APPLIED ECONOMETRICS (21901)
(Third quarter)

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Lectures:	Thursday, Friday		9:00-10:30	Room: 20.031
Seminars:	101	Wednesday	9:00-10:30	Room: 13.107
	102	Wednesday	13:00-14:30	Room: 13.107
	103	Wednesday	14:30-16:00	Room: 13.107

Objectives

The course will introduce the student into the empirical analysis of some economic issues using econometric techniques.

The course will be organized around some economic topics, closely related to some papers in the literature. There will be a general emphasis on the usual stages in applied work in economics:

- How to define the question to be analyzed (objective)
- The economic theory framework corresponding to the empirical model
- The type of data necessary (and available) for the analysis
- The econometric techniques adequate for the exercise given the characteristics of the data and the model
- The interpretation of the results
- The elaboration of the conclusions

The course will pay specific attention to the econometric techniques used in the different topics. Examples of fields of the potential empirical applications are: labour economics, health economics, consumer demand, sports economics, housing economics, among others.

Prerequisites

Similar to those in the Econometrics I, II and III courses in the grade of Economics at Universitat Pompeu Fabra, i.e:

- Basic knowledge of the concepts of statistical inference, hypothesis testing and maximum likelihood estimation
- Knowledge of the regression model and consequences of problems of internal and external validity
- Basic knowledge of instrumental variables, time series and dynamic causal effects
- Basic knowledge of microeconometrics: discrete choice models, limited-dependent variables models, panel data

Organization

Teaching consists of 19 lectures and 6 seminars of 1,5 hours each. The econometric methodologies and the discussion of an empirical application associated to each topic will be developed in the lectures. Seminars will be devoted to the discussion of empirical homework exercises, one for each topic, and also to the presentation of the contents of published papers related to empirical applications of the econometric techniques of each topic. Students will be asked to write an essay based on an empirical exercise they have to do with real data, to be presented in the last two lectures of the course. In order to practice team work, homework exercises, presentations of papers and the essay are expected to be done in groups of 3-4 people belonging to the same seminar group.

The solutions of the assignments should be sent by mail, as a pdf file, before the date of the corresponding seminar. The deadline for handing in the essays is June 6.

Participation and asking questions are highly encouraged in lectures and seminars.

Evaluation

In order to pass the course, the student should obtain at least 50 points out of 100, minimum of 20 from the exam, according to the following distribution:

Paper presentation: 10 points

Empirical essay and presentation: 20 points

Participation: 10 points

Exam: 60 points

For those not passing the course in June and who have obtained at least 15 points in the exam and have attended and participated in the seminars, there will be a second chance to take the exam in July.

Syllabus

1. Multinomial discrete choice models (MDCM)
   - ✓ Independence of Irrelevant Alternatives
   - ✓ Nested Logit
   - ✓ Mixed Logit

   Application: The demand for health care services
   Sahn, D.E., S.E. Younger and G. Genicot (2003), "The demand for health services in rural Tanzania", *Oxford Bulletin of Economics and Statistics*, 65, 241-259

2. Limited-Dependent Variables Models (LDVM)
    - ✓ Limitations of the Tobit model
    - ✓ Double-Hurdle models
    - ✓ Two-part models

    Application: A model of wild-life valuation
    Martínez-Espiñeira, R. (2006), "A Box-Cox double-hurdle model of wildlife valuation: the citizen's perspective", *Ecological Economics,* 58, 192-208

3. Policy Evaluation Methods (PEM)
    - ✓ Differences in differences
    - ✓ Propensity score matching
    - ✓ Regression discontinuity design

    Application: Consequences of school construction
    Duflo, E. (2001), "Schooling and labor market consequences of school construction in Indonesia: Evidence from an unusual policy experiment", *American Economic Review*, 91, 795-813

4. Duration models (DM)
    - ✓ Basic concepts
    - ✓ Continuous time models
    - ✓ Unobserved heterogeneity

    Application: Unemployment benefits and unemployment duration
    Narendrantahan, W., S. Nickell and J. Stern (1985), "Unemployment Benefits Revisited", *Economic Journal*, 95, 307-329

5. Panel data (PD)
    - ✓ Correlation between individual effects and the explanatory variables
    - ✓ Dynamic models
    - ✓ Discrete choice models

    Application: Travel demand in urban areas
    Su, Q. (2010), "Travel demand in the US urban areas: a system dynamic panel data approach", *Transport Research Part A*, 44, 110-117

There will also be additional empirical references for each topic to be discussed in the presentations.

The econometric contents of each topic can be followed using the lecture notes and the following textbooks:

Jones, A., *Applied Econometrics for Health Economists: A Practical Guide*, Radcliffe Publishing, 2007 (basic)

Greene, W.H., *Econometric Analysis*, Prentice Hall, 2008 (intermediate)

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

Cameron, A.C. and Trivedi, P.K., *Microeconometrics using STATA*, STATA Press, 2010 (advanced)

Wooldridge, J.M., *Econometric Analysis of Cross-Section and Panel Data*, MIT Press, 2010 (advanced)

Course plan

Lecture	April 3	Multinomial Discrete Choice Models	Jaume García
Lecture	April 4	Multinomial Discrete Choice Models	Jaume García
Lecture	April 10	Multinomial Discrete Choice Models	Jaume García
Lecture	April 11	Multinomial Discrete Choice Models	Jaume García
Lecture	April 24	Limited Dependent Variables Models	Jaume García
Lecture	April 25	Limited Dependent Variables Models	Jaume García
Seminar	*April 30*	*Assignment MDCM*	*Jaume García*
Lecture	May 2	Limited Dependent Variables Models	Jaume García
Seminar	*May 7*	*Assignment LDVM*	*Jaume García*
Lecture	May 8	Policy Evaluation Methods	Sergi Jiménez
Lecture	May 9	Policy Evaluation Methods	Sergi Jiménez
Seminar	*May 14*	*Papers' presentations*	*Jaume García*
Lecture	May 15	Policy Evaluation Methods	Sergi Jiménez
Lecture	May 16	Duration Models	Jaume García
Seminar	*May 21*	*Assignment PEM*	*Sergi Jiménez*
Lecture	May 22	Duration Models	Jaume García
Lecture	May 23	Duration Models	Jaume García
Seminar	*May 28*	*Papers' presentations*	*Jaume García*
Lecture	May 29	Panel Data	Jaume García
Lecture	*May 30*	*Panel Data*	*Jaume García*
Seminar	June 4	Assignment DM	Jaume García
Lecture	June 5	Panel Data	Jaume García
Lecture	June 6	Assignment PD	Jaume García
Lecture	June 12	Essays' presentations	Jaume García
Lecture	June 13	Essays' presentations	Jaume García