

The main objective of this thesis is to analyze whether traded volume increases predictive power of volatility. We are mostly focused on Garman-Klass volatility estimator, which is more efficient than squared returns. Both univariate (AR, HAR, ARFIMA) and multivariate models (VAR, VAR-HAR) are used to find out if traded volume improves volatility forecasting. Furthermore, GARCH(1,1) both with and without traded volume is carried out and forecasted. All these methods are estimated on a basis of rolling window and during each step 1-day ahead forecast is computed. Final assessment is based on MAPE, RMSE and Mincer-Zarnowitz test of the out-of-sample forecasts, which are compared with the realized volatility. It turns out that traded volume slightly improves predictive power of the scrutinized models in case of FTSE 100 and IPC Mexico, contrary to Nikkei 225 and S&P 500 when a decrease of the predictive power is detected. Moreover, we observe that only HAR and VAR-HAR models are able to produce an unbiased forecast. As the evidence of the improvement is not conclusive and to maintain model parsimony, HAR model fitted by Garman-Klass volatility appears to be the best alternative in case of missing the realized volatility.