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## **‘REALIZED COVARIANCE MODELING, FORECAST ERROR VARIANCE DECOMPOSITIONS AND A MODEL-BASED DIEBOLD-YILMAZ INDEX’**

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### **ABSTRACT**

A generalized version of the spillover index of Diebold and Yilmaz is derived from a Conditional Autoregressive Wishart model (CAW). The CAW model is first estimated by Quasi Maximum Likelihood under L1-penalization and taking advantage of the analytical gradient. The spillover index is then computed, accounting for the interdependence between realized variances and covariances. To recover the index, a novel rectangular forecast error variance decomposition is introduced, assuming shocks on  $N$  equity returns and a reaction on the  $N$  realized variances and the  $0.5N(N-1)$  realized covariances. Empirical examples contrast our index to a benchmark specification including only spillover between realized variances.