12I001
Econometrics

6 ECTS

Overview and Objectives

This course is intended to provide students with the most widely used and up-to-date econometric tools of cross-sectional and panel data analysis. The focus will be on the identification and estimation of causal effects. It will enable students both to conduct their own empirical research projects, and assess empirical research papers. We will implement each of the techniques using standard statistical software and real-world data. We will stress the correct statistical interpretation of the results as well as their translation into economically meaningful answers.

Required Activities

The course will be structured into 3 hours of lectures a week and 1 hour of TA session.
We will use the econometrics software Stata. The Review Course in Mathematics, Statistics and Computational Tools in September should have prepared the students to immediately start using Stata for empirical work.

Evaluation

The course will be graded based on five take-home problem sets (25%) and a written exam (75%). Problem sets can be submitted individually or in groups of up to three students. The final problem set will involve an in-class presentation.

Materials

We will mostly follow the following textbook:

Stock, James H. and Mark W. Watson (2011), Introduction to Econometrics,

3rd ed., Pearson Addison-Wesley.

The lectures will also draw heavily from the more advanced textbook:

Angrist, Joshua D. and Jörn-Steffen Pischke (2009), Mostly Harmless

Econometrics: An Empiricist's Companion, Princeton University Press.

However, any textbook in econometrics will cover the topics developed in the course.

The technical level of the course will be closer to introductory textbooks, but students with a strong mathematical background may find advanced textbooks more appropriate.

Alternative Introductory textbook

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Wooldridge, Jeffrey M. (2009), Introductory Econometrics: A Modern Approach, 4th ed., South-Western Cengage Learning.

Advanced textbooks

Cameron, A. Colin and Pravin K. Trivedi (2005), Microeconometrics: Methods and Applications, Cambridge University Press.

Wooldridge, Jeffrey M. (2002), Econometric Analysis of Cross Section and

Panel Data, MIT Press.

Companion textbook

Kennedy, Peter (2008), A Guide to Econometrics, 6th ed., Blackwell

Resources

Additional course materials (problem sets, articles, etc) will be provided on the course webpage:
http://www.econ.upf.edu/~gonzalez/Econometrics

Topics and Reading List

Week 1: Introduction to the identification and estimation of causal effects

* Stock & Watson, Chapter 1

* Mostly Harmless, Chapters 1 and 2 (pages 1-16).

"Con out of Economics" Symposium, *Journal of Economic Perspectives*, Spring 2010, Vol. 24, No. 2.

Week 2: Ordinary Least Squares

Stock & Watson, Chapters 4-9

Mostly Harmless, Chapter 3

Week 3: Discrete choice models

Stock & Watson, Chapter 11

Week 4: Experiments

Stock & Watson, Chapter 13

Mostly Harmless, Chapter 2

Weeks 5 and 6: Instrumental Variables

Stock & Watson, Chapter 12

Mostly Harmless, Chapter 4

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Weeks 7 and 8: Panel data and difference-in-differences

Stock & Watson, Chapter 10

Mostly Harmless, Chapter 5

Week 9: Regression Discontinuity Designs

Stock & Watson, Chapter 13.4

Mostly Harmless, Chapter 6

Imbens, Guido and Thomas Lemieux (2008) "Regression discontinuity designs: A guide to practice," *Journal of Econometrics*, vol. 142(2), p. 615-635.

Lee, David S. and Thomas Lemieux (2010) "Regression Discontinuity Designs in Economics." *Journal of Economic Literature* 48(2), p. 281-355.

Week 10: Overview and applications

(student presentations)

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