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Analyzing Politicians' Stock Trading Activities

This study examines politicians' stock trading activities to determine if their transactions outperform the general market. Utilizing data from March 2021 to May 2024, we analyzed 39,114 transactions. Our research addressed correlations between reporting gaps and trade profitability, differences in trades between political parties, the success of individual investors, potential insider trading, active states, and frequently traded ticker symbols. Findings indicate that politicians' transactions do not generally outperform the market. Republicans tend to have more profitable trades than Democrats. Certain individuals and states exhibit high trading activities. The study underscores the need for enhanced transparency in political stock trading.

Background and Significance

The debate over whether government officials should participate in stock trading persists due to potential conflicts of interest and the risk of insider trading. Investment is a crucial wealth-building strategy, but it can lead to conflicts of interest for government officials. These officials are expected to prioritize the public good, which may not always align with profit-maximizing motives. Furthermore, there is the risk that politicians may exploit non-public information for personal gain, leading to insider trading.

This study aims to analyze the trading activities of politicians and determine if their transactions outperform the general market, using the S&P 500 index as a benchmark for average market returns. By examining the investment behaviors of politicians, we aim to shed light on whether they benefit from privileged information or superior investment strategies. This study is particularly significant in the current climate of increasing demand for transparency and accountability in government.

Our research addresses several key questions: Is there a correlation between the reporting gap and trade profitability? Is there a difference in the frequency or profitability of trades made by Democrats versus Republicans? Who is the most successful investor in the government? Are there potential cases of insider trading? Are certain states more active in terms of the number of transactions? Which ticker symbols are most frequently involved in politicians' transactions? These questions are essential in understanding the extent and impact of political stock trading.

Methods

Data Collection: Data for this study was scraped from [Capitol Trades](https://www.capitoltrades.com/trades), resulting in a dataset of 39,114 transactions spanning from March 2021 to May 2024. Scraping was chosen due to the lack of existing comprehensive datasets. The data was cleaned and processed to ensure accuracy, with transaction prices updated to reflect market prices on the transaction dates. This step was crucial to align the reported prices with the actual market conditions at the time of each trade.

Variable Creation: Additional processing of the transactions dataset generated a trades dataset. Trades were formed using a cycle algorithm that grouped all transactions by politician names and tickers. For each politician and ticker, the algorithm generated trade cycles, starting with a series of stock purchases and ending with a series of sales. The average purchase and sell prices were calculated based on the mean of all buy and sell prices in the cycle. The average days between transactions were computed as the difference between the mean sell and purchase dates. From these two factors, the trade's annualized percentage profit was calculated. Additionally, stock performance before and after transaction dates was estimated using prices fetched at day offsets of [-90, -60, -40, -20, -10, 10, 20, 40, 60, 90] from the transaction date.

Two primary methodologies were employed:
1. Transaction Cycle Analysis: Implemented as a Python function, this methodology evaluates the trading behavior of politicians by analyzing patterns and performance across their stock transactions. The function begins by grouping the data by 'Politician Name' and 'Ticker', isolating transactions for each individual politician and stock combination. These grouped transactions are sorted by date for correct processing. The function identifies and processes cycles of buying followed by selling, recording details such as transaction prices, IDs, amounts, and dates. Following the completion of a sell phase, it computes metrics including average buy and sell prices, total percentage profit, and annualized profit based on the duration between the first purchase and last sale within the cycle.
2. Evaluating Stock Performance Pre- and Post-Transaction: Using R, this methodology assesses stock performance around transaction dates by calculating percentage changes for stock prices at specific intervals before and after transactions. These changes are annualized to provide a clearer picture of short-term stock performance in an annualized context. The methodology creates columns for each interval's annualized performance and calculates the average performance across all intervals before and after transactions.

Further data processing adjusts transaction types, reclassifying 'RECEIVE' as 'BUY' and excluding 'EXCHANGE' transactions and transactions by parties labeled as 'Other'. The market_figure function categorizes stock performance trends, and the eval_success function assesses the effectiveness of 'BUY' or 'SELL' decisions based on these trends.

Results
- Market Performance: The average annualized percentage profit for the S&P 500 was 6.8%, while politicians averaged 4.7%. This indicates that, on average, politicians do not outperform the market.
- Reporting Gap: No significant correlation was found between reporting gaps and trade profitability. A linear regression model was used to calculate the slope coefficient between trades profitability and reporting gap, suggesting no correlation.
- Political Parties: Democrats made more trades (accounting for two-thirds of the total), but Republicans had higher profitability. This discrepancy highlights a difference in trading strategies and outcomes between the two parties.
- Top Investor: Marie Newman achieved a 219% annualized profit with 32 trade cycles and 120 transactions over the past three years, significantly outperforming the market.
- Insider Trading: Several politicians exhibited unusually high proportions of very good decisions, suggesting potential insider trading. Politicians who made over 15% annualized average percent profit with more than five trades, or whose proportion of very good decisions exceeds 35% with more than ten transactions, can be subjects for further investigation. Scatter plots were used to identify such individuals.
- Active States: California, Texas, Tennessee, New York, and New Jersey had the highest trading activities. This may reflect regional socio-economic dynamics and political climates.
- Popular Tickers: Tech companies dominated the most frequently traded symbols, reflecting broader market trends and potential sector biases in trading decisions.
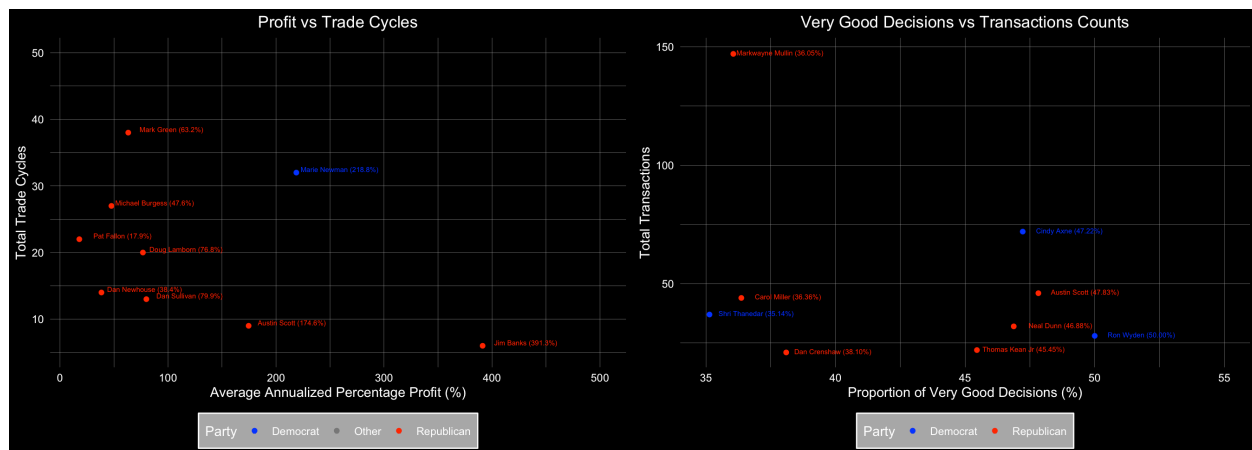
Discussion

Our analysis shows that, on average, politicians do not outperform the market. This finding suggests that politicians' trades do not benefit significantly from privileged information or superior investment strategies. The absence of a significant correlation between reporting gaps and trade profitability indicates that the timing of disclosures may not impact financial outcomes directly. While Democrats engaged in more trades, Republicans were more profitable, possibly due to different trading strategies or risk tolerances.

Marie Newman stood out as the most successful investor within the government, achieving an annualized profit vastly exceeding that of the S&P 500. This exceptional performance warrants further investigation to understand the underlying factors. The identification of potential insider trading cases among certain politicians highlights the need for stricter regulations and greater transparency in political stock trading. Such scrutiny is essential to maintain public trust and ensure fair market conditions.

The high trading activity in states like California, Texas, Tennessee, New York, and New Jersey may be influenced by their socio-economic environments and political dynamics. The predominance of tech stocks among the most traded symbols aligns with broader market trends but also points to potential sector biases in politicians' trading decisions.

Limitations
- The three-year data duration limits the evaluation of long-term investment strategies, potentially missing broader market cycles and politicians' investment skills.
- Methodology 1 assumes that the amount of stock bought and sold within a cycle is equal, which might not reflect reality. Additionally, it assumes that all stocks are sold by the end of the cycle, an assumption that often does not align with typical investing practices where holdings may persist across multiple cycles or remain unsold for strategic reasons. These assumptions can lead to inaccuracies in analyzing the financial performance and decision-making strategies of politicians, whose trading patterns may exhibit complex behaviors not fully captured by these assumptions.
- Politicians are required to report only transaction volume ranges, not exact amounts, which restricts the ability to precisely assess the impact of their trades. This limitation makes it difficult to determine the exact quantity of stock bought or sold. Such constraints lead to significant gaps in analysis, particularly when trying to evaluate the financial outcomes or potential market influence of these trades. This lack of precision can also hinder efforts to detect patterns that might suggest unethical behavior, like insider trading.
- Some trading activities by politicians might not be disclosed, particularly those conducted through intermediaries or associates, creating blind spots in the data.

Future Work

Future studies should explore the impact of political events on trading activities and apply alternative methodologies to deepen the analysis. Additionally, more comprehensive and accessible datasets would enhance the robustness of such studies. Investigating the motivations and strategies behind politicians' trades could provide further insights into their investment behaviors and potential conflicts of interest. This study contributes to our understanding of the financial activities of politicians, providing a foundation for future research and potentially informing policy discussions on transparency and regulation in political stock trading. The need for more detailed and accessible data remains a significant challenge, underscoring the importance of transparency for fair market conditions and public trust in political figures.

References

- https://www.capitoltrades.com/
- https://finance.yahoo.com/