Applied Economics ›
Volume 44, 2012 - Issue 12



Original Articles

# Dynamic relations between order imbalance, volatility and return of top gainers

Yong-Chern Su, Han-Ching Huang & Shiue-Fang Lin

Pages 1509-1519 | Published online: 09 Mar 2011

Cite this article https://doi.org/10.1080/00036846.2010.543080



Full Article | Figures & data | References | Citations | Metrics
Reprints & Permissions | Read this article | Share

## Abstract

Investors have been working hard to find the best trading strategy. Previous studies suggest that order imbalance can be a state variable in explaining cross sectional stock return. In this article, we examine dynamic relations between order imbalance, volatility and stock return of top gainers. Then, we develop an order imbalance based trading strategy and explain the causality. We employ a time varying Generalized Autoregressive Conditional Heteroscedasticity (GARCH) model to investigate intraday dynamics among order imbalance, volatility and return. A significantly negative relation between order imbalance and volatility has been documented. The leverage effect proposed by Christie (1982) could explain the above result. Current period order imbalance explains current period volatility and stock return. Contemporaneous order imbalance has a significantly positive and lag-one order imbalance has a significantly negative influence on stock return. Time span of data and responsibility of market

maker explain this phenomenon. Finally, we develop a profitable order imbalance based trading strategy. To explore the profitability of our trading strategy, we examine the causal relationship between return and order imbalance. We find that order imbalance is a good indicator for price discovery. Moreover, order imbalance is a better indicator for predicting returns in large firm size quartile.

## Notes

[1] Small firm effect means that those companies with a smaller market capitalization outperform larger companies. This market anomaly is a factor used to explain superior returns in the three factor model by Fama and French (1992). The three factors are the market return, companies with high book-to-market values and small stock capitalization.

[2] VIX, VXN represent the implied volatility of options on S&P100, NASDAQ100, respectively. According to Arak and Mijid (2006), the value of VXN is always larger than that of VIX from 1995 to 2002.

[3] Lee et al. (2001) use 6-minute intervals with each interval containing nearly 12 trades on average. Ekinci (2004) constructs 5-minute intervals for an intraday analysis of stocks with 27.3 trades per interval on average. We shorten the time interval for the sample period of each stock is only one day. In addition, we use 1.5-minute intervals to catch the intraday seasonality for NASDAQ dealers are required to report trades within 1.5 minutes.