Economics Seminar, Indian Statistical Institute, New Delhi

Speaker: Valentyn Panchenko, University of New South Wales

Title: Efficient Estimation of Parameters in Marginals in Semiparametric Multivariate Models

Day and Date: 4:15 PM, Thursday, 21st April, 2011

Venue: Seminar Room 2, ISI Delhi

Abstract

Recent literature on semiparametric copula models focused on the situation when the marginals are specified nonparametrically and the copula function is given a parametric form. For example, this setup is used in Chen, Fan and Tsyrennikov (2006) [Efficient Estimation of Semiparametric Multivariate Copula Models, JASA] who focus on efficient estimation of copula parameters. We consider a reverse situation when the marginals are specified parametrically and the copula function is modelled nonparametrically. This setting is no less relevant in applications. We use the method of sieve for efficient estimation of parameters in marginals and show its asymptotic distribution. Simulations suggest that the sieve MLE can be up to 40% more efficient relative to QMLE depending on the strength of dependence between marginals. An application using insurance company loss and expense data demonstrates empirical relevance of this setting.