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## **ASYMMETRIC EFFECT OF TRADING VOLUME ON REALIZED VOLATILITY**

### **Abstract:**

This study examines the asymmetric effect of trading volume on realized volatility. The study introduces new realized volatility models to examine this effect: one model uses asymmetric trading volume variables based on intraday returns, and the other uses asymmetric trading volume variables based on daily returns. These new variables are introduced into the heterogeneous autoregressive (HAR), with the leverage effect, and realized semivariance (RSV) with the leverage effect models. The in-sample estimation results show that the asymmetric variables are significant. Furthermore, out-of-sample forecasting comparisons present results in which asymmetric trading variables increase the forecasting accuracy of realized volatility. These empirical analyses show that it is important to consider asymmetric trading volume in modelling and forecasting realized volatility.

### **Keywords:**

realized volatility, trading volume, asymmetric effect, forecast performance

**JEL Classification:** C58, G17, C50