PhD in Economics and Finance

Econometrics II - Microeconometrics

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Instructors:

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Aim and scope:

This part of the Econometrics course introduces students to basic econometric techniques for the analysis of observational cross-sectional and panel data. Students will learn how to develop, estimate, interpret and present results from microeconometric models for so-called limited dependent variables and linear models for the analysis of panel data. The characteristics of this type of data are such that statistical and econometric techniques appropriate for their treatment have a specific nature, generally differentiated from those appropriate for time series data. The qualitative nature of most of the information, the representativity of the samples used and the censoring issues associated to the dependent variables are, among others, some of the aspects that distinguish these techniques from an econometric perspective. Furthermore, the growing importance of this type of information has also meant that a significant number of official surveys from different countries have a panel data structure. This type of data has some econometric advantages and also requires the use of specific techniques.

Structure:

This is an introductory course to econometric methods for microeconomic data, as such it mostly focuses on methodologies and simple applications. Methods are presented during lectures. Although the emphasis will be on understanding why the data and sample characteristics justify adopting a particular estimation method, much of the material will still be fairly technical. This is meant to provide students with sufficient knowledge and jargon to read and understand journal articles with micro-econometric applications. Lectures are then complemented by tutorials during which students will go through simple applications and complete lab exercises using real data. These are meant to provide an in-depth understanding of the methods. Tutorials will require the use of the Stata software, which the students can access using their university license. Data, do-files and all the material presented during tutorials will be made available to students.

Assessment

Assessment is exam-based. This will include both theoretical questions and questions based on applications and requiring interpretation of empirical results.

Pre-requisites

This part of the course crucially builds on the material introduced in Econometrics I and some of the material introduced in Econometrics III. Additionally, students are expected to have acquaintance

with basic differential and integral calculus, linear algebra, and probability/distribution theory.

Topics:

a. Models for limited dependent variables

1. Binary choice models
2. Multi-response models: ordered and multinomial models
3. Count data models
4. Censoring, truncation and sample selection

b. Introduction to panel data models

1. Static linear models
2. Dynamic linear models

References:

A nice textbook with a good balance between theory and applications is:

M. Verbeek, *A guide to modern econometrics*, Wiley.

We will cover chapters 7 and 10.

Here are some additional references you may find useful:

Winkelmann, R. and Boes, S. (2009) Analysis of Microdata. Springer, Berlin

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

Scott Long and Jeremy Freese (2014) Regression Models for Categorical Dependent Variables Using Stata, College Station, Stata Press

Bond, S.R. Dynamic panel data models: a guide to micro data methods and practice. Portuguese Economic Journal 1, 141–162 (2002). https://doi.org/10.1007/s10258-002-0009-9

Further readings may be made available during lectures and tutorials