

Advanced Regression

Objectives

- To further the capacity of the students to use linear regression as a tool for empirical analysis
- To introduce students to topics that reflect the best of contemporary econometrics
- To teach students how to assess the validity of empirical analysis presented to them by
 - organizing each methodological topic around an important real-world question
 - by considering alternative specifications for the same data set as a way to assess whether their substantive findings are robust
 - by systematically addressing the various threats to validity of the analysis

Contents

1. Review of probability and statistics
2. Linear regression with one regressor
3. Linear regression with multiple regressors
4. Regression with panel data
5. Instrumental variable regression
6. Regression with a binary dependent variable (if time permits)
7. Time series regression (if time permits)

Evaluation

- ES: 2-hour final written exam during the last week of the semester (60% of the grade), quizzes, exercises and projects (20% of the grade), class participation (20% of the grade).
- Reexamination session (September) : 2h written test

Textbooks

- J. Stock and M. Watson, *Introduction to Econometrics*, second edition, Pearson, 2007.

Characteristics

- 6 ECTS credits
- Compulsory course for the master in statistics
- Fall Semester
- Learning activities: 2 hours lectures/presentations, 2 hours exercises per week. The students will actively participate in the presentation and explanation of the concepts involved.
- Prerequisite: knowledge of probability, statistical inference, linear algebra, multivariate calculus.

Teaching team

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