

MICROECONOMETRICS I

Organisation

Lectures: Prof. Steiner

Classes: Katharina Wrohlich (kwrohlich@diw.de)

Dates: Weekly, Tuesday, 14.00 – 15.30 (Lectures), 16.00 – 17.30 (Classes)
Starting: 17th April; *Ending:* 29th May; *Written exam:* Friday, 15th June, 14.00 – 15.00

Venue: FU Berlin, Garystr. 21, Hs 107/108

Aim and contents of the course

The **aim of microeconometrics** is to analyze individual behavior on the basis of micro data (cross-section and panel data) of individuals, households, and firms. The standard linear regression model is generally not applicable to micro data due to 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. To deal with these problems, over the last three decades a large number of statistical models and methods have been developed and extensively applied in various fields of empirical microeconomics, in particular labor and public economics, and industrial organisation.

This is the **first** in a sequence of two **courses in Microeconometrics** taught in the first half of the semester. The lectures introduce the **most commonly used models in applied microeconometrics**. **Applications** of these models to empirical data and to a variety of empirical topics are given in classes. All lectures and classes are given in English. An introduction to a statistical software package (**STATA**) is also given, but any other software package appropriate for the analysis of micro data and available at the university's PC-lab can also be used.

The course is appropriate for advanced students specializing in econometrics as well as for doctoral students specializing in empirical microeconomics. Basic knowledge of the theory of estimation and testing in econometrics, including Maximum Likelihood estimation, is assumed.

Requirements

Students are expected to attend all lectures and classes. There will be **two extended empirical exercises** involving substantial homework (can be in small groups) on the computer. To keep up with the material presented in the lectures and classes, students with little background in econometrics will also have to spend continuously substantial time (point estimate: 4 hours/week) on digesting the material at home.

There will be a **final exam** (60 minutes) covering material from both the lectures as well as the exercises and applications. The exam may be written in English or German. The empirical exercises will contribute 30% to the final grade.

2 credit points can be obtained for this course counting for Econometrics as "Pflichtveranstaltung" or for Economic Policy ("Volkswirtschaftspolitik") as "Wahlveranstaltung". The course can be combined with Microeconometrics II to obtain 4 credit points in either of the two mentioned subjects. This course, or alternatively Microeconometrics II, also counts for the microeconometrics part of Econometrics II in the **Berlin Graduate Program in Economics and Management Science**.

Literature

The lectures are mainly based on:

W. H. Greene, *Econometric Analysis* (5th ed), Prentice Hall, 2003, Chapters 13, 21 and 22.

The same – and much more – material is also contained in the more advanced textbooks:

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

J. M. Wooldridge, *Econometric Analysis of Cross Section and Panel Data*, MIT Press, 2002.

The material presented in the course is also made available in lecture notes downloadable for students from the Blackboard for this course. There, you will also find some additional material, such as data sets, exercise sheets, additional references and downloadable papers, and news concerning the course.

Syllabus

1. Microeconometrics – Topics, Methods, and Applications

Introduction to Data Analysis with STATA

Exercise 1: GLS Estimation of Cross-Section Savings Equations

2. Static Linear Panel Data Models

2.1. Pooled Linear Regression Model

2.2. Fixed-Effects Model

2.3. Random-Effects Model

Exercise 2: Panel Estimation of Empirical Wage Equations

3. Discrete Choice Models I

3.1. Linear Probability, Binary Logit and Probit Models

3.2. Conditional and Multinomial Logit Models

3.3. Models for Ordered and Count Data

Refresher: Maximum-Likelihood Method

Exercise 3: Empirical Analysis of Female Labor Force Participation

4. Limited-Dependent Variable Models I

4.1. Censored and Truncated Variables

4.2. Tobit Models

4.3. Selection Models

Application: The Demand for Health Care