Econometrics

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Lecturer: Dr. Igor Asanov

Language: English

Credits: 6

Format: Lecture + Exercise

Rooms: Moritzstr. 18 Campus Center - Raum 1118, Seminarraum 5

Time: Thursday, from 12:00 to 13:30 (Lecture), from 13:45 to 15:15 (Exercise)

First Lecture: 18.04.2024

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Course Handout: http://www.kirchkamp.de/oekonometrie/pdf/oekt-p.pdf

Overview

Econometrics helps to estimate the relationships between economic events. We will discuss which methods we can use to estimate these relationships and what are the underlying assumptions of these methods.

The aim of this course is to introduce students to empirical methods in economics. The goals of this course are to explain (1) which methods one can use to estimate the relationship between economic events, (2) assumptions of these methods, and (3) how to use these methods.

During the lectures you will learn:

- What are the key concepts in probability and statistics?
- Why and when to use maximum likelihood methods?
- What are the assumptions of the linear regression?
- How to provide hypothesis testing?
- When to use the non-linear regressions?
- What are the assumptions of multiple regressions model?
- How to provide joint-hypothesis testing?
- Why and when to use Bootstrapping?
- Why and when to use Machine Learning?
- Why and when to use Bayesian methods?

During the seminars you will learn:

- How to use statistical package **R**
- How to work with data sets
- How to provide a statistical analysis
- How to interpret and present your results

Prerequisites: Probability Theory

Preferred previous courses: Statistics, Econometrics, Programming in R

Course Structure

1. Review of Probability and Statistics
2. Review of Maximum likelihood and Method of Moments
3. Review of Linear Regression
4. Review of Models with Multiple Regressors
5. Bootstrap
6. Bayesian methods
7. Machine Learning