

Course: Advanced Econometrics for Education Economists

University of Zürich, 26 to 28 September 2011

Abstract: This seminar style course involves three hours of teaching on quantile regression and three hours of teaching on the estimation of treatment effects. Furthermore, students will present and discuss a research paper of their own. Students will receive feedback through the intensive oral discussion during the course and through a 'referee' report written by one of the fellow students. Grading is on a pass/fail basis. In addition to the referee report, students have to hand in solutions to a set of problems after the end of the course.

Quantile regression is increasingly used in applied econometric research. The method allows to estimate the differential effects of covariates along the conditional distribution of the response variable. Linear quantile regression can now be estimated with most econometric software packages. This course provides an up-to-date introduction into linear quantile regression.

Evaluation of treatment effects, e.g. the effects of policy interventions, has become a major focus in the applied educational literature. Researchers are very concerned about identification issues and they do not want their evaluation results to depend solely on functional form assumptions. Nonparametric and semiparametric methods relax the functional form assumptions needed. This course provides an introduction into some basic nonparametric and semiparametric methods and shows how to apply these methods in order to estimate treatment effects.

Outline

1. Introduction to linear quantile regression: Distance function, Asymptotic distribution, Properties of the estimator, Interpretation as Method-of-Moments Estimator
Application: Mincer Earnings Equation
2. Quantile Regression: Minimum-Distance estimation
Application: Earnings Regression based on cell data
3. Quantile Regression: Decomposition Analysis
Application: Gender Wage Gap
4. Non- and semiparametric methods: Kernel Regression, Nearest Neighbor Regression, Partially Linear Model, Semiparametric Selection Model
5. Estimation of Treatment Effects: Matching, IV methods, Regression Discontinuity Design

References:

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