

IDENTIFICATION OF NONSEPARABLE MODELS WITH A BINARY ENDOGENOUS REGRESSOR

QUANG VUONG[†] AND HAIQING XU[‡]

ABSTRACT. The aim of this paper is to establish nonparametric identification of structural functions in nonseparable models with a binary endogenous regressor. The outcome variable may be continuous, discrete or a mixture of both, and the instrumental variable can take binary values. We distinguish the cases where the model includes or does not include a selection equation for the binary endogenous regressor. First, we establish point identification of the structural function when it is continuous and strictly monotone in the latent variable. Next, we characterize all the testable restrictions on observables imposed by the model with or without the selection equation. Lastly, we generalize our identification results to the case where the outcome variable has a probability mass in its distribution such as when the outcome variable is censored or binary.

Keywords: Nonparametric identification, nonseparable models, discrete endogenous variable, instrumental variable, quantile regression, treatment effects

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[†](corresponding author) Department of Economics, New York University, 19 W. 4th Street, 6FL, New York, NY, 10012, qvuong@nyu.edu.

[‡]Department of Economics, University of Texas at Austin, BRB 3.160, Mailcode C3100, Austin, TX, 78712, h.xu@austin.utexas.edu.