Program of Statistics II

Master Social Sciences

Helena Veiga

December 28, 2021

1. Objectives

Models with discrete dependent variables and applications of panel data methods in all fields of social sciences have become increasingly important. This course starts with a brief review of concepts previously carried out in other courses of the program and focuses afterwards mainly on the methodological and empirical issues concerning the analysis of cross section and panel data in the specific context of social sciences. On satisfactory completion of this course, students will be provided with a number of sophisticated econometric tools which are of use in advanced empirical research or professional work.

2. Outline

Chapter1. Multiple regression-re-visiting

   1.1 Revision of basic concepts

   1.2 Sampling distributions of the OLS estimators

   1.3 Testing hypotheses about a single population parameter

   1.4 Confidence Intervals

   1.5 Testing hypotheses about a single linear combination of the parameters

   1.6 Testing multiple linear restrictions

Chapter 2. Models with categorical dependent variables

   2.1 The linear probability model

   2.2 The probit, logit models and interpretation

   2.3 Estimation and inference in models with categorical dependent variables

3. Grade

The final mark of the course is based on:

- A final exam (50%).

- A project (50%). The project consists of reproducing some empirical results of a published paper or a student idea structured in a research paper.

4. References

- C. Cameron and Trivedi, Microeconometrics, Cambridge University Press, 2005.

- F. Hayashi, Econometrics, Princeton University Press, 2000.

- J. Wooldridge, Econometric Analysis of Cross Section and Panel Data, MIT Press, 2010.

- M. Creel: Econometrics. Available at http://pareto.uab.es/mcreel/Econometrics/econometrics.pdf

- M. Arellano, Panel Data Econometrics, Oxford University Press, 2003.

- W.H. Greene, Econometric Analysis, Prentice Hall, 7th edition, 2012.