

A Predictive Ability Based Model Selection Method

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Abstract

A testing procedure is proposed for autoregressive conditional heteroskedasticity model selection on the basis of evaluating the accuracy of conditional mean or conditional variance forecasts produced by them. The procedure hinges upon the joint fluctuations of the standardized one-step-ahead prediction errors of the candidate models making simultaneous use of the information that they provide. The exact distribution of the test statistic is explicitly derived and the method is illustrated on ARCH models used for predicting the one-trading-day-ahead conditional variance of the dependent variable as well as on ARFIMA and HAR models used for predicting the one-trading-day-ahead realized volatility.

Keywords: multivariate gamma distribution, predictability, realized volatility, intraday volatility.