Control Functions in Microeconometric Models

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These lectures will focus on the use of control functions in econometric models to account for unobserved heterogeneity which contaminates the parameters of interest. We will begin by examining the relationship between instrumental variables and control function estimation in linear models. We will then illustrate the use of control functions in a range of non linear models including sample selection and endogenous treatment models. Our discussion will initially focus on models where the control function is motivated by a process characterized by "selection on unobservables". The lectures will also cover a range of parametric and semi-parametric settings. We will also discuss control function estimation when the approach is motivated via "selection on observables". The list of topics to be discussed is the following. A reading list will be available early next week.

1. Linear models
2. Non linear models
3. Sample selection
4. Identification via conditional second moments via the use of control functions
5. Models with non additive heterogeneity
6. Selection on observables
7. Linear panel data models
8. Non linear panel data models
9. Non linear panel data models with non additive individual effects