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Comparison three moment methods of parameter estimation for FGM copula in presence of outlier

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Abstract

Paying attention to copulas for estimating the dependency parameters, have become popular in recent decades. Various methods of estimation for dependency parameter of copula in presence of outliers are considered in this paper. We only consider the methods based on moment, which named moment, copula moment and mixture methods. However, moment method of estimation is an ancient method, but we sometime face limitations. One of these limitations is that the boarders of parameter/parameters may be changed; and this causes the obtained value of estimation to become non-suitable. Thus, two other methods of estimation are considered, which are related to moment. The results show that when we use copula moment and mixture methods for copulas in presence of outliers, the obtained MSEs are smaller. Also, copula moment is the best estimator based on MSE.

Keywords: Bivariate copula, Outlier, Moment method, Copula moment, Mixture, Estimation, Uniform distribution, FGM copula.

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