

**Estimating Nonseparable Selection Models:
A Functional Contraction Approach**

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Abstract:

We propose a novel method for estimating nonseparable selection models. We show that, for a given selection function and under suitable contraction conditions, the potential outcome distributions are nonparametrically identified from the selected outcome distributions and can be recovered using a simple iterative algorithm based on a contraction mapping. This result enables a full-information approach to estimating selection models without imposing parametric or separability assumptions on the outcome equation. We propose a two-step estimation strategy for the potential outcome distributions and the parameters of the selection function and establish the consistency and asymptotic normality of the resulting estimators. Monte Carlo simulations demonstrate that our approach performs well in finite samples. The method is applicable to a wide range of empirical settings, including consumer demand models with only transaction prices, auctions with stochastic winning rules and incomplete bid data, and Roy-type models with data on accepted wages.