Econometrics – Syllabus

MA-Experimental and Empirical Economics

Herbert Stocker

Summer term 2024

Course Description

This course provides a comprehensive introduction to econometric methods commonly used in applied economic analysis. Students will learn the theoretical foundations behind various econometric techniques and their practical implementation using statistical software. Emphasis will be placed on understanding the assumptions underlying these methods, interpreting results, and critically evaluating empirical research.

Prerequisites:

Undergraduate-level coursework in statistics and econometrics. Familiarity with basic calculus and linear algebra. Proficiency in statistical software such as R is highly recommended.

Organization:

There will be weekly sessions in class for the lecture as well as the seminar.

Lecture: Monday,   15.00 - 16.30, HS1; first meeting: Mo 04.03.2024
Seminar: Thursday, 11.30 - 13.00, SR4; first meeting: Th 14.03.2024

Course homepage: https://www.hsto.info/econometrics2/

Course Outline (preliminary):

– Review of basic econometrics
– Conditional Expectation and Projection, The Algebra of Least Squares
– A Review of Large Sample Asymptotics and Asymptotic Theory for Least Squares
– Hypothesis Testing and Confidence Intervals
– GLS, Regression Systems, Seemingly Unrelated Regression
– Instrumental Variables
– Panel Data

Grading:

Seminar: The seminar is assessed on the basis of several short written tests, some online exercises and short presentations. The outcome of the lowest-scoring written test will be disregarded, i.e. not included in the result.

For successful completion of the seminar, participants must attain a minimum of 50% of the points available in the written examinations, as well as 50% of the maximum total points possible.

Lecture: The lecture will be graded based on a written comprehensive final examination, covering all materials taught throughout the lectures. The final examination may consist of both theoretical and practical components, including single choice and essay questions, data analysis tasks, and interpretation of results.

Exam date: Mo 24.06.2024, 15.00 - 16.30

The course grade is a credit ECTS weighted averages of all parts of the course.

Literature:

The review of basic econometrics will be based on my lecture notes. For the more advanced parts, I will frequently refer to Hansen (2022*a*) (see also Hansen (2022*b*)).

Excellent undergraduate textbooks are Stock and Watson (2020), Wooldridge (2012) and Verbeek (2008).

On a more advanced level Greene (2007), Davidson and MacKinnon (2003) and Cameron and Trivedi (2005) are often recommended.

References

Cameron, A. C. and Trivedi, P. K. (2005), *Microeconometrics: Methods and Applications*, Cambridge University Press.

Davidson, R. and MacKinnon, J. G. (2003), *Econometric Theory and Methods*, Oxford University Press, USA.

Greene, W. H. (2007), *Econometric Analysis*, 6th edn, Prentice Hall.

Hansen, B. (2022*a*), *Econometrics*, Princeton University Press.

Hansen, B. (2022*b*), *Probability and Statistics for Economists*, Princeton University Press.

Stock, J. H. and Watson, M. W. (2020), *Introduction to econometrics*, Pearson.

Verbeek, M. (2008), *A guide to modern econometrics*, John Wiley & Sons.

Wooldridge, J. M. (2012), *Introductory Econometrics: A Modern Approach*, 5 edn, South-Western College Pub.