Topics in Applied Econometrics for Public Policy

Section II:

Non-parametric Estimation and Methods for Quantile regression

Master in Economics of Public Policy and Finance

Barcelona School of Economics

LAURA MAYORAL
Institute for Economic Analysis and BSE

Spring 2024

1. DESCRIPTION

The course "Topics in Applied Econometrics for Public Policy" consists of two sections. This syllabus describes the second section.

This 20-hour graduate course will cover non-parametric estimation methods and methods for quantile analysis. The course will focus on the application of these techniques, with the primary objective of ensuring that students have a comprehensive understanding of the methods and can apply them critically in their own analyses. It assumes a good command of basic statistics and econometrics and will begin with a quick review of some fundamental concepts that will be useful for the course. Stata will be the primary software used.

2. INSTRUCTORS AND WEBSITE OF THE COURSE

Main Instructor: Laura Mayoral, mayoralaura@gmail.com

Teaching Assistant: Tancredi Rapone, tancredi.rapone@icloud.com

Website of the course:

http://mayoral.iae-csic.org/econometrics2024/econometrics_2024.htm

3. COURSE OUTLINE

(1) **Introduction**: Overview of the course. Review of basic concepts.
(2) Part I: **Non-parametric and Semi parametric Estimation.** Motivation. Kernel density estimation. Non-parametric regression. Introduction to semi-parametric methods.
(3) Part II: **Quantile regression.** Motivation. Unconditional and conditional quantiles. Quantile regression. Quantile treatment effects.

4. TEXTBOOKS

Main references:

- Cameron, A. Colin and and Pravin K. Trivedi, *Microeconometrics: Methods and Applications*, Cambridge University Press, New York May 2005
- Cameron, A. Colin, and Pravin K. Trivedi. *Microeconometrics Using Stata*. Revised Edition. Stata Press, 2010.
- Angrist, J. D., Pischke, J.-S. (2008). *Mostly Harmless Econometrics: An Empiricist's Companion*. Princeton University Press.

Other useful resources:

- Stata do files and datasets, Cameron and Trivedi's book:
  https://cameron.econ.ucdavis.edu/mmabook/mmaprograms.html

Additional references will be provided in the website of the course as the course evolves.

5. ORGANIZATION OF THE COURSE

- *Classes*: Teaching consists of 10 lectures (2 hours each) and 5 seminars (1 hour each). Participation in class and seminars is highly encouraged.
- *Course Materials*: All the materials of the course will be posted in this website: http://mayoral.iae-csic.org/econometrics2024/econometrics_2024.htm as well as in Classroom. Please check it regularly for updates.
- *Assignments*: There will be problem sets (to be submitted individually) and one empirical project (to be done in groups). Contents and submission dates and rules will be provided soon. Late submissions are graded with zero points.

6. OFFICE HOURS

By appointment.

- For questions about the main lectures, please send an email to arrange a day/time to: mayoralaura@gmail.com.
- For questions about the seminars, please send an email to arrange a day/time to: tancredi.rapone@icloud.com.

7. GRADING

- Final examination (50%)
- Problem sets (30%)
- Empirical project (20%)

You will need at least 50 points out of 100 to pass this section of the course.