

Executive Summary: Lobbying Effort and Market Outcomes

Annually, companies spend billions of dollars on lobbying. Lobbyists are tasked with influencing politicians to propose bills, vote, and take actions that are beneficial to their clients interests. These actions, presumably, should have a positive effect on a company's stock valuation as it is always in the company's interest to make money. We want to know to what extent does lobbying have an effect on market outcomes?

Our **research question** is, therefore:

1. Is there a correlation between the lobbying ratio and relative market performance?
 - a. If so, what is the optimal ratio that maximises a company's relative performance.

Data Collection and Processing

- NASDAQ: Initial list of companies.
- SEC Data: Source of assets data. Selected companies with at least 10 quarters of reports.
- yfinance: Company and S&P 500 adjusted closing prices.
- Lobbying Disclosure Act API*: Lobbying costs reported in quarterly intervals.
 - Matched client names to names in market data using rapidfuzz.
 - Cross-checked with webscraped data from OpenSecrets.

Modelling Approach and Results

We employ a number of models to determine the best fit for the data. We start with linear regression and find that it is not a good fit for our data; the R^2 of the linear model is -0.0024. We, therefore, moved on to a selection of classification models, reported in the table below. We used 3 categories related to relative market performance (RMP): (1) RMP > 5%; (2) RMP < 5%; (3) RMP between these two levels. We also set our delay to 5 quarters meaning that we analysed RMP 5 quarters after the lobbying costs were reported.

Model	Logistic Regression	kNN	SVM	Combination
Accuracy Score	0.56	0.53	0.56	0.56

The performance of the linear model indicates that our measures of lobbying expenditures and relative market performance do not follow a linear relationship. Moreover, our attempts to classify upward or downward market performance from a company's lobbying expenditures indicate that lobbying expenditures alone are not good predictors of the direction of a company's stock price movement.

Conclusions and Future Directions

Future iterations of this project would aim to overcome some issues that we identified. One of the most critical issues is the fact that many other factors - outside of lobbying - affect market outcomes and performance. Future versions of this project may then require modifying our current large-N analysis or using an alternative research design. We could add in controls for outside factors such as macro-economic indicators of the market nationally and internationally, and competition especially within sectors. We may also explore approaches such as matching and quasi-experiments.

A possible way to identify and exploit a quasi-experiment is to look for bills that had both support and opposition within sectors. In these cases we would group companies by their support or opposition of a bill and analyse the lobbying costs associated with the specific bill or decision in question. This approach should also help overcome another issue we identified as the fact that we only observe one universe of outcomes: where lobbying costs are observed. Therefore, we miss the alternate universe of observations where we would see the outcomes associated with no lobbying costs.

*Dataset Created by Rahul Krishna.