

Introduction

Econometrics II is the second part of a two-part econometrics course oriented to management science research. The Econometrics course is mainly concerned with microeconomics analysis, the analysis of individual-level data on individuals or firms. Econometrics II is the second part of the econometrics course.

Objectives

The objectives of the econometrics course are:

- i. To provide the students with some useful tools for his/her future research.*
- ii. To help the student to develop a way of thinking in quantitative terms.*

Econometrics II covers the analysis of cross-sectional and panel data that is based on alternative regression models. In some cases, as the Binomial and Poisson regression models, the dependent variable is discrete. In other cases, like censored regression and sample selection models, the normality assumption still holds, but the dependent variable has not been completely observed.

Learning Outcomes

- i. Understand maximum likelihood estimation and identify what is common and what not with respect to least squares estimation.*
- ii. Apply maximum likelihood estimation and likelihood ratio testing in specific models.*
- iii. Estimate and test regression models for binomial, multinomial, ordinal and count data.*
- iv. Estimate and test regression models for censored data.*
- v. Estimate and test sample selection models.*

Competences

General Competences

- *To understand the basic ideas of maximum likelihood estimation.*
- *To manage the main model of regression with limited dependent variables*

Specific Competences

- *To get practice with maximum likelihood estimation and likelihood ratio testing*
- *To understand and apply regression models for binomial and count data*
- *To understand and apply regression models for censored data*
- *To understand and apply selection models.*

Content

The course is divided in five sections: (1) binomial regression, (2) more on binomial regression, (3) Poisson regression, (4) Truncation and censoring and (5) Sample selection

Methodology

The course has 10 lectures, in five blocks of the two sessions each. The lectures are given in a traditional, professor-to-student way. The lecture notes describe the methods covered by the course, and there is a worked example for each block. Computation is expected to be done in Stata.

The material for this course consists in the lecture notes, the worked examples and data sets. The data sets are in Stata format (extension .dta).

Evaluation

Grading are based on the participation (1/3) and the exercises submitted by the students at the end of each chapter (2/3).

Course Outline & Bibliography

SESSION	DESCRIPTION	CASE/ACTIVITY
1-2	1. Binomial regression	[ECON--03] Limited dependent variables [ECON-E9] Counseling services data
3-4	2. Binomial regression (continuation)	[ECON-E10] Women unionization data
5-6	3. Poisson regression	[ECON-E11] Data on Chinese companies
7-8	4. Truncation and censoring	[ECON-E12] Data on ambulatory Expenditure
9-10	5. Sample selection	ECON-E13] Data on wives' working hours

Bibliography

- Wooldridge, J.M. (2000). *Introductory Econometrics*. South Western College Publishing.
- Cameron, A.C. et Trivedi, P.K. (2010). *Microeconomics using Stata*. Stata Press

Professor's Biography



Prof. Miguel-Angel Canela

Visiting Professor of Managerial Decision Sciences

Miguel Angel Canela teaches quantitative methods at IESE Business School. He holds a Ph.D. in mathematics from the Universitat de Barcelona and has been a professor at this university for thirty years, as well as a senior consultant and director of the Master in Quality Management at the Institut Català de Tecnologia.

After some years devoted to research in mathematical analysis, Prof. Canela's interest was driven towards interdisciplinary research. His research experience covers a wide spectrum of applications, from statistics and mathematical modelling to diverse fields such as biochemistry, botany, nutrition and management science. He is actually focused on business intelligence and the application of data mining techniques to business problems