Semiparametric transformation model with endogeneity: a control function approach

Prof. Dr. Ingrid Van Keilegom
(Universite catholique de Louvain, Belgium)

November 21, 2012

We consider a semiparametric transformation model, in which the regression function has an additive nonparametric structure and the transformation of the response is assumed to belong to some parametric family. We suppose that endogeneity is present in the explanatory variables. Using a control function approach, we show that the proposed model is identified under suitable assumptions, and propose a profile likelihood estimation method for the transformation. The proposed estimator is shown to be asymptotically normal under certain regularity conditions. A small simulation study shows that the estimator behaves well in practice.