Minicourse: Econometric Evaluation of Social Programs
June 8-13
CIDE Summer School

Instructor: Edward Vytlacil, Yale University

This mini-course will consider the econometric evaluation of policy counterfactuals. Our starting point will be to consider treatment effect parameters when (1) the effect of the treatment varies across individuals; and (2) selection into treatment is possibly related to the idiosyncratic treatment effect. We then move beyond the conventional treatment effect parameters to consider the evaluation of alternative policies that would change the selection of individuals into the treatment. Our prototypical examples will be (1) college education, with policy counterfactuals that would encourage college attendance such as a tuition subsidy, and (2) job training programs, with policy counterfactuals that would change the assignment of workers into the programs. We will consider alternative criteria for evaluating policies. Our focus will be on the evaluation of such programs using selection models, though we will also consider other approaches.
Course Outline:

R denotes required readings, NR denotes readings that are not required.

1. Heterogeneity in Program Impacts, Modeling Self-Selection, and Parameters of Interest.

We first briefly review structural models and counterfactual notation. We then discuss possible ways to summarize the effect of an intervention when the effect varies across people, including both mean and distributional treatment parameters. We then consider alternative policy changes, and what information is required to evaluate proposed policy changes according to alternative criteria.

Readings:

NR James J. Heckman/Jeffrey Smith/Nancy Clements Making the Most Out Of Programme Evaluations and Social Experiments: Accounting for Heterogeneity in Programme Impacts. Review of Economic Studies, 64 October 1997, Nr. 221

2. Overview of some possible approaches

We consider some alternative approaches to evaluate policy counterfactuals, including the use of randomized experiments, before-after and differences-in-differences approaches, matching approaches, regression discontinuity approaches, instrumental variable approaches, and selection model approaches. Emphasis will be given to analyzing these approaches when treatment effects vary across individuals.

Readings:

3. Further Analysis of Instrumental Variables and Selection Models to Evaluate Treatment Effects.

We consider the structure of parametric, semiparametric, and nonparametric selection models, and relate them to the independence and monotonicity assumptions imposed in the LATE framework. We analyze the identification and estimation of treatment effects while controlling for self-selection. We focus on the Marginal Treatment Effect parameter (MTE), and consider how the shape of the MTE function can provide guidance on whether a program currently in place is targeting those individuals who would most benefit from the program.

Readings:


4. Selection Model to Evaluate Policy Changes

We consider the evaluation of policies that change incentives for entering the program or otherwise change selection into the program. Our prototypical examples will be (1) tuition subsidies on self-selection into college attendance, and (2) alternative rules for case-workers to select individuals into job training. Most of the discussion will be in the context of selection models.

Readings:


R James J. Heckman/Edward Vytlacil Marginal Policy Changes and Treatment Effects for Individuals at the Margin. Unpublished manuscript, University of Chicago, Department of Economics, 2007

5. Adding Additional Structure to Selection Models

We continue to investigate the use of selection models to evaluate treatment effects, but now consider alternative restrictions on the outcome equation in addition to the selection model for selection into treatment.

Readings:


NR. Cecilia Machado/Azeem M. Shaikh/Edward J. Vytlacil Instrumental Variables and the Sign of the Average Treatment Effect. Unpublished manuscript, Yale University, Department of Economics, 2009
6. Statistical Decision Rules and Decision Making under Ambiguity

We now consider two important complications, sampling variability in the estimation and that objects of interest may not be identified.

Readings:

R Charles Manski Identification Problems and Decisions Under Ambiguity: Empirical Analysis of Treatment Response and Normative Analysis of Treatment Choice. Journal of Econometrics, 95 April 2000, Nr. 2,

R Charles Manski Statistical Treatment Rules for Heterogeneous Populations. Econometrica, 72 July 2004, Nr. 4
