DATA 607 – DATA ACQUISITION AND MANAGEMENT – FINAL PROJECT PROPOSAL:

Spring 2019

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This proposal is joint work of Team Tyrannosaurus:

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for the Final Project of Data 607 – Spring 2019.

The Federal Open Market Committee (FOMC), part of the Federal Reserve, is responsible for setting and announcing monetary policy for the United States at its scheduled meetings eight times per year. Its brief carefully written policy statement announces its decision to raise or lower interest rates and discusses its economic outlook. This statement moves financial markets all over the world. Our project seeks to apply data science principles to further understand the dynamics between FOMC statements and financial markets.

To accomplish this, we will gather multiples sources of public data: the FOMC statements dating as far back as 1994 will be webscraped from (<https://www.federalreserve.gov> ) Financial time series and macroeconomic data will be gathered from the FRED website (<https://fred.stlouisfed.org>) or other locations through their API. Sentiment analysis of the FOMC statement will be applied to infer the central bank tone on a mechanical basis. This may be used to infer a level of dovish or hawkish sentiment. The statements will have to be cleansed and formatted into a tidy format using tidyverse and tidytext. The sentiment and rate setting decisions of the statements may be compared to financial market responses. Statistical analyses can be conducted to regress the degree of sentiment to each financial time series response. Exploratory data analysis with ggplot will assist in visualizing the magnitude and strength of empirical relationship. Examples of the financial variables of interest include equity index returns (SP500, FTSE100) or treasury bond yields (2 year, 10 year) or bond credit spreads.

Past academic research has explored the relationship between FOMC meeting dates, their information content and the financial markets. Business practitioners in the financial sector scrutinize these statements closely. We will leverage these resources in devising the data analysis protocols and statistical analysis.

Lastly, findings will be presented in a joint powerpoint deck.