

**Prof. V. Steiner / A. Pape**

**Professur für Empirische Wirtschaftsforschung und Wirtschaftspolitik**

## **Applied Microeconometrics (SS 2021)**

### **Aim and contents of the course**

The aim of applied microeconometrics is to analyze individual behavior on the basis of micro data (cross-section and panel data of individuals, households, and firms) and evaluate the effects of economic policies at the micro level. Microeconomic methods account for the non-metric measurement and censoring of dependent variables at the individual level, selectivity and incomplete observability of endogenous variables, and the dependence of individual observations over time. The course surveys discrete-choice, limited-dependent and selection models, duration models, panel data models, and “treatment effects” estimation. Several applications in empirical microeconomics are presented. Students learn how to apply these methods using real-world micro data and the software package STATA.

All teaching will take place online and all materials will be provided on blackboard. There will also be a blackboard discussion forum.

### **Requirements and grading**

Knowledge of basic estimation methods, such as the linear regression model, instrumental variables and the maximum likelihood method is assumed.

Grading will be based on the **final exam** which may be written in English or German.

For PhD students, an empirical research paper is also required.

### **Background reading (optional):**

James Heckman, Micro Data, Heterogeneity, and the Evaluation of Public Policy, *Journal of Political Economy*, 2001, 109 (4), 673 – 748 (Nobel Lecture)

(Skip the technical parts at first reading; hopefully, you may want to re-read the full paper after completing this course.)

### **Text books (in increasing order of difficulty)**

M. Verbeek, *A Guide to Modern Econometrics* (4 ed.), Wiley, 2012.

W. H. Greene, *Econometric Analysis* (7 ed.), Pearson, 2012, Chapters 11 and 17-19.

A. C. Cameron and P. K. Trivedi, *Microeconometrics. Methods and Applications*, Cambridge University Press, 2005

J. Wooldridge, *Econometric Analysis of Cross Section and Panel Data*. 2<sup>nd</sup> ed., MIT Press, 2010

**Lecture slides** and references to **selected journal articles** on empirical applications will be made available at the course blackboard. Text books are not required for the course but recommended for background reading.

./.

## **Syllabus**

### **Introduction: The Econometric Analysis of Micro Data**

#### **1. Discrete Choice Models**

- 1.1 Binary logit and probit models
- 1.2 Multinomial discrete-choice models
- 1.3 Endogeneity in discrete-choice models

#### **2. Limited-Dependent Variable Models**

- 2.1 Tobit models
- 2.2 Selection models and treatment-effects estimation
- 2.3 Duration models

#### **3. Panel Data Models**

- 3.1 Static linear fixed-effects and random-effects models
- 3.2 Difference-in-Differences estimation and policy evaluation
- 3.3. Dynamic linear models
- 3.4. Non-linear panel data models