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Project Proposal

Do Congress Members’ Trades Outperform the Stock Market

# Introduction

The intersection of politics and financial markets has long been scrutinized, with concerns over whether lawmakers leverage privileged information for personal monetary gain. In the United States, members of Congress are legally required to disclose their stock trades under the STOCK Act, enacted in 2012, to promote transparency and deter insider trading. However, despite these regulations, public skepticism remains regarding whether congressional stock trades outperform the broader market due to potential access to non-public information.

This analysis seeks to explore whether the stock trades of U.S. Congress members in 2023 and 2024 have outperformed the overall market. The project will leverage publicly available data from Capitol Trades, which tracks congressional stock transactions, and financial market data sourced from Yahoo Finance. By analyzing the returns of stocks bought and sold by lawmakers and comparing them to market performance, this project aims to determine whether congressional trades yield statistically significant excess returns.

Beyond overall performance, this analysis will examine whether there are notable differences in trading success across political parties and congressional chambers. Specifically, it will test whether members of one party tend to achieve higher returns than the other and whether the House of Representatives or the Senate exhibits stronger market performance.

# Data

## Capitol Trades

To get data on what stocks congress members traded and when, I will scrape the website <https://www.capitoltrades.com/trades>, which contains all reported trades from congress members across the past 3 years. I will then take all trades from 2023 and 2024 to be part of my sample to cover two full periods of the stock market. To ensure an accurate return can be calculated, only tickers that the congress member has bought and sold at least once will be included in the sample. Per [Yahoo Finance](https://finance.yahoo.com/news/average-stock-holding-period-121123957.html?guccounter=1&guce_referrer=aHR0cHM6Ly93d3cuZ29vZ2xlLmNvbS8&guce_referrer_sig=AQAAAAKFkaYec2C7JwyIpiiLiynAwdUJAtZ9jYolIR9q9jPC3h6tyhYPgm7qM_SJ0Iv0JrThMJHFZx4WwhDtDJtGUW8RRYP6BnxdnMDOhttGjjkd1072sqSO7StIz3ncIt-FsDwpH5WbymOyhFgausq-nUkqGzZcDJTwmBALTEc48JNC), the average stock is held for 5.5 months, so the sample will consist of all stocks up to 4 average stock turns.

## GitHub: rreichel3/US-Stock-Symbols

The American stock market contains three leading stock exchanges: NYSE, NASDAQ, and AMEX. A few ticker symbols are shared between the exchanges, which would pose a problem to the method used to get stock prices. Thus, I will use a [data source on GitHub](https://github.com/rreichel3/US-Stock-Symbols), which has all the ticker symbols on the leading three stock exchanges. This will help me remove ticker symbols shared between the exchanges and have a list of all possible ticker symbols. Some ticker symbols scraped from Capitol Trades will be from smaller or private stock markets where prices may not be easily gathered; those will be removed from the sample.

## YFinance

To gather stock prices for both the congress-member traded stocks and the market baseline (S&P 500), the public API from Yahoo Finance will be used via the yfinance python module. For simplicity of the dataset, the following assumptions will be used:

* Even though somebody can buy and sell the same stock multiple times due to not having data on the investment size, all stocks will be compared based on their percentage return rather than actual returns.
* Any stock in the sample must have been purchased at least once and sold at least once in the sample period of 2023 and 2024. The earliest date bought will be the Buy Date, and the latest sell date will be the Sell Date. If the Sell Date is before the Buy Date, that record will be removed from the sample.
* The S&P 500 Index will be used as the Market Baseline Stock
* The Market Baseline Stock prices will utilize the exact dates as the traded stock
* The open price on the open date will be used for the Buy Price, and the close price on the sell date will be used for the Sell Price.
* If either date falls on a weekend or market holiday, the closest previous date will be used; for example, a date that lands on a Sunday will use the price from the last Friday.

## Data Dictionary

|  |  |  |
| --- | --- | --- |
| Field | Datatype | Description |
| Name | String | Congress member’s name |
| Ticker | String | The stock market ticker of the stock that the congress member traded |
| Party | String | The political party the congress member is affiliated with |
| Chamber | String | The chamber of Congress the congress member serves in (House or Senate). |
| State | String | The state that the congress member represents |
| Buy Date | String | The earliest date within the sample that the congress member bought shares of the traded stock |
| Sell Date | String | The latest date within the sample that the congress member sold shares of the traded stock |
| Buy Price | Float | The opening price of the traded stock on the Buy Date (or closest valid date). |
| Sell Price | Float | The closing price of the traded stock on the Sell Date (or closest valid date). |
| Trade Return % | Float | The traded stock’s return as a % using:  *Return % = 100 \* ((Sell Price – Buy Price)/Buy Price)* |
| Market Buy Price | Float | The opening price of the market baseline stock on the Buy Date (or closest valid date). |
| Market Sell Price | Float | The closing price of the market baseline stock on the Sell Date (or closest valid date). |
| Market Return % | Float | The market baseline stock’s return as a % using:  *Return % = 100 \* ((Sell Price – Buy Price)/Buy Price)* |
| Overperformance % | Float | The target variable represents how much better the traded stock performed than the market baseline stock over the same period using:  *Overperformance % = Trade Return % - Market Return %* |

# Proposed Analysis

Below are the research questions and hypotheses:

* **Congress Performance vs Market Performance**
  + Question 1: How does the average stock market return of congress members compare to the market?
  + Question 2: Do congress members’ trades in the stock market overperform the stock market at a statistically significant level?
    - H0 – Average Trade Return = Average Market Return
    - HA – Average Trade Return > Average Market Return
* **Performance by Party**
  + Question: Does the Republican Party (known for its support of capitalism) outperform the Democratic Party in the stock market at a statistically significant level?
    - H0 – Average Trade ReturnDemocrats = Average Trade ReturnRepublicans
    - HA – Average Trade ReturnDemocrats < Average Trade ReturnRepublicans
* **Performance by Chamber**
  + Question: Does one chamber outperform the other in the stock market at a statistically significant level?
    - Test 1
      * H0 – Average Trade ReturnSenate = Average Trade ReturnHouse
      * HA – Average Trade ReturnSenate > Average Trade ReturnHouse
    - Test 2
      * H0 – Average Trade ReturnSenate = Average Trade ReturnHouse
      * HA – Average Trade ReturnSenate < Average Trade ReturnHouse