Semi-nonparametric indirect inference

Stellingen

behorende bij het proefschrift

Semi-Nonparametric Indirect Inference

door

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1. In economic theoretic models, parameters have a well defined economic meaning. In an econometric context, such parameters can be estimated from observational data only under the influence of an axiom of correct specification.

2. While algebraically tractable models might offer valuable analytical insight and elegant theoretical descriptions of economic activity, they have little credibility in a statistical context requiring the strict satisfaction of correct specification axioms.

3. Loosely speaking, axioms of correct specification need only hold asymptotically. By letting the 'complexity' of the parameter space increase with sample size, econometric models might achieve a considerable level of generality.

4. The class of Semi-Nonparametric Indirect Inference (SNPII) estimators offers a flexible framework that allows us to conduct statistical inference on parameters lying in large infinite dimensional spaces.

5. SNPII estimators can be used in the context of complex high-dimensional nonlinear dynamic models that typically lead to analytically intractable criterion functions for extremum estimators.

6. A special sub-class of SNPII estimators that makes use of infinitely many parametric auxiliary estimators can be shown to be $\sqrt{T}$-consistent and asymptotically Gaussian.

7. Many propositions can be shown to hold true by appropriately defining the space of interest, notions of convergence, continuity, smoothness, distance and others. Some notions are just more intuitive than others.

8. I like Karl Popper's definition of science as being essentially composed of a collection of falsifiable statements. Evidence in favor or against a statement is often gathered through the use of statistical tools. The validity of these tools relies on a large number of mathematical axioms that are unverifiable. I do not know where this leaves us.