Do Politicians generate Alpha? An Application of Alternative Data in Financial Markets

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1 Introduction

With the 2020 congressional insider trading scandal still in recent memory, one has to wonder if politicians possess non-public information which allows them to generate alpha (i.e. excess return) in the stock market. When in early 2020 several US Senators attended closed briefings from health and foreign relations officials on the COVID-19 outbreak and its future impact in the US, they bought and sold stocks. Among other, former Georgia Senator Kelly Loeffler (R) together with her husband Jeffrey Sprecher (CEO of Intercontinental Exchange), former Georgia Senator David Perdue (R), and North Dakota Senator John Hoeven (R) bought stocks worth millions in companies such as Citrix Systems, DuPont (which manufactures PPE), and health science companies, which were all about to benefit from the lurking pandemic. The most prominent example, however, is North Carolina Senator Richard Burr (R). As Chair of the Senate Intelligence Committee, Burr downplayed COVID-19 in public, saying that the US government is well prepared to this public health threat. Unbeknownst to the public, however, Burr and his wife sold significant amount of stock. Just 20 days later, a secret recording revealed how Burr was much more concerned in private, calling COVID-19 'much more aggressive in its transmission than anything that we have seen in recent history'[1]. While outright insider trading is prohibited under the 2012 STOCK Act, one has to wonder how clear cut the lines are. Interestingly, one of the few senators voting against the bill was Richard Burr.

In this paper I set out to answer the question if it is possible to build a trading strategy around the stock trades made by members of the US House

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[1] Mak, T. (March 19, 2020). Weeks Before Virus Panic, Intelligence Chairman Privately Raised Alarm, Sold Stocks. *NPR*. `https://www.npr.org/2020/03/19/818192535/burr-recording-sparks-questions-about-private-comments-on-covid-19`

of Representatives. While it is important to note that stock trades are not disclosed instantly but rather with long lags, I still think that there may be some informational value in the trades made by politicians as they may be the result of structural changes in the economy through new laws. In the past decade, the popularity of alternative data among professional money managers has exploded. Alternative data gives investors access to new and unique data sources to support their investment decisions. Especially hedge funds are at the forefront of alternative data to retain their performance in a world in which standard data is not enough anymore to create a competitive edge. Hence, the aim of this paper is also to showcase how alternative data, in this case stock trades of US politicians, can be used to construct and backtest investment strategies. In addition, I try to provide additional evidence of the stock picking abilities of US politicians given the lack of consensus in the literature.

Generally, I do find evidence that politicians outperform the market. A long-only, equally weighted *Politician Portfolio* with the top four most bought stocks each month with monthly rebalancing generates more than 20% alpha annually. Given that 2020 was definitely an extraordinary year for markets, I argue that a longer time period is needed to definitely argue in favour of the stock-picking ability of US politicians, though.

The remainder of the paper is structured as follows. First, I present a brief overview of the insider trading literature with special focus on stock trading of US politicians. Second, the focus is on the web scraping methodology and data preparation. In particular, I highlight the different methodologies used for scraping the different data sources. Lastly, I briefly present the results of the backtested trading strategy and give concluding remarks.

2   Literature Review

It logical to assume that lawmakers have access to information that the rest of us do not. Questions if a particular company is awarded a government contract or what companies will benefit the most if a new tax law is passed are just some of the intricate information policy makers possess. With the introduction of the Stop Trading on Congressional Knowledge (STOCK) Act enacted on April 4th 2012, the regulatory environment changed significantly, though. Members and employees of Congress were no longer allowed to act on non-public information derived from their official positions for personal gain. Especially committee assignments such as on the US House Committee on Financial Services or the US House Committee on Appropriations provide intricate knowledge which may

benefit (or disadvantage) a particular company and/or industry.

Boller & Ward (1995) were the first to analyse investments by Senators and members of the US House of Representatives. The authors found that 25% of them invested in companies which may be affected by current legislative activities. However, they did not show that politicians do generate alpha with their investments but that this is merely a conflict of interest. In their seminal paper, Ziobrowski et al. (2004) were the first to show that US Senators do indeed generate abnormal returns from their common stock investments. Using stock trades of US Senators between 1993-1998, they show that a portfolio that replicates stock purchases by US Senators beats the market by 85 basis points (0.85%) a month. They also find that sales underperform the market. While one could argue that being a Buffett-like stock picker is a prerequisite for being a US Senator, this rather highlights the informational advantage politicians have over the public with regards to the stock market. Similarly, Ziobrowski et al. (2011) find that a portfolio that mimics members of the US House of Representatives beats the market by around 6% annually in the period 1985-2001. Such profits would put US politician in the top spot of investors, even outperforming hedge fund managers (Fung et al., 2008), and corporate insiders (Jeng et al., 2003). While this would certainly seem like being a disciple of Buffett is indeed a prerequisite, the literature disagrees on the stock picking abilities of politicians. For instance, C. Eggers & Hainmueller (2013) replicate earlier findings for the period of 1985-2001 and conduct their own analysis on trades made between 2004-2008. In both periods they find that the evidence of the systematic trading acumen argued by previous literature is non-existent. Furthermore, they show that politicians would have fared better in 2004-2008 if they would had liquidated their positions and invested in a passive index fund. Hence, this implies that unethical investing on non-public information in Congress is much more limited than previously indicated.

More recently, Karadas (2015) finds that powerful Republicans (those with powerful committees assignment and/or committee tenure) have the highest abnormal returns with more than 35% on an annual basis under a one-week holding period, indicating that members of Congress generate short-term profits on time-sensitives information. Moreover, the author argues that being on committees does help in that it serves as a mechanism to acquire non-public information. Yet, the pre-STOCK Act portfolios of the most powerful Republicans do no longer outperform in the post-STOCK Act period. In contrast, Belmont et al. (2020) find no evidence that US politicians outperform the broad market and no relationship between committee assignments and stock-picking ability. However, they do find that stocks sold after the January 24th COVID-19 briefing underperform by 9%, clearly providing evidence for the criminal probe

into Loeffler and Co. There is generally a lack of consensus in the literature whether politicians do make alpha or not. Therefore, this paper tries to provide further evidence by replicating a simple *Politician Portfolio.*

3 Web Scraping, Data and Method

I used a variety of data sources in this study: stock trades of the members of the US House of Representatives, stock prices, and supplementary data such as a list of all US districts. The stock trades are scraped from Quiver Quantitative using basic HTML scraping methodologies. I used the XPATH to get access to the HTML tables. Table 1 shows the most bought stocks each month for 2020. The number of purchases range from three up to 17 for Microsoft (MSFT) in April 2020. The total number of purchases for the top four most bought stocks is 309. Generally, the choice of stocks seems rather unconventional with many small cap and less known positions. The tickers are adjusted according to Yahoo Finance convention with SPACs converted to their current tickers if merged. For instance, Diamond Eagle Acquisition Corp. (DEACU) took sports betting operator DraftKings public in April 2020 which converted its ticker to DKNG.

Table 1: Most Bought Tickers US Representatives 2020

	Date	1	2	3	4
1	2020-01-01	JIH	AAPL	CMCSA	HD
2	2020-02-01	DEACU	AAPL	BSX	BRK-B
3	2020-03-01	USAC	SH	ENLC	BPMP
4	2020-04-01	MSFT	AAPL	BRK-B	AMZN
5	2020-05-01	AAPL	SNE	T	AMZN
6	2020-06-01	TJX	HAE	PGR	SKYY
7	2020-07-01	DCP	ENBL	ET	NGL
8	2020-08-01	ENBL	ET	GLOP	USAC
9	2020-09-01	KTOS	AMN	GEL	CVET
10	2020-10-01	PASO	USAC	AAPL	ABT
11	2020-11-01	IWN	BX	TSLA	CVNA
12	2020-12-01	AAPL	COST	FANUF	NGL

Notes: This table shows tickers of the most bought stocks of members of the US House of Represenatives for each month in 2020. The data is scraped from Quiver Quantitative which uses the mandatory SEC filings all US politicians have to fill out. The tickers are adjusted according to the Yahoo Finance convention. SPACs are converted to their current tickers.

In terms of particularities of the data, politicians do not disclose the exact amount for which they bought or sold a stock but a range. For instance, the
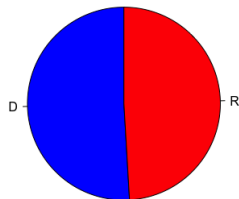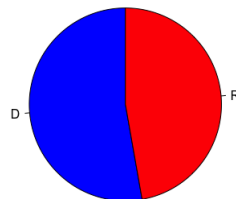
Figure 1: Structure US House	Figure 2: Distribution Trades

Notes: Figure 1 shows the structure of the US House of Representatives in the 117th US Congress. Figure 2 shows the distribution of purchases and sales by members of the House of Representatives by political party. Red indicated Republican and blue indicates Democrat. The trade history covers 2020-01-02 until 2020-12-30.

data may include $1,001-$15,000 or $1,000,001-$5,000,000. However, this is not an issue since the portfolio is assumed to be equally weighted. Furthermore, it does not show the political party directly but rather an abbreviation for the US district the congressman is representing. I translate the abbreviation to the full state names, i.e. NY27 becomes New York 27. Afterwards, I cross-match the districts with an overview table from Wikipedia to match the respective party to the congressman. Since only four members assumed office in 2020, this approach is sufficient to not lose trades. A notable issue in the data cleaning part was the presence of non ASCII spaces such as $\backslash u00A0$ in the supplementary US district table from Wikipedia. For instance, the space in "Virginia 8", the 8th district of Virginia, was not recognised as such, making any sort of logical comparison impossible. This is most likely the result of hyperlinks in the original table. The cleaned data includes 8,174 trades (61 exchanges, 4,014 purchases, and 4,160 sales) by 105 congressmen which includes names such as Nancy Pelosi (D), Marjorie Taylor Greene (R), and Matt Gaetz (R). While the Republicans and Democrats are roughly equally represented in the House, the trading data is slightly skewed towards Democrats (figures 1 and 2).

In addition to the politician data, I scraped stock prices from Yahoo Finance in order to build the trading strategy. While Yahoo unexpectedly shut down its API in 2012 due to violations of terms of service, I manually scraped the stock prices without the aid of a package such as tidyquant using a combination of hhtr GET, content, and handle. To do this, a simple XPATH HTML scrape is not sufficient because it is limited to 100 observations. A simple for loop is not sufficient either given that the row numbers beyond observation 100 in the table are out of the bounds when scraping. Therefore, I create a function which dynamically adjusts the URL using the company ticker and the UNIX codes for the dates I wanted to scrape the prices on. For instance, the UNIX code '1622979813' would translate to 2021-06-06 11:43:33 GMT. The prices cover the

period of 2020-02-03 until 2021-01-29. Here it is important to note to set the UNIX codes to some time before the US market opens (e.g. 6am EST) and after it closes (e.g. 22pm EST) to get the full prices of the day. In essence, I replicate the URL used when downloading the historical data as a CSV file which I adapt to fit my criteria.

In order to build a long-only *Politician Portfolio*, I check which stocks are most bought in a given month. I use the top four stocks in the previous month to build an equally weighted portfolio in the coming month. Four stocks are chosen to avoid too many issues arising from ties which may affect the results. For instance, if Apple (AAPL), Microsoft (MSFT), Facebook (FB), and Google (GOOGL) are the most bought stocks in January, I buy and hold those stocks in February. At the end of the month, all stocks are sold and the new portfolio is constructed for March with the most bought stocks in February. Buying is done at the opening price on the first trading day in a given month while selling is done at the closing price on the last trading day. While one can argue that this may not fully capture the informational value in the trades given the rather given the rather long-term style of most politicians, I deem this to be appropriate in this simple study. The portfolio is equally weighted with an arbitrary starting capital of $100,000. However, the starting capital should be high enough to cover more expensive stocks. For instance, a $10,000 starting capital with 25% invested in Amazon (AMZN) would not be enough to buy one stock. I assume that we cannot buy fractional shares and any difference not spent in a month is carried on into the next month. Furthermore, I assume no transaction costs which seems reasonable given the plethora of no-cost/low-cost neo brokers. The monthly performance is compared to the SP500 which I also scrape via the SPY ETF (tracking error 0.03).

4   Results and Discussion

It is important to note, that one should not overdo the stock price scraping from Yahoo Finance. I ran several times into issues retrieving the data, which I suspect to be the result of constraints on the requests per time unit (second, minute, hour). Therefore, I advise to save the data locally regularly.

The main result is that congressmen outperform the broad market index in 2020. Figure 3 shows the portfolio values of the long-only *Politician Portfolio* and the same amount invested in the SP500. $100,000 invested in the SP500 at the beginning of February 2020 would have turned into roughly $116,000

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compared to $137,000 in the portfolio that mimics the most popular trades among members of the US House of Representatives.

Figure 3: Performance Politician Portfolio vs. SPY
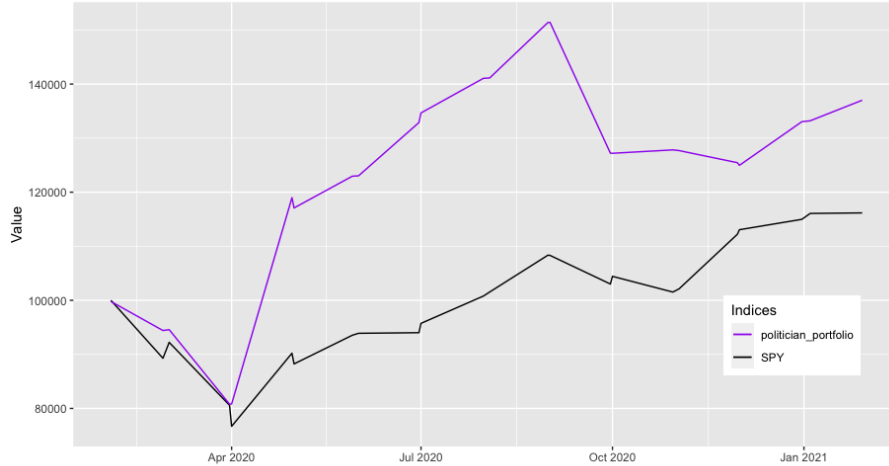
Notes: This figure shows the total value of the long-only Politician Portfolio compared to the SPY. Both portfolios are self-financing with an arbitrary starting capital of $100,000. The Politician Portfolio is comprised of the four most bought stocks in a given month by members of the US House of Representatives.

This translates into roughly 20% alpha generated by the politicians, which is economically significant. On a monthly basis, politicians outperformed the SP500 by 1.75% in 2020. Interestingly, politicians underperform in mid to late 2020 which may be the result of the general shift from growth to value in the market happening around that time. The politicians are heavily invested in tech tickers which may explain the performance relative to the SP500. Furthermore, I argue that the steep increase in the portfolio value in April 2020 is the result of the intricate knowledge of the possible repercussions from the COVID-19 pandemic in the US. This is shown by the purchase of the short SP500 ETF (SH) in March 2020 which effectively allowed the politicians to bet against the US market.

While I do acknowledge that 2020 was a peculiar year for financial markets with the COVID-19 recession, the rise of 'meme-trading', and the unparalleled size of backstops by monetary and fiscal policy, the findings do indicate rudimentary evidence that politicians outperform. Therefore, the findings align with Ziobrowski et al. (2004) and Ziobrowski et al. (2011). However, the magnitude of outperformance is most likely the result of generally favourable market conditions in 2020. Nonetheless, a larger time period is needed to fully verify this.

For instance, how would politicians have fared if we had a prolonged bear market? In addition, the use of an equally weighted long-only portfolio of the four most bought stocks may significantly skew the results. To alleviate this, I argue that future research should build a long-short portfolio with all trades done by politicians weighted by the amount. Regardless of the findings, the results are telling in that the use of such alternative data sources to identify and backtest investment strategies is important to investigate.

5   Conclusion

In this paper I set out to answer if politicians generate alpha in the stock market and if it is possible to build a trading strategy around those investments. To do this, I scraped data on the trades made by members of the US House of Representatives from Quiver Quantitative which directly aggregates them from the individual filings. Among other, the data includes information on the amount, ticker, and US district the congressman represents. I scraped supplementary data such as a list of the US districts from Wikipedia. For stock prices, I build a function which scrapes Yahoo Finance by adjusting URLs using tickers and UNIX codes. The politician data covers the whole of 2020 and I parse stock prices until January 2021.

Afterwards, I built a long-only, equally weighted *Politician Portfolio* with the four most bought stocks in a given month. As a starting capital, I set an arbitrarily high amount of $100,000 which I rebalance every month. As a benchmark, I chose to SPY ETF to approximate the SP500. Comparing the returns in 2020, I find evidence that politicians do generate alpha and outperform the broad market. $100,000 invested in the *Politician Portfolio* at the beginning of February turned into $137,000 at the end of January 2021, compared to $116,000 for the SPY. Therefore, this paper provides additional evidence on the stock picking ability of US politicians in that non-public information allows them to pick sound investments. However, I do acknowledge the limited sample size and simplistic trading strategy construction. Future research is needed to fully alleviate the lack of consensus in the literature. This paper did provide interesting results for the use of web scraping and alternative data for the use in investment, regardless.

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