Applied Econometrics, CC502

Description: In this module we will review essential statistical concepts, including probability, random variables, distributions, correlation, sampling, estimation, confidence intervals and hypothesis testing. The course will cover fundamental methods for microeconomic data (with focus on linear models), including instrumental variables estimation. We will also discuss how results from such analyses can be interpreted and applied in the context of managerial decision-making. Furthermore, we will address some limitations and potential pitfalls of econometric methods. The target audience are graduate students (M.Sc. Management). The goal of this course is to give a solid introduction to microeconometric methods. The students should be enabled to understand basic concepts and to utilize these results for their own applied work.

Lecture: Friday 10.15-11.45, SN163, first lecture 8th September 2017

Exercise Sessions:

1. Friday, 8.30-10.00, L7, 3-5, P158

2. Monday, 8.30-10.00, L7, 3-5, S031

3. Monday, 10.15-11.45, L7, 3-5, P158

4. Wednesday, 13.45-15.15, L7, 3-5, S031

5. Wednesday, 15.30-17.00, L7, 3-5, S031

You are required to enroll for one of the five exercise classes offered via Portal[2] (1.-5. "Parallelgruppe") to ensure that everyone gets a desk in the computer pool. The exercise sessions start in the second week. We will use Stata to get some hands-on experience with data analysis.

Grading: Written exam (90 minutes) (6 ECTS points).

Prerequisites: Basic knowledge of introductory statistics at bachelor level.

Course website: `http://www.farbmacher.de/mannheim/ae/lecture.html`

Office hours: by arrangement

Recommended texts:

Jeffrey M. Wooldridge. *Introductory Econometrics.* Cengage Learning, 2013

Stock James H. and Watson Mark W. *Introduction to Econometrics.* Pearson, 2012

Cameron Colin A. and Trivedi Pravin K. *Microeconometrics: Methods and Applications.* Cambridge University Press, 2005

An excellent textbook by Bruce Hansen, which covers our topics in far more detail, is also available at `http://www.ssc.wisc.edu/~bhansen/econometrics/`.

Outline of the course (preliminary):

- **Main concepts in probability theory, statistics and econometric analysis**

- **Linear regressions with one regressor**

- **Linear regressions with multiple regressors**

  Hypothesis testing; Omitted variables; Model specification (dummy variables, interactions, etc.); Heteroskedasticity

- **Linear Probability Model**

- **Internal and external validity**

- **Repeated Cross Sections; Differences in Differences and Panel Data**

- **Overview instrumental variables estimation**