

One deals with the estimation and consequent forecast of the integrated covariance matrix in the context of high-frequency stock price data and high dimensionality regarding the number of analyzed assets. We present several methods for the integrated covariance estimation and then use these estimates as a basis for forecasting models. We mainly focus on the multivariate extensions of the HAR model. Finally, in the empirical study, we compare different model-estimator combinations (based on 5-min interval observation and 50 assets) using economic and statistical evaluation. Economic evaluation is based on portfolio optimization, including transaction costs.