

## 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. Regression with a binary dependent variable
6. Instrumental variable regression
7. Time series regression

### 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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