Elections and the Stock Market

Introduction

From 1788 to 2020 the United States presidential electoral process has undergone changes that would render it unrecognizable to those familiar with its original form. From screaming a candidates name at a carnival, to signing your name under the candidates on a public board, to paper ballots, to anonymous touchscreens and mail in ballots, the way we vote is as dynamic as the country itself. What hasn't changed however, is the contentious nature of presidential elections and the trepidation spread by each candidate about the other which permeates through the voters in the country.

In the election of 2000 though, the internet brought about a new way of viewing candidates. Now potential voters could visit campaign websites, or search for videos of candidates discussing debated issues. Voters could also share information, and attempt to dissuade others from voting for the candidate they didn’t endorse. The internet brought about a slurry of new ways to engage voters, and altered the shape of elections for both parties. The internet also brought with it innovations surrounding the stock market. Once an esoteric system resigned only to a few experts, the internet brought about day trading and increased the volume of consumers trading stocks without the help of experts. On the experts' side, things were changing rapidly as well. Trading was no longer taking place in pits with voice trading between
normal market hours. Now, trading was done electronically at extended hours. Massive increases in computing power in the early 21st century also led to changes in the way consumers, and institutional traders, saw the stock market and the ways they generate profit.

The questions our research aims to address are: Do events associated with the presidential election cycle produce predictable and consistent results in each election year on the three major stock indices values? Is there an increase in volatility as the election approaches? Was there an increase in trading volume as the election cycle progressed? Does this increase in volume throughout the election cycle result in an increase in the value of the indices? Dates of specific interest to our research are the primary debates, Super Tuesday, the vice-president nomination, the Democratic and Republican National Convention, final nominee debates, the day of the election, and the announcement of the president-elect. Our financial data is gathered from the three major American indices (NASDAQ, Dow Jones Industrial Average (DJI), Standard and Poor 500 Index (S&P 500)), and a variation on The Chicago Board Options Exchange's Volatility Index (VIX). While finding market returns and standard deviations and using them in further analysis, we will be able to draw a correlation between major events and in volatility with comparison to a non-election year, thus creating an avenue to develop a relationship between stock market volatility and presidential elections.

**Literature Review**

While other literature has covered the existence and lack of correlation of elections and the effects on the stock market (Gärtner, Manfred, Wellershoff, 387)(Białkowski, Jędrzej, Gottschalk, Wiśniewski, 1941)(Jones, Banning, 273), our aim is to add something unique in our analysis in the way of analyzing trends throughout the full election cycle. This would stand in
contrast to the traditional myopic method which focuses on the election as a solitary event. Our research aims to take a broad view and understand the whole election process as a series of interrelated events and not of isolated instances, and to bring this analysis to more modern elections (2000 to 2016), something of which there is considerably less literature.

Since the election process is a sequence of connected events, our research in this subject must consider the different outcomes and what effects they have on the risk and return of the market. Similar research has considered whether or not market return is affected by expanding or contracting the power of the executive office (Guo 2019). This research was limited by a small sample size and the idea of a lagging market - one that trails behind events that influence it. Our research can improve upon these conclusions by deeply analyzing the efficient market hypothesis or the idea that the market “prices in” certain events. Also there was an article, “Presidential Elections and the Stock Market,” which proposed the hypothesis that Wall Street favors the conservative party by covering key events during election cycles and following the DJI data from 1900 to 1968. The article proves that there is no long-term relationship between market movements and market favoritism. This article is especially helpful in that it shows that short-term market movements between the Democratic and Republican conventions may be used to predict presidential election winners.

There was extensive research done by these authors regarding the effectiveness of voters’ forecasts for the presidential winner. Their hypothesis was that voter presidential forecasts were random, and they follow a random, unidentifiable pattern. To test this, they observed American National Election Study surveys that asked, “Who do you think will be elected President in November?” and they found that voter forecasts can predict the presidential candidate 82% of the time. This article is a nice linkage between voter psychology, addressed in other resources, and
the predictions they have for the winner of the November elections. As voters are active traders in the stock market, it is important to try and give understanding to their market activity and political prediction.

Other recent studies have focused on market volatility during an election cycle; however, few have focused on its key campaign events. The relationship between stock market volatility and election outcome uncertainty is explored in the 2017 study by D.R. Bowes, "Stock Market Volatility and Presidential Election Uncertainty." Bowes concluded that election uncertainty increased the stock market volatility. While macro events and sentiment analysis can predict volatility, a micro look at the effect of campaign events on elections will provide investors a clearer picture of what is happening to their money in real-time and how individuals can impact the economy based on collective trading movements.

A further study (W. Wing-Keung, M. McAleer “Mapping the Presidential Election Cycle in US stock markets”) concluded that Republican incumbents cause an increase in volatility leading up to an election. They theorized that political manipulation changes indices, not random events. Political powers may try and manipulate the stock market to better their chances for reelection. Confounding variables may correlate to indices volatility but may not directly cause the volatility. Narrowing focus on key campaign events will help eliminate confounding variables that contribute to market volatility. Key campaign events are meant to manipulate voters and convince them to vote for one party over the other. By delving into those events, a more accurate prediction of market volatility is possible.

Similar to the two previous studies, “Impact of U.S. Presidential Elections on Stock Markets’ Volatility: Does Incumbent President's Party Matter?” analyzed both uncertainty of
stock market movements and how incumbent party affiliation affects those movements. Specifically, they considered that expectations of a switch in the party controlling the White House imply serious economic, regulatory, fiscal, and tax policy changes. They concluded that these shifts of policy instill a sense of instability and uncertainty among voters and traders in the stock market, therefore encouraging greater market volatility and instilling a sense of urgency in voters to hedge against this uncertainty.

With the obvious unpredictability of the stock market complemented by uncertainty of events like the presidential election, it is common for active stock market traders to find safe investments to bring a sense of stability during times of serious changeability. A study that found examples of safe investments in the 2016 election is, “Safe Havens in the Face of Presidential Election Uncertainty: A Comparison between Bitcoin, Oil and Precious Metals.” They looked at heavily traded stocks and concluded that oil, precious metals, and Bitcoin were “safe havens” during the instability of the elections.

**Methods**

**Background**

For our research we wanted to fully capture the impact of elections on the stock market. To simulate the stock market we used three major indices, the S&P 500, the NASDAQ, and the Dow Jones Industrial Average. We believed these three serve as an acceptable stand in for the stock market at large since they are the three major indices in the United States and consist of most of the major companies and sectors of the American economy. They are also made up of the securities that see the most volume. Volume is an important metric since in this study it effectively stands in for our sample size. If more people are trading around a certain election
event that we have isolated, then we can see the level of impact that event had. The DJIA, S&P 500 and NASDAQ also represent different industries and sectors which gives our research better reach and insight into the market as a whole instead of simply looking into one sector. Also, we chose to cover the entire election cycle from the final primary debate until the losing party of the election concedes to the winner.

Events Considered in Research

Below is a timeline of the events we believe are significant through the election cycle and where they are in the year (Fig 1.1). Some of these events do not occur every year depending on the incumbent president, such as a primary if the incumbent were running for a second term. Further, the dates on the figure represent the range of dates the events have occurred on from 2000-2016. The events consist of, the Final Primary Debates, Super Tuesday, Announcement of Vice President nominee, Conventions, The final debate, the presidential election, and announcement of the presumptive president-elect. We chose these events because they represented either the final, or the largest events within the election cycle. For example, we chose Super Tuesday since nearly 1/3rd of all primaries in the United States occur on that day. Had we included every primary the results of this research would become convoluted and we wouldn't achieve the breadth of events we want to cover. This was also why we chose to only cover the final debates of the primaries as well as the final presidential debate.

The selective narrowing of these events also allows us to isolate them from one another and study individual impact versus collective impact. If we had all of the primaries and all of the debates examined we would not be able to determine the degree of impact of each style of event on the market in an isolated way.
Final Democratic Primary Debate
1 Mar – 14 Apr
Super Tuesday
1 - 7 Mar
Final Republican Primary Debate
22 Feb – 10 Mar
VP Announcement
6 Jul – 29 Aug
Democratic National Convention
Mid - August
Republican National Convention
Late August – Early September
Final Presidential Debate
13 - 22 Oct
Presidential Election
First Tuesday in November
Election Called / Candidate Concedes
Early November

Fig 1.1
November
Data Collection Methods

An advantage we had in this topic was the fact that the presidential elections are well documented so dates and times are relatively easy to find. We were able to determine each of the dates of the events that we wanted to study and place them in a spreadsheet. Once we found the dates we extended the time we looked at them to include the entire week around that event, placing the event itself on the fourth day of the week. To clarify, if the event occurred on Tuesday, we would look at the market from the preceding Saturday, to the following Friday, having three day on each side of the event. We did this because most of these events occur in the evening after the market has closed. So to understand the impact on the market we need to look at what happens before and after the event to analyze how it changed once the event passed.

Once we had the dates we looked on public databases that hold closing values for each index for the days we are looking at and plotted them in excel. Once we had the plot we could examine the plot and determine if there were significant impacts from each event, and whether a consistent impact occurred in each cycle. We can then examine whether or not this was a trend, and which events had the largest impact of the various events in the election process.

While the closing value of each index is important it does now show the entire story of the impact on the market. Volume is another metric that we are using to determine if there was a disparate impact during these events vs the rest of the year. We take a similar approach to the volume metric as we did for the closing value. Going over the same dates as stated before we look at the average trading volume on the days when these events occurred and the days prior and after. A spike in the trading volume would signify there was some reaction from the market to this event, and if we saw one we can reasonably assume whether investors view these events as significant or not. We will not be trying to determine why these reactions occur aside from the
events we have studied. Any attempt to do so would be conjecture at best, and while the Rational Choice Theory is popular in contemporary economics, oftentimes this theory does not represent reality as the market is prone to irrational acts such as panic and speculative buying.

**Conclusion**

While these methods don’t cover every event or variable that may be associated with elections and their impact economically. We believe this covers a sufficient amount of them to fully understand how the market is impacted and reacts to these events as the election cycle moves forward toward its conclusion in November. These methods have provided the following results and represent a sound and efficient way of gathering the data we needed for this study.

**Results - Volume Volatility**

When we analyzed the raw closing data from each of the three indices from January of 2000 through December of 2016 and calculated the daily return for each index combined, the following histogram (left) can be constructed which indicates the appearance of a normal distribution with a mean ($\mu_r$) of 0.02% and a standard deviation ($\sigma_r$) of 1.37%. We then analyzed
the volume of only the NASDAQ (to prevent binomial or trinomial data from the different indices) and discovered another apparent normal distribution with a mean ($x_v$) of almost 1.9 billion shares with a standard deviation ($\sigma_v$) of approximately 400 million shares. These two datasets were used as the benchmark to analyze the impact of the different election related events and to check them for significance.

The data collected from the periods surrounding the election cycle can be shown in histograms as well. The above histograms for the election cycle paint a slightly different picture than all the returns. Something to note is the skew for the volume which shows that volume is scattered more above the mean than below it. This may be because of greater uncertainty in the markets caused by events surrounding the election cycle.
### Results - Return Volatility

<table>
<thead>
<tr>
<th></th>
<th>Mean of Returns</th>
<th>SD of Returns</th>
<th>Mean of Volume</th>
<th>SD of Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>0.02%</td>
<td>1.37%</td>
<td>1,899,097,732</td>
<td>402,718,501.89</td>
</tr>
<tr>
<td>Election Cycle</td>
<td>0.06%</td>
<td>1.24%</td>
<td>1,799,764,285</td>
<td>404,768,863.22</td>
</tr>
<tr>
<td>Election Day</td>
<td>-0.55%</td>
<td>1.92%</td>
<td>1,950,737,368</td>
<td>392,938,476.66</td>
</tr>
</tbody>
</table>

The table above shows that on the days surrounding election day, the standard deviation of returns is 40% larger than the entire period of returns. In addition, the volume of the NASDAQ is 3% higher on surrounding days than the entire period.

#### Conclusion

From this data collection and analysis we discovered that the standard deviation for the returns on the days surrounding election day is greater than the deviation for all returns which indicates a possibility for a higher volatility on these days. In addition, the return rate for each of the indices tends to be negative in days surrounding election day which might indicate selling pressure on the market during these times. This is further supported by the higher trading volume during these times that is skewed, indicating a likelihood for more uncertainty.

#### Introduction:

Along with volume, we wanted to also analyze the average change in return day over day around each of the events that constituted the election cycle. Rather than look at the entire cycle, we wanted to see how individual events influenced the volatility of returns on each index. To do this we isolated the week around an event, using the closing values of three days before, and three days after the events which are represented on the graphs as -3 and +3 respectively, using 0
as the day of the event. Once we plotted them on a graph we were able to see if there was a significant reaction from the market on the day or the event that was distinguishable from the days leading up to and around it. What we found was that while some events had an impact on the market many did not. Many however, were inconclusive and did not have a definitive result. While all of these graphs are available in appendix A, the ones we found most compelling are included in this results section.

**Graphs Considered**

The only event which drew a significant reaction from all of the indexes was Super Tuesday, having a distinct dip or rise in each year we observed. What is also noteworthy is that in years where there was an incumbent president, 2004 and 2012 the reaction from the market is slightly less than in years when both major parties were conducting primaries. Also important is that the most common reaction was a negative return on Super Tuesday, with 2016 being a notable exception to this pattern.
While Super Tuesday represented the most noticeable reaction from the market, the final presidential debate elicited the least reaction from the market in all indexes.
While these two events represent the greatest and least reaction from the indexes, there were also other significant findings in the graphs. We found that the indices largely followed one another in the reaction they had to each event. For example, if the DJI saw an increase or decrease during a certain event, this was also seen in the other indices on the same event. There were no occurrences where the indices disagreed, or had a disparate reaction to an event, as might be suspected since they each represent different sectors of the economy.

Conclusion

From this data collection and analysis we discovered that all the events we looked at did not have the same impact on the market, and while certain events caused a significant and notable reaction, others caused no reaction and did not impact the market. While the election
cycle might impact the market, it seems clear that when taken individually these events do not have a significant or reliable impact.

**Discussion and Interpretation**

**Research Questions Explained**

1. Do events associated with the presidential election cycle produce predictable and consistent results in each election year on the three major stock indices values? Both Super Tuesday and the day of the U.S. Election did produce predictable and consistent returns. However neither day produced more gains or more losses just consistent volatility. An additional consideration in the data collected was that all of the charts that referenced 2008 had considerably more volatility. This is most likely due to the 2008 financial crisis.

2. Is there an increase in volatility as the election approaches? This paper looked at volatility at specific events leading up to the election. There was no increase in volatility when looking at timing of events. More volatility was accepted during later events, closer to the media announcement of the election winners but no additional volatility was seen that correlates to timing.

3. Was there an increase in trading volume as the election cycle progressed? Yes, the trading volume increased as the election cycle progressed and culminated around the night of the election.

4. Does this increase in volume throughout the election cycle result in an increase in the value of the indices? No, this paper found that if an individual trader were to rely on this information they would gain no advantage in their market outcome. Though there was
more trading volume in the NASDAQ exchange during the election cycle, this did not result in a return that was different than any other time throughout the year.

The relationship between technology and the stock market was a key segway in which we were able to suggest there might be a political nature of the stock market. In intermediate level finance classes, we learn that the stock market immediately reflects news and announcements. This allowed us to examine the stock market on the days of the election cycle that we chose. Although the market is influenced by a variety of factors, politics being one of them, we were able to draw conclusions and assume that the market could have largely been affected by those political announcements.

Through our findings, we are able to infer that there is not a strong reflection of election cycles on the stock market returns. Although we see an increase in trading volume, we did not see substantial evidence to prove political events cause market fluctuations. We made the connection that the market is affected by many factors whether they be economic, political, regulatory, etc. For example, almost every election cycle we examined was afflicted by some measure of national calamity. 2000 the “dot-com” bubble burst. 2004 witnessed an escalation of Operation Iraqi Freedom. 2008 was influenced by the subprime mortgage crisis. 2016 drew increased uncertainty as political division grew in the United States and the market attempted to understand what the Presidency Donald Trump might look like. These events caused fluctuation within the economy, thus skewing the results of our data and disturbing the stock market.

There is a universe of influencing factors that cause fluctuation in the market. Unfortunately, it is not possible to see how each factor causes a drop or rise in market returns. We had to make an assumption that if the stock market saw fluctuations on the election cycle
days, a large part of that fluctuation was due to the political event or announcement. While this may be true to some extent, it is impossible to suggest that all of the fluctuation was due to the political event, especially because the market is so unpredictable. There are other factors that could have contributed to the volatility of that day, and there is another possibility that the market happened to move randomly. Therefore, it is difficult for us to draw complete conclusions in our research as there is no manner in which we are able to understand the reactions of the market completely. The worldwide events from each election year and vast influencers on market volatility proved to be obstacles that were unavoidable in our considerations, but explained the results of our research. Together, we draw the conclusion that the stock market was not highly influenced by the election cycles.

**Conclusion**

**Limitations**

The core limitation we had within our research was the inability to isolate variables. Since the stock market is such a frenetic and massive institution, we do not have the capability to isolate variables completely. While this might be possible given experts in finance, statistics, and computer science, these types of experts are simply not available to undergraduate students.

Another limitation was that before the year 2000 campaign websites were not widely used due to the lack of available internet thus limiting our scope from 2000-2016. Using more recent data and campaign websites is beneficial for two reasons. First, it is easier to complete background research on campaign platforms and promises. Second, this access to campaign platforms allowed for more public access and visibility to trading stocks and candidates'
platforms. Additionally, ending the study in 2016 allows for a comprehensive picture that would not be possible in 2020 due to the ongoing election which limited our sample size.

This study also focused only on events that both parties could participate in. This allowed for the data collection to be a one to one comparison. A limitation to one to one comparison on market volatility is that it is impossible to compare these without AI and that both parties don’t always participate in each event if the sitting president is running for reelection.

The final limitation to our research was the truncated timetable we had given the length of the semester. While we were able to cover considerable ground in this research paper, we did not examine as many incidents as we would have liked if the semester were longer.

**Difficulty with Data Collection**

The available literature primarily looked into big picture market trends during election cycles before the year 2000; it also focused on issues such as party or incumbency. While helpful, this does not create a full picture. By focusing on post-2000 election cycles, it considers the effect that technology and the internet help distribute information in real-time thus helping to eliminate a possible difference in volatility between pre-2000 and post-2000 analysis.

A strong point of the available literature was quantitative data collection. However, while the data collection was strong, the data display was difficult for the layperson to understand. Data display was a necessary consideration in this paper's results section, as making sure that the data was organized and understandable was a priority. While the end goal was clear and understandable data, it was first necessary to reduce the data that was collected by narrowing down the focus of the research paper.
When drawing conclusions on the research, it was crucial to focus on continuing themes seen through previous literature and the results from the collected data. In order to see accurate themes in the research complete data saturation was necessary. The data collected is comprehensive and shows a continuing theme of volatility.

**Contributions**

The stock market is an extremely volatile environment that has unpredictable movements. When we see increases in volatility, it provides opportunities to take advantage of extreme market movements or hedge against potential heavy losses. Our research shows the impact of political variables on the behavior of the United States stock market and that this relationship contributes to the overall financial market volatility. By understanding the political factors and nature that contribute to market volatility, people actively trading in the stock markets are able to make better, wiser investment decisions by understanding market movement and predicting such volatility.

The financial markets and their indices are commonly used for valuing the performance of the economy. Confidence levels regarding the economy greatly affect consumer and producer spending, budget planning, and new business ideas and developments on all levels. By being able to have a sense of predictability for times of uncertainty and market volatility, this allows families, home owners, business owners, and all people to understand the risk of the stock market and the economy crashing, or heading towards a downturn, so they can readjust or make better budgetary decisions.
Recommendations

Our recommendations around this research focus on the outcomes we found and how they might be applied to an investor, or an analyst looking for insight. To this end, it is our recommendation that political events, such as the ones reviewed in this research, not be used as the sole indicator of market outcomes. These events do not correlate with the market and do not offer consistent and reliable outcomes. We recommended that if someone were looking for market insights, they should look at other factors which might more closely follow market trends. Further, in this research we used a single variable to analyze the market and make predictions. While this was useful for the purpose of this research, a larger breadth of variables should be used if the intended outcome is to predict outcomes in the future.

Future Research

A follow up to this research would be to examine elections which occurred in other countries that have a Parliamentary government. This model of government is significantly different from the American model in that the Prime Minister is elected by the houses of Parliament and not the body politic. This might lead to a different result than the one we found, since the outcome could be more certain based on the majority party, and the power of that executive is not as expansive.

Also, follow up research might be required to expand this to elections in the United States before 2000. While the environment of the country might have been different, and technology not as impactful, the results might be similar. It would be important to understand if the difference the internet made was as significant as we contended it was in this research, or if the internet played less of an important role in the volatility of the market.
Bibliography


**Appendix A: Graphs and Tables**

1. **Dow Jones Industrial Average**

![Graph 1](image1)

Final Democratic Primary Debate (DJI)

![Graph 2](image2)

Final Republican Primary Debate (DJI)

![Graph 3](image3)

Super Tuesday (DJI)
2. Standard and Poor’s 500 Index
3. NASDAQ Composite Index