

Multivariate Skew Normal-Based Stochastic Frontier Models

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Abstract

In this talk, a new multivariate skew normal-based stochastic frontier model (SFM) is developed to model the relationship between technical inefficiency and random noises. The proposed model is a flexible extension of the classical normal–half-normal SFM and does not require the data are independent and identically distributed. The new proposed model accommodates both positive and negative skewness and provides an alternative solution of ‘wrong skewness’ problems from the classical SFM. Maximum likelihood estimators of parameters are provided. The simulation study and a real data example are given for illustration of our results