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Adaptively weighted combinations of tail-risk forecasts

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Adaptively Weighted Combinations Of Tail-Risk Forecasts

Brief Description

Several methods have been proposed in the literature for forecasting daily Value at Risk (VaR) and Expected Shortfall (ES), with tail risk models generally classified into three main categories: parametric, semi-parametric, and non-parametric. However, given the various sources of uncertainty associated with the data, market conditions, estimation methods, and exogenous variables that can have a significant impact on the dynamics of tail risk, there is no single model that consistently outperforms all the others.

To mitigate the impact of model misspecification and improve the predictive accuracy of individual models, we investigate the use of two forecast combination approaches.

In the proposed approaches, the weight of the most accurate set of predictors is determined adaptively according to strictly consistent loss functions for VaR and ES employed in the Model Confidence Set procedures.

Our findings reveal that combinations of VaR and ES forecasts result in higher predictive accuracy over a wide range of individual competitors.

Abstract

Several methods have been proposed in the literature for forecasting daily Value at Risk (VaR) and Expected Shortfall (ES), with tail risk models generally classified into three main categories: parametric, semi-parametric, and non-parametric. However, given the various sources of uncertainty associated with the data, market conditions, estimation methods, and exogenous variables that can have a significant impact on the dynamics of tail risk, there is no single model that consistently outperforms all the others. To mitigate the impact of model misspecification and improve the predictive accuracy of individual models, we investigate the use of two forecast combination approaches. In the proposed approaches, the weight of the most accurate set of predictors is determined adaptively according to strictly consistent loss functions for VaR and ES employed in the Model Confidence Set procedures. Our findings reveal that combinations of VaR and ES forecasts result in higher predictive accuracy over a wide range of individual competitors.