COURSE SYLLABUS

ECONOMETRICS III, 2016-17
(5 ECTS credits)

Theoretical lectures:

Group 1 (English): Jaume García (Office 20.223)

Group 2 (Catalan): Sergi Jiménez (Office 20.280)

Group 3 (Catalan): Jaume García (Office 20.223)

Seminars:

101, 102, 103, 204	Maria Cervini
104, 105, 106	Sebastian Ellingsen
201, 202, 203	Sébastien Willis
205, 206	Sergi Jiménez
301, 302, 303	Jaume García

COURSE DESCRIPTION

Econometrics III is the third subject of the training cycle in Econometrics. The course is devoted to the discussion of the econometric techniques adequate for individual data (microdata). This means data coming from surveys and the observations correspond to individuals, households or firms. It is increasingly common to deal with this type of information in empirical analysis, given the increasing availability of official microdata and surveys conducted by individual firms or institutions to collect information.

Most of the topics refer to the case of information related to a specific period of time (cross-section data), but topics are also devoted to longitudinal data and panel data (data sets where the information corresponds to individuals observed in different time periods).

From the econometric point of view the features which characterize the course contents are:

- The treatment of qualitative information, both as explanatory variables (for instance modelling the effect of the type of occupation) and as dependent variables (the choice of transportation mode).

- The econometric implications in terms of estimation of having a dependent variable which is the result of a choice and a quantitative variable. For instance, tobacco consumption is the result of deciding to consume tobacco

and the amount of the expenditure for those who are consumers (zero for non-smokers).

- The importance of the representativeness of the sample you use to estimate a model (sample selection issues). For instance, in the case of tobacco the econometric implications of having information only about those who are smokers.

- The interest in analysing how the time an individual is in a particular state affects the probability of leaving that state. Unemployment is the typical example.

- The advantages of panel data in order to control the unobservables which generate inconsistent estimates when dealing with cross-section data

Although this is a methodological course, the empirical part of it has a very important weight in the presentations and in the final evaluation.

COMPETENCES

Previous competences

- Students are required to have a basic background in Econometrics, i.e. a good knowledge of the regression model (equivalent to the contents of the course Econometrics I) and hypothesis testing.

- Basic knowledge of the econometric package *Stata*

- Basic knowledge in Economics in order to read economic papers where the econometric techniques discussed in the course are applied.

Specific competences

- Ability to model qualitative factors in an econometric model

- Ability to specify an econometric model adequate to the type of model used to answer a question in a particular study

- Ability to take into account the characteristics of the data set into the econometric specification and the estimation of a model.

- Ability to make adequate interpretations of the estimation results of the microeconometric models discussed in the course.

Other competences

- Ability to work with real data

- Ability to analyse and summarize the results from an empirical analysis

- Team work

- Ability to present the results of an empirical analysis

METHODOLOGY

- The course is organized in 20 theoretical lectures and 6 seminars. Apart from that, preparing the lectures and the seminars require some individual and team work training.

- In the theoretical lectures the nine topics of the syllabus will be covered. These sessions should be complemented with the reading of some sections of some of the books included in the reading list.

- The seminars will be devoted to the discussion of an empirical paper related to the topic of the seminar and an empirical exercise with real data using Stata. The preparation and presentation of the materials for the seminar have to be done in groups (no more than four people). This will serve as practice of team work and a way of confronting different points of view. In any case, the evaluation of participation in the seminars will be done at an individual level.

- The solutions to the exercise lists and a summary of 2000 characters (including blanks) of the empirical paper for the seminar will have to be submitted by e-mail not later than 08:00 of the Wednesday of the week of the corresponding seminar to econometria.3.upf@gmail.com indicating in the subject GRUP1, GRUP2 or GRUP 3, depending on the group to which those sending the exercises belong.

- The summary should include the objectives of the paper, the econometric characteristics of the models and a discussion of the main empirical results.

- All the materials of the course will be available in *Campus Global*.

EVALUATION

To pass the course students have to obtain 50 out of 100 points according to the following distribution:

Final exam: 70 points (minimum of 25 to have the possibility of passing the course)

Participation: 30 points. This includes submitting the solutions of the exercise lists and attending the seminars as a requirement. Participation has to be active during the seminars. Attendance is a requirement but does not contribute to the final marks.

There will be a second chance to take the final exam at the end of the quarter for those who failed to pass the course, *only* for those who have attended seminars and who have obtained 15 out of 70 in the final exam.

CONTENTS

Topic 1: Qualitative explanatory variables

      Greene, 8.2
      Wooldridge (2010a), 7.1 a 7.4

Topic 2: Binary discrete choice models

      Cameron and Trivedi, 14.1 a 14.3
      Greene, 19.2, 19.3, 19.4.3
      Jones, Chap. 3
      Stock and Watson, 11
      Wooldridge (2010a), 7.5 i 17.1
      Wooldridge (2002), 15.1 a 15.6

Topic 3: Multinomial discrete choice models

      Cameron and Trivedi, 15.1 a 15.4
      Greene, 19.7
      Jones, Chap. 5
      Wooldridge (2002), 15.9

Topic 4: Limited-Dependent variables models

      Cameron and Trivedi, 16.1 a 16.3
      Greene, 20.2, 20.3.1 a 20.3.3
      Wooldridge (2010a), 17.2 i 17.4
      Wooldridge (2002), 16.1 a 16.6

Topic 5: Sample selection models

      Cameron and Trivedi,16.5, 16.6,
      Greene, 20.4.1 a 20.4.4
      Jones, Chap. 7 and Chap. 8
      Wooldridge (2010a), 17.5
      Wooldridge (2002), 17.1 a 17.4.1

Topic 6: Policy evaluation models

      Cameron and Trivedi, 25.1 a 25.3, 25.5
      García-Pérez, Chap 1 i 2

Topic 7: Count data models

      Cameron and Trivedi, 21.1 a 21.10
      Greene, 14.1 a 14.4
      Stock and Watson, cap. 10
      Wooldridge (2010a), Chap. 13 and Chap. 14
      Wooldridge (2002), Chap. 10

Topic 8: Panel data models

Cameron and Trivedi, 21.1 a 21.10
Greene, 14.1 a 14.4
Stock and Watson, Chap. 10
Wooldridge (2010a), Chap. 13 and Chap. 14
Wooldridge (2002), Chap. 10

Topic 9: Introduction to big data in economics

Varian, H. R. (2014), "Big Data: New Tricks for Econometrics." *Journal of Economic Perspectives*, 28(2): 3-28.

Einav, L. and J. D. Levin (2013), "The Data Revolution and Economic Analysis", NBER Working Paper No. 19035

BIBLIOGRAPHY

Basic

JONES, A., *Applied Econometrics for Health Economists*, Radcliffe Publishing, 2007

STOCK, J.H. and WATSON, M.W., *Introduction to Econometrics*, Pearson, 2012

WOOLDRIDGE, J.M., *Introductory Econometrics: A Modern Approach*, Gengage, 2013

Intermediate

GREENE, W.H., *Econometric Analysis*, Pearson, 2012

Advanced

CAMERON, A.C. and TRIVEDI, P.K., *Microeconometrics. Methods and Applications*, Cambridge University Press, 2005

CAMERON, A.C. and TRIVEDI, P.K., *Microeconometrics using STATA,* STATA Press, 2009

WOOLDRIGDE, J.M., *Econometric Analysis of Cross-Section and Panel Data*, MIT Press, 2010

OUTLINE

Week	Dates	Theory lectures	Seminars
1	9/01 to 13/01	Topic 1	
2	16/01 to 20/01	Topic 2	
3	23/01 to 27/01	Topic 2, Topic 3	
4	30/01 to 03/02	Topic 3	List 1 (Topic 1,2) Reading 1
5	06/02 to 10/02	Topic 4	List 2 (Topic 3) Reading 2
6	13/02 to 17/02	Topic 5	List 3 (Topic 4) Reading 3
7	20/02 to 24/02	Topic 6	List 4 (Topic 5) Reading 4
8	27/02 to 03/03	Topic 7	List 5 (Topic 6) Reading 5
9	06/03 to 10/03	Topic 8	List 6 (Topic 7) Reading 6
10	13/03 to 17/03	Topic 9 List 7 (Topic 8) Reading 7	