ISYE 4031 Project Proposal

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Abstract

We plan to analyze stocks over the last 10 years using all 5 methods learned in class in order to compare their effectiveness and analyze limitations of each.

1   Proposed title of project

Quantitative Comparison of Cross-Sectional and Time-Series Analytical Methods of Stock Market Trends

2   Methods

- Cross-Sectional:
    - Simple Linear Regression
    - Multiple Linear Regression
- Time series:
    - Time series regression
    - Exponential smoothing
    - Non-seasonal Box-Jenkins models

We plan to utilize all 5 methods and compare their results, discussing the limitations of various methods and which ones are preferred.

3   Dataset

S&P 500: `https://www.nasdaq.com/market-activity/index/spx/historical?page=1&rows_per_page=10&timeline=y10`
We have more datasets under consideration of more stocks as well as economic factors over the same time period, however, we are seeking feedback on which ones to include without being overly broad.

- Annual inflation rates
- Employment data
- Federal funds effective rate
- GDP
- Top 10 current stocks
- Daily treasury rates