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Testing Identifying Assumptions in Nonseparable Panel Data Models

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Abstract

Recent work on nonparametric identification of average partial effects (APEs) from panel data require restrictions on individual or time heterogeneity. Identifying assumptions under the "generalized first-differencing" category, such as time homogeneity (Chernozhukov et al. 2013), have testable equality restrictions on the distribution of the outcome variable. This paper proposes specification tests based on these restrictions. The bootstrap critical values for the resulting Kolmogorov-Smirnov and Cramer-von-Mises statistics are shown to be asymptotically valid and deliver good finite-sample properties in Monte Carlo simulations. An empirical application illustrates the merits of testing nonparametric identification from an empiricist's perspective.

JEL: C1, C14, C21, C23, C25

Keywords: panel data, nonparametric identification, specification testing, discrete regressors, bootstrap adjustment, Kolmogorov-Smirnov statistic, Cramer-von-Mises statistic

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