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Applied Economics I

Academic Year: (2023 / 2024)   **Review date: 15-06-2023**

Department assigned to the subject: Economics Department

Coordinating teacher: CARRASCO PEREA, RAQUEL

Type: Compulsory ECTS Credits : 9.0

Year : 2 Semester : 1

REQUIREMENTS (SUBJECTS THAT ARE ASSUMED TO BE KNOWN)

Graduate courses in Econometrics I and Econometrics II (Master in Economic Analysis)

OBJECTIVES

The goal of this course is to link econometric methods for estimation of causal effects to data. We will cover a number of theoretical topics that are important in applied research in labor economics, health economics, industrial organization and related fields.

The course will be organized in lectures to provide the economic framework and the econometric issues for each topic. The lectures will be complemented with problem sets, that include both theoretical and empirical exercises. Students ought to handle the Stata program on their own and read related papers.

DESCRIPTION OF CONTENTS: PROGRAMME

1. Empirical strategies for identification of causal effects
1.1. Aims and methods of empirical research
1.2. Microeconomic data structures
1.3. Causal relationships of interest
1.4. The identification problem: potential outcomes and causality

2. Social experiments
2.1. Advantages of randomized experiments: The independence condition.
2.2. Internal and external validity
2.3. Examples

3. Selection on observables
3.1. Identification with observational data
3.2. Conditional independence
3.3. Conditional mean-independence
3.4. Regression and causality

4. Matching
4.1. Introduction
4.2. Matching methods and assumptions
4.3. Propensity score
4.4. Relation with regression

5. Identification using external information
5.1. Natural experiments and instrumental variables (IV)
5.2. Identification using IV. The Wald estimator
5.3. Local average treatment effects (LATE)
5.4. Control function approach

6. Regression Discontinuity (RD) designs
6.1. Discontinuities in assignment rules
6.2. Sharp and fuzzy RD designs

7. Differences in Differences (DD)
7.1. Natural experiments and DD
7.2. The fundamental identification assumption
7.3. Differences in differences in differences (DDD)

| 7.4. | Synthetic control methods |
| 7.5. | DD with panel data |

8.	Quantile methods
8.1.	Unconditional and conditional quantiles
8.2.	Quantile regression (QR). Interpretation
8.3.	Extensions

9.	Structural estimation
9.1.	Policy parameters
9.2.	Computational problems
9.3.	Methods of estimation
9.4.	Applications

ASSESSMENT SYSTEM

Grading will be based on a midterm (40%), a presentation (20%) and a final exam (40%)

% end-of-term-examination: 40
% of continuous assessment (assigments, laboratory, practicals...): 60

Students must obtain at least 40% in the final exam to pass the course. This rule applies both in the regular and the second call. In those cases in which, after weighting the grades from the continuous evaluation and the final exam, the final grade is above (or equal) 5 but the minimum grade in the final exam is not obtained, the final grade in the course will be 4 (Failed), unless the exam grade is below 3, in which case the final grade will be 3 (Failed).

% end-of-term-examination:	40
% of continuous assessment (assigments, laboratory, practicals…):	60

BASIC BIBLIOGRAPHY

 - A. Colin Cameron & Pravin K. Trivedi Microeconometrics: Methods and Applications, Cambridge University Press, 2005
 - Jeffrey M. Wooldridge Econometric Analysis of Cross Section and Panel Data Econometric Analysis of Cross Section and Panel Data, MIT Press, 2010
 - Joshua D. Angrist & Jörn-Steffen Pischke Mostly Harmless Econometrics. An Empiricist's Companion, Princeton University Press, 2009
 - Pravin K. Trivedi & A. Colin Cameron Microeconometrics Using Stata, Revised Edition, Stata Press, 2010