SEC and Stock Market

The analysis of the relationship between market behavior and SEC Press Releases/Public Statements/ Speeches

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Background

There are lots research discussing the sentiment analysis about Twitter, News, or particularly Financial News.

The potential relationship between the mood and the stock market is the cutting edge topic.

The sentiment analysis could focus on any articles, such as the governance statements, in there is the SEC.

Problems We try to Solve

The U.S. Securities and Exchange Commission (SEC) has a three-part mission: to protect investors; maintain fair, orderly, and efficient markets; and facilitate capital formation. But are they effective? Will SEC announce something on News or Public Statement affect the stock market?

Q:Is there any correlation between emotional feature in SEC statement and US stock market behave?

Data Sources and Methods

Data Sources:

6000+ articles from SEC.gov website. Three types: Press Releases, Public Statements, Speeches. http://www.sec.gov/news/pressreleases

Yahoo Finance: S&P500, NASDAQ, DOW JONES index, 2000-1-1 to 2016-3-31

Methods

Sentiment Analysis with Python, R;

Regression, Classification, Decision Tree, Neural Network;

Keywords, topic find;

Open Sentiment Analysis packages NLTK or API (http://www.sentimentanalysisonline.com/), etc.

Some Examples

In 2001, SEC shut down the market due to the attack on 9/11, when the market reopen, one press release said like this:

2001-91
   SEC TAKES ACTION TO FACILITATE REOPENING OF FAIR AND ORDERLY EQUITIES MARKETS
 Washington, D.C. September 14, 2001 - ...reopening of U.S. equities markets on Monday, September 17, 2001. These markets are the world's **strongest and most vibrant**, in spite of the heinous acts of last Tuesday.
 The Commission has used, for the first time, its **emergency powers** to ease certain regulatory restrictions temporarily:
...
The Commission will **monitor the situation**. Investors should be assured that U.S. markets will function **effectively and fairly,** and that market and investor protections are squarely in place...
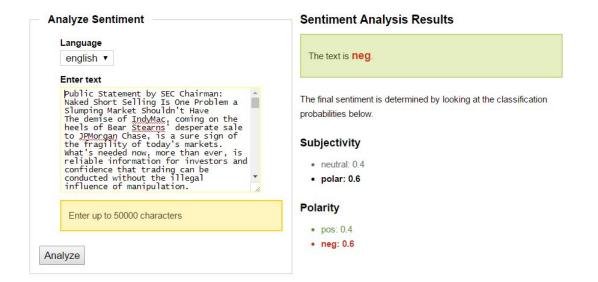
Market Reaction during 9/11

Sentiment Analysis Test

Sentiment Analysis with Python NLTK Text Classification

This is a demonstration of **sentiment analysis** using a NLTK 2.0.4 powered **text classification** process. It can tell you whether it thinks the text you enter below expresses **positive sentiment**, **negative sentiment**, or if it's neutral. Using **hierarchical classification**, *neutrality* is determined first, and *sentiment polarity* is determined second, but only if the text is not neutral.

Analyze Sentiment

Language

english ▼

Enter text

Public Statement by SEC Chairman:
Naked Short Selling Is One Problem a
Slumping Market Shouldn't Have
The demise of IndyMac, coming on the
heels of Bear Stearns' desperate sale
to JPMorgan Chase, is a sure sign of
the fragility of today's markets.
What's needed now, more than ever, is
reliable information for investors and
confidence that trading can be
conducted without the illegal
influence of manipulation.

Enter up to 50000 characters

Analyze

Sentiment Analysis Results

The text is **neg**.

The final sentiment is determined by looking at the classification probabilities below.

Subjectivity

- neutral: 0.4
- **polar: 0.6**

Polarity

- pos: 0.4
- **neg: 0.6**

Test link: http://text-processing.com/demo/sentiment/

There is one Public Statement by SEC Chairman:Christopher Cox

Naked Short Selling Is One Problem a Slumping Market Shouldn't Have, July 18, 2008

Test Result **Negative.**
Article link: http://www.sec.gov/news/speech/2008/spch071808cc.htm

schedule

2nd week build basic model

3rd week Final proposal presentation (Apr 25th)

4th week Final project report

Reference

(1)Emotional Index build based on CCTV News reports
http://dataunion.org/19257.html

(2)Twitter mood predicts the stock market, 2011, Johan Bollen, Huina Mao, Xiaojun Zeng

(3)slides from my R tutorial on Twitter text mining #rstatshttps://jeffreybreen.wordpress.com/2011/07/04/twitter-text-mining-r-slides/

(4)Sentiment Analysis in Financial News, 2009, Pablo Daniel Azar

(5)Impact of Financial News Headline and Content to Market Sentiment, 2014, Tan Li Im, Phang Wai San, etc.

(6)Sentiment Analysis in the News, Alexandra Balahur, Ralf Steinberger, etc.