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4th LJUBLJANA DOCTORAL SUMMER SCHOOL
3 - 21 July 2017

10 - 14 July 2017, from 9.00 to 16.00

Course title:
EMPIRICAL METHODS FOR ECONOMIC ANALYSIS
ECTS credits: 6

Lecturer: Professor Ulrike Schneider, Vienna University of Technology, Austria and Professor Martin Wagner, Technical University Dortmund, Germany, Institute for Advanced Studies, Vienna, Austria and Bank of Slovenia, Ljubljana

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AIMS OF THE COURSE:

Students are enabled to understand the main ideas, assumptions and applicability of the discussed econometric methods.
Background knowledge of statistics and basic econometrics will help the participants get the most out of this course.
For lab sessions, a portable computer with the software gretl (or R) is desirable. This software is open and multi-platform.

COURSE SYLLABUS:

1. **Introduction and review of basic econometric concepts**
   Review of OLS and GLS: Assumptions and properties
   Review of maximum likelihood estimation
   Hypothesis testing
   Specification analysis
2. **Panel data models**
   One way error component model
   Fixed and random effects specification
   Specification testing: The Hausman test
3. **Instrumental variables**
   IV and 2SLS estimation
   GMM estimation
   Hypothesis testing

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4. **Discrete choice models**
   Binary response (Logit and Probit)
   Multinomial response (multinomial, conditional and nested Logit)
5. **Selection and censored variables**
   Truncation and censoring (Tobit)
   Sample selection (Heckit, Roy)

LIST OF READINGS:

- Stock, J. and M. Watson (2003), Introduction to Econometrics.
- Greene, W. (2011), Econometric Analysis.
- Hsiao, C. (2003) Analysis of Panel Data.
- Cameron, A.C. and P.K. Trivedi (2005), Microeconometrics: Methods and Applications.

None of the above references corresponds one-to-one to our course and only selected parts of these books are discussed in class. We list these references since many of you may have had courses based on one of these books. All covered topics are treated to a certain extent in the book of Greene. During the course we will provide additional pointers to the literature.

TEACHING METHODS:

The course consists of a mix of lectures and lab sessions. In the lab sessions, the discussed methods are applied using real world data and examples. Additional exercises are provided through homework.

Lecturer's Biographical Note (around 1.000 characters):

Ulrike Schneider *holds a M.Sc. degree in Mathematics from the University of Vienna, a Ph.D. in Applied Mathematics from the University of Colorado at Boulder and her Habilitation in Statistics from the Vienna University of Technology. She is currently an Associate Professor at the Department of Statistics and Mathematical Methods in Economics at the Vienna University of Technology where she teaches courses in econometrics such as panel data methods and microeconometrics. Her research interests involve model selection methods with a focus on Lasso-type estimators. She is interested in statistical theory as well as applications of these methods to economic questions, including finding determinants of economic growth and determinants of retirement decisions.*

Martin Wagner *is Professor of Econometrics and Statistics in the Faculty of Statistics of the Technical University Dortmund since October 2012. He was educated in Vienna, at the Technical University and the Institute for Advanced Studies, obtaining Diplomas in Mathematics (1995) and Economics (1998), as well as his Doctorate (2000). He obtained his Habilitation in Economics in 2007 at the University of Bern. Martin Wagner has worked at the Technical University of Vienna, the Institute for Advanced Studies in Vienna, the University of Bern and has been Professor of Econometrics and Empirical Economics at the University of Graz before his arrival in Dortmund. Visiting positions have brought him to Princeton University and the European University Institute in Florence. His research interests are econometrics, quantitative economics, transition economics and environmental economics.*