Abstract:

The evaluation of Value-at-Risk (VaR) forecasts is fundamental for the stability of our financial system through the regulatory frameworks Basel III for banks and Solvency II for insurances, but also for their internal risk forecasts. While the statistical literature advices the use of scoring (loss) functions for forecast evaluation, the economic literature as well as the practical implementation in the regulatory systems is still mainly concerned with so-called VaR backtests. The fundamental connection of these two principles is still not well understood, which is especially problematic as these approaches regularly deliver contrasting results in practice. In this project, we formally connect these concepts by drawing on the recent literature on forecast calibration, which I will review extensively in this talk. For this, we make use of recently developed decompositions of scoring functions into interpretable components assessing (mis)calibration, discrimination, and uncertainty and show that backtests only assess calibration while entirely ignoring a forecasts' discrimination. Intuitively, this corresponds to ignoring the forecasts' ability to discriminate between periods of lower and higher risk. As a consequence, we propose the practical use of score decompositions that, additional to backtests, reveal information on the overall predictive ability and the hitherto unexploited information on discrimination and hence provoke more informative insights in applications.