A New Semiparametric Quantile Panel Data Model: Theory and Applications

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ABSTRATC: Motivated from modeling the impact of foreign direct investment (FDI) to economic growth, in this paper, we propose a new semiparametric quantile panel data model with correlated random effects in which some of the coefficients are allowed to depend on some smooth economic variables while other coefficients remain constant. A three-stage estimation procedure is proposed to estimate both constant and functional coefficients based on the integrated quasi-likelihood approach and their asymptotic properties are investigated. We show that the estimator of constant coefficients is root-N consistent and the estimator of varying coefficients converges in a nonparametric rate. A Monte Carlo simulation is conducted to examine the finite sample performance of the proposed estimators. Finally, the proposed semiparametric quantile panel data model is applied to estimating the impact of FDI on economic growth using the cross-country data from 1970 to 1999.

This is a joint work with Dr. Linna Chen and Dr. Ying Fang.

Keywords: Correlated Random Effect; Foreign Direct Investment; Panel Data; Quantile Regression Model; Quasi-likelihood; Semi-parametric Model; Varying Coefficient Model.