

ACMS Statistics Seminar

Jiwoong Kim
Tues, November 29
154 Hurley Hall
4:00 – 5:00 PM



The Cramer-von Mises Type Estimation and Hypothesis Testing in the Regression Model with Panel Data

I will discuss the application of Cramer-von Mises (CvM) type estimation method to the regression model with panel data – called panel regression model – and obtain estimators of regression parameters as a result of the application. The error in the panel regression model is decomposed into two unobservable components: time-invariant individual effect and remainder disturbance which varies with cross section and time. The panel regression model discussed is the random effects model: the individual effect is uncorrelated with covariates. Time periods are the same for all cross section units – called balanced panel – and the time dimension fixed while the dimension of the cross section units increases to infinity when we come to investigating the asymptotic properties of the CvM type estimators. A simulation study compares the performance of the CvM type estimators with other estimators and shows the superiority of the CvM type estimators. I will discuss testing for the existence of the individual effect. The CvM type test statistic converges in distribution to quadratic forms of normally distributed random variables. An analytic expression for the converging distribution function will be derived, and the hypothesis test will be performed.

The Department of Applied and Computational
Mathematics and Statistics

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