

Team name:
Fight_Potatoes

Team members:
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1. Politics is highly correlated with the economy, and we want to monitor the link between them. We will use tweets about US-China relations and Covid to predict changes in the stock market.

The first source we are going to use is Twitter API. We will collect tweets that mention the words (see Appendix A) in a certain time frame. We will determine how positive the words used in those tweets are to create an index. This index will depict how positive or negative the view towards the China-US relationship and Covid for a certain tweet.

The second source is Yahoo Finance. We collect stock index data (e.g., S&P 500) as our market indicator (maybe also data by industry if we need to narrow it down).

Output: A graphical depiction

2. Twitter data: Twitter API

Financial data: Yahoo Finance

We are working as a team to collect the data and expect to finish data gathering by Feb 25th.

3. Work to be completed:

- Train the model (multiple models in total for 2 topics: one for the US-China relations and one for Covid) (DDL: March 4)
 - Clean data/prepare data - Susan Chen
 - Observe data
 - Split data into training and testing part
 - Perform sentiment analysis to create an indicator for sentiment/subjectivity of the tweets using the TextBlob package
 - Run regression on different possible models - Wenxin Gu
 - The model should be something of the form:

Market indicator \sim sentiment indicator + control variables

- Compare each model and select the best fit - Carolyn Liu
 - Check R squared and significance, etc.
 - Backtest on testing part data
 - Output- Wenxin Gu, Susan Chen, Carolyn Liu
 - A graphical depiction (DDL: March 11)
 - Prediction table (DDL: March 11)
4. Include any additional information you wish to provide about your project.
- N/A
5. If you need additional feedback from me then please make sure to include that in your report.
- N/A

Appendix A: Query keywords

Covid:

- Vaccination
- Omicron
- Booster
- mask
- Lockdown
- Covid-19
- Death rate
- Travel restriction
- Positivity rates
- total infections
- Mandate
- Breakthrough infections
- Social distancing
- Quarantine
- Isolation
- Pandemic
- shutdown

US-China Relations:

- US-China Relations
- Xi Jinping

- Trump
- Trade war
- Xinjiang
- Biden
- Eileen Gu
- Taiwan
- Hong Kong
- CCP
- TikTok
- Huawei
- Tariffs
- Human rights
- Zhao Lijian
- Ned Price