

MICROECONOMETRICS

Academic Year: 2023/2024

Term: 4th Trimester

ECTS: 4.5

INSTRUCTOR(S)

Pedro Raposo

CONTACTS AND OFFICE HOURS

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BIOGRAPHY

Pedro Raposo is an Associate Professor at CATÓLICA-LISBON, teaching Mathematics, Labor Economics, Microeconometrics, with research interests in Labour Economics and on high dimensional fixed effects in the context of big panel datasets. He is a consultant at National Statistics Institute working mainly on a big data project. Since 2008, Pedro worked on several research projects with different institutions, such as, Banco de Portugal, the National Statistics Institute(INE) on topics ranging from Econometrics to Labor Economics. Some of this research was used in his PhD in Economics at Tilburg University, under the supervision of Prof. Jan van Ours. Pedro has published his work in top journals such as Journal of Econometrics, Review of Economics and Statistics, Journal of Human Resources, Labour Economics, Economics Letters, and the Journal of Population Economics. Before Pedro taught at ISEGI (UNL), where he did a MSc in Statistics, and worked in the financial sector at SIBS, after his undergraduate studies in Economics at ISEG.

COURSE OVERVIEW

The goal of this course is to provide students with a thorough understanding of a variety of econometric models that economists use for empirical microeconomic research. Special emphasis will be given to the application of these models to economic data in recent empirical research, in order to illustrate how they can be employed to answer empirical questions in different fields, labor or health economics or finance research questions. Put particular emphasis on the interpretation of the results and on learning to use the econometric software “STATA”.

LEARNING OBJECTIVES

After the completion of the course the student should know 1. how to deal with different datasets, cross section and panel data; 2. Deal with different econometric models (write and interpret the analytical expressions of the different estimators and implement in Stata).

TEACHING AND LEARNING METHODOLOGY

The course uses both lectures and learn by doing using stata. Each chapter we go from the lecture and in that sense the theoretical knowledge to a learn by doing session where we learn how to implement in stata empirically the knowledge given in the lecture.

REQUIRED BACKGROUND

Students should have attended at least one statistics undergraduate course. Students should know how to compute an expected value and a partial derivative.

ASSESSMENT

Problem Sets (#5)	individual grade	10%
Research Paper	individual grade	40%
Final Exam	individual grade	50%

Please refer to the appendix for additional details of these components.

COURSE CONTENT

1. Panel data models (week 1-2)
 - 1.1. Panel data, Fixed-effects and random-effects and first-differencing.
2. Treatment effects (week 3)
 - 2.1. Econometric models for policy evaluation: lab and natural experiments, matching, difference in differences, IV and control functions.
3. Maximum Likelihood and numerical optimization (week 4)
 - 3.1. The log-likelihood function and the maximum likelihood estimator. Application to stata.
4. Discrete choice models (week 5)
 - 4.1. Binary choice models, multinomial, ordinal response and count regression models.
5. Decomposition methods (week 6)
 - 5.1. Oaxaca-Blinder decomposition, Quantile regression based decomposition (Machado and Mata), RIF-regression (Firpo, Fortin, and Lemieux), When do covariates matter? Gelbach decomposition.
6. Tobit models (week 6)
 - 6.1. Corner solution, sample selection and censored regression models.

BIBLIOGRAPHY

Recommended books:

Introductory econometrics - Wooldridge

Microeconometrics – Cameron and Trivedi

Microeconometrics using Stata – Cameron and Trivedi

ADDITIONAL RESOURCES

Bootstrap is a curated collection of resources, techniques, and personal development tools from academic sources, thought-leaders, and well-established productivity practices. [bootstrap_ - Productivity & Study Resources | CATÓLICA-LISBON \(ucp.pt\)](#)

CODE OF CONDUCT AND ETHICS

Católica Lisbon School of Business and Economics is a community of individuals with diverse backgrounds and interests who share certain fundamental goals. A crucial element to achieve these goals is the creation and maintenance of an atmosphere contributing to learning and personal growth for everyone in the community. The success of CATÓLICA-LISBON in attaining its goals and in maintaining its reputation of academic excellence depends on the willingness of its members, both collectively and individually, to meet their responsibilities.

Along with all the other members of our community, students are expected to follow professional standards and CATÓLICA-LISBON standards of Academic Integrity. Some details should be mentioned here: Please arrive on time for class with uninterrupted attendance for the duration of the class. Signing an attendance sheet for anyone else in the class constitutes fraud and a violation of the CLSBE code of conduct. Use of computers and other electronic devices during the class is not allowed unless expressly requested by the instructor of the course. Students who persistently act in a disruptive and disrespectful manner during the class session may be invited to leave.

Students are expected to behave at all times according to the fundamental principles of academic integrity, including honesty, trust, fairness, respect, and responsibility. In particular,

- a. In **individual graded assignments** of any type, students may not collaborate with others or use any materials without explicit permission from the instructor of the course;
- b. In **group assignments** and reports, all students listed as authors should have performed a substantial amount of work for that assignment;
- c. It is dishonest to fabricate or falsify data in experiments, surveys, papers, reports or other circumstances; fabricate source material in a bibliography or “works cited” list; or provide false information in other documents in connection with academic efforts;
- d. **Plagiarizing**, i.e. “to steal and pass off the ideas or words of another as one’s own and or to use another’s production without crediting the source” (Merriam-Webster Dictionary) is an Academic Integrity breach. It can be avoided by using proper methods of documentation and acknowledgement. Visit this guide for additional resources on how to avoid plagiarism in your written submissions <http://en.writecheck.com/plagiarism-guide>
- e. In **exams** students must not receive or provide any unauthorized assistance. During an examination, students may use only material and items authorized by the faculty. Use of smartwatches or other communication devices is not permitted during the exam.

Academic integrity breaches will be dealt with in accordance with the [school’s code of Academic Integrity](https://www.clsbe.lisboa.ucp.pt/system/files/assets/files/academicintegritycode.pdf): <https://www.clsbe.lisboa.ucp.pt/system/files/assets/files/academicintegritycode.pdf>