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Introduction

There is a marvel that occurs in the United States every four years. And no, I am not talking about the Olympics or the World Cup; I'm referring to presidential elections. The process feels as if it lasts for eons, going from primaries to debates, and finally concluding on Election Day itself.

The significance of every election cannot be understated; the President of the United States is thought to be the most powerful being on the entire planet. The last election was one of the most important in history, with a divided nation choosing who would determine the country's fate during a global pandemic. The entire world came to a standstill during the first week of November; no one knew what would happen as the vast increase of mail-in votes delayed the final results from being announced to the public. Everyone was glued to their screens to see if Georgia, Pennsylvania, North Carolina, or Nevada reported any more of their votes.

This got me, an undergraduate on the pre-business track at Emory University, thinking about a broader concept. I was never incredibly invested in politics, but occasionally checked different networks for some updates of the current news. But the 2020 election was distinct; I knew what was at stake for my country, and probably refreshed my electoral map more during that first week in November than I ever did for anything else. After seeing how the election changed my habits, I was interested in finding out how presidential elections affect another construct: the stock market[1]. This did not just pertain to the 2020 election either; I could go back a century and see how the stock market responded to these major events. There, this project was born.

I am not trying to reach any absolute conclusions through my studies. If anything, this has been more of a thought experiment, a way for me to learn more about our government and history through my love of economics. And who knows, maybe we can adequately prepare for the 2024 election from this information. While this is nowhere near the level of the articles I read on a daily basis, I hope this is at least somewhat informative and thought-provoking, and makes you revisit the ever-important phenomena that surround our lives every single day.

[1] In this project, whenever I say 'stock market', I am really referring more to the Dow Jones. While the Dow obviously does not take the entire market into consideration, it was the best index for me to use in this project. I will explain more of my reasoning on that front later into this paper.

The Variables

When I started looking at the economy and each presidential election that occurred from the twentieth century onward, I obviously had to base this off the different outcomes that the election provided, and how each election was unique. I couldn't study every election individually, and compile them into one huge gallery of information. That would probably not provide us with what we want, and is much more work than is necessary for a project like this. So, I got to thinking of the different parts of an election, and how any of those could possibly make the stock market fluctuate. After some thought, I decided on four main variables; the first two are pretty intuitive, while the other two are more outside the box.

1. Democrat vs. Republican

Like I said, pretty straightforward. Does the stock market perform better under a certain political party? Does it just depend more who the president currently is and what he does[2]? Does it not matter who the president is, and the Dow simply changes based on other international events?

2. Incumbent vs. Newcomer

The intuition for this is the same as the first variable. Does the stock market favor an incumbent, since the people generally know what to expect? Or, does the president become old news, and the stock market slumps until someone new steps in?

3. The margin of the president's win in the Electoral College

This variable may not make much sense at first, but I thought it would be important to analyze. What I did is take the difference between the number of electoral votes the winner received and the number of electoral votes the runner-up received, then plotted this information against the

[2] Obviously, the president is not a position exclusive to men. However, since we have not yet elected a female president at the time of writing this paper, I feel it is appropriate to use the term in this manner.

stock market[3] before and after their respective elections. I thought this also might cover some expectations the country had going into each election. While I was not alive during either of these elections, I could imagine that Raegan's win over Mondale in 1984 was more expected than Bush's win over Gore in 2000.

4. Polls ranking each President of the United States

Out of all the variables I am studying, this is the only one that is semi-subjective. What I did is I took five distinct sources that ranked the presidents of the United States in order, from worst to best. The metrics they used for those lists are not important in this study; this was simply an idea to see if presidents ranked lower on the list championed worse economies, or if it had no effect on how the stock market performed. The citations for each of the lists I used are in the bibliography. If they are collectively biased in any way, I apologize for not giving a valid representation of what the people think regarding our past presidents. My selections were as close to random as I could make them.

[3] I use the terms 'winner' and 'runner-up' because there are a few elections where more than two candidates received electoral votes; specifically, the elections of 1912, 1924, 1948, and 1968. In these elections, to find the electoral vote win margin, I subtracted the votes of only the second place candidate from the winner. For example, in the election of 1968, Richard Nixon received 301 electoral votes, Hubert Humphrey received 191, and George Wallace received 46. Therefore, Nixon's win margin was 110 electoral votes (301-191), not 64 (301-191-46).

The Chosen Cycles

So, now we have established what this project entails, and what variables we are using to measure the stock market from the twentieth century onward. However, there is more to this study than just the variables; I have also separated every four-year presidential term into four distinct periods, all revolving around each presidential election. I wanted each of these periods to encompass an important time in the process, and see if the data changes from any of these periods to the next. These periods are mainly used for the first two variables, since they are not as appropriate for the last two.

Period One: Election Day to Inauguration

These two events are the most prominent during this time, and I wanted to make one of the periods represent the stock market during its interim. Obviously, the winner of the election is only the president elect at this time, provided that the winner was not the incumbent. This would take immediate fluctuations into consideration, and demonstrate how the economy changes right after the world knows who will be sworn in during the next inauguration.

Period Two: Inauguration to 100 Days into the Presidency

Is going 100 days into the president's term a slightly arbitrary period of time? Yes, obviously it is. However, this is a common landmark for each president to see how much he did in his initial three months or so in office. So, I believe it is a decent time period for this project. This means that this period takes into account changes in the stock market from the inauguration to either June 12th or April 30th, depending on which election it is[4].

[4] Why there are two unique dates here is covered later in the paper.

Period Three: 100 Days into the Presidency to June 30th of the next Election Year

This covers the bulk of the president's term, and it is purposefully structured in this way. The main part of this study is the presidential election itself; while each president's performance is also important, it is not the main focus here. So, while I do include this portion in the study, it is clustered into a single period, composed of the times when elections are not as relevant. The second half of the election year is when the process truly starts kicking off; we know who the two main candidates are, the presidential debates are around the corner, and the media spends more time on what Election Day is going to look like. Hence, this is why the period extends for over three years, and typically ends on June 30th.

Period Four: July 1st to Election Day

Finally, this period cycles back into period one, and completes a full presidential term. The spotlight is clearly on election day during this time, and expectations are high as we head into the second Tuesday of November. Finally, the election occurs, and we feed back into the exact same loop once again.

An Average for Each Period

Before delving into the different variables, I first want to premise how well the Dow Index performs during each cycle, regardless of who's in office and whether or not an incumbent is serving. Below is a table displaying the average for each period from 1900 to 2021.

Period	Dow Jones Industrial Average Return (1900-2021)
Period One	2.28%
Period Two	3.68%
Period Three	21.36%
Period Four	6.11%

As we would expect, period three has by far the greatest return, since it spans the most amount of time. However, this is only because the Dow Index has gone on an upward trend since the beginning of the twentieth century. If the Dow Index started to stagnate and even decline, we would see that period three would suffer the most from such an event. Period one and period two are relatively close, since expectations do not change much after the president elect is known. They also cover roughly the same amount of time, although period two from 1937 onward is about a month longer, which may explain its slight edge over period one. What is surprising is period four; it is far higher than periods one and two. This period is also only three months, yet it is more than double the increase from period one and more than two percentage points higher than period two. There is much more uncertainty when it comes to this period, so it is possible that this volatility was replaced with better expectations when a new nominee had a chance at becoming the next United States president. The reasons for discrepancies in this table are less important than distinctions in specific variables; I simply thought it would be important to portray these four periods with its raw data before diving in to each specific variable.

Disclaimers

Why the Dow?

As you may have seen by my first note, the term ‘stock market’ is a bit of a misnomer when it comes to this project. What I am really measuring is the performance of the Dow Jones Industrial Average during these periods, not the entirety of the market.

There has been controversy regarding whether or not the Dow Jones Index is still useful today, and there are extremely good reasons for that. The Dow only measures 30 companies, and those companies are not chosen based on how well they represent the market as a whole. So you may be asking why I chose to use the Dow Jones Index and not the S&P 500 or the NASDAQ indexes. There is one reason and one reason only for this: the day of inception for each of them.

Dow Jones’s inception date occurred in 1896, a perfect time for this study, since this analyzes elections from 1900 onward. The S&P 500, NASDAQ, and the majority of other indexes do not have this longevity; the S&P 500 was born in 1957[5], and the NASDAQ was created in 1971. Since I would have fewer data points if I did not use the Dow in my study, I accepted what probably is a marginally less accurate index for more than a dozen more data points.

Different Places have Different Dows

As I was doing this study, I found something intriguing: not every source has the same records on the Dow’s value. Yes, they’re pretty close, but shouldn’t this have an objective answer? I was able to find one reliable source that displayed the Dow Index daily ever since its inception, so that’s the source I used. Obviously, with the several different websites that I found having different numbers, I cannot say for certain which one is actually correct. I have compared my data with all my findings and nearly everything relevant is within a percentage point of each other. So, while my data may be slightly off for some parts of this project, I believe my outcome will be valid, and there are still key takeaways from what I have found.

[5] The S&P 500 was created measuring fewer companies in 1923, but developed into the index we know it to be today in 1957.

The 20th Amendment

Nowadays, we are accustomed to inaugurations happening on the January 20th that follows the presidential election. But did you know this was not always the case?

Before Franklin Roosevelt's[6] second inauguration in 1937, each inauguration took place on March 4th instead of January 20th. However, this was changed, due to how far apart the election and its respective inauguration initially were. These topics were covered in Section One of the 20th Amendment, stated below:

The terms of the President and Vice President shall end at noon on the 20th day of January, and the terms of Senators and Representatives at noon on the 3d day of January, of the years in which such terms would have ended if this article had not been ratified; and the terms of their successors shall then begin.

Thus, the date of each inauguration was permanently changed. While this may not be important in the scope of our daily lives, it certainly is for this study. As I mentioned earlier, period one of the presidential election cycle covers the Dow from Election Day to Inauguration Day, and period two spans from the inauguration to 100 days later. So, these two intervals differ depending on what election is being analyzed. For each respective election and inauguration that took place before 1936 and 1937, period one goes from the second Tuesday in that November to March 4th, and period two goes from March 4th to June 12th. For each respective election and inauguration that took place in 1936 and 1937 or later, period one goes from the second Tuesday in that November to January 20th, and period two goes from January 20th to April 30th. Therefore, the third period starts from different dates as well, although the fourth period is the same no matter what election it is. With all of this in mind, the main point stands that these periods do not remain constant throughout these elections' history, and it is important to keep this in mind when reading the data.

The 38th and 46th Presidents of the United States

As you may know, the 38th President of the United States was Gerald Ford, and he did not become the Commander-in-Chief via an election. So, there is not as much data in this project

[6] Franklin Delano Roosevelt will be referred to as 'FDR' for the rest of this paper.

on Ford as there are on the other presidents. While Ford becomes important when we discuss the rankings of these presidents, he does not get an equal amount of attention until then.

There is also little information regarding the current President of the United States[7], Joe Biden. This is because, as of the writing of this paper, his term started two months ago. Thus, while we have data on period one of his presidency, he has yet to conclude periods two, three, and four. While I did mention the 2020 election was the main reason for this paper to exist, it is not as significant in my results than the presidential terms that have definitively ended.

Deaths and Resignations

This project is based on four year cycles between elections, where there is usually a singular president in office during that time. But what if that's not the case? What happens if a president died in office or resigned?

Throughout the 120 years of this project, this has been the case 5 times: William McKinley, Warren Harding, FDR, John Kennedy, and Richard Nixon. Whether or not this is an obstacle depends on which variable is being analyzed.

For example, this is not a problem when comparing Democrats and Republicans. Every time a president left office prematurely for any reason, their replacement was a man within the same political party. Since that is all we focus on, this is not a challenge for our first variable.

However, this does play a role when comparing newcomers and incumbents. If an incumbent leaves office, he will obviously be replaced by someone new. So, how should we take this into account? I think rather than completely altering our datasets, we should simply reframe what we are trying to find. We can do this because our focus is not on each individual president, but rather each distinct election. So, instead of asking, 'how did the Dow perform while this president was in office?' we can ask, 'how did the Dow perform after the incumbent won the previous election?' By doing this, whatever happens in office does not matter; the election has already passed, and for this study, anything else is deemed to not be as important.

As an aside, this doesn't come into play for our other two variables, since there has been no president since 1900 that has left office before their respective inauguration (which is how we are measuring the Dow against the electoral vote win margin), and we are not separating the poll variable into separate periods, but rather their using one big period encapsulating each

[7] The current president of the United States as of the making of this paper, in the midst of 2021.

president's entire time in office. In summary, we need not worry about the four deaths and one resignation throughout this time period, merely due to the true purpose of this study.

Weekends

The Dow is not active 24/7; it is open from 9:30 am to 4 pm, Monday through Friday, with few exceptions. This means that, with the periods I have set, some of them may start or end on a day when the Dow is closed. For example, January 20th, 2013 was a Sunday, and thus, period one could not end on that specific day. So, if a certain period ends on a day when the Dow is closed, that period ended on either the most recent previous day when the Dow was open, or on the next day when the Dow reopened. Whether the former or latter took place depended on which period it was. The procedure went as follows:

1. For election days, this was not a problem, since the elections always took place on Tuesdays.
2. For inauguration days, the most recent previous day when the Dow was open was the end of the period, so that no movements after the inauguration would affect the final result.
3. For the 100th day of the presidency, the next day when the Dow was open was the end of the period, so that all 100 days were encapsulated in the period.
4. For the first day of July in each election year, the most recent previous day when the Dow was open was the end of the period, so that period four could have the entirety of July in its data set.

The First 100 Days

Nowadays, we know the first 100 days of each new president to be a common metric among newscasters and other journalists. With this, though, lies some history into where this precise yet arbitrary measurement came from.

The first president to place significance onto his first 100 days was FDR. As you may know, the United States was in dire straits during 1933, suffering from the Great Depression and its effects. FDR decided that he would use his first 100 days to put the country on a new track; or rather, a New Deal. He did more in his first 100 days as president than any other, signing over a

dozen significant bills into legislation and saving America's banks, amongst several other deeds. Those three months were an unprecedented time then, and it certainly still is now.

So why do I believe this is a disclaimer? Well, this study goes back to the beginning of the twentieth century, which is before FDR initially took office. So, the first few presidents in this analysis did not see their first 100 days as a significant interval in their term. So, data points in this period may be somewhat biased, since these presidents may have done more with the metrics that we use today.

With all of this in mind, I still believe these periods are important in this study. I would be utterly appalled if there was not a president that did not want to start their term in the right direction; after all, we know that first impressions are everything. So, I am sure these presidents still wanted to impress during these few months, even if they did not have the 100 day benchmark in mind[8].

But enough of that. Now, let's get to the fun stuff.

[8] I go into more detail regarding the first 100 days later in this paper. For now, here is an informative article to satiate your interest: https://www.usnews.com/news/history/articles/2009/02/12/the-first-100-days-franklin-roosevelt-pioneered-the-100-day-concept

Variable One: Democrats and Republicans

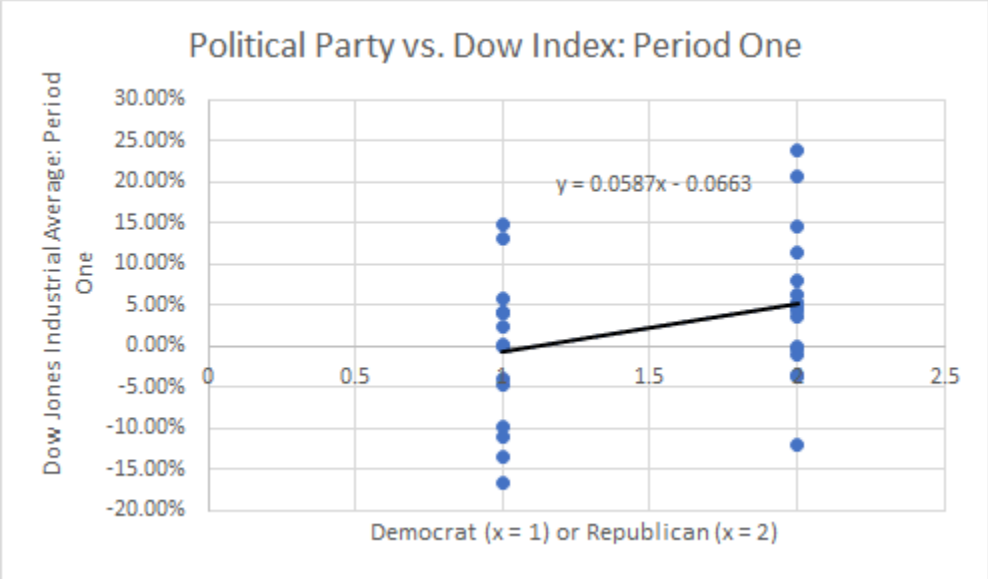
This was naturally the first comparison I wanted to make when conceptualizing this study. Is there something about Democrats or Republicans that make the Dow increase or decrease consistently when they're in office? Does the president's political affiliation not matter?

After pondering this question, I do not think the Dow fluctuates simply because the president has a 'D' or 'R' next to their name. It might change because of certain policies that are made more frequently by a certain party, but not because of political affiliation and absolutely nothing else. At the end of the day, however, there is only one way to see if this is the case.

To set up the data, I put the political party on the x-axis and the Dow Jones Industrial Average during that specific period on the y-axis. In this situation, the independent variable is binary, meaning each data point will contain one of two outcomes: we are considering a Democrat as the president, or a Republican as the president. Obviously, there has been no candidate since 1900 that is a mixture of each; while there have been moderates and extremists, each president specifically identifies with one of these two political parties.

To compensate for this, I assigned a number to each political party. In these data sets, you will see that the Democratic Party is associated with the value x=1, and the Republican Party is associated with the value x=2. This means that each of these graphs will have two vertical lines of data points, and we're able to compare them side by side. So, let's get started by showcasing the graph comparing political affiliation to the Dow Jones Index in period one.

Period One: Democrats vs. Republicans



Before diving into what this graph tells us, let's go through what each part represents. Each blue dot is one data point, meaning that is how well the Dow did during period one under either a Democrat or Republican president. The black line is the trendline, providing the overall relationship between the two clusters of data points. Finally, the equation in slope-intercept form is the equation of the trendline, which gives the line's y-intercept and slope.

So, how does this equation tell us what the average return was from the Dow Index during these time periods? For Democrats, the answer lies in what 'y' is when we plug in x=1 into our equation. This equals .0587-.0663 = -.0076, which means the Dow Jones Industrial Average, on average, decreases by .76% from post-election day to inauguration day, provided that a Democrat is the president elect. We can make the same calculations for Republicans; their average rate of return from the Dow is what 'y' is when we plug in x=2 into our equation. This equals .0587(2)-.0663 = .0511, which means the Dow Jones Industrial Average, on average, increases by 5.11% from post-election day to inauguration day, provided that a Republican is the president elect. While I won't go through these steps for every single data set, I believe it's important to know how to read these graphs, and now you can for upcoming figures.

What the slope of the equation also tells us is how different the averages are between Democrat and Republican presidents. Since each of these data sets are one unit of 'x' away from each other, the key to calculating the difference between the Democrat average and the Republican average is to add or subtract the slope, depending on what sign the slope is. This is

an extremely important part of these datasets; the sign of the slope tells us whether the Dow Index was higher under Democrats or Republicans. In this example, the slope is .0587, meaning that Dow's index, on average, is 5.87% higher under Republicans than under Democrats during period one.

In my opinion, this is fascinating information. There does not seem to be any significant outliers in this data; the Dow's performance under Republicans seems to dominate during this time. There are two points where the Dow increased by more than 20% with a Republican president elect, these times being under Calvin Coolidge in 1924 and Herbert Hoover in 1928. Both of these periods were during the Roaring Twenties, a time where the stock market was booming until the Great Depression hit.

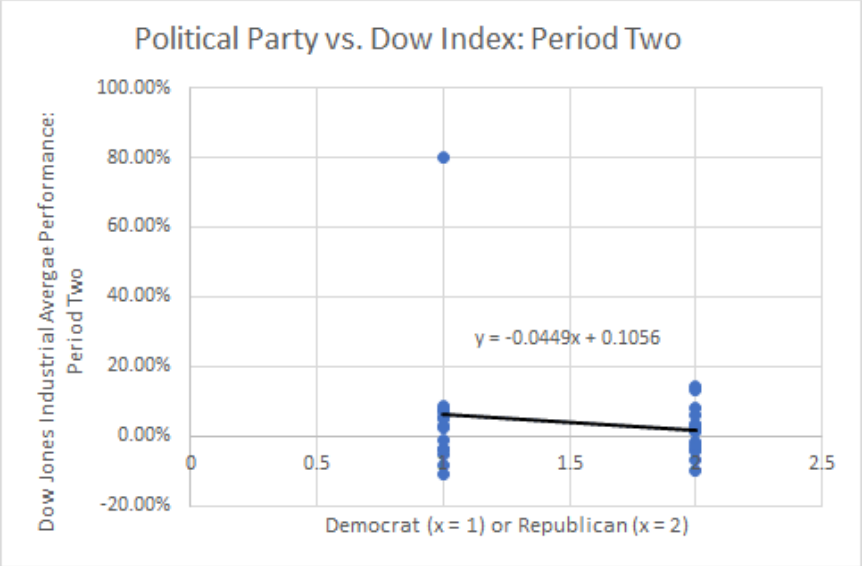
In 1928, it was almost as if the independent variable and the dependent variable switched. The Dow Index did not rise because Hoover was elected; Hoover was elected because the economy was booming. Coolidge could have run for president again at this time, but decided against doing so, and the Republican Party nominated Hoover instead. Hoover ended up winning the election by over 6 million votes, and the Dow continued to prosper after he became the president elect.

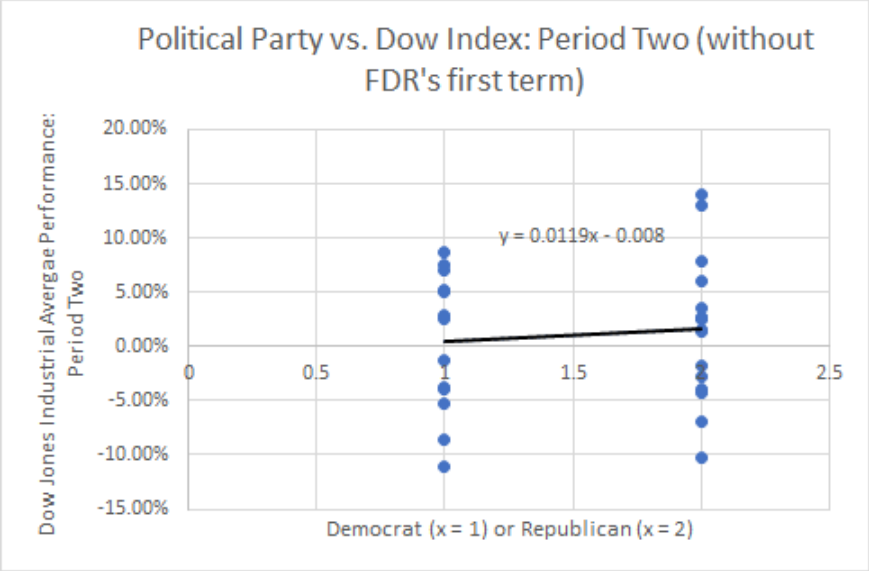
Turning to the other political party in this graph, the main winners from this side are Bill Clinton's victory in 1996 and, believe it or not, Joe Biden's success in 2020. An article from CNN at the end of November 1996 claimed that it was the "best November in 34 years"[9], whilst November 2020 posted the "biggest monthly gain since 1987"[10].

To summarize, while there may have been some external variables involved not pertaining to the current president elect, Republicans tend to outperform Democrats before their respective inaugurations by a decent margin. But how did they do after they were sworn into office? Let's see how they compare during period two.

[9] https://money.cnn.com/1996/11/29/markets/novemberrally_pkg/
[10] https://www.cnbc.com/2020/11/29/stock-market-futures-open-to-close-news.html

Period Two: Democrats vs. Republicans





You may be wondering why there are two graphs for this period, and why they look extremely different. And while yes, the difference between these two slopes is nearly 6%, these two graphs are not as different as they seem. In fact, they are exactly the same, with the difference being one data point.

The one difference is a huge outlier in the form of FDR's first 100 days during his first term in 1933. He was in a situation far more unique than most other incoming presidents: he had to deal with the horrors resulting from the Great Depression. During his first 100 days, he reshaped the United States; from his Fireside Chat saving the banks to the Federal Emergency

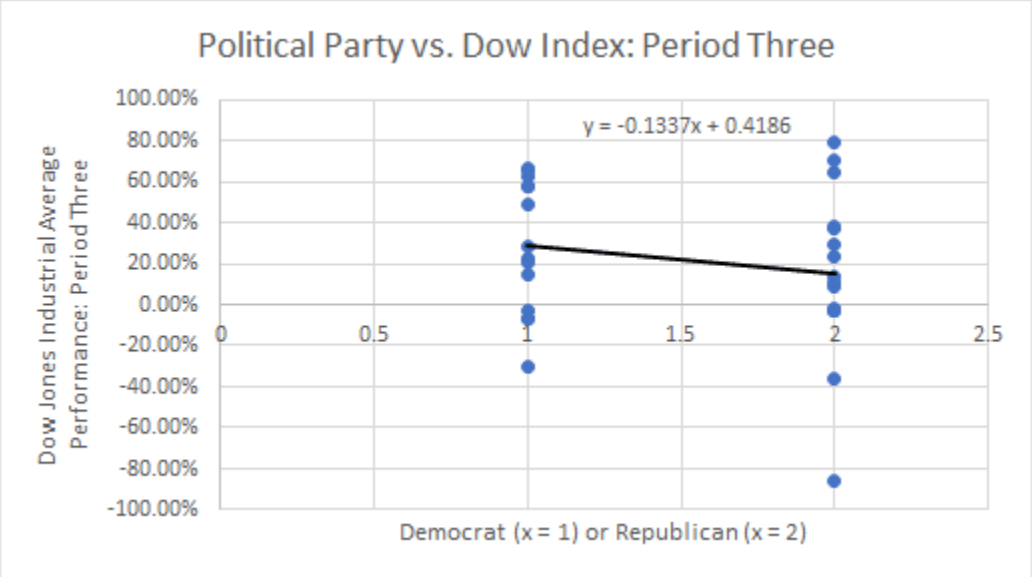
Relief Administration to passing over a dozen important laws through Congress, FDR helped America during those three months in ways no one else could ever imagine[11].

Once again, however, the situation at hand was quite unique; no other president from the twentieth century onward has had to deal with such a bleak outlook. So, while he obviously should be included in this analysis, the relationship might be a bit clearer when this extravaganza is removed from the picture.

Including these Hundred Days in our analysis, we can see that Democrats have a decent edge, with the Dow Index increasing 4.49% more under their party than under Republicans. This is not the case when FDR is removed; the script is flipped, with Republicans gaining a slight advantage. Both of these values, however, pale in comparison to the Republican stronghold over period one. Thus, the hype of Republican policies seems to die down after the president goes through his inauguration day. Let's see if this keeps up in period three.

[11] During these 100 days, FDR also oversaw the best day for the Dow in its entire history, with over a 15% increase from the previous day's close.

Period Three: Democrats vs. Republicans



This period has a lot more volatility, which is expected, considering it spans over three years compared to periods one and two, which only cover a couple of months. Quite a few presidents were able to support a booming economy during this period; some examples include Woodrow Wilson's first term, Harry Truman, Dwight Eisenhower's first term, Ronald Raegan's second term, Bill Clinton's first term, and Barack Obama's first term, each in office whilst the Dow Index increased by at least 50%[12]. With this, inevitably, there are some blemishes, including William McKinley's second term, and FDR's second term. But neither of those come remotely close to Herbert Hoover's period three, which saw the Dow decrease by more than 80%. This was right before FDR was elected, which explains why he had to recover from such turmoil. The Dow during Hoover's presidency, like FDR's, is completely unprecedented, and created one of the worst reputations for any president in history. While Hoover was not entirely at fault, his beliefs in not implementing massive government intervention certainly did not help the cause.

When it comes to the graph, this tells an extremely different story. Republicans helped the Dow more in the early stages of their presidency, but now, the Democrats hold an incredible 13.37% lead over them. This is no longer a time for presidents to simply make promises; this is a time for action. And the Dow is usually a decent judge as to how well each president has stepped up to the plate. There have been presidents from both sides who have done so tremendously, with

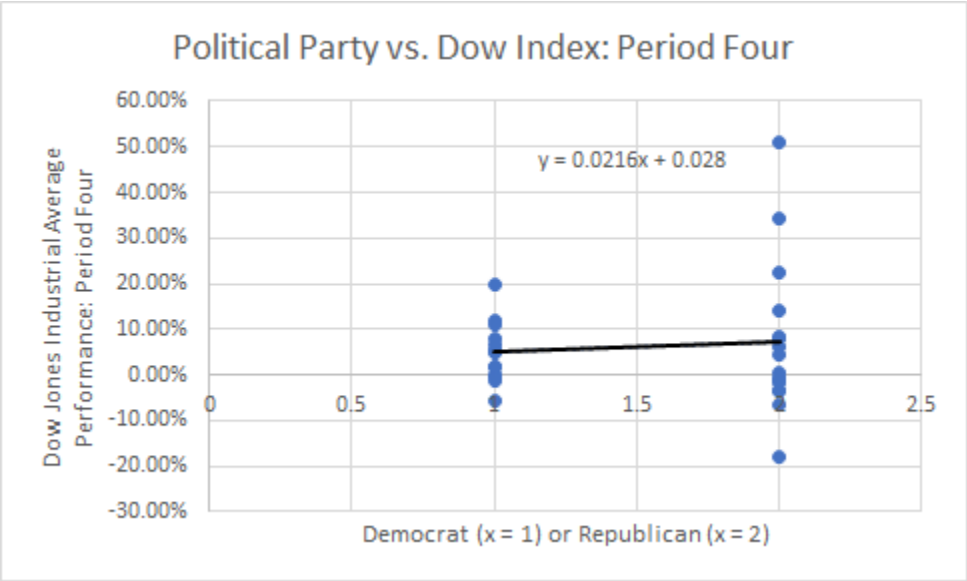
[12] These are not all of the terms that fit into this category. Others include Calvin Coolidge and FDR's first term, but since I already alluded to their successes, I thought it would be more appropriate to highlight others.

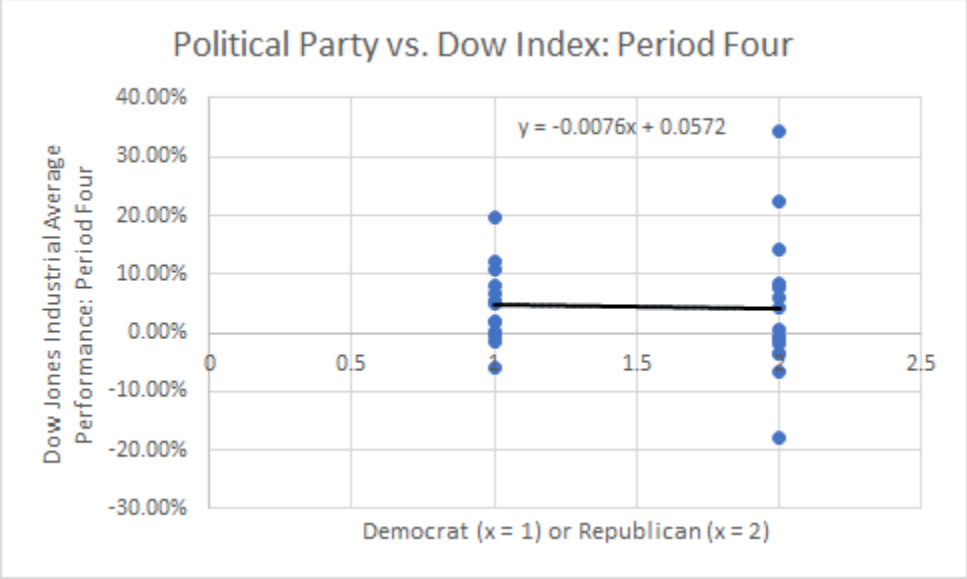
at least three Democrats and three Republicans generating a net return of 50% or above. But, unlike the first two periods, the Democrats steal the show; while the Dow has increased on average under both parties, it is simply no contest when juxtaposing the two.

So, we have seen a trend throughout these first three periods; the Republicans lead immediately after they become the president elect, but the Democrats have done better and better later on during their presidencies. Let's see how these presidents have done before either running for re-election, or simply stepping down after a second term[13].

[13] Besides FDR of course.

Period Four: Democrats vs. Republicans





Similar to period two, I have decided to to include two distinct graphs, with the one difference being one data point. This data point was Hoover's period four during the second half of 1932.

The reasons for this have to do with what was happening during this time. The Dow fell to its lowest point ever on July 8th, 1932[14], nearly going below 40, which is incredible to think

[14] https://www.politico.com/story/2013/07/this-day-in-politics-july-8-1932-093787

about considering where the Dow is today. And, as with low points, there is nowhere to go but up.

There is also the factor that Election Day was coming up during this period, so the Dow possibly rose not because of the president in office, but maybe because he was soon to be leaving office a couple of months later. So, with all of this in mind, it is important to examine this period both with and without this data point.

Looking past this one era in time, Republicans seem to reclaim the lead here. With Hoover's 1932 performance, they edge out the Democrats by over 2 percent, but lose the lead without 1932, even though that may be close to negligible. Most Democrats oversee minimal fluctuations in the Dow during this time, with the main exception being Woodrow Wilson's first term. Republicans have a lot more variation, with successes from Hoover and Calvin Coolidge in 1928, and downturns, including George W. Bush's second term in 2008[15]. This has a similar volatility to periods one and two, since each is comprised of a few months.

So, what have we learned? I think the most fascinating observation here is that Republicans are better immediately before and after Election Day, while Democrats are better when Election Day is not as relevant in the short term. Speaking in terms of our four periods, Republicans won in periods one and four, whilst Democrats dominated during periods two and three.

I am not going to list my opinions as to why I think this is the case. I believe that would remove the impartiality I am trying to implement in this paper, and it deviates from the main purpose of this study. I allow you to make your own opinions on this data, or completely ignore it if you so desire. These are what my findings tell me, and since this study has to do with revolving the Dow around the election cycle, this is what's most important. Now, let's continue on to our other variables to see what trends we can find there.

A Quick Note

I think it is important to mention here that for every different variable that we look at, remember that the data points are going to be the same. For example, FDR will still have his marvelous period two performance, and Herbert Hoover will still have his diabolical period three

[15] This was definitely at least in part due to the Great Recession and the housing crisis, but is still important for this study.

performance. What I am doing is changing the variable that we are looking at. Let's take the example of going to our next variable, incumbent against newcomer, versus this variable, Democrats against Republicans. FDR is changing from a Democrat to being a newcomer, and Hoover changes from a Republican to also becoming a newcomer[16]. So, even though these two were in separate groups, they are now in the same group. This is all purely on the basis of arrangement; I am not fabricating new data for each part of this paper.

[16] Recall that FDR's brilliant 100-day performance was during his first term, meaning he was not an incumbent at that time.

Variable Two: Newcomers vs. Incumbents

Instead of looking at political affiliation, we are going to look at whether or not this is a president's first term in office, and from that, analyze how this factor influences the Dow Jones Industrial Average.

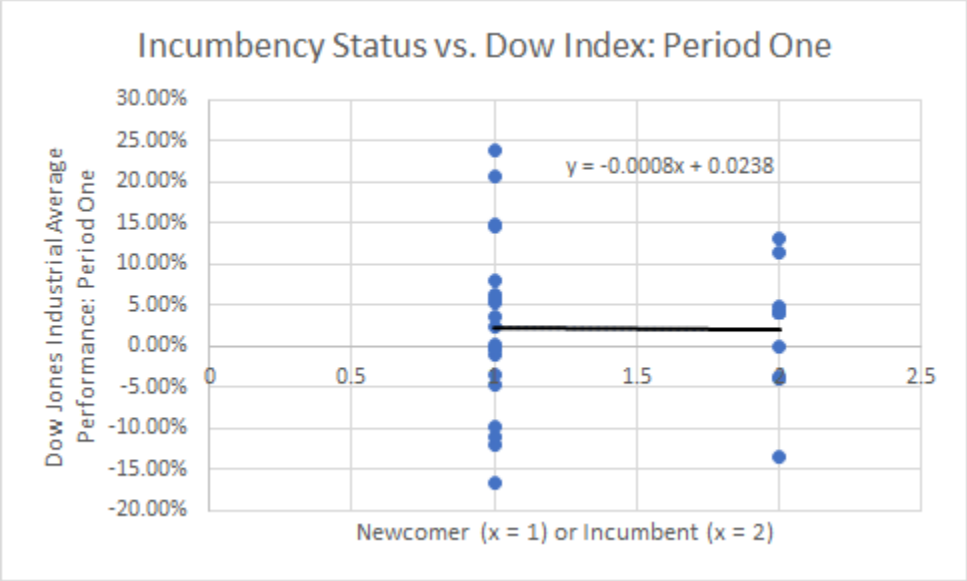
The method of retrieving this data is similar to what I did for our first variable. Each point will be on one of two different columns, except this time, the newcomers will be represented with the line x=1, and the incumbents will be represented with the line x=2. Everything else remains the same; the equation will be presented on the top of the graph, the trendline will compare the two sides, and each point corresponds to the Dow when a certain president was in office during that specific period of time.

There is one aspect of this that I believe is important, before we hop into going through each period. Counting Joe Biden, we have had 31 presidential terms since the beginning of the twentieth century. Within those terms, 16 of them have had Republican presidents, and 15 have had Democrats. This was extremely convenient, since the sample sizes were reasonably balanced. This, however, is not the case with newcomers and incumbents; in these 31 terms, 20 of them had a newcomer and 11 of them had an incumbent.

The rationale for this is rather easy to see. All but one president has served for either one or two terms. Each president that served for a single term was only a newcomer, implying he never got to experience the oval office as an incumbent. Each president that served two terms was a newcomer once and an incumbent once, meaning that the ratio is equal. So, with that one exception, the ratio of serving as a newcomer and serving as an incumbent is either 1:0 or 1:1, meaning that there will always be at least as many newcomers as there are incumbents. Therefore, since there have been several one-term presidents, the newcomers vastly outnumber the incumbents.

Despite this obstacle, there is still enough data for this variable to provoke some ideas. With that out of the way, let's dive right into period one.

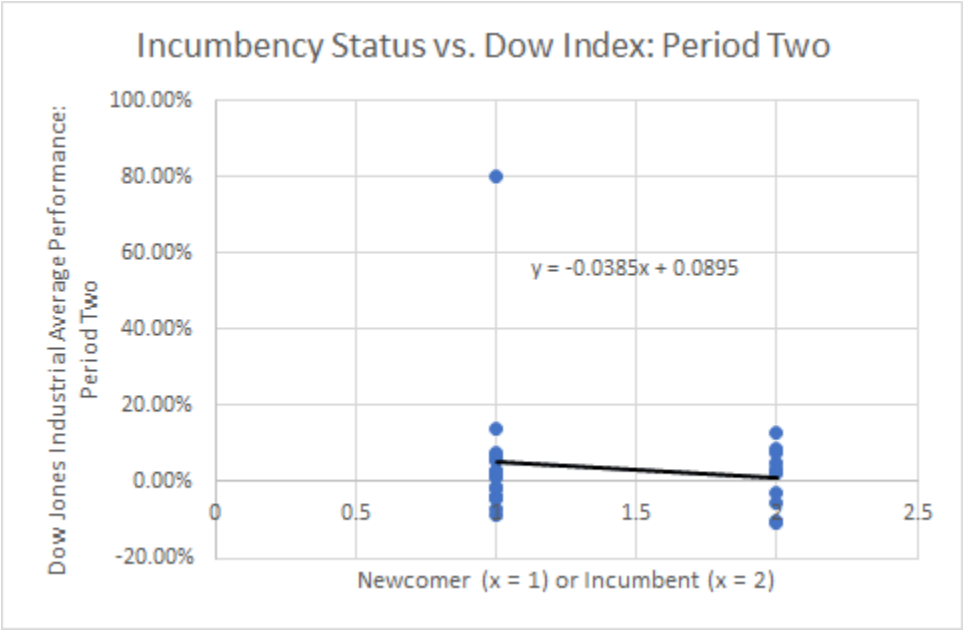
Period One: Newcomers vs. Incumbents

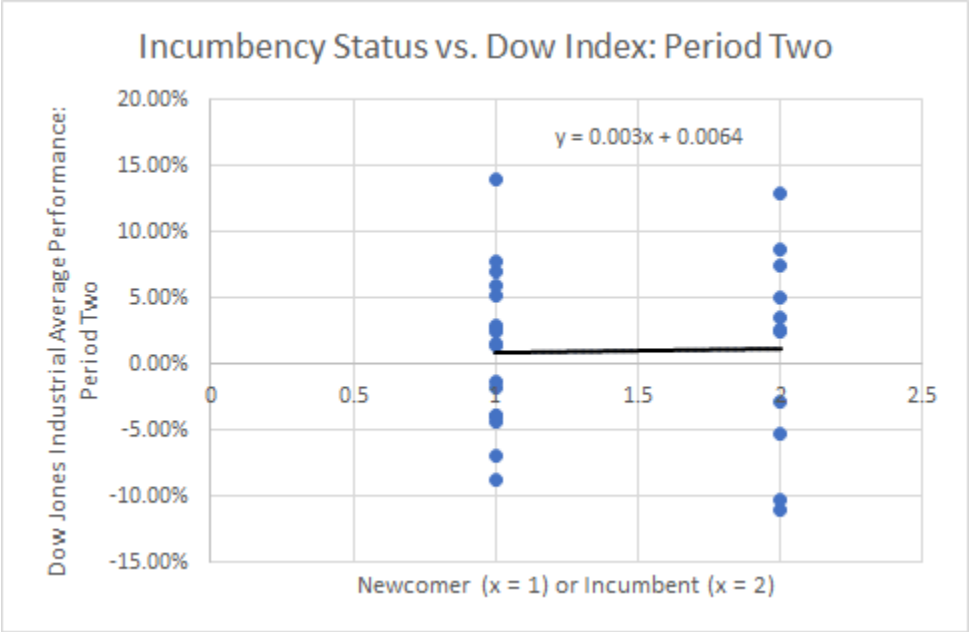


I find this particular dataset rather interesting. The newcomers' outcome is scattered, ranging from a 25% increase to a 20% decrease. The incumbent's outcome has a much lower range, with all data points staying within 15% of the Dow from the start of the period. But it all comes together when comparing the two: there is less than a .1% difference between the two sides.

When incumbents win their second straight election, the country generally knows what to expect. The news has covered him for nearly half a decade, and everyone knows what he has and has not done. Therefore, an incumbent maintaining this position would not considerably shake the Dow, since there is no significant change in power or the status quo. On the other hand, a newcomer brings with him an abundance of new government officials due to the spoils system, and a new set of ideals that will dictate the Commander-in-Chief's decisions for four whole years. The Dow could react positively or negatively to this, but it certainly is going to move. Thus, I can see these two sides evening out to create close to a horizontal trend line, and there being no difference going into inauguration day.

Period Two: Newcomers vs. Incumbents





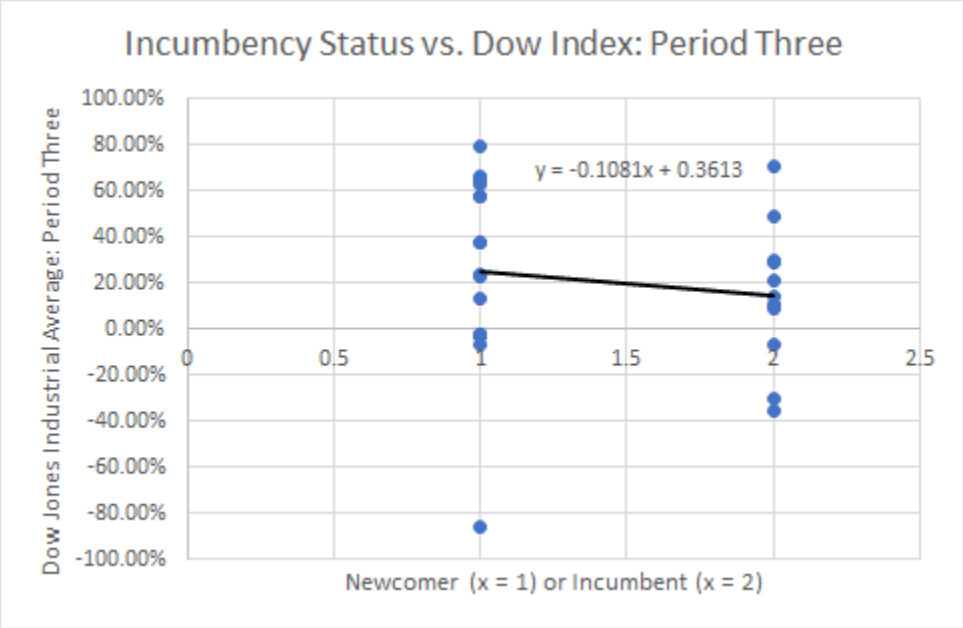
Once again, I have separated this dataset into two graphs, one with FDR's first term and one without it. The distribution is much easier to see in the second graph, and we can see that unlike period one, the spread between newcomers and incumbents is nearly identical. Its similarity to period one is that both of their returns are almost exactly the same, at least when you exclude FDR's one term as a newcomer. If anything, this shows how much one data point can skew an entire dataset.

It seems as if the newcomers have set the scene during this period for what their presidency will be. Thus, they do not bring any drastic changes in the Dow, and it's back to how the presidency usually is. However, there is no data yet that distinguishes these two categories.

While this period of time is only about six months long, I personally would've expected more of a difference. I thought newcomers would go out of their way to make their first few months in the oval office extraordinary, that newcomers would care more about this and go above and beyond to make themselves stand out.

I guess the bulk of the presidency in this regard is more important than the initial burst. If the third period is similar to these, I would safely assume there is no real correlation between incumbency status and the Dow.

Period Three: Newcomers vs. Incumbents



Now this is more of what I expected from this variable. Even including Hoover's abysmal term, the newcomers outperform the incumbents by over 10%.

It's safe to say that a president's approval numbers usually decrease the longer he is in office, especially going into a second term. I'd also add that the Dow highlights expectations, and where the economy is going in the near future. I think this is where these two factors intersect; incumbents become old news, lacking a sense of pizzazz. When it becomes a president's fifth, sixth, and seventh year in office, we desire change. We start thinking about the next election, who the new candidates are going to be, and how he's going to change our nation for the better. A newcomer is in the midst of doing that; an incumbent is past his prime.

This isn't to say that incumbents do a bad job at maintaining a stable Dow. As we can see by the equation on the graph and its trendline, incumbents on average are well above the x-axis, obtaining an average of a nearly 15% increase. With this in mind, everything I mention here is relative; a 15% is only so impressive when newcomers average a 25% increase, which would be even higher if it wasn't for one single president[17].

It's quite astounding to see such a stark difference between this and the first two periods. Let's see which category period four falls into.

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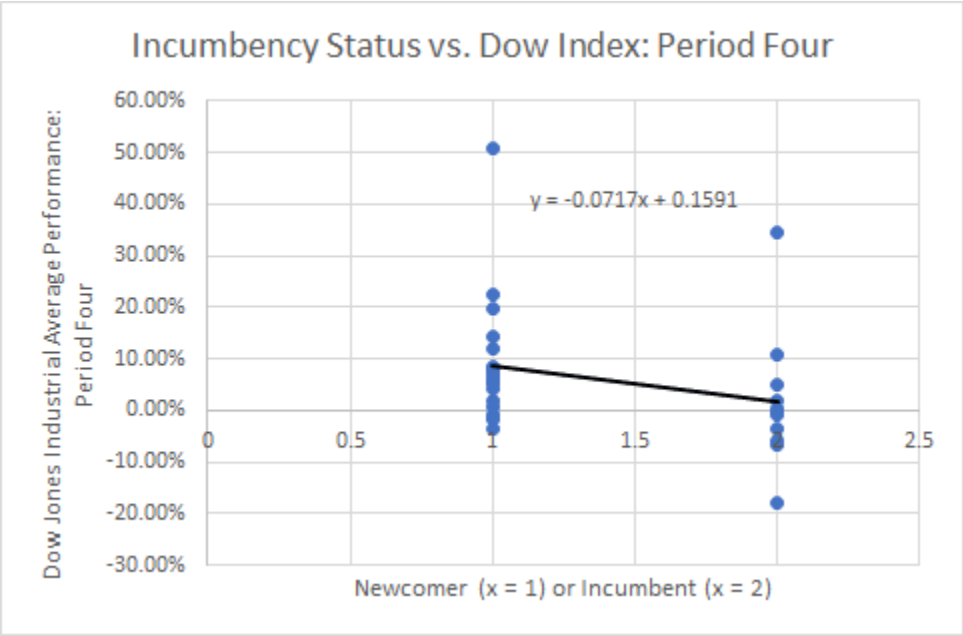
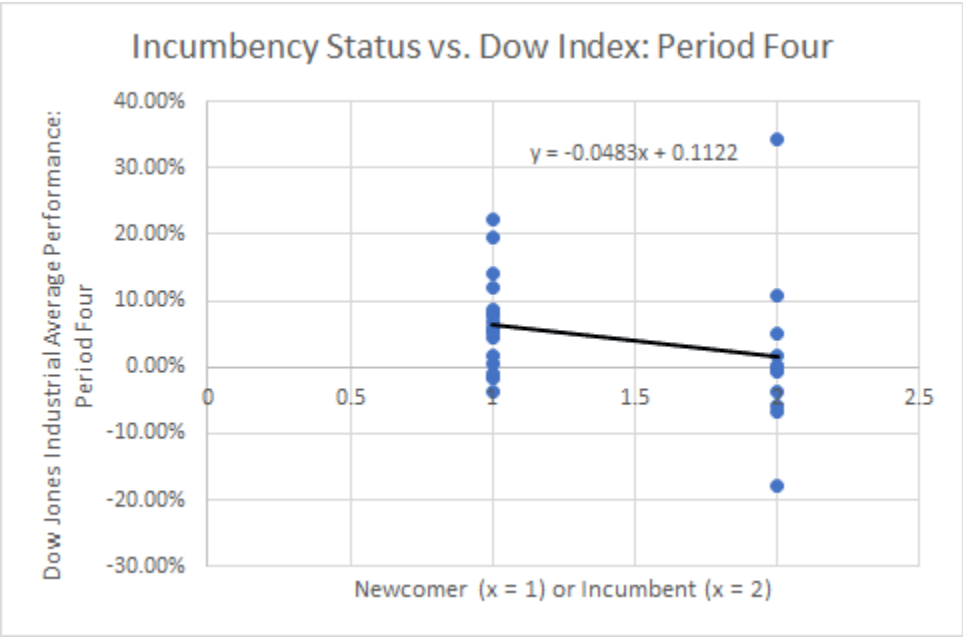
[17] I know I have alluded to several of President Hoover's shortcomings. If you are interested in learning more about this time period and how Hoover fit into it, I'd suggest reading the article below:
https://courses.lumenlearning.com/atd-fscj-ushistory2/chapter/brother-can-you-spare-a-dime-the-great-depression/

Period Four: Newcomers vs. Incumbents





Like the other period four that we analyzed, I have included the data with and without Hoover's 1932 period. Just as we saw in period three, the newcomers are the dominant force here; the people know that their presidential campaign is far from over during this time. The incumbents, however, are the opposite; this is the end of their eighth year in office, and are about to pass the torch onto their successor. There is a lot more uncertainty when an incumbent is in

office during this time; the one thing we know is that someone very different is going to be the new most powerful person in the world. While we obviously do not know if there's going to be a change in power with the newcomers, everything may remain somewhat similar for another four years, whether that's for the better or worse. Once again, both sides retain positive averages, but the difference is definitely meaningful.

So what is there to glean here? I think the most important aspect of these four periods is that there was never a time where the newcomers did worse than the incumbents. Sure, they were even for the first two periods, but the last two periods turned the tables in their favor. So, all other factors held constant, a new president is more likely to champion a flourishing Dow Index than an incumbent is.

I think this was pretty expected, for the reasons that I mentioned earlier. The newer president wants to do more and prove himself; everything is new and surreal, especially considering he is literally the President of the United States. The same goes with the people; the nation wants to see how he reacts to this new environment, hear his speeches, see what bills he passes through Congress, and whether or not he goes through with his previous promises. An incumbent knows what the ins and outs are, which is obviously helpful, but it's not new anymore. After an incumbent has passed dozens of bills reflecting his beliefs, the people aren't going out of their way to see what he's going to do next. The process is cemented; nothing major is going to change unless there's a scandal or another major international event. Everything is fresher at the beginning; that's how we human beings operate.

But enough about comparing newcomers and incumbents. Now, we're headed off to our third variable: the margin of each president's win in the electoral college.

Variable Three: The margin of each president's win in the Electoral College

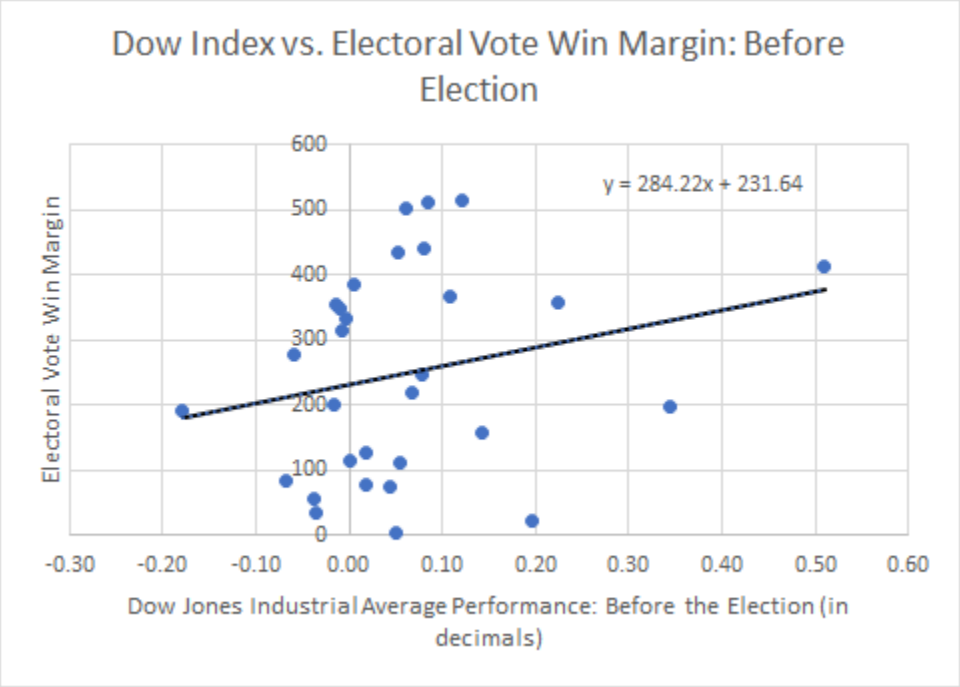
This variable is quite different from the first two. For starters, this variable is not binary; there are hundreds of possibilities on what this variable can be, from 1 to over 500 (if you want to see the exact way I calculated these numbers, see footnote 3). Another main difference is what I'm doing with the periods; instead of there being four distinct periods, there will only be two. The two periods I am choosing for this variable are period one and period four.

Why? Because these are the periods immediately after and before the election, respectively. I do not think that the margin of electoral votes that a president won by will make a difference post-inauguration. So, periods two and three are pretty irrelevant for this topic.

Like I said when I introduced this variable, the main reason I chose this topic is that it's as close as we can get to calculating the expectations of the public going into an election. While this argument is certainly not sound, I think it's a decent general foundation. There are definitely some exceptions, which I saw first-hand when Trump upset Clinton in 2016 after nearly every poll was in favor of the Democrat. With this in mind, I will once again state what the purpose of this paper is: this is not meant to provide a flawless statement of how elections and its factors move the Dow. This is a test, throwing different variables at the wall and seeing if some stick whilst incorporating some logic. There may be no actual proof, and that's okay; knowing two variables aren't correlated may be just as important as knowing that they are.

The quick note from period two once again stands here; this is the exact same data with the exact same time periods, just framed in a different manner. This will be the case throughout this study, but it's important to keep that in mind. With that out of the way, let's see what this dataset looks like.

Comparing Electoral Win Margins to the Change in the Dow Index Before the Election



This graph looks quite different than the others. The first part that probably stands out is the equation: 284.22x? Why is it so high? What is that supposed to mean? However, that question is somewhat answered by the second main change in this graph: the Dow Jones Industrial Average is now the x-axis instead of the y-axis. This is because the Dow Index is independent of whatever the electoral vote win margin is, and we are assuming that the win margin is dependent on the change in the Dow. The change is also not written in percentages, but rather decimals (.1 = 10%, .2 = 20%, etc.). This is simply to save space and make the dataset look less cluttered.

So with all of this new formatting, what does the equation now tell us? An easier way to interpret this is to divide everything by 100, so the x's go up by 1% for each unit, rather than 100%. After doing this, the equation tells us that for every 1% increase in the Dow, the electoral vote win margin increases by 2.8422 votes.

So now, we can use how the Dow did before the election to predict how close or lopsided the election is going to be. However, the actual numbers for this equation aren't very useful for the main reason that they're extremely restrictive. Let's say, for example, that with this equation,

we want to find how the Dow would change if we thought the electoral vote win margin will be 50 votes. This equation indicates that the Dow will have to decrease by almost 64% for this to be the case, which is obviously not true. The numbers are not what matter: the direction is.

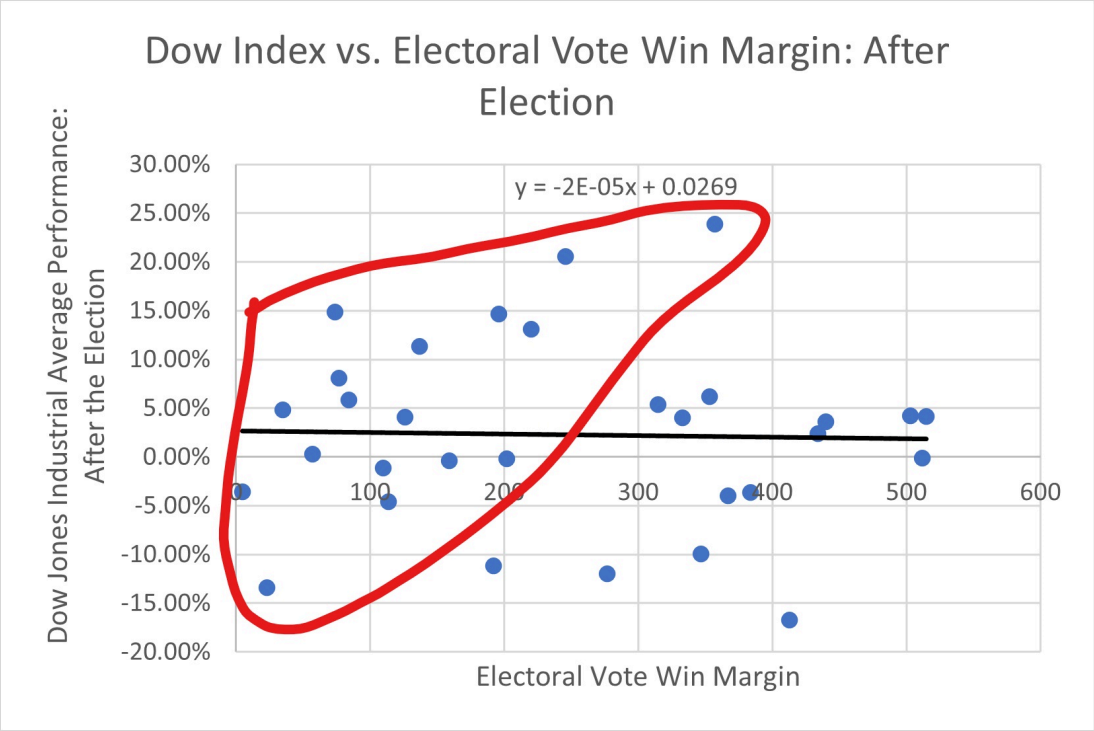
What this is saying is that if a president won an election by a landslide, there is a higher probability that the Dow Index performed well leading up to Election Day. The same applies for the opposite case: if there was an extremely tight race between two candidates, there is a higher probability that the Dow Index did not perform as well leading up to Election Day.

I mentioned when first introducing this variable that this was meant as an abstract way to find expectations. The stock market thrives on these predictions; they guide whether a stock increases or decreases, surges or falls. The same logic can be used here; a better Dow Index can imply that we know more of what to expect. If a candidate won their election relatively easily, most people were probably predicting that person to win. Thus, in a roundabout way, we can say that Dow spikes right before an election can indicate that the nation generally knows what is going to happen, and can plan accordingly. This is reflected in the election's outcome, which, if everyone was right, is not as close because the nation knew what to expect.

A higher Dow Index being associated with a more lopsided Election Day can also be explained with hope for the future. Take the Hoover example once again; I already alluded to the fact that the Dow increased by 50% during his period four, and the reason for this is not because of Hoover. It is probably because the nation was looking forward to seeing him out of office, and being replaced by someone who knew how to better manage the country during that time. So, the Dow may have risen due to that hope, and thus, Hoover lost horribly. This process is certainly plausible, but can only be used for a few elections throughout the years.

So, we now know that a better Dow may lead to an uncontested election. Let's see if this holds true for the Dow Index after the election has already occurred.

Comparing Electoral Win Margins to the Change in the Dow Index After the Election



This graph is a bit different from the one before the election for multiple reasons. First of all, I switched the axes back to its original form, with the Dow once again being the y-axis (which are in percentages again since it no longer looks cumbersome). The intuition behind this is to point out that the election has already occurred. Therefore, the electoral vote win margin is not going to change based on how the Dow performs during this period, and should be classified as the independent variable.

Because of this, the equation looks extremely different. While the slope was over 200 for the first equation, this one has to use scientific notation in order to convey its meaning. Looking at the two graphs, you'd expect this one to be closer to a horizontal line; after all, the slope measures the change after one unit of x, and there are over 500 to choose from in this graph. However, it ordinarily wouldn't be this low; this tells us that either the electoral vote win margin has close to no effect on how the Dow performs for the next couple of months, or that they are simply independent variables that should not be placed into the same group.

My guess would be that the latter is true. The election has now passed, and all that really matters is the winner; no one really cares whether the president elect won by 5 electoral votes or

500 at this point. There is no punishment for winning by a lesser margin or any benefit for winning in a landslide; whoever took the majority of the votes is declared the winner. So, it would make sense that this variable does not play a huge role in the Dow Index after it becomes old news.

What I will say, though, is that there does seem to be a bit of a positive correlation in the left half of the graph. This is what the dots within the red area represent; they follow a positive correlation for a decent period of time, but this ends when the win margin exceeds about 300. Maybe this is preposterous speculation or apophenia, but I think it should be taken into consideration; there is a possibility the Dow increases with the electoral win margin up to a certain point.

I do not think this variable provides us with as much of a story. Sure, there are a couple of conclusions to be made, but the first two variables definitely exhibited more of a pattern. Although I expected that; this has definitely received less attention than the other variables up to this point, so it's not surprising to see that there is less information to be had here. Maybe, if this were framed in a different light and I changed a couple steps in my methodology, we would be given a whole new perspective. But that is for another paper.

Now, let's move on to our final main variable: how the Dow Index has performed in relation to the ranking each president has received from multiple different articles.

Variable Four: Polls Ranking each President of the United States

Remember, this ranking is subjective, but it does somewhat portray how well each president did during their time in office. I also tried to take these polls from varying perspectives.

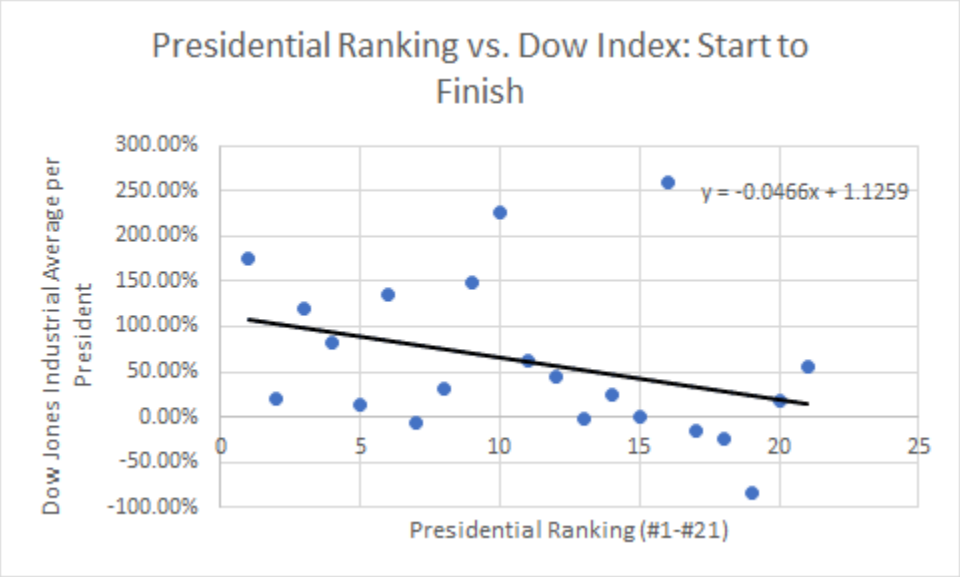
The rankings are based on how they were ranked relative to each other. Let's say, for example, that a president who served after 1900 was ranked to be the best ever president of the United States. Then, there were two presidents before 1900 that were ranked second and third. If the fourth president on that list was after 1900, he will still be ranked second on the list; after all, the presidents prior to 1900 should not be counted for the purposes of this paper, since they are not a part of this study. In summary, it doesn't matter where George Washington, Abraham Lincoln, or anyone else who served before 1900 are on the list; all that matters is where the more modern presidents are.

There are no distinct periods for this variable. I tried graphing the Dow Index against each of these, and they did not tell much of a story. There were no real relationships in periods one and two, since the presidents were just starting out and couldn't justifiably be judged on their competence yet. So, these indexes encompass each president's entire time in office, from start to finish. This does provide some valuable information, and I think this is the best way to frame these two variables.

Also keep in mind that this data goes back to the Dow's original inception in 1896. This is because William McKinley's first term started in 1897, and he won the election again in 1900. So, I felt it would be biased to only include one term in his presidency, even though that's what has happened until now.

Lastly, I wrote in the disclaimers that different places have different Dows. So, if you want to find out how the Dow performed from ten different sources, you will probably get ten different answers. My data is an estimate from two websites whose averages were remarkably close to each other, which I felt could not be a coincidence. Remember, this paper is not meant to be extremely precise; it is meant as a starting point and an opportunity to ponder how these different variables affect the Dow, and possibly the stock market and economy as a whole. With that being said, let's see what, if anything, is to be gleaned from presidential rankings.

Presidential Rankings vs. Dow Index



This is by far the most volatile dataset we have dealt with throughout this study. The reasoning for that is sound: this can cover up to eight years of the Dow Index, which provides ample chances for fluctuation. We go from Calvin Coolidge's term when the Dow increased by over 250%, to Hoover's, which was when the Dow decreased by more than 80%. But that isn't the point here.

We can see that there is a non-negligible slope downwards in the trendline, which indicates that higher ranked presidents championed better performing Dow indexes. This is what I and probably you would have expected; after all, shouldn't their ranking be somewhat based on the stock market's performance and the economy? I think this relationship is a little more indirect; these presidents shouldn't be trying to increase the Dow Index for the sole purpose of increasing the Dow Index. They do so through their actions, by helping the nation and the people, bringing prosperity and optimism.

This does showcase the fact that the economy and stock market aren't the only aspects of a country that matters. Take Theodore Roosevelt as an example; he's incredibly iconic and has a wonderful reputation, yet the Dow stayed relatively stagnant during his presidency. The same goes with Woodrow Wilson; Wilson fought the country through an entire world war, yet his

reward is a Dow that dropped. There are also presidents that exceeded expectations, with Coolidge being the main example[18].

So what's the verdict? A president's reputation is definitely affected by how the stock market performs while he's in office, but it isn't everything. Even when the Dow turns against him, he has several other avenues to prove his worth as the Commander-in-Chief. Looking back at a presidency, the Dow can give a decent prediction as to how they did, and an increasing Dow can imply that a president is succeeding at fulfilling his promises and acting on his beliefs. Looking only at the Dow would be naive, but you should consider it along with the several other variables to form your own opinions.

[18] There is a valid argument to be had that Coolidge was lucky in this regard, and that the Dow changed because of how the Roaring Twenties was changing American culture. That, however, is beyond the scope of this paper.

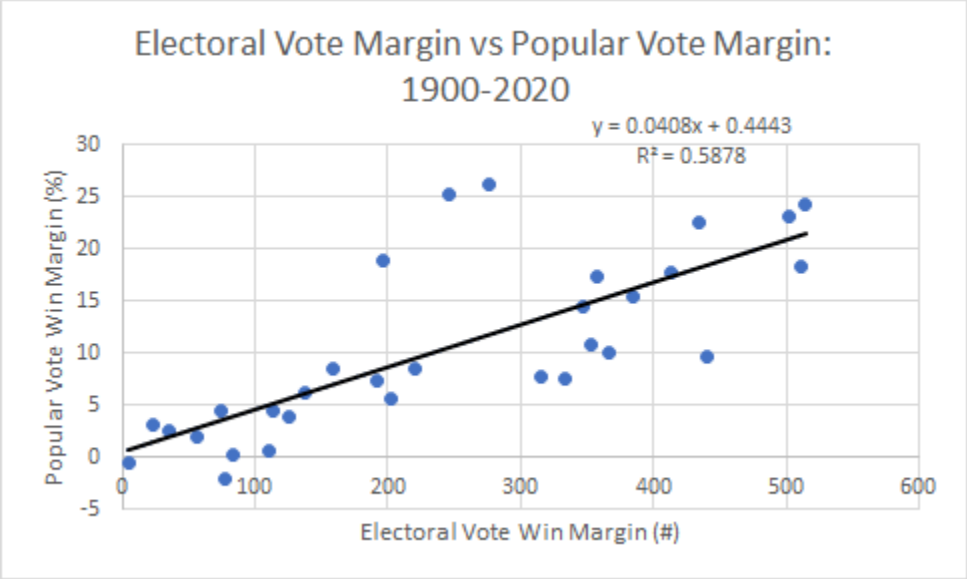
Miscellaneous

There were a couple of different datasets that interested me, but did not belong in any other category. So, these relationships do not focus on presidential elections as much, but are relevant with other variables we've considered.

The first two variables are at the center of a heated controversy: whether or not we should remove the electoral college as the way of determining the United States President and replace it with the popular vote. With this question posing quite the debate, I wanted to see how related these two variables really were. There have now been five elections where the winner of the electoral college did not receive the majority of the popular vote[19], so there is obviously some discrepancy between these two measurements. So, are these anomalies to an otherwise sound system, or is this a cry for help and a reason to change the way American presidential elections work? Let's find out.

[19] https://www.history.com/news/presidents-electoral-college-popular-vote

Electoral Vote Margins vs. Popular Vote Margins



All of the data points are to the right of the x-axis, since a president cannot win with fewer electoral votes than their[20] opponent. As expected, the electoral vote win margin increases with the popular vote win margin, and most points are close to the trendline. However, you will see that I included a new statistic in this dataset: the R-squared value. This represents the percentage of the dependent variable that is explained by the independent variable. In previous datasets, I felt that including this would be useless, since the point is that each variable was one of dozens that could influence the Dow Index. This case is different; in a perfect world, the electoral college should account for most if not all of the popular vote. You can see the R-squared value is 0.5878, meaning that the electoral vote win margin explains 58.78% of the popular vote. While this is a decent amount, I do not think it's enough to make the electoral college the only way we determine the next President of the United States.

Over 40% of the popular vote win margin are factors that are not in the electoral college, making the two vastly different. This is mainly due to the way the states have been created; a few slight changes in what certain states own can make a huge difference at the national level[21]. From this data, I believe this debate regarding the electoral college and the popular vote should continue; there are clearly stark distinctions between the two, and the United States has evolved

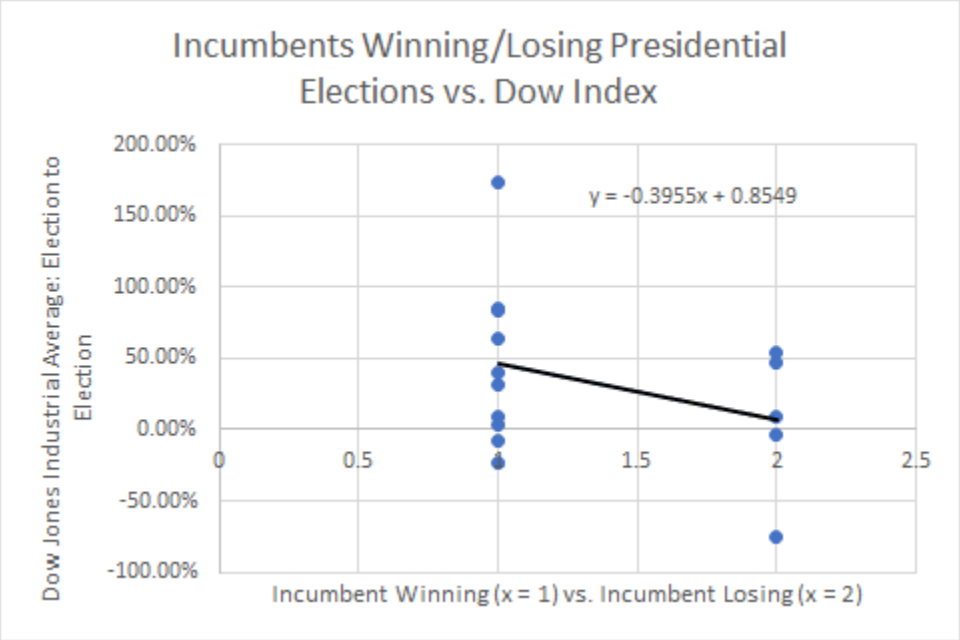
[20] I know I have used the pronoun 'he' until this point. However, I am referring to presidential nominees in this situation, not actual presidents. Thus, I feel that 'their' is much more just than 'he' in this one instance.

[21] Obviously, at this point in time, gerrymandering cannot occur for Presidential Elections. But, with some simple alterations, some of these elections would have been a lot different. Take the Florida panhandle as an example; allocating this to Alabama would turn Florida into a far more blue state.

past the point where the Electoral College is the way to go. Why the Electoral College was created and its purposes are not relevant to this paper, but they should be considered going into the future and deciding how future elections are going to look.

The other dataset I analyzed in this category is the opposite of what I did for the newcomer vs. incumbent variable. There, we looked back at how the Dow Index did and saw whether it performed better under a newcomer or under an incumbent. Instead of using hindsight with this variable, I wanted to see if the Dow Index could also be used as a predictor. For this dataset, I calculated how the Dow performed under a president who was running for re-election, and seeing whether or not he won. The independent variable is once again binary, since the incumbent either won or lost when he went for re-election. So, can the Dow predict the future? Only one way to find out.

Incumbents' Results in Presidential Elections vs. Dow Index



You may have observed that there are fewer data points on this graph than others. This is because I could not include every presidential election, since there are some presidents that did not run for re-election, and some elections do not have an incumbent, since the current president may have served his two terms[22]. But there is still a correlation to be seen here.

All of the presidents that won their re-election campaign are on the line x=1, and the presidents that lost are on the line x=2. It's easy to see that the winners had a better Dow Index during their previous terms; it's nearly 40% higher for them than for the presidents who lost. This is not extremely surprising though; people want to see if the stock market is improving and if each president deserves another four years in office. If the people form a consensus that the president is doing his job correctly, chances are that he will win the next election. But if he's been slacking and there are candidates with more promising qualities, it's going to be much harder for the incumbent. This is something we can use in future elections; if the stock market has increased by 50% or more, the incumbent will probably emerge victorious. But if the Dow has decreased over that four year period, the nation will probably elect a newcomer that has the possibility of reinvigorating the economy and stock market that is so important for international affairs.

[22] This is the case after FDR, since the 22nd Amendment limits presidents to a maximum of two terms.

Conclusion

There's a lot to unpack here. From political parties and incumbents to electoral vote win margins and presidential rankings, there are dozens of factors to consider regarding both the Dow Index and each presidential election. Some variables displayed relationships, some did not. Some correlations were expected, some weren't. But hopefully, you've learned something along the way.

There isn't one specific idea that I want to emphasize from this paper. This study is all about manipulating datasets in different ways to try and find variables that influence each other. I do not want you leaving this with unwavering opinions about political parties or incumbents; that's for you to decide on your own, regardless of what I tell you. I wanted to try something unprecedented, a project that no one else ever thought about. Sure, there are several sources that will compare the Dow Index and presidents, but they do not go through four distinct periods along with all these different variables. The presidential term in aggregate isn't the only part that matters; it's the process of getting there and the different periods in time that form it.

As of the making for this paper, this information will probably not be relevant for a few years. The latest election was only a few months ago, and there are much hotter topics dominating the media. Maybe save this until 2024, when the news starts to cover the next election. Maybe use this as food for thought and provoke new conversations to reach new opinions. Maybe just ignore everything here; do whatever you think is correct. But maybe when 2024 comes around, you'll find connections that weren't imaginable before. A new statistic catching your eye, a new quote reminding you of this paper. That's all I ask for; an acknowledgement, a place in the back of your mind so that my studies may be relevant for you in the future. Hopefully you can agree to these terms.

If you learned anything from this paper, I'll consider it as a success. Always remember to try and find relationships, even when it seems like there's nothing there. Because sometimes, what's in plain sight may unveil unbelievable phenomena.

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