

Improving IV regression with Support Vector Machine

immediate

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Abstract

We study a linear model in which independent variables are endogenous to random error. In the well-known two-stage least square method, we assume linear relation between dependent variables and instrumental variables (IVs), whereas in many economic models the dependency among variable is not necessarily linear. We use support vector machine, a method that is commonly used in machine learning, for explaining relation between endogenous variables and IVs in the first stage of two-stage regression process. The proposed method is shown to be consistent, and its performance with finite samples is evaluated by simulations.