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# Forecasting Aggregate Stock Market Volatility using Financial and Macroeconomic Predictors: Which Models Forecast Best, When and Why?

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## Abstract

This paper revisits the topic of forecasting aggregate stock market volatility using financial and macroeconomic predictors in a comprehensive Bayesian model averaging framework. Candidate models include time-varying (with various degrees of dynamics) and constant-coefficient autoregressions based on the logarithm of monthly realized volatility augmented with exogenous predictors capturing risk premia, leverage, bond rates and proxies for credit risk. Thus, we simultaneously address parameter instability and model uncertainty that unavoidably impact volatility predictions. Applied to monthly S&P 500 volatility from 1926 to 2010, we find that Bayesian model averaging with time-varying regression coefficients provides very competitive density and modest improvements in point forecasts compared to rival approaches.

**Keywords:** Bayesian model averaging, forecasting, model uncertainty, parameter instability, realized volatility

(JEL: C11, C22, C51, C53)

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