

[Invited Talk]

# Evaluating Copula-Based Multivariate Density Forecasts in Selected Regions of Support

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## Abstract

We propose a testing framework for comparing the predictive accuracy of copula-based multivariate density forecasts, focusing on a specific part of the joint distribution. The test is based on the Kullback-Leibler Information Criterion, using out-of-sample conditional likelihood and censored likelihood to restrict the evaluation of the forecasts to the region of interest. Monte Carlo simulation results show that the proposed tests have satisfactory size and power properties in small samples. In an empirical application to daily exchange rate returns we find evidence that the dependence structure varies with the sign and magnitude of returns, such that different parametric copula models achieve superior forecasting performance in different regions of the support. Our empirical analysis emphasises the importance of allowing for lower and upper tail dependence for accurate forecasting of common extreme movements of the different currencies.

*Keywords:* Copula-based density forecast; Kullback-Leibler Information Criterion; out-of-sample forecast evaluation.

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