1 Course organization

- The course takes place on Thursdays, 14:30 - 17:30, at DIW, Room 2.2.008 (Friedensburg).
- Credit points: 9 ECTS. 9 three hour sessions + final exam session.
- First session: April 25th, 2019
- Final session: July 10th (Exam), 2019
- Compulsory reading in bold.
- Evaluation: if this course is taken for credits, the final grade will be determined by
  - 2 problem sets (to be completed in groups of max. 2 participants), weighted 1/3 each, and
  - a final exam, weighted 1/3.

2 Course objectives

- Discuss advantages and limitations of structural econometric models. Give students an understanding of why and when adding structure is important.
- Provide insights into strategy (especially, identification) in important papers in structural Labour, Public & IO literature. Give a feel of how one may go about establishing a structural model.
- Establish basic estimation techniques & numerical methods such as Simulation, Numerical integration and Discretisation.
- Develop matrix programming skills using Matlab. Loops vs. vectorisation; readability vs. speed; sustainable coding for several projects.

3 Introduction to Structural Approaches (April 25, PH)


References


## 4 Static discrete choice in IO (May 2, HU)

- Estimating demand and supply parameters in markets with differentiated products using aggregate (product-level) data.
- Coding exercise: preliminaries.

### References


## 5 Static discrete choice in IO (May 16, HU)

- Recap Berry et al. (1995).
- Coding exercise: Berry et al. (1995) nested fixed-point (NFP) algorithm.
- Discuss extensions and alternative estimation methods.

### References


6 Dynamic discrete choice in IO (May 23, HU)

- Introduction to dynamics.

References


7 Dynamic discrete choice in IO (June 6, HU)

- Coding exercise: Rust (1987)
- Examples of applications to demand estimation.
- Conditional choice probability (CCP) estimation.

References


8 Dynamic discrete choice in Labour I (June 13, PH)

- Dynamic incentives to labour supply: investing in human capital
- More on Discretisation
- Interpolation

Reference


9 EXTRA SESSION: Dynamic discrete choice in Labour I (June 14, 15.00 - 17.00, Dulles Room (52010) Boryana Ilieva)

- Dynamic optimisation in finite time: backward induction
- Structural Modelling in Python
- Programming practices in large econometric projects

Reference
- respy Python Package documentation
- respy Python Package code

10 Dynamic discrete choice in Labour II (June 20, PH)

- Dynamic incentives to labour supply: the role of education, full time and part time experience
- Identification and validation of structural parameters
- Policy Simulation

Reference

11 Partial job search (27th June, LH)

- Discuss motivation and rationale of job search models
- Understand optimal job search decisions
- Non-parametric identification & estimation using duration data
- Simulation using inverse probability sampling

References

12 Equilibrium job search (4th July, LH)

- Contrast optimal stopping to equilibrium job search models
- Discuss how on-the-job search generates wage dispersion of observationally equivalent workers
- Simulation & estimation of the model
References


13 Exam (July 10)