Seminar

FORECASTING LARGE REALIZED COVARIANCE MATRICES: THE BENEFITS OF FACTOR MODELS AND SHRINKAGE

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Campus S. Caterina

Abstract: [www.stat.unipd.it/fare-ricerca/seminari](http://www.stat.unipd.it/fare-ricerca/seminari)
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We propose a model to forecast very large realized covariance matrices of returns, applying it to the constituents of the S&P 500 on a daily basis. To deal with the curse of dimensionality, we decompose the return covariance matrix using standard firm-level factors (e.g. size, value, profitability) and use sectoral restrictions in the residual covariance matrix. This restricted model is then estimated using Vector Heterogeneous Autoregressive (VHAR) models estimated with the Least Absolute Shrinkage and Selection Operator (LASSO). Our methodology improves forecasting precision relative to standard benchmarks and leads to better estimates of the minimum variance portfolios.

*Joint work with Diego Brito and Ruy Ribeiro*