The University of Chicago
Department of Statistics

Seminar Series

AZEEM SHAIKH

Department of Economics
The University of Chicago

Inference for Partially Identified Econometrics

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133 Eckhart Hall, 5734 S. University Avenue
Refreshments following the seminar in Eckhart 110.

ABSTRACT

We develop computationally intensive, yet feasible methods for inference in a very general class of partially identified econometric models. Let P denote the distribution of the observed data. The class of models we consider are defined by a population objective function $Q(\theta, P)$ for $\theta \in \Theta$. The point of departure from the classical extremum estimation framework is that it is not assumed that $Q(\theta, P)$ has a unique minimizer in the parameter space Θ. The goal may be either to draw inferences about some unknown point in the set of minimizers of the population objective function or to draw inferences about the set of minimizers itself. To this end, we study two distinct definitions for confidence regions. In the first formulation, the object of interest is some unknown point $\theta \in \Theta_0(P)$, where $\Theta_0(P) = \arg\min_{\theta \in \Theta} Q(\theta, P)$, and so we seek random sets that contain each $\theta \in \Theta_0(P)$ with at least some prespecified probability asymptotically. In the second formulation, the object of interest is $\Theta_0(P)$ itself, and so we seek random sets that contain this set with at least some prespecified probability asymptotically. For each of these two notions of confidence regions, we construct random sets satisfying the desired coverage property under weak assumptions. We also provide conditions under which the confidence regions are uniformly consistent in level.