# A dynamic model for daily equity covariances based on multiple measures

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## Abstract

We construct a model for realized measures and outer products of past daily returns that is based on normal and Wishart densities to measure the daily equity covariance matrix. The model is typically designed for high-frequency measures obtained from different intra-day sampling frequencies. These measures are noisy and hence it is important that their contribution to the likelihood function is weighted appropriately. We formulate a parsimonious dynamic conditional model for extracting a potentially high-dimensional equity covariance matrix. The modeling approach is illustrated for three portfolios of 2, 5 and 15 equities from the Dow Jones Industrial Average index. We empirically find that the in-sample fit of the model is dominating those of other models and that the model is robust to sudden changes in volatility and dependence.

*Key-words*: high-frequency data; multivariate volatility; realized covariance; Wishart density.