), chapter 7
   - Stated- and revealed-preference data
   - Ranked data and ordered responses

6 Estimation techniques (15.5. and 22.5.; Karl Popper room)
   - Train, K.E. (2009), chapters 8–11, 14
   - Numerical integration and drawing from densities
   - MSL estimation, MSM estimation, and indirect inference
   - Individual-level parameters
   - Expectation-Maximization Algorithm
   - Bootstrapping
7 Papers


