

Twitter Analytics and Equity Option Interaction

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This study examine the correlation between Twitter mentions of low market cap companies (less then 1B USD in NASDAQ), and their share option volatility (traded at CBOE, Chicago Board Options Exchange).

There is a lot of prior work on using Twitter to analyze financial markets (Bar-Haim et al, 2011), to identify expert investors (Ben-Ami et al, 2014), etc.

Our study has a few differentiating points:

- We focus on companies of low trading volume
- We investigate the trade of share options rather than of shares themselves
- We use option volatility as the indicator of market behavior

For this study, we collected three data sets:

1. Tweets that mention symbol tickers of companies traded under \$1B on NASDAQ. For cases of uncertainty, we developed a machine learning method to categorize tickers as related or unrelated to the stock market.
2. Share option trading hourly data collected to calculate VIX (Volatility Index) (Brenner & Galai, 1989). VIX values predict the trade volatility of a given option at a specific time.
3. Shares daily rates collected in order to calculate the real volatility values.

Comparison of predicted VIX and actual volatility over time will give us the mismatch time points. These time points are those we want to check: we want to test whether the amount of symbol ticker references on Twitter is higher than normal at these points.