ABSTRACT

Social media and money: How our tweets affect the financial markets

Ni Yang

Keywords: Twitter; Text Classification; Investor Sentiment; Market Microstructure, Return Predictability

Social media, such as Twitter, has replaced traditional media as a dominant information source (Gan et al., 2020). With social media being a fast and more efficient information dissemination channel, investors can quickly access, update and exchange stock-related information before making trading decisions. In this study, I examine the mechanism by which social media sentiment affects stock prices. I first collect a sample of 2.2 million tweets and quantify each tweet using Natural Language Processing (NLP) techniques to infer whether the tweet has a positive or negative tone. Next, I employ a modified vector autoregression (VAR) model to assess the impact of tweets on stock returns at the minute frequency. I find that Twitter sentiment affects stock prices through its impact on trades. Trades have stronger price impacts with an increase in tweet volume or investor sentiment. In addition, both bullish and bearish tweets amplify the impact of trades on stock returns. Twitter sentiment causes a permanent price movement until a new equilibrium is reached, showing Twitter sentiment contains substantial information to drive stock prices. These findings suggest that trades in the stock market become more informative as tweet activity increases, as well as when tweets contain higher sentiment. To the best of my knowledge, this is the first study looking at the exact mechanism of how social media affects the stock market and investors' response behaviour.

References

Gan, B., Alexeev, V., Bird, R. and Yeung, D., 2020. Sensitivity to sentiment: News vs social media. *International Review of Financial Analysis*, 67, 101390.