

Please notice that the course moved online.

10140201 Econometric Analysis

Lecture: Some videos and further instructions will be uploaded on blackboard. The course will be available from November 2nd on.

Instructor: Lars Winkelmann, lars.winkelmann@fu-berlin.de

Consultation hour: Monday 01:30–02:30 p.m.,
via Webex: <https://fu-berlin.webex.com/meet/lars.winkelmann>.

Tutorials: Videos will be provided via blackboard.

Instructor: Elias Wolf, eliaswolf@zedat.fu-berlin.de, contact Elias directly for an appointment.

Course description

This course covers statistical tools needed to understand empirical economic research and to plan and execute independent research projects. A theoretical background in linear regression analysis is the key. Selected topics include estimation and inference, asymptotic theory, big data, simultaneous equations models. Special attention will be placed on limitations and pitfalls of different methods, their potential fixes and connections.

Chapters:

- (1) Multiple linear regression model:
geometric properties, statistical properties, hypothesis testing.
- (2) Estimation methods:
Generalized least squares, instrumental variables estimation, generalized method of moments, maximum likelihood, penalized least squares.
- (3) Multivariate models:
linear simultaneous equation models, seemingly unrelated regression.
- (4) Model selection and specification:
Functional form, variable selection.

Prerequisites

The course builds on the bachelor-level courses Introduction to Econometrics(102038) and Statistics(102010, 102013), or equivalent. Students are assumed to be familiar with basic concepts in linear algebra, analysis, probability theory and statistical inference. The introductory course "Quantitative methods" (Oct. 20th and 22nd) is highly recommended.

Grading

Grades will be based on a final, 2 hours exam. You can collect extra points over the semester by handing in solutions of two voluntary problem sets (homework). Due dates for the problem sets are announced on blackboard. Your final grade of the Econometric Analysis course is based on the sum of extra points and the exam points.

The problem sets and final exam will emphasize different aspects of the course, including theory and empirical procedures. We will test if you understand the main results and underlying intuition, the tools and how they are applied.

Textbooks and Readings

The primary text is **Davidson and Mackinnon (2009, Econometric Theory and Methods)**. In addition, you can also consult more applied text books like Verbeek (2012, A Guide to Modern Econometrics) or Wooldridge (2018, Introductory Econometrics). A classic reference for asymptotic theory in the linear regression model is Hayashi (2000, Econometrics). From Greene (2008, Econometric Analysis) we got the title of our course. This book is very helpful to look up certain things and to get an idea about the material we will not be able to cover!