

Microeconometrics - Summer 2021

Syllabus

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Course description

This course introduces the microeconomic methods needed for the analysis of cross-sectional and panel data and teaches the application of these methods and the programming of the respective estimators using the econometric software STATA. The goal of the course is to be able to read and understand more advanced methods in microeconomic research and to evaluate the output of academic articles using microeconomic methods. In addition, the students should be equipped to undertake their own microeconomic analyses.

1 Organizational information

1.1 Preconditions

We will assume that all students are familiar with basic statistics and econometrics. Hence, having taken the course "Econometrics" is a clear advantage.

1.2 Structure of the course and dates

- The course will be taught in English
- The course will be taught flipped classroom. The students are expected to prepare the course material before the in-class sessions. Course material consists of screencasts and textbook chapters. Preparation should amount to the time equivalent of a full lecture, i.e., 10 SWS in total. The interactive in-class sessions repeat the lecture material and discuss applied exercises. In-class exercises cover another 10 SWS.
- The dates of in-class sessions are blocked in the first half of the semester!
- In-class sessions via Zoom (link will be provided in RWTHmoodle)
 - Monday, 9:15–10:00
 - Monday, 12:15–13:00
 - Monday, 13:15–14:00
 - Dates: April 19, 26, May 3, 10, 17, 31, June 7

1.3 Course requirements

- The grade of the course consists of a take-home assignment and a take-home exam
- Exam
 - Take-home exam, 2 hours
 - In order to pass the course, you need to pass the exam. According to the examination rules, there will be two dates to write the exam in the summer term. Note that there will be no possibility to pass the exam offered in the winter term. The exam will take place in the examination period at the end of the summer term.
 - Relevant for the exam is all material from the lectures and exercise sessions. Please note that examples and small tasks from the lecture may be covered in the exam.
- Take-home assignment
 - To pass the assignment, you need to obtain 75% of the total points. The assignment grants a bonus of one grade increment to the exam (i.e. 1.3 instead of 1.7, etc. with the exception of an exam grade of 1.0).
 - The assignment will be handed out on June 10 and you will have until July 10 in order to complete it.
 - The take-home assignment will encompass applied exercises using STATA. We will provide student licences of STATA.
 - Assignments may be handed in individually or in groups of two persons.

1.4 Contact

- Prof. Dr. Almut Balleer
 - Email: balleer@ewifo.rwth-aachen.de
 - Office hours upon request, please sign up in advance via email

2 Contents of the course

- *Reviewing basic methods*
 - *OLS: estimation, inference and model specification*
(Wooldridge Chapters 1-4)
 - *Heteroscedasticity and endogeneity*
(Wooldridge Chapters 4-6, Cameron and Trivedi Chapter 4)
- *Linear panel data models*
 - *Pooled ordinary least squares*
(Wooldridge Chapter 6)

- *Random effects (RE) estimation*
(Wooldridge Chapter 10, Baltagi Chapters 2-4)
- *Fixed effects (FE) estimation*
(Wooldridge Chapter 10, Baltagi Chapters 2-4)
- *First-difference (FD) estimation*
- *Nonlinear (panel data) models*
 - *Maximum likelihood (ML) estimation*
 - *Binary response models (LPM, Logit, Probit)*
(Wooldridge Chapters 15, 16, Cameron and Trivedi Chapters 14-16, Baltagi Chapter 11)
 - *Corner solutions (Tobit)*
 - *Censored and selected data (Heckman)*
(Wooldridge Chapter 26)

3 Literature

Main reference

- Jeffrey M. Wooldridge: *Econometric Analysis of Cross-Section and Panel Data*, 2002

Supplementary reading

- Cameron, A. Colin and Pravin K. Trivedi: *Microeconometrics*, 2005
- Badi H. Baltagi: *Econometric Analysis of Panel Data*, 3rd edition, 2005

Background reading on introductory econometrics

- Stock, James H., und Mark W. Watson, *Introduction to Econometrics*, 2nd/3rd edition, Boston.
- Wooldridge, Jeffrey, *Introductory Econometrics - A Modern Approach*, South-Western Cengage Learning, 4th edition, 2009.
- Judge, George G. et al, *Introduction to the Theory and Practice of Econometrics*, Wiley, 2nd edition, 1988.
- Greene, William H., 2008, *Econometric Analysis*, Prentice Hall, 2011.