UNIVERSITÄT DUISBURG ESSEN

Offen im Denken

DAAD Guest Professorship
Prof. Dr. Mikael Lindahl

Winter term 2025/26

Applied Econometrics: Quasi-Experimental Methods for Causal Inference

Overview

This course focuses on the most common econometric methods used to analyze causal questions with observational data, with a particular emphasis on quasi-experimental research designs. We will cover instrumental variable methods, regression discontinuity designs and difference-in-differences methods. The course addresses both basic and advanced issues related to these methods, with special attention to understanding and estimating models that allow for heterogeneous treatment effects. By the end of the course, students should understand the underlying assumptions under which particular econometric estimators are unbiased and/or consistent, and know which method to apply in specific empirical settings. Students should also be able to critically assess empirical studies published in top journals and implement the econometric techniques covered in the course using real data. The overall focus of the course is in the application of econometric techniques.

Content

1. Quasi-experimental research designs: Introduction, the Rubin Causal Model and various average treatment effects
2. Instrumental variable methods
3. Regression discontinuity designs
4. Difference-in-differences

Prerequisites: Solid knowledge of microeconometrics and regression analysis at the level of Stock and Watson “Introduction to Econometrics”.

Registration

Please send an email to Prof. Mikael Lindahl mikael.lindahl@economics.gu.se by 10th October 2025 to register.

Dates

Lectures take place on Tuesdays, 10.15-11.45 (room WST A.08.17). The introductory event takes place on 14.10.2025.

Degree program eligibility

Students from the following master degree programs can enroll in the seminar: Gesunheitsökonomik, Märkte und Unternehmen, and Volkswirtschaftslehre.

Grading and ECTS

Course grades will be based on a replication exercise (70% of the final grade) and a class presentation (30% of the final grade). Active participation during class is expected.

6 ECTS points are granted for this course, meaning you have to invest approximately 180 hours of workload into this course. A substantial part is for your individual reading of the required literature and for thoroughly preparing your term paper.