

Utilizing Market Information in Ensemble Machine Learning for Stock Returns Prediction (the Case of Russian Stock Market)

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Abstract

For years stock market returns prediction has been a relevant and challenging task of practical forecasting. A variety of financial econometrics and machine learning techniques have been widely used in search of new, superior predictive techniques. This study aims to evaluate the validity of various market indicators as features for a number of machine learning algorithms for the task of the Russian stock market returns short-run prediction. In particular, we assess the ability of indicators of market liquidity, volatility, and prices in the derivatives markets (futures market) to contain information useful for the prediction of the stock prices of the largest Russian companies. We train multiple machine learning models and ensembles, consistently including these indicators as explanatory features to assess how it changes the quality of the resulting forecasts. We show that the indicators of liquidity and volatility of the stock and futures markets are valuable sources of information about the future dynamics of stock returns, and, thus, the models that use them deliver better the predictive performance.

Keywords: Stock returns forecasting; Liquidity spillovers; Volatility spillovers; Futures market; Russian stock market; High-frequent data

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