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# Nonparametric Estimation in case of Endogenous Selection \*

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This paper addresses the problem of estimation of a nonparametric regression function from selectively observed data when selection is endogenous. Our approach relies on independence between covariates and selection conditionally on potential outcomes. Endogeneity of regressors is also allowed for. In the exogenous and endogenous case, consistent two-step estimation procedures are proposed and their rates of convergence are derived. Pointwise asymptotic distribution of the estimators is established. In addition, bootstrap uniform confidence bands are obtained. Finite sample properties are illustrated in a Monte Carlo simulation study and an empirical illustration.

*Keywords:* Endogenous selection, instrumental variable, sieve minimum distance, regression estimation, inverse problem, inverse probability weighting, convergence rate, asymptotic normality, bootstrap uniform confidence bands.

*JEL classification:* C14, C26

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