

THE EFFECTS OF PARTISAN POLITICS AND ELECTION TIMING ON STOCK
MARKET VALUATIONS

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Arthur Bidwill

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Arthur Bidwill

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Abstract

Investors are constantly trying to find edge that will make them more successful than their peers. It is for this reason that analysts aim to correlate all aspects of the financial world to produce this edge. For years, scholars and analysts have struggled to find how if at all, politics affect stock market valuations. If they are able to find statistically significant evidence the market reacts differently to political events such as the incumbent president's policy bias or congressional majority changes, they can invest accordingly. Common theories point out that Republicans are generally superior to Democrats in regards to the performance of the stock market during their respective terms. Theory also suggests presidents are more likely to perform better in the first and last years of their term. Therefore election timing must be reviewed to realize its implications for an above or below average stock index performance. It is the goal of this paper to test these theories so any hypothesis about partisan politics or election timing can be proven genuine or laid to rest.

KEYWORDS: (Partisan Politics, Presidential Election Timing, Congressional Election timing)

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CHAPTER I

INTRODUCTION

Investors try to gain edge or “alpha” by capitalizing on the “abnormal rate of return on a security or portfolio in excess of what would be predicted by an equilibrium model like the capital asset pricing model (CAPM)”.¹ They will use any information available to them to engage in such arbitrage opportunities. Arbitrage can include anything from short-term or intraday buying and selling, to long-term investment strategies. The investment strategies investigated in this paper focus on the effects of partisan politics and election timing on the S&P 500 index by forming two separate models. One will use growth of the S&P as the dependant variable while the other will use the value of the S&P for the given year.

Common theory suggests Republicans will on average be better for stock market returns. This could be because of their policies regarding deregulation as well as the tendency to lower capital gains taxes.² Lower taxes on capital gains will result in a higher incentive for investors to allocate a higher percentage of their portfolios into security positions instead of risk free assets such as Treasuries. This will drive individual stock

¹ Falkenstein, Eric. *Finding Alpha: The Search for Alpha When Risk and Return Break Down*. Hoboken, N.J.; Wiley, 2009.

² "The History of Capital Gains Taxes." The New York Times January 18, 2012 [cited 2012]. Available from <http://krugman.blogs.nytimes.com/2012/01/18/the-history-of-capital-gains-taxes/>.

prices up and along with them, the entire index. It is simple supply and demand at its core.

So if the stock market performs better during Republican regimes, then Republican majorities in congress should conceivably create similar results. Whether or not it is plausible doesn't change this belief for more investors. People often view Republicans as "fat cat" conservatives who only care about their wallets. Regardless of the general belief by the masses or "Castles in the air" often results in inflated stock valuations.³ The belief that stock prices are the result of the psychological aspects of investing instead of fundamental analysis is what many consider to determine stocks valuations.⁴ This inherently says it doesn't matter what a company's actual value is. As long as enough people believe its market capitalization (price x shares outstanding) should be greater, its value will eventually increase to abnormal levels before the bubble eventually bursts.

This is related to partisanship in congress and the presidency in several ways. Since many theorize conservatives are better for stocks, when the probability of a Republican retaining or acquiring power in office increases, the S&P 500 trends upwards. It doesn't matter if changes within each company have occurred to increase their value. If the masses agree, valuations will change. This goes against the efficient market hypothesis in every way. A simple version says "it should be impossible to outperform

³ Malkiel, Burton G. "Firm Foundations and Castles in the Air." In *A Random Walk Down Wall Street*. New York, NY: W.W. Norton & Company, Inc, 2007, 23.

⁴ Ibid

the overall market through expert stock selection or market timing, and that the only way an investor can possibly obtain higher returns is by purchasing riskier investments.”⁵

Analysts also believe election-timing plays a role in stock market volatility and valuation. The goal of a President’s’ election platforms is to implement policy changes to amass new voters and keep the ones they have. Some theories say the timing of these changes occurs mostly in the first and last years of their tenure. It is for this reason the stock market correlation with election timing contributes greatly to the stock market.

If presidential election timing affects the stock market, then midterm congressional elections should also have an effect since presidents are unable to get anything passed without the support of congress. One reason congressional elections may have an effect on the market has to do with political uncertainty. During midterm elections, many presidents actually lose percentages of majority in congress because some find the government is more efficient if power is distributed between both parties.⁶ This creates market volatility normally scaring off prospective security investors. Any volatility will lower stock market indices such as the S&P 500.

The Congressional Effect Fund is one real-life example showing how money managers use political information to invest.⁷ Its goal is to decrease the investor’s exposure to riskier assets (equities) when congress is in session. This method exposes them to lower volatility and more consistent returns. Unfortunately for this fund, some of

⁵ Ibid, 172

⁶ Ovlia, Vincent Louis, David Enke, and Michael C. Davis. "The Effects of Congressional Elections on Future Equity Market Returns." *Global Journal of Business Research* 2, no. 1 (2008): 12.

⁷ "Congressional Effect Funds." March, 2012 [cited 2012]. Available from <http://www.ceffx.com/about-us>.

the rallies that occur after large crashes are missed. However, the tradeoff between striking it rich and losing everything seems to be sufficient by enough investors to keep this fund alive.

This is just one application of how politics can affect the stock market. If there are enough people to believe there should be an effect, their most likely will be one. The goal of this paper is to identify which aspects of politics have the greatest impact, negative or positive, on the stock market. Through the models constructed in this paper and from those of previous articles, certain variables can be determined statistically significant so institutions and retail investors alike can use this information to make better decisions with their money during times of political change.

LITERATURE REVIEW

The articles referenced in this paper include ideas and conclusions from different groups with several points of view, all seeking to answer whether partisan politics matter for the economy. However, the specific methods used make each group unique.

Therefore, this chapter can be broken down into four groups

- 1) Group one looks at short term trading throughout the day during very close elections. This group includes the articles *Partisan Impacts on the Economy: Evidence from Prediction Markets and Close Elections* by Erik Snowberg published in March 2006 and *Do stock Returns Vary with Campaign Contributions? Bush vs. Gore: The Florida Recount* by John J. Shon published in November 2010.

- 2) Group two attempts to correlate partisan politics with stock returns but this time through longer time periods instead of one election. This set includes Bumba Mukherjee's July 2007 article, *Partisan Politics, Interest Rates and the Stock Market: Evidence from American and British Returns in the Twentieth Century*, Roland Fuss' May 2006 article, *Partisan Politics and Stock Market Performance*, as well as Bento J. Lobo's May 2000 article, *Jump Risk in the U.S. Stock Market: Evidence Using Political Information*.
- 3) Group three tests the effects of presidential cycles such as first half and second half performance. This group includes Ray R. Sturm's 2009 article, *The 'other' January Effect and the Presidential Election Cycle*, Steven T. Jones' 2008 article, *US Elections and Monthly Stock Market Returns* and Alberto Alesina's 1988 article, *Partisan Cycles in Congressional Elections and the Macro Economy*.
- 4) Group four aims more at the effects of percentage changes of majority in the House and Senate. These articles are Vincent Louis Ovlia's 2008 paper titled, *The Effects of Congressional Elections on Future Equity Market Returns* and Erik Snowberg's December 2006 article, *Party Influence in Congress and the Economy*.

1. Short Term Trading During Close Elections

While most articles look at more general affects using longer series of data, Shon (2010) and Snowberg (2010) set out to look at more intraday trading during close election

times.⁸ In both studies, they aimed to correlate mean stock returns with whether Bush or Gore would win the presidency in the year 2000. It is common theory that the stock market prefers a Republican President. Both of the articles wish to find more evidence in order to accept or reject this theory once and for all. The thought behind this naïve preference to Republican Presidents lies in their aversion to higher taxes. Lower taxes should conceivably give consumers more money to invest thus driving stock prices higher. However there are more factors that are in play that need to be accounted for. Since empirical evidence in many articles actually shows markets prefer Democratic leaders, those other factors must be more important than higher taxes.

In Shon's article, he had a sample size of 6,708, which is the full population of all firms that are traded publicly. He regresses stock returns during the 37-day Florida recount period against the level of partisanship of campaign contributions made during the two years leading up to Election Day.⁹ He uses the variable %BUSH to represent the proportion of firm contributions that went to the Bush campaign. Shon expects that the coefficient for this variable will be positive meaning that stock returns will increase with the percentage of contributions going to Bush. This of course conforms to the theory discussed previously. Erik Snowberg's article uses slightly different methodology for determining correlation between political parties and stock returns. He analyzes data from high frequency financial fluctuations following the release of flawed exit poll data on Election Day 2004. To gauge financial markets, he used the electronic trading market

⁸ Snowberg, Erik, Justin Wolfers, and Eric Zitzewitz. "Partisan Impacts on the Economy: Evidence from Prediction Markets and Close Elections." *Quarterly Journal of Economics* 122, no. 2 (2007): 807.

⁹ Shon, John J. "Do Stock Returns Vary with Campaign Contributions? Bush vs. Gore: The Florida Recount." *Economics and Politics* 22, no. 3 (2010): 257.

of futures derived from stock indexes while votes were being processed the night before the election in 2000. Then he looked at the 2004 election and compared Bush's reelection to equities, interest rates, the dollar, and oil prices. Lastly he analyzed data back from 1880 to see if there was a correlation during the time of elections.

Snowberg's article found when the probability of Bush winning the election increased, markets showed an increase in equity values, interest rates, oil prices and even a stronger dollar.¹⁰ These results were also consistent with results from the 2000 election between Bush and Kerry. When looking at broader data from 1880, he found there was a similar correlation. Though this evidence shows that Republicans tend to increase some economic values, it does not prove they result in higher welfare for the population. Shon found similar results. Using all the contribution levels from all publically traded firms, he found a positive relationship between stock returns and percentage of contributions going to the Bush campaign.¹¹

2. Partisan Effects on Longer Term Data Sets

The second groups of articles again look to find a strong relationship between partisan politics and stock returns. This group also includes volatility as an economic indicator. Higher volatility is usually indicative of a selloff in response to the presence of fear in the market. In the studies done by Lobo (2000) and Fuss (2006), they again sought to find more substantial evidence either supporting or rejecting the theory that Republican leaders are better for stock returns. In Lobo's Jump Risk article, he tracked sudden fluctuations in stock indexes and attempted to separate routine intraday trading jumps

¹⁰ Snowberg, Erik, Justin Wolfers, and Eric Zitzewitz, 808.

¹¹ Shon, John J, 268.

from those influenced by new information. His theory is that jump risk is directly correlated to what party is in power.¹² In Fuss' article, he looked at volatility and mean stock returns during the 2002 German federal election.¹³ Finally in Mukherjee's 2007 study, he regressed stock returns, interest rates and volatility against government partisanship.¹⁴

Mukherjee tested his hypothesis which says electoral expectations, partisan politics, and electoral uncertainty influence both the mean and variance of stock prices, by using stock prices from election years dating back to 1944 and comparing them to polling data.¹⁵ He then compared polling data to the 2 year U.S. Treasury Bond Futures contract for six elections starting in 1980. Fuss used a similar methodology for the German Federal Election in 2002. He used stock return data from the nine months prior to the election and regressed those prices against survey data. The stock index he chose is the small-cap German stock market index called SDAX. The survey data used is from the electoral option mode. It measures the probability of either party winning the election. Political uncertainty is also derived from the electoral option mode in order to see if higher (lower) uncertainty influences stock market returns or volatility.¹⁶ In Lobo's study, daily stock returns were again used but this time from January 1, 1965 to December 31,

¹² Lobo, Bento J. "Jump Risk in the U.S. Stock Market: Evidence Using Political Information." *Review of Financial Economics* 8, no. 2 (1999): 149.

¹³ Fuss, Roland, and Michael M. Bechtel. "Partisan Politics and Stock Market Performance: The Effect of Expected Government Partisanship on Stock Returns in the 2002 German Federal Election." *Public Choice* 135, no. 3-4 (2008): 131.

¹⁴ Mukherjee, Bumba, and David Leblang. "Partisan Politics, Interest Rates and the Stock Market: Evidence from American and British Returns in the Twentieth Century." *Economics and Politics* 19, no. 2 (2007): 143.

¹⁵ Ibid

¹⁶ Fuss, Roland, and Michael M. Bechtel, 140.

1996. There are eight electoral terms inside of this time period, three of which are Democratic and the rest Republican.

The results from Lobo's study suggest midterm elections are a more important source of uncertainty compared to presidential elections.¹⁷ He found jump risk or volatility increased by ten to twenty percent during midterm elections. He also concluded that small cap stock returns are higher during Democratic Regimes. The catch is that volatility tends to be higher during these administrations as well. Fuss found small cap stocks in the SDAX performed better when the probability of a right wing party winning the election increases. He also found right leaning parties are correlated with higher volatility while uncertainty about who would win the election actually reduced volatility. Mukherjee found evidence that left wing parties are associated with higher interest rates and decreased mean and volatility of stock returns.¹⁸

3. The Effects of Presidential Election Cycles

The third group of articles tested the cyclical effect presidential elections have on the economy. Some argue the economy tends to perform better during the second half of a president's term because they are trying to shore things up right before reelection. Theory argues people tend to have short memories and if the last thing they remember is two years of a higher performing economy they will vote for the current president's reelection. In a 2008 study, Jones aimed to find any possible relationships between stock market performance and various occurrences in American elections.¹⁹ In a second article

¹⁷ Lobo, Bento J., 155.

¹⁸ Mukherjee, Bumba, and David Leblang, 164

¹⁹ Jones, Steven T., and Kevin Banning. "US Elections and Monthly Stock Market Returns." *Journal of Economics and Finance* 33, no. 3 (2009): 273.

Sturm (2006) first looks at the original January effect that argues if the first month of the year's stock performance is positive, then the next eleven months will follow. He then wanted to combine this information with the presence of presidential election events.²⁰ In a third article by Alesina (1988), the effects of partisan cycles in congressional elections are examined. They look to explain why the party of the President has always lost votes in mid-term Congressional elections. They also want to support or debunk the theory that republican administrations are correlated with poor growth in the first half of their terms while democrats are related to higher growth.²¹

Data used for Alesina's analysis focused on Congressional Elections from 1950-1984 and regressing them against simple GNP data for those years.²² In Jones' *US elections and monthly stock market returns*, he used monthly market returns from the Dow Jones Industrial Average over a period of one hundred and four years. He described each date in the data by which party is in control of the presidency, and which party holds majority in the house and the senate. He also "performs tests based on how many consecutive presidential elections have been won by the same political party."²³ In Sturm's January effect article, he used closing prices on the last trading day in December before the president starts his first term. For his stock prices he used returns from the S&P 500 index. He created two different portfolios off of whether or not January has a positive return. He calculated the spread between the two and tested to see if it is equal to zero.

²⁰ Sturm, Ray R. "The 'Other' January Effect and the Presidential Election Cycle." *Applied Financial Economics* 19, no. 16-18 (2009): 1355.

²¹ Alesina, Alberto, and Howard Rosenthal. "Partisan Cycles in Congressional Elections and the Macroeconomy." (1988) : 1.

²² Ibid, 23.

²³ Jones, Steven T., and Kevin Banning, 275.

Sturm found that in the first year of the president's term, January is by far the strongest and best predictor of how the subsequent eleven months will perform. The second year is easily the worst predictor with the third year having no negative returns in the sample. The fourth year is interesting because if January is negative, the next eleven months ended up positive. He finds these relationships to be very strong.²⁴ In Alesina and Rosenthal's article, they explain why Republicans exhibit below average growth in the first half of their term while Democrats exhibit the opposite. They also predict that both Democrats and Republicans have similar growth in the second half of their terms.²⁵ In Jones' article, he found that election results have no real effect on stock market returns. His study also shows the election cycle should not be used as a predictor for equity returns.²⁶

4. The Effects of Percentage Changes in Congressional Majority

The last and final pair of articles looks at percentage swings in majority in the house and the senate. In Ovlia's 2008 article he proposes Congress is easily able to pass legislation that will effect market fluctuations at some point down the road. Not only do they look at the majority during congressional terms, but also the effect of percentage changes during midterm elections.²⁷ In Snowberg's 2006 article, he looked more specifically at the different effects of midterm elections relative to Presidential elections.

²⁴ Sturm, Ray R., 1357.

²⁵ Alesina, Alberto, and Howard Rosenthal, 1.

²⁶ Jones, Steven T., and Kevin Banning, 275.

²⁷ Ovlia, Vincent Louis, David Enke, and Michael C. Davis, 6.

Their study finds which of these two variables, cycles or majorities has a more profound effect on equities, oil prices, and bond prices.²⁸

The methodology used by the latter article involved data from Tradesports.com. This website created two different contracts that paid \$10 if Republicans continued to have majority in the Senate and another \$10 if they maintained House majority. With this they were able to gauge the probability of Republicans winning majorities in Congress. These probabilities were then put into a model regressing them against an equity futures contract. For this experiment they used the 2006 Congressional election since it would be very difficult to track a greater number of elections in this much detail.²⁹ In Ovlia's article they observed control of the House and Senate by not just majority, but the amount of control since a party with convincing majority would be more able to pass legislation. They also examined the gain and loss of each party during Congressional elections. These variables were regressed against the S&P 500 index from post WWII to the present.³⁰

The results of Ovlia's article pointed to a positive correlation between stock returns and Democratic presidents. It also found equities tend to outperform when power is allocated equally between political parties.³¹ Snowberg's article found that all of his independent variables were correlated to Republican majorities in Congress; stock returns, oil prices, and bond yields were all higher. They also found evidence that a change of power in the house and senate only had about a 20% impact on the economy

²⁸ Snowberg, Erik, Justin Wolfers, and Eric Zitzewitz. "Party Influence in Congress and the Economy." *Quarterly Journal of Political Science* 2, no. 3 (2007): 278.

²⁹ Ibid

³⁰ Ovlia, Vincent Louis, David Enke, and Michael C. Davis, 7.

³¹ Ibid

relative to a Presidential overhaul. Contrary to Ovlia's article, they found stock returns are slightly better over time with Republican control.³²

Since there are so many ways of drawing conclusions between these variables, it has been near impossible to have a consensus. Some find that markets do better with a more left leaning government while others believe that the right prevails. Volatility was found to be higher when Democrats are in power, which correlates to a less stable and underperforming stock market. Going through these articles as well as a dozen more not included has sparked a greater interest in why the market reacts as it does to the government, or if it is completely independent of which party is in control of the presidency and house. That is what makes this study so interesting and why I feel it would be sensible to form my own conclusion.

³² Snowberg, Erik, Justin Wolfers, and Eric Zitzewitz, 286.

Chapter II

THEORY

The objective of this chapter is to explain the motives behind common theory testifying the market reacts to partisan politics. Some theories are actually misconceptions that can be proven with papers entailing empirical evidence. The government is said to affect the macro economy in numerous ways; this chapter hopes to explain if and why these events occur.

PRESIDENTIAL EFFECTS ON THE STOCK MARKET

Pro Republican

Conventional belief argues that the stock market's performance tends to improve when a Republican holds the government's highest office. However, if it were this simple, Republicans would have no trouble with reelection on a consistent basis. So the question becomes why do so many people automatically believe this to be true. For most people it lies solely in the fact Republicans are averse to higher taxes and routinely base their campaigns on how they will reduce taxes.¹ Below is a supply and demand curve for an economy operating at high unemployment levels. "LD" and "LS" stand for labor demand and labor supply. There are several ways to lower unemployment according to economic theory. It is important to note the policies in this paper used by Republicans

¹ Reed, W. R. "Democrats, Republicans, and Taxes: Evidence That Political Parties Matter." *Journal of Public Economics* 90, no. 4-5 (2006): 725.

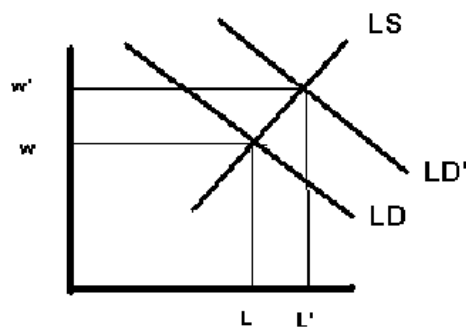
and Democrats both deal with changing components of the demand function. Though they implement different strategies, both parties hope to increase demand for labor. The Democratic solution is discussed in the next section. The demand function states that

$$Y = C + I + G + (X-M) \quad (2.1)$$

where “C” represents consumption, “I” represents investment, “G” stands for government spending and “X-M” stands for exports minus imports. Republicans will try to alter the demand function and solve unemployment but cutting taxes. If taxes are cut, consumption will increase thus pushing aggregate demand up to equilibrium.

FIGURE 2.1

ECONOMY OPERATING AT HIGHER THAN NORMAL UNEMPLOYMENT LEVELS



SOURCE: "Real Business Cycles." [cited 2012]. Available from <http://www.personal.kent.edu/~cupton/bbamacro/ma11.htm>.

If taxes increase whether it is income or property, people will have less money for consumption. This is one fundamental law of supply and demand. If money supply to the everyday consumer is cut short by taxation, they won't have as much money to buy food

and other necessities. This has a negative impact on the stock market. If less money is flowing into businesses each day, company growth and stock prices inevitably fall, causing indexes to fall as a whole. Many argue this is one reason why the stock market performs better under Republican power.

As a result, Republican voters act very stubbornly regarding their aversion to left wing ideals. However, people need to look at the breakdown of how these tax cuts are applied. Capital gains tax is consistently a large part of why wealthier Republicans will never vote Democrat. Republicans revolt if taxes increase as they are set to in the near future. If people start to see their returns diminish by April 15th, they will have fewer investment incentives. When the bottom tax bracket investor all the way to the top “1%” sees no reason to risk their money, more will move to treasures and cash. This is especially true during tough economic times. This would only further decrease the amount of inflow to the stock market causing lower valuations.

These theories are not set in stone however. Yes, people will have less money to invest, and once they do invest they will retain a lower percentage of their gains. But theories are often in question. Even as the argument for lower taxes balloons, studies show there has been only one Democratic President, Roosevelt, who held power during a period of stock market underperformance.² This seems impossible given basic ideologies that Democrats are anti-corporation, anti- big business and pro spending.

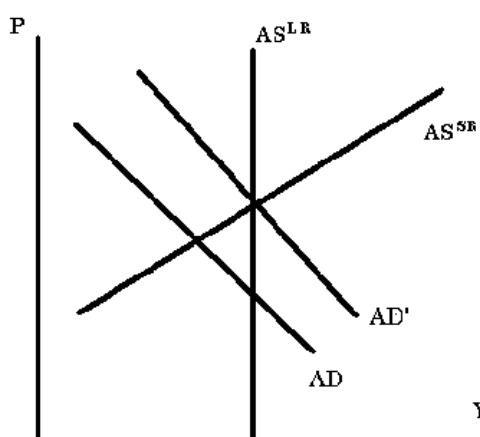
Pro Democrat

Since Republicans are better for the economy for being pro business and pro tax cuts, then Democrats must be the opposite. Yes, Democrats are more likely to implement

² "For Higher Stock Returns, Vote Republican or Democrat?" [cited 2012]. Available from <http://www.investopedia.com/articles/financial-theory/08/political-party-democrat-republican-stock-returns.asp#axzz1pOykfHVa>.

higher taxes than Republicans, but they are also more likely to spend. Government spending can come in different forms. However, since this paper is interested in how it affects stock market valuations, the focus will remain there. Using basic macroeconomic theory, the following graph is constructed.

FIGURE 2.2
SUPPLY AND DEMAND CURVES FOR AN INCREASE IN GOVERNMENT SPENDING



SOURCE: "Real Business Cycles." [cited 2012]. Available from <http://www.personal.kent.edu/~cupon/bbamacro/ma11.htm>.

In this case, a region of interest is functioning at higher than normal unemployment levels. "AS^{lr}" stands for aggregate loan supply in the long run while "AS^{sr}" stands for short run. "AD" stands for aggregate demand for loans. The leaders of the city decides that they will increase "G" component of the demand function,

$$Y = C + I + G + (X-M) \quad (2.1)$$

enough to push the aggregate demand curve to AD'. This brings the economy to equilibrium thus solving the unemployment problem for the time being. Increasing

money supply will lower interest rates and as a result increase the likelihood investors will move their money into stocks. A real problem that comes with increased government spending is inflation. This problem is dealt with later on in the inflation section.

Some argue that Democrats focus more on regulating the actions of big Wall Street corporations than their Republican counterparts. They could do this by forcing companies to increase the transparency of how their assets are allocated. Another way is to make financial institutions adhere to tighter lending regulations in order to avoid predatory lending. Trading instruments can also be watched more closely to make sure they are not amplifying crashes in the stock market with high frequency market making machines. The bottom line is all of these tools to enforce regulation will lead to decreased volatility in the stock market.

Volatility is often referred to as the “fear gauge” of the market. Big swings in market prices are an indication investors are unsure of which direction stocks will go. In such times of uncertainty, markets will be thin. The size of trades (volume) in unstable market conditions is often small compared to when the stock market is performing well. For example, when an enormous order comes in to buy or sell 20,000 shares, it ends up sweeping all the bids or offers, inevitably triggering a massive swing in price. When people see massive swings, rational thinking usually goes out the window, only further compounding problems. This pricing turnstile causes people to eventually run from stocks as they are seen as an unsafe investment. Since Democrats can generally be counted on to increase regulation thus decreasing volatility, theory suggests Democratic Government leads to a healthier, more predictable stock market.

CONGRESSIONAL EFFECTS ON THE STOCK MARKET

Congress' effects on the economy are vast considering the President can't get much accomplished without approval. Therefore it is important to look at how senate and house majority affects the stock market. Rational thought says the affects should be similar to those of the Presidency since Republicans inherently have common views on the economy. However, others argue the combination of a Republican President and Democratic Congress or vice versa, have a greater impact on stock returns. This could come back to the reasoning in the last section, volatility.

If the President is a Democrat and Republicans have majority in Congress, maybe a true bipartisan government can operate at higher efficiency. This could prevent any major changes in Government policy from occurring. When both congress and the presidency is controlled by the same party, bipartisanship vanishes. Major changes often come with volatility, which as a result decreases stock values.

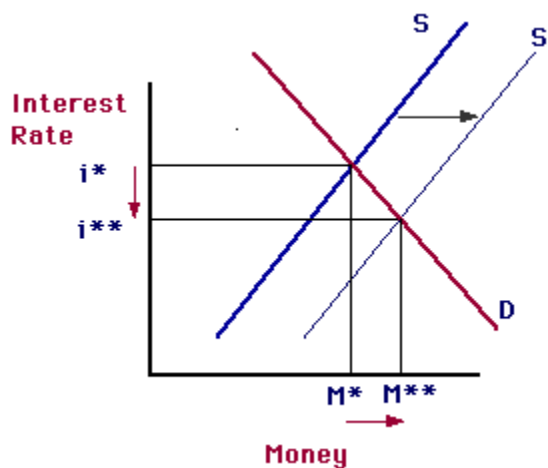
INTEREST RATES

The level of interest rates is ultimately how much people are required to pay in order to use someone else's money. It doesn't start with the everyday consumer. In fact, average citizens are the last to feel the effects of the Federal Reserve's actions. It begins with the Federal Funds rate. This is a required amount of cash or reserves banks must

possess according to the Federal Open Market Committee.³ They meet periodically to decide what level of interest rates is best for the economy during times with different market conditions. Their power includes the ability to adjust the Federal Funds Rate. The following figure will show this graphically.

FIGURE 2.3

THE EFFECT OF THE FEDERAL FUNDS RATE ON INTEREST RATES



SOURCE: <http://www.uri.edu/artsci/newecn/Classes/Art/INT1/Mac/1970s/1970sA.html>

In this case, the negative sloping demand curve stays constant. The y-axis is interest rates and the x-axis represents the quantity of money flowing in the economy. The Fed can increase the money supply curve from S to S' . This causes interest rates to fall.⁴

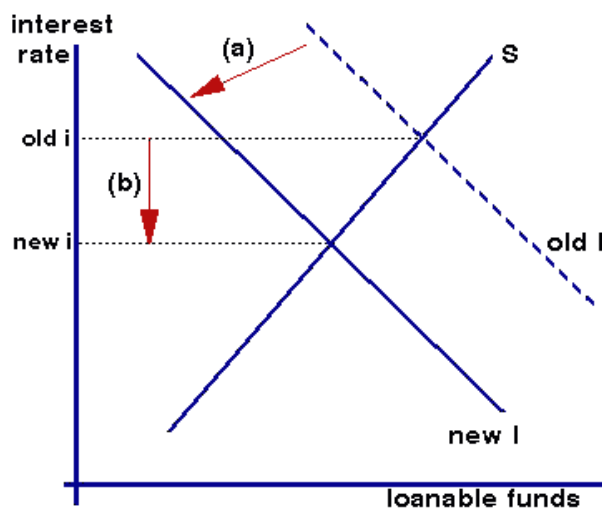
Below is a graph involving loanable funds and interest rates. In this case there is a discrepancy between the supply and demand of loanable funds. “I” stands for investment

³ "The Federal Reserve." March, 2012 [cited 2012]. Available from <http://www.federalreserve.gov/>.

⁴ Ibid

and “i” stands for the interest rate. There is an excess of loanable funds forcing a shift of the demand curve from a higher investment level to a lower one because of abnormally high interest rates. Because there is a large amount of loanable funds, interest rates will adjust to a lower level, pushing the supply and demand curves back to equilibrium.

FIGURE 2.4
LOANABLE FUNDS VERSUS INTEREST RATES



SOURCE: "Fiscal Stimulus: A Loanable Funds Critique." [cited 2012]. Available from <http://epress.anu.edu.au/apps/bookworm/view/Agenda,+Volume+16,+Number+4,+2009/5061/makin.xhtml>

The reasons for these adjustments are limitless. If the economy is doing poorly, the Fed Funds rate will most likely be lowered. This makes it easier for banks to lend out money to other banks and further more, lowers the interest rates they charge to every day consumers. Now borrowing for any kind of investment such as a new house will be cheaper, causing people to invest more. It also allows businesses large and small to

borrow more money to spur growth. These events promote an upturn in the economy's overall health.

Lowering the Fed Funds rate is the Fed's way of speeding up the economy when signs of a recession are looming. Businesses are allowed to grow because they are allowed to lend and borrow more money. The effects on the stock market are simple. First off, investors are always looking for the best possible returns. Normally a portfolio will consist of some combination of common stocks, mutual funds, cash and bonds. Investors adjust the proportions of these instruments in order to maximize their profit. In times when interest rates are low, bond prices are intrinsically higher and require more capital for purchase. This means not only will investors earn less return from low interest rates, but also face decreasing bond prices making them lose twice. Since we assume investors are rational thinkers, they will cause them to position more money into stocks thus creating the inverse relationship. As interest rates increase, people will be more likely to increase their exposure to bonds. As the FOMC meets, traders and retail investors hang on every last bit of news because when they lower the Federal Funds rate, stock indices trend upward.⁵ This makes sense as stocks are in a way, along for the ride as companies' growth rates increase.

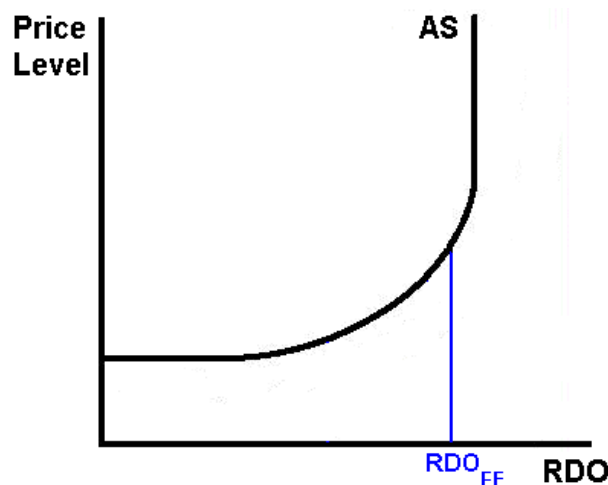
⁵ "The Federal Open Market Committee." March, 2012 [cited 2012]. Available from <http://www.federalreserve.gov/monetarypolicy/fomc.htm>.

INFLATION

Inflation is more or less a by-product of the pace the economy is growing. If inflation is higher (around eight or nine percent), the economy is growing too fast. This is a result of too much money circulating and not enough goods and services available for purchase. If inflation is low and stagnant, the economy is either growing at a steady pace or not at all. Stock returns, whether nominal or real, are commonly found to depend negatively on actual inflation, expected inflation and unexpected inflation.⁶ If inflation is higher, stock values are higher than what they should be (inflation). Their price should be discounted to a lower value because inflation is not priced in. In light of this, investors will feel stock prices are at too high of a level for entry. As a result people will be less likely to invest, as it is not smart to buy at the stock's highest value. Investors must remember their cash flows are also higher than normal thus offsetting the inflated value of stocks. It is for this reason many believe inflation and stock returns are not correlated at all.

⁶ Azar, Samih Antoine. "Inflation and Stock Returns." *International Journal of Accounting and Finance* 2, no. 3-4 (2010): 255.

FIGURE 2.5
DOMESTIC OUTPUT AND INFLATION



SOURCE: "A Model of the Macro-Economy: Aggregate Demand and Supply." [cited 2012]. Available from <http://www.harpercollege.edu/mhealy/eco212i/lectures/asad/asad.htm>.

This graph illustrates what happens when there is higher than normal levels of output. "RDO" stands for real domestic output and "AS" stands for aggregate supply. As output increases the price level slowly increases. However, when output increases past "RDO fe", or real domestic output at full employment, the price level shoots up causing unhealthy inflation.

Inflation can be trimmed by the FOMC. If they feel the economy is growing at an unsustainable pace, they will increase the Federal Funds rate. This makes it more difficult for banks to lend to each other as well as every day consumers. The consequences of these actions are poor for stocks because as interest rates increase, stock prices decrease. So the negative relationship between stock returns and inflation levels is more based off of how interest rates are adjusted to trim inflation levels.

UNEMPLOYMENT

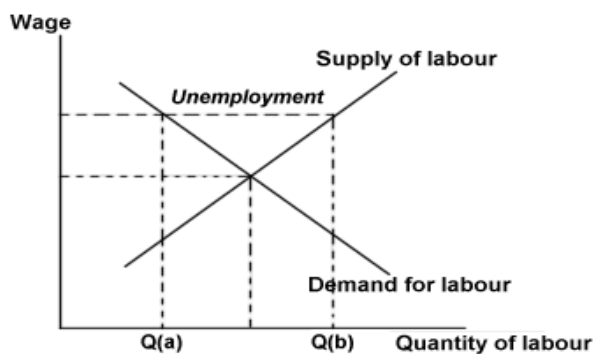
Common intuition would lead most to believe a higher jobless rate means lower stock returns. This makes sense, as there are less people with money to invest in stocks. However, it would be ignorant to assume this theory without any proof. In fact when broken down, the effects of unemployment depend a lot on the state of the economy as a whole. In down periods, higher unemployment points to a few other factors. The FOMC as a private entity is responsible for keeping the economy on an even keel. When news of rising unemployment comes during a recession, it is their job to offset it. They will most likely do this by purchasing bonds and as a result lower interest rates. As we know from the earlier section, lowering interest rates is generally a good thing for stocks.

Below is the classic macroeconomic illustration of supply and demand for the labor market. Unemployment exists when wages are too high for businesses to pay their employees, creating an excess supply. The reason for the surplus of capable workers could be a minimum wage that is too high. This creates a price floor, leaving many people out of work. Theories suggest Democrats are more likely to increase the minimum wage in recessionary times. They believe this will put more money in the pockets of those already employed thus increasing components of the demand function stated in earlier sections. This will in turn bring the supply and demand for labor back to equilibrium with a shift in labor demand. Obviously their will always be a Republican argument against raising minimum wages.

They believe the reason for the surplus of capable workers could be a minimum wage that is too high. This creates a price floor keeping the graph out of equilibrium. They feel companies are already struggling to pay the workers they already have in a

recession. So why would they hire new ones when wages are raised? According to Republican beliefs, raising the minimum wage will only further compound unemployment issues.

FIGURE 2.6
LABOR VERSUS WAGE



SOURCE: "Bized." December 21, 1998 [cited 2012]. Available from <http://www.bized.co.uk/learn/economics/wages/influences/minwage/tutor.htm>.

This is why Republicans are more likely to let the minimum wage level act more freely. Their goal is for it to be adjusted to levels that will decrease the surplus of those unemployed, even if it means trimming the minimum wage requirement. These policies can cause waves considering no one wants to be responsible for lower wages.

The negative result of an increasing unemployment result is the impact it has on businesses. If companies are laying off employees, it is most likely from low reports of earnings and thus growth rates. Both of these have huge implications for stock valuations. If revenue is decreasing, dividends and growth rates will sink with the ship. Letting employees go will decrease costs in an effort to stop the company from bleeding out. This

will lower the overall sentiment for the company and will begin pulling out their money causing stock prices to decrease.

CHAPTER III

DATA

It would be ignorant to believe financial markets perform better under Republican regimes without empirical evidence. Right wing politics include offering lower tax rates and the implementation of budgetary cutbacks. This could spur investment and result in higher stock valuations. Spending on the other hand, by left leaning governments, can also cause stocks to rally. Understanding which of these parties correlates to better market conditions increases the amount of information voters carry to the election booth. Market conditions are not limited to just direction. Volatility weighs a great deal on an investor's decisions to play the game or sit out. When risk becomes prominent enough to lose sleep over, longs¹ begin to exit the market. This causes inevitable drops in the market.

Election timing plays a significant role in market conditions. Midterm elections are just as, if not more important than presidential elections, which will be discussed later on. It is important to note that pre-election day information is just as significant as Election Day itself. Studies have been done to see at what point in the timeline of the incumbent's term, the market performs abnormally (higher or lower). If there are statistically significant correlations, people will be able to make smarter decisions with their investments.

¹ Longs refer to investors who are interested in buying stocks or have already made their purchase.

The variables this paper focuses on are similar to those of past studies. The dependent variable in this study is the Standard and Poor's index, the S &P 500. Since it is regarded as one of the best representations of the stock market, it will be useful for this study's data. It was also frequently used in other academic articles researched for this thesis. The S&P was picked over the Dow Jones Industrial average because it is a market weighted index as opposed to price weighted. This means its five hundred companies have the highest market capitalizations. The Dow on the other hand has companies that have the highest prices regardless of their market cap. However, this does not mean the S&P represents exact stock valuations for each industry; it is simply a way of portraying the mood of the stock market during the given period. The S&P consists of five hundred large-cap stocks that are actively traded in the U.S. The values chosen for the model are what the value of the index was in January of the specific year. The values date back to 1968 and continue through 2010. The mean for this time period is approximately 477, which is fairly low, because the S&P didn't break 200 until 1985. The reason for picking this time period was out of simplicity; the data was readily available at the Federal Reserve of St. Louis' Economic Research website.²

TABLE 3.1

DESCRIPTIVE STATISTICS OF REGRESSION VARIABLES

Variable	Observations	Mean	Standard Deviation	Minimum	Maximum
<i>Year</i>	43	1989.5	12.84523	1968	2010
<i>Unemployment</i>	43	6.069767	1.779585	3.1	10.4
<i>S&P 500</i>	43	527.9119	477.273	82.78	1477.19

² "Federal Reserve Bank of St. Louis." [cited 2012]. Available from <http://www.stlouisfed.org/>.

<i>Interest Rate</i>	43	7.155581	2.572315	3.22	13.92
<i>Republican President</i>	43	.6976744	.4647008	0	1
<i>Senate</i>	43	.4186047	.4991687	0	1
<i>Election Year</i>	43	.25	.4380188	0	1
<i>Midterm Election Year</i>	43	.5	.5057805	0	1
<i>House</i>	43	.2790698	.4538503	0	1
<i>Growth</i>	42	7.017315	14.51456	-22.95235	34.04895

The first variable is the unemployment statistic. This will be put into the model as a percent of those actively looking for jobs but are unable to find one. From 1968-2010, there was a mean of about six percent. This bodes well for my research since it is about where unemployment levels should be in a normal economy. Acceptable unemployment in a good economy is said to be around five percent. This paper's hypothesis is higher unemployment should increase in recessionary times or when the S&P index is underperforming.

The next variable is the interest rate in January of the same year. The mean of about seven percent is on the higher side for a well-functioning economy. The reason for an abnormally high mean is most likely from the rate levels between 1980 and 1985. The hypothesis is interest rates should generally be lower when stocks are performing well. If interest rates are high, investors will shift their assets to bonds thus taking money out of the stock market. Conversely if interest rates are low, investors will want to put more money into the equities market in hopes of higher returns.

The next five variables are all dummy variables, the first being *Republican*. This variable has a value of one if a Republican president is in power and zero otherwise. Since they are dummy variables, the minimums and maximums don't tell anything about the data set. However the fact the mean is around .5 says in the time period from 1968-2010 Republicans and Democrats had an equal amount of time as leader of the white House. The same goes for the variable *Senate*. It received a one if Republicans were in control and a zero if Democrats were.

House is the next variable, which also has a value of one if the majority of house members are Republican. Finally, the last two are election year and midterm election year. Election year has a value of one if it is a presidential election year while midterm election year has a value of one if that year is a midterm election year. Both these variables are given a 0 otherwise.

The last variable in the above table is growth. This is calculated simply by plugging values of the S&P 500 into the growth formula.

$$growth = \left(\frac{S\&P\ 500_{current} - S\&P\ 500_{previous}}{S\&P\ 500_{previous}} \right) \times 100 \quad (3.1)$$

The growth value is useful because I don't only want to find out if the S&P is up or down in certain years. The average rate of return is what most investors care most about. This way we can be as thorough as possible when trying to form a conclusion.

TABLE 3.2

DESCRIPTIVE STATISTICS OF GROWTH FOR PRESIDENTIAL VARIABLE

Variable	Observations	Mean	Std. Dev	Min	Max
Republican Growth	29	4.652039	14.77486	-22.95235	34.04895
Democratic Growth	13	12.2937	12.91351	-16.32824	30.26547

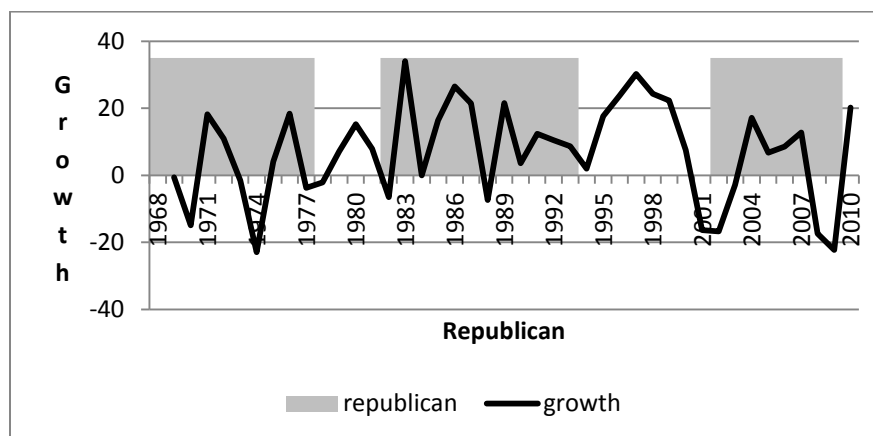
Growth	42	7.017315	14.51456	-22.95235	34.04895
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For the table above, the growth rate of the S&P 500 needed to be calculated for the observable years. The mean growth for the time period of 1968-2010 was 7.017% and had a standard deviation of 14.15% approximately. The minimum growth was negative 22.95% which happened while a Republican President was in control in 1974. The maximum growth for the S&P 500 was 34.05%. This was in 1983 while also while a Republican President was in power. As seen above, the mean growth rate for when a Republican President has the white house is 4.65%. This is much lower than the mean growth rate of thirteen observations when Democrats were in control of the Presidency (12.294%).

In the graph below, the growth rates for the time period between 1968 and 2010 are shown. In the background, the shaded areas represent the periods when a republican president is in power. The gaps are the time periods when a Democratic president is in control.

FIGURE 3.1

S&P 500 GROWTH VERSUS REPUBLICAN OR DEMOCRATIC PRESIDENT

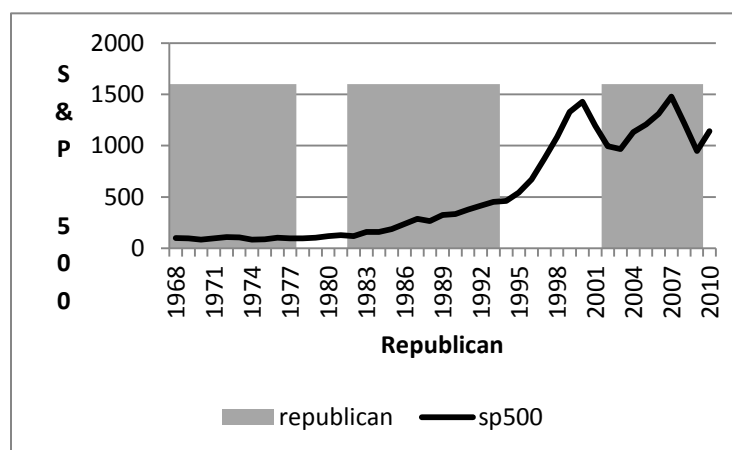


There is no dominating pattern alluding to better performance for either party. So no conclusions can be drawn as to which party has a stronger impact on the growth of the S&P 500 just by looking at the graph for this time period.

The next graph looks at the index as a value from year to year instead of calculated growth rates. Once again the shaded regions represent the time periods when a Republican President is in control of the white house. Obviously in this time period, Republicans dominated the presidency.

FIGURE 3.2

S&P 500 VERSUS REPUBLICAN OR DEMOCRATIC PRESIDENT



The S&P has been upward trending from 1968-2010. It did however peak in 2000 before a sharp drop off in 2001. This can be attributed to the Internet bubble that consumed the stock market in the 1990s. However, it did rebound all the way until 2007 when the market crashed. This is when the housing bubble dismantled the financial markets. Though it was during a Republican Presidency we can't immediately say Republicans were responsible.

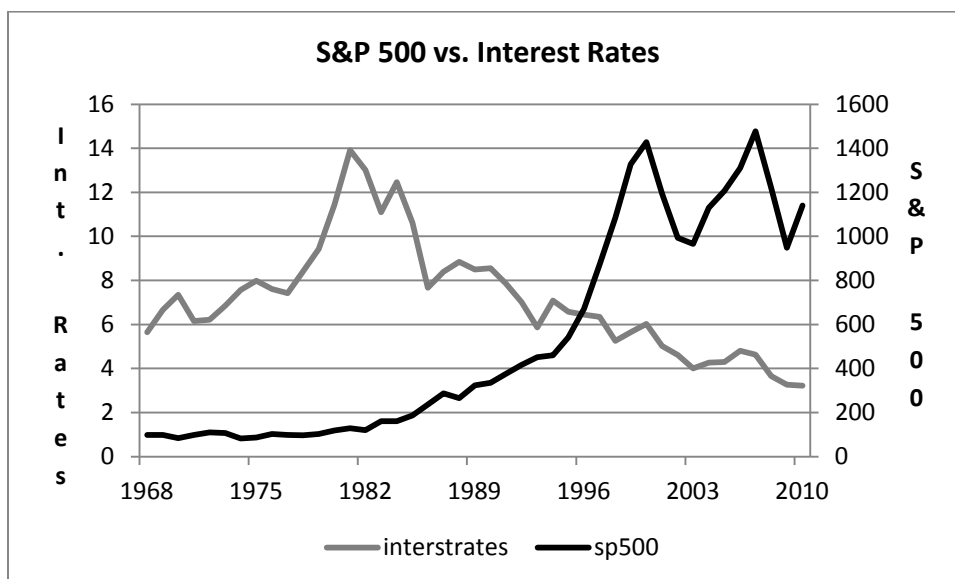
The next graph shows the S&P 500 versus interest rates from 1968-2010. Common theory suggests when interest rates are higher, stock valuations should be lower

as people can get higher returns without taking on the risks of the stock market.

Conversely when interest rates are low, investors should be more willing to reallocate there money into equities.

FIGURE 3.3

S&P 500 VERSUS INTEREST RATES



This graph clearly shows when interest rates are higher; the S&P 500 is lower. This is true up to about 1996. At this point, interest rates become relatively low due to a number of different reasons. This forced people to increase their stake in the stock market, thus increasing the value of the S&P 500.

Since the President isn't the only one influencing legislation, it is important to graph the same variables above (sp500, sp500 growth) but this time with the House and Senate in the background. First, lets look at descriptive statistics for the variables *senate*, *house*, *election year* and *midterm election year*. This way we can find the mean growth for each time period. The first variable summarized S&P 500's mean growth while

republicans are in power. This is followed by the same growth but in time period when democrats control the house. The next two summaries represent when republicans or democrats control the House. This is followed by growth rates when it is a presidential election year or a midterm election year.

TABLE 3.3

DESCRIPTIVE STATISTICS FOR REGRESSION VARIABLES USING GROWTH

Variable	Observations	Mean	Std. Dev	Min	Max
Republican Growth (Senate)	18	11.62392	15.25529	-16.768	34.04895
Democratic Growth (Senate)	24	3.562366	13.20871	-22.95235	21.50217
Republican Growth (House)	12	9.776843	15.39558	-16.768	30.26547
Democratic Growth (House)	30	5.913504	14.2664	-22.95235	34.04895
Pres. Election Year growth	10	7.881104	12.71059	-17.40805	23.77244
Non Pres. ElectionYearGrowth	32	6.747382	15.2122	-22.95235	34.04895
Midterm Election Year	21	4.795927	14.93823	-22.95235	26.54034
Non Midterm Election Year	21	9.238704	14.08421	-22.29354	34.04895

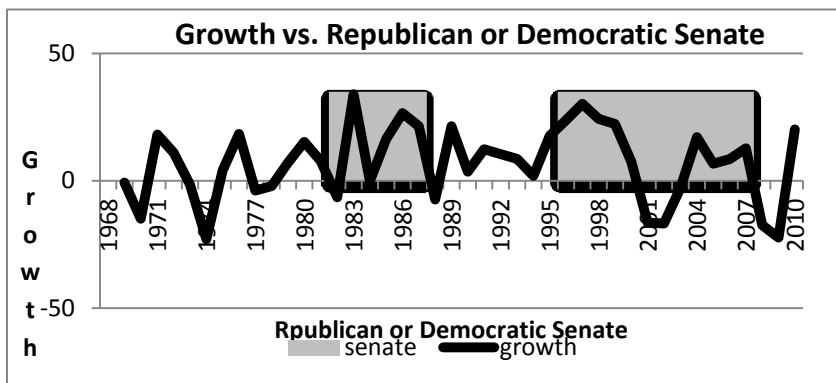
For the first variable we can see that the mean growth for when Republicans control the Senate is 11.6% while it is only 3.56% when Democrats are in control. This is a large spread that can hopefully be explained later in my model. While Republicans control the House, growth is 9.78%. This is also much higher than when Democrats control the house (5.91%). Whether or not it is a presidential election year does not seem to have that large of an effect considering in election years growth is 7.9% compared to a

mean growth of 6.7% in non-election years. This spread is not nearly as large as some of the others above. Midterm election timing has a much larger effect in this time period given mean growth is 4.8% in midterm election years and 9.23% in non-Midterm election years.

Next, the variables above are graphed against growth and values of the S&P 500 to see if trends are clearly visible. The first graph shows growth of the S&P versus Senate majorities. The grey shading represents times when Republicans have the majority in the Senate. The gaps are representative of Democratic majority. It would be hard to argue any clear relationship between the two given the randomness of S&P 500 growth.

FIGURE 3.4

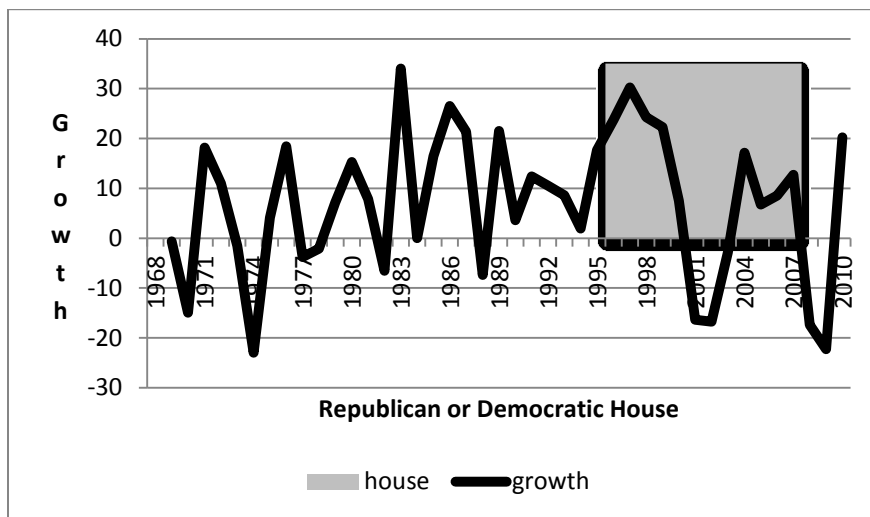
S&P 500 GROWTH VERSUS REPUBLICAN OR DEMOCRATIC SENATE



The following graph paints a picture of the S&P 500 growth from 1968-2010 with House majority as a backdrop. Just as above, you can't draw any significant conclusions just by studying the graph. This is especially true because Democrats have had House majority for most of the observations.

FIGURE 3.5

S&P 500 GROWTH VERSUS REPUBLICAN OR DEMOCRATIC HOUSE



The next two graphs instead look at the S&P 500 index to see if there are noticeable trends correlated with different Congressional Majorities. Once again no strong conclusions can be made for either case for or against Republicans.

FIGURE 3.6

S&P 500 VERSUS REPUBLICAN OR DEMOCRATIC SENATE

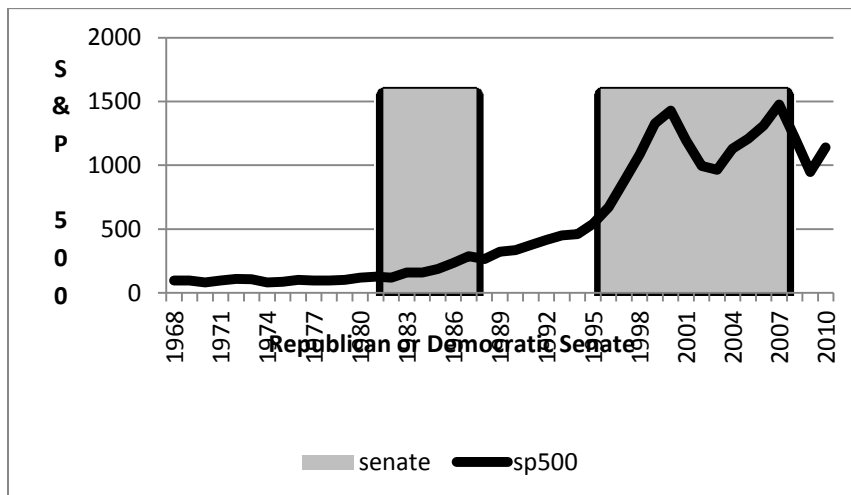
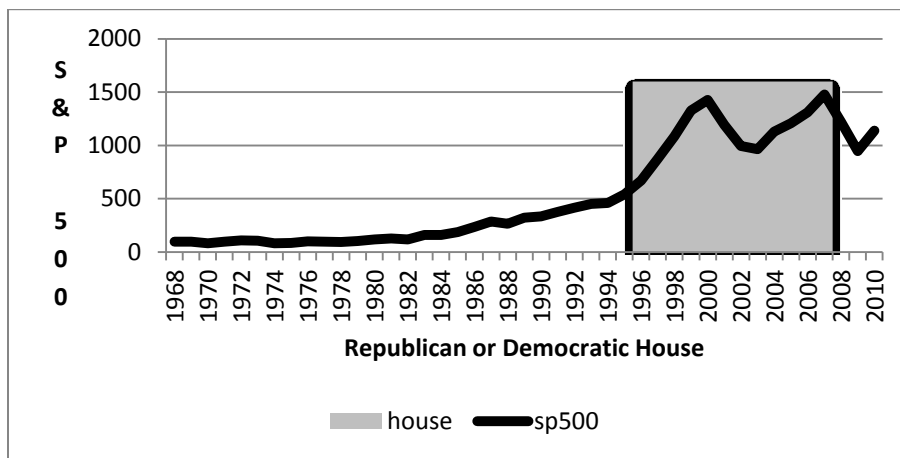


FIGURE 3.7

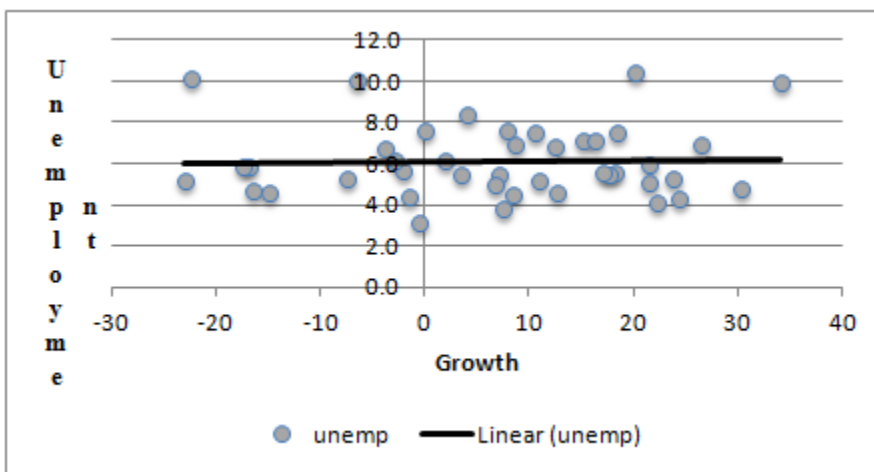
S&P VERSUS REPUBLICAN OR DEMOCRATIC HOUSE



The following graph aims to correlate unemployment rates with characteristics of the S&P 500. Since many economists look at growth to see if the economy is doing well it is important to look at its trends against unemployment rates. The graph below shows that in this time period, no definite conclusion can be drawn.

FIGURE 3.8

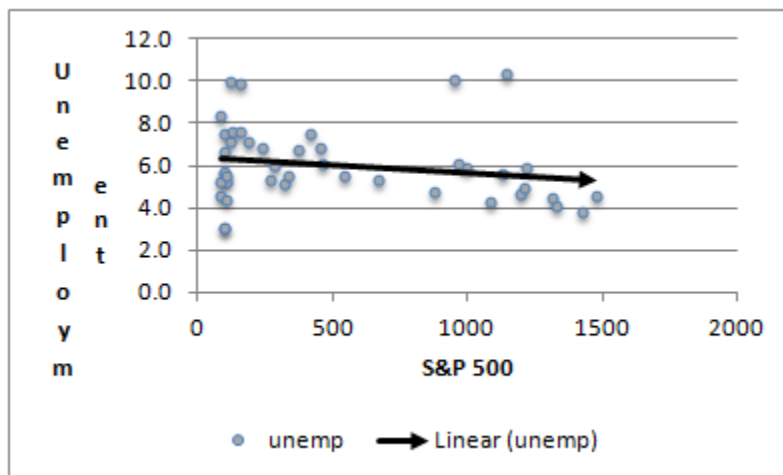
S&P 500 GROWTH VERSUS UNEMPLOYMENT RATE



However when looking at the S&P 500 index and not its growth, a trend line can be drawn correlating higher unemployment rates with lower S&P 500 this time period.

FIGURE 3.9

S&P 500 VERSUS UNEMPLOYMENT RATE



CHAPTER IV

METRICS

The goal of this chapter is to construct a model that best represents partisan politics and election timing with the S&P 500. Since yearly returns of the S&P 500 are positively correlated with time in the long run, auto serial correlation will be present. The Prais Winsten Cochrane-Orcutt regression will be used to correct for this. Since the values of the S&P 500 often do not give an accurate portrayal of the state of the economy, another regression using S&P growth from year to year will be used. Once the two models are constructed, the significance of each variable will be tested to weed out unnecessary information so that an accurate model can be used to represent the effects of political timing and partisanship on stock market valuations.

Regression 1:

$$\begin{aligned} S\&P500 = B_0 + B_1year + B_2unemp + B_3int.rates + B_4repub + B_5sen \\ &+ B_6electionyear + B_7midtermelect + B_8house \end{aligned} \quad (4.1)$$

Regression 2:

$$\begin{aligned} Growth = B_0 + B_1year + B_2unemp + B_3int.rates + B_4repub + B_5sen \\ &+ B_6electionyear + B_7midtermelect + B_8house \end{aligned} \quad (4.2)$$

TABLE 4.1

FIRST REGRESSION USING VALUE OF S&P 500 AS DEPENDANT VARIABLE

Cochrane-Orcutt AR(1) regression -- iterated estimates

Source	SS	df	MS			
Model	445989.764	8	55748.7205	Number of obs =	42	
Residual	274429.539	33	8316.04663	F(8, 33) =	6.70	
Total	720419.303	41	17571.2025	Prob > F =	0.0000	
				R-squared =	0.6191	
				Adj R-squared =	0.5267	
				Root MSE =	91.192	

sp500	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
year	36.52639	7.950551	4.59	0.000	20.35087	52.70191
unemp	-38.14229	13.6218	-2.80	0.008	-65.85605	-10.42852
interstrates	-3.548213	15.40653	-0.23	0.819	-34.89303	27.79661
republican	-65.79745	48.49711	-1.36	0.184	-164.4656	32.87067
senate	106.5039	75.55246	1.41	0.168	-47.20868	260.2166
electionyr	36.25346	31.74143	1.14	0.262	-28.32497	100.8319
midtermelect	-22.85719	22.1815	-1.03	0.310	-67.9858	22.27141
house	63.0131	103.5448	0.61	0.547	-147.6504	273.6766
_cons	-71916.45	15898.67	-4.52	0.000	-104262.5	-39570.36

rho	.8315667
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Durbin-Watson statistic (original)	0.696835
Durbin-Watson statistic (transformed)	1.344488

The regression obtained:

$$S\&P500 = -71916.45 + 36.5year - 38.14unemp - 3.55int. rates - 65.8repub + 106.5sen + 36.25electionyear - 22.86midtermelect + 63house \quad (4.3)$$

T- tests for significance:

$\alpha = .1$ with $n=43$ degrees of freedom gives a critical value of 1.7

$$year : H_0: B_1 = 0 \\ H_1: B_1 \neq 0$$

$$t = 4.59 \\ 4.59 > 1.7$$

Reject the null hypothesis that $B_1 = 0$ so *year* is significant

$$unemployment: H_0: B_2 = 0 \\ H_1: B_2 \neq 0$$

$$t = -2.8 \\ |-2.8| > 1.7$$

Reject the null hypothesis that $B_2 = 0$ so *unemployment* is significant

$$interest rates: H_0: B_3 = 0 \\ H_1: B_3 \neq 0$$

$$t = -.23$$

$$|-.23| < 1.7$$

Fail to reject the null hypothesis that $B_3 = 0$ so *interest rates* is not significant

$$\begin{aligned} \text{republican: } H_0: B_4 &= 0 \\ H_1: B_4 &\neq 0 \end{aligned}$$

$$\begin{aligned} t &= -1.36 \\ |-1.36| &< 1.7 \end{aligned}$$

Fail to reject the null hypothesis that $B_4 = 0$ so *republican* is not significant

$$\begin{aligned} \text{senate: } H_0: B_5 &= 0 \\ H_1: B_5 &\neq 0 \end{aligned}$$

$$\begin{aligned} t &= 1.41 \\ t &< 1.7 \end{aligned}$$

Fail to reject the null hypothesis that $B_5 = 0$ so *senate* is not significant

$$\begin{aligned} \text{electionyear: } H_0: B_6 &= 0 \\ H_1: B_6 &\neq 0 \end{aligned}$$

$$\begin{aligned} t &= 1.14 \\ 1.14 &< 1.7 \end{aligned}$$

Fail to reject the null hypothesis that $B_6 = 0$ so *electionyear* is not significant

$$\begin{aligned} \text{midtermelect: } H_0: B_7 &= 0 \\ H_1: B_7 &\neq 0 \end{aligned}$$

$$\begin{aligned} t &= -1.03 \\ |-1.03| &< 1.7 \end{aligned}$$

Fail to reject the null hypothesis that $B_7 = 0$ so *midtermelect* is not significant

$$\begin{aligned} \text{house: } H_0: B_8 &= 0 \\ H_1: B_8 &\neq 0 \end{aligned}$$

$$\begin{aligned} t &= .61 \\ .61 &< 1.7 \end{aligned}$$

Fail to reject the null hypothesis that $B_8 = 0$ so *house* is not significant

Year and *unemployment* were the only significant variables present after running the first regression. Next, the variables with the lowest statistical significance had to be taken out. This meant that *house* ($t=.61$) and *int.rates* ($t=-.23$) were removed.

The regression obtained:

$$\begin{aligned} S\&P500 = -76892.09 + 39.02\textit{year} - 40.48\textit{unemp} - 68.221\textit{repub} + 141.75\textit{sen} \\ &+ 39.38\textit{electionyear} - 25.11\textit{midtermelect} \end{aligned}$$

(4.4)

TABLE 4.2

SECOND REGRESSION USING VALUE OF S&P 500 AS DEPENDANT VARIABLE

Cochrane-Orcutt AR(1) regression -- iterated estimates

Source	SS	df	MS			
Model	390792.828	6	65132.1379	Number of obs =	42	
Residual	277401.866	35	7925.76761	F(6, 35) =	8.22	
Total	668194.694	41	16297.4316	Prob > F =	0.0000	
				R-squared =	0.5848	
				Adj R-squared =	0.5137	
				Root MSE =	89.027	

sp500	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
year	39.01639	7.701496	5.07	0.000	23.38152	54.65126
unemp	-40.47667	12.70999	-3.18	0.003	-66.27931	-14.67402
republican	-68.22181	45.4529	-1.50	0.142	-160.4961	24.05248
senate	141.7495	48.56237	2.92	0.006	43.16264	240.3363
electionyr	39.37881	30.17533	1.30	0.200	-21.88038	100.638
midtermelect	-25.11484	21.20706	-1.18	0.244	-68.16747	17.93778
_cons	-76892.09	15361.72	-5.01	0.000	-108078	-45706.13
rho	.8517348					

Durbin-Watson statistic (original) 0.385704
Durbin-Watson statistic (transformed) 1.346803

senate: $H_0: B_4 = 0$

$H_1: B_4 \neq 0$

$$t = 2.92$$

$$2.92 > 1.7$$

Reject the null that $B_4 = 0$ so *senate* is significant

One more significant variable (*senate*) was obtained by taking out the two variables. However, after looking at the p value, more variables can be considered significant at an 80% confidence. The variables that failed the t test are *republican* ($P=.142$), *electionyr* ($P=.2$) and *midtermelect* ($P=.244$). However, they were significant using the p values, so they were left in the model. The final regression obtained was the same as above but with robust errors to correct for heteroskedasticity.

TABLE 4.3

FINAL REGRESSION USING VALUE OF S&P 500 AS DEPENDENT VARIABLE

Cochrane-Orcutt AR(1) regression -- iterated estimates

Linear regression

Number of obs = 42
 F(6, 35) = 6.90
 Prob > F = 0.0001
 R-squared = 0.5848
 Root MSE = 89.027

sp500	Coef.	Semirobust Std. Err.	t	P> t	[95% Conf. Interval]	
year	39.01639	7.896956	4.94	0.000	22.98472	55.04806
unemp	-40.47667	15.22378	-2.66	0.012	-71.38259	-9.570745
senate	141.7495	45.11277	3.14	0.003	50.1657	233.3333
republican	-68.22181	52.79574	-1.29	0.205	-175.4029	38.95925
electionyr	39.37881	29.67474	1.33	0.193	-20.86411	99.62173
midtermelect	-25.11484	22.58515	-1.11	0.274	-70.96513	20.73544
_cons	-76892.09	15712.75	-4.89	0.000	-108790.7	-44993.51
rho	.8517348					

Durbin-Watson statistic (original) 0.385704

Durbin-Watson statistic (transformed) 1.346803

Regression obtained:

$$\begin{aligned}
 S\&P500 = -76892.1 + 39.02year - 40.48unemp + 141.75sen - 68.22repub \\
 + 39.38electionyr - 25.11midtermelect
 \end{aligned}
 \tag{4.5}$$

This was the model constructed after revamping the original model and running the regression with robust errors to correct for heteroskedasticity. *Sen* was the variable with the largest magnitude with 141.75 and a positive sign meaning that for each year the senate had a republican majority, the S&P 500 was 141.75 higher on average. *Repub* was the variable with the next largest magnitude (-68.22) meaning when republicans were in control of the white house; the S&P was 68.22 lower. The variables that follow are self-explanatory. With this model R-squared of .5848 was obtained. This meant about 58% of the data gathered could be explained by the model. With smaller amounts of data, an R-

squared of 58% is acceptable. Next, the growth of the S&P 500 was regressed against the same variables.

TABLE 4.4

FIRST REGRESSION USING S&P 500 GROWTH AS DEPENDANT VARIABLE

Cochrane-Orcutt AR(1) regression -- iterated estimates

Source	SS	df	MS			
Model	2193.55664	8	274.19458	Number of obs =	41	
Residual	6122.04618	32	191.313943	F(8, 32) =	1.43	
Total	8315.60282	40	207.89007	Prob > F =	0.2209	
				R-squared =	0.2638	
				Adj R-squared =	0.0797	
				Root MSE =	13.832	

growth	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
year	-.4263745	.399221	-1.07	0.294	-1.239561	.3868121
unemp	1.246876	2.004035	0.62	0.538	-2.83521	5.328961
interstrates	-1.944375	1.722712	-1.13	0.267	-5.453424	1.564674
republican	-14.62285	6.431739	-2.27	0.030	-27.72388	-1.521831
senate	19.84325	9.976476	1.99	0.055	-.4781632	40.16467
electionyr	9.064728	6.003379	1.51	0.141	-3.163754	21.29321
midtermele-r	-9.413425	4.450082	-2.12	0.042	-18.47795	-.3489035
house	-11.38702	14.06216	-0.81	0.424	-40.0307	17.25665
_cons	869.3298	797.0212	1.09	0.284	-754.1492	2492.809

rho	.2796653
Durbin-Watson statistic (original)	1.588631
Durbin-Watson statistic (transformed)	1.888380

The regression obtained:

$$\begin{aligned} \text{Growth} = & 869.33 - .426\text{year} + 1.25\text{unemp} - 1.94\text{int.rates} - 14.62\text{repub} \\ & + 19.84\text{sen} + 9.06\text{electionyear} - 9.41\text{midtermelect} - 11.39\text{house} \end{aligned} \quad (4.6)$$

T-Tests for significance

$$\begin{aligned} \text{year :} H_0: B_1 = 0 \\ H_1: B_1 \neq 0 \end{aligned}$$

$$\begin{aligned} t = -1.07 \\ |-1.07| < 1.7 \end{aligned}$$

Fail to reject the null that $B_1 = 0$ so *year* is not significant

$$\begin{aligned} \text{unemployment: } H_0: B_2 = 0 \\ H_1: B_2 \neq 0 \end{aligned}$$

$$\begin{aligned} t = .62 \\ .62 < 1.7 \end{aligned}$$

Fail to reject the null that $B_2 = 0$ so *unemployment* is not significant

$$\begin{aligned} \text{interest rates: } H_0: B_3 = 0 \\ H_1: B_3 \neq 0 \end{aligned}$$

$$\begin{aligned} t &= -1.13 \\ |-1.13| &< 1.7 \end{aligned}$$

Fail to reject the null that $B_3 = 0$ so *interest rates* is not significant

$$\begin{aligned} \text{republican: } H_0: B_4 = 0 \\ H_1: B_4 \neq 0 \end{aligned}$$

$$\begin{aligned} t &= -2.27 \\ |-2.27| &> 1.7 \end{aligned}$$

Reject the null that $B_4 = 0$ so *republican* is significant

$$\begin{aligned} \text{senate: } H_0: B_5 = 0 \\ H_1: B_5 \neq 0 \end{aligned}$$

$$\begin{aligned} t &= 1.99 \\ 1.99 &> 1.7 \end{aligned}$$

Reject the null that $B_5 = 0$ so *senate* is significant

$$\begin{aligned} \text{electionyear: } H_0: B_6 = 0 \\ H_1: B_6 \neq 0 \end{aligned}$$

$$\begin{aligned} t &= 1.51 \\ 1.51 &< 1.7 \end{aligned}$$

Fail to reject the null that $B_6 = 0$ so *electionyear* is not significant

$$\begin{aligned} \text{midtermelect: } H_0: B_7 = 0 \\ H_1: B_7 \neq 0 \end{aligned}$$

$$\begin{aligned} t &= -2.12 \\ |-2.12| &> 1.7 \end{aligned}$$

Reject the null that $B_7 = 0$ so *midtermelect* is significant

$$\begin{aligned} \text{house: } H_0: B_8 = 0 \\ H_1: B_8 \neq 0 \end{aligned}$$

$$\begin{aligned} t &= -.81 \\ |-.81| &< 1.7 \end{aligned}$$

Fail to reject the null that $B_8 = 0$ so *house* is not significant

Since *house* and *unemp* had the lowest t statistics, $-.81$ and $.62$ respectively, they were immediately removed. The R-squared from the growth model (.26) was much lower than the R-squared of the value model constructed above (.58). This had a lot to do with

the fact that the S&P has trended upward consistently since its inception. Removing this trend by using growth of the S&P lowered the R-squared.

TABLE 4.5

SECOND REGRESSION USING S&P 500 GROWTH AS DEPENDANT VARIABLE

Cochrane-Orcutt AR(1) regression -- iterated estimates						
Source	SS	df	MS			
Model	1762.03738	6	293.672897	Number of obs = 41		
Residual	6505.90515	34	191.350152	F(6, 34) = 1.53		
				Prob > F = 0.1967		
				R-squared = 0.2131		
				Adj R-squared = 0.0743		
				Root MSE = 13.833		
Total	8267.94253	40	206.698563			
growth	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
year	-.3183695	.3558943	-0.89	0.377	-1.041634	.4048948
interstrates	-.5163469	1.426561	-0.36	0.720	-3.415468	2.382774
republican	-10.37904	5.681827	-1.83	0.077	-21.9259	1.167823
senate	11.23231	5.951059	1.89	0.068	-.8616983	23.32632
electionyr	7.263593	5.941657	1.22	0.230	-4.811308	19.33849
midtermele~r	-8.606469	4.523109	-1.90	0.066	-17.79853	.5855933
_cons	649.4981	715.1498	0.91	0.370	-803.8611	2102.857
rho	.2338185					
Durbin-Watson statistic (original)			1.612317			
Durbin-Watson statistic (transformed)			1.860117			

The regression obtained:

$$\begin{aligned}
 \text{Growth} = & 649.49 - .31\text{year} - .52\text{int.rates} - 10.38\text{repub} + 11.23\text{sen} \\
 & + 7.26\text{electionyear} - 8.61\text{midtermelect}
 \end{aligned}
 \tag{4.7}$$

Since *int.rates* and *year* were the least significant variables, they were taken out to improve the overall model.

TABLE 4.6

THIRD REGRESSION USING S&P 500 GROWTH AS DEPENDANT VARIABLE

Cochrane-Orcutt AR(1) regression -- iterated estimates

Source	SS	df	MS			
Model	1583.25079	4	395.812697	Number of obs =	41	
Residual	6678.94576	36	185.526271	F(4, 36) =	2.13	
Total	8262.19655	40	206.554914	Prob > F =	0.0967	
				R-squared =	0.1916	
				Adj R-squared =	0.1018	
				Root MSE =	13.621	

growth	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
electionyr	6.93366	5.835245	1.19	0.243	-4.900765	18.76809
republican	-8.977201	5.346404	-1.68	0.102	-19.82021	1.86581
senate	8.626922	5.166261	1.67	0.104	-1.850742	19.10459
midtermele~r	-8.469	4.474422	-1.89	0.066	-17.54355	.6055486
_cons	12.3363	5.42156	2.28	0.029	1.340864	23.33173
rho	.2236644					

Durbin-Watson statistic (original) 1.551475
Durbin-Watson statistic (transformed) 1.865525

The regression obtained:

$$\begin{aligned} \text{Growth} = & 12.34 + 6.93\text{electionyr} - 8.98\text{republican} + 8.63\text{sen} \\ & - 8.47\text{midtermelct} \end{aligned} \quad (4.8)$$

TABLE 4.7

FINAL REGRESSION USING S&P GROWTH WITH ROBUST ERRORS

Cochrane-Orcutt AR(1) regression -- iterated estimates

Linear regression

growth	Coef.	Semirobust Std. Err.	t	P> t	[95% Conf. Interval]	
electionyr	6.93366	5.486748	1.26	0.214	-4.19398	18.0613
republican	-8.977201	5.343345	-1.68	0.102	-19.81401	1.859606
senate	8.626922	5.176089	1.67	0.104	-1.870674	19.12452
midtermele~r	-8.469	4.373108	-1.94	0.061	-17.33807	.4000732
_cons	12.3363	5.144675	2.40	0.022	1.902414	22.77018
rho	.2236644					

Durbin-Watson statistic (original) 1.551475
Durbin-Watson statistic (transformed) 1.865525

After correcting for heteroskedasticity this final model was obtained. Even though *electionyr* had a t-statistic of 1.26, it was still included in the model because of its

relatively low P-value of .214. This was significant if using a 75% confidence.

Considering this was such a small data set (41 observations), it was still considered a telling variable.

The final growth model did not have as many variables compared to the value model. This can be explained by the consistent upward trend stocks have shown since the sixties. Taking trends away will lower significance. The variables with the highest magnitudes were *repub*, *sen* and *midtermelct* with values of -8.98, 8.63 and -8.47 respectively. S&P 500 growth was 8.98% lower when a republican president was in power, 8.63% higher when there was a republican majority in the senate and 8.47% lower when it was a midterm election year. Also, growth was 6.94% higher in presidential election years. The final R-squared for the growth model was .1916 meaning the model constructed accounted for 19.16% of the data for the observed years. This was acceptable given the small number of observations.

Final regressions:

$$Growth = 12.34 + 6.94electionyr - 8.98repub + 8.63sen - 8.47midtermelect \quad (4.9)$$

$$S\&P500 = -76892.1 + 39.02year - 40.48unemp + 141.75sen - 68.22repub + 39.38electionyr - 25.11midtermelect \quad (4.5)$$

CHAPTER V

RESULTS

The purpose of this section is to explain whether the statistically significant variables had a positive or negative effect on the dependent variables. This was done by looking at the sign (+/-) of the coefficient in the regression. The confidence interval was used to double check by seeing which side of zero most of the data was on. If the majority of the data was on the negative side, the variable had a negative effect on the value or growth of the S&P. If most of the data was on the positive side, the variable had a positive effect on the S&P. After assessing the effects of these variables, they will be compared to theory discussed earlier in the paper as well as previous research to determine any similarities. Lastly, conclusions can be solidified correlating the effects of politics and election timing on stock market growth and valuation.

The first variable coefficient was *year*. This was only significant in the model determining the value of the S&P. The sign was positive and had a coefficient of 39.02. This meant for every increase in one year, the value of the S&P increased by 39.02. The positive correlation can be confirmed by looking at the 95% confidence interval. The values [22.98, 55.05] meant that 95% of the time, coefficients would fall between these two positive values. Common theory suggests over time, stock valuations should increase and not decrease. This is proven in the model for value of the S&P.

Unemployment was a variable found significant in the model for value of the S&P 500 but not the growth model. Its coefficient was negative and had a value of 40.48, meaning that for every increase in one percentage of unemployment, the value of the S&P 500 was 40.48 lower. The negative effect of unemployment is confirmed by the confidence interval [-71.38,-9.57]. So 95% of the time, the coefficient fell between these two negative values. This agrees with theory discussed earlier suggesting when unemployment is higher, the stock market performs poorly.

Senate was one of the strongest variables found significant in both of the regressions. The sign was positive meaning when Republicans were in control of the Senate; the S&P 500 tended to have both higher value and higher growth for the respective years. The coefficient for the growth model was 8.63. For each year Republicans had Senate majority, growth was 8.63% higher. The relationship was strongly supported by looking at the value regression done earlier. That coefficient had a positive sign with a value of 141.75 meaning for every year Senate majority was held by Republicans, the S&P 500 index increased by 141.75. In both regressions, the variables were significant using a 90% confidence interval. The positive relationship was further supported by the 95% confidence intervals from both regressions. The confidence interval for the value regression was [50.17, 233.33] meaning 95% of the time, the coefficient for *senate* fell between those two values. Since both numbers were positive, it can be concluded that *senate* was positively correlated with levels of the S&P 500. Switching over to the growth model, the confidence interval was [-1.87, 19.12]. This shows that 95% of the time, the coefficient for the *senate* was between these two values.

Since most of data points to a higher positive coefficient, it can be claimed that republican senate majority had a positive effect on the S&P.

The next variable assessed was *republican*. Since it was statistically significant using 80% and 90% confidence for the value and growth models respectively, its contributions to both models needed to be reviewed. In the value and the growth model, the coefficients carried a negative sign. For each year the presidency was controlled by the Republican Party, the stock market had growth 8.98% lower than in non-Republican years. The value of the S&P 500 was also 68.22 lower than when a different party was in control. These relationships appear more convincing by looking at the confidence intervals in both regressions. For the value regression, 95% of the time the coefficient for the *republican* variable was between [-175.4, 38.96], further supporting the theory that the relationship between Republican presidents and stock market values was negative. The confidence interval for the growth regression painted the same picture ([-19.81, 1.86]). These relationships went against the theory Republican Presidents are better for the stock market. The reasons for this will be discussed further in the next chapter.

Next, *electionyr* will be reviewed. This was a dummy variable that took the value of one for Presidential election years and zero otherwise. In both regressions, the sign for this variable was positive. For the growth model, the variable said in election years, growth increased by 6.94%. For the value model, the S&P 500 increased by 39.38 during Presidential election years. For the value model, the confidence interval stated 95% of the time, the coefficient was between [-20.86, 99.62]. Though weaker than previous confidence intervals, it showed bias leaning towards positive values. The confidence interval for the growth model was much stronger and even more biased towards positive

coefficients with values falling between [-4.19, 18.06] 95% of the time. This supported theories arguing presidents make more drastic changes aiding the economy in the first and last years of their term.

The last and final variable, *midtermelect*, was statistically significant at the 90% level in the growth model. This had the same meaning as earlier this time accounting for midterm election years. For the growth and value models, the coefficients were negative, implying midterm election year growth was 8.47% lower than in non-midterm election years. This variable was not as significant in the value model. However, it did show in midterm election years, the value of the S&P 500 was 25.11 lower. This was further supported by the confidence interval for growth that said 95% of the time; the coefficient was between [-17.34, .4]. This was a very strong bias towards a negatively signed coefficient making a stronger case for the argument that presidents do a poor job helping the stock market in the middle of their terms.

It is important to view this data through a lens by comparing its relevance to past results and conclusions drawn in previous work. Hopefully its implications agree with studies from other scholars so the independent variables can be clearly defined as significant or insignificant. It was however difficult to compare apples to oranges. Many of the papers discussed in the literature review section either used different versions of the independent variables from this paper, or different sets of years. This did cause a small problem though comparisons were still drawn.

In Snowberg's 2006 article, his model looked like this:

$$\Delta \log S\&P500 = \beta \Delta re - electionprobability^1$$

(5.1)

He measured the change in probability using data from Tradesports.com, which used mock futures contracts to give values to changing probabilities for the Bush vs. Gore election. He found the coefficient to be positively correlated to the S&P 500. These measured intraday changes in the probability Bush would win the election and were tested at the ten and thirty-minute time intervals. The magnitude of this variable was significant, implying for every increase in the probability of Bush being re-elected, the S&P500 increased by 1.5%.² While the variables did differ between this paper and Snowberg's, the implications were similar. Since Bush is Republican, it can be inferred that the higher the chance of a republican remaining president correlated with higher market returns. It would be foolish conclude this with one hundred percent certainty considering many external factors contributing to this. For instance, people could have been more comfortable with a returning president. Or they could have felt that Gore's specific policies would result in lower stock market returns. That being said, it does go against the model created in this paper. In both the growth and value regressions, Republican Presidents had a negative impact on stock returns.

The next paper by Mukherjee used several different variables to account for changes in presidential power during election years. One variable represented an increase in the probability of a Democratic victory for President. This variable carried a negative

¹ Snowberg, Erik, Justin Wolfers, and Eric Zitzewitz. "Partisan Impacts on the Economy: Evidence from Prediction Markets and Close Elections." *Quarterly Journal of Economics* 122, no. 2 (2007): 814.

² Ibid, Table 1

sign meaning stock returns declined if the probability of a Democratic victory increased.³ This variable was significant in most of the election years tested. However, it was insignificant in several. The coefficient had a magnitude of .004 meaning for an increase in the probability of a Democrat winning the election, mean stock returns decreased by .4%.⁴ This went against both the growth and value models from this paper. Mukherjee also found the probability of democrats winning the election negatively correlated with variance and volatility.

Roland Fuss found similar results in his study of the 2002 German election. He said the coefficient was positive and significant relating the probability of a right leaning party winning the election to mean stock returns.⁵ He also found volatility increased when the probability of right leaning parties increased. Once again, these results go against this paper's models saying right wing presidents were negatively correlated with returns. This was a much different set of data being from only one year and in a different country. That needs to be factored into the equation before any conclusions can be made. However, it was consistent with the previous articles looking at intraday changes in market returns.

The results from the last two expected return articles painted a very interesting picture when compared to the actual return from this paper. Take for instance the reaction of the market to the probability of a Republican president winning the respective

³ Mukherjee, Bumba, and David Leblang. "Partisan Politics, Interest Rates and the Stock Market: Evidence from American and British Returns in the Twentieth Century." *Economics and Politics* 19, no. 2 (2007):

⁴ Ibid, Table 3

⁵ Fuss, Roland, and Michael M. Bechtel. "Partisan Politics and Stock Market Performance: The Effect of Expected Government Partisanship on Stock Returns in the 2002 German Federal Election." *Public Choice* 135, no. 3-4 (2008): 142.

elections. In both Fuss and Mukherjee's research, this resulted in positive gains for stock valuations. The expectation of republicans having control seemed to be good for stocks. This is the opposite of the results found in this paper which say that once the Republican president is in the White House, stocks performed poorly. These strange results further confirm the "Castle in the air" theory that says people build ideas up with so much certainty that it results in directional changes in the stock market. In several papers discussed in the literature review chapter, they discuss general theory has always said Republicans are good for the stock market. Now it seems this is true for periods leading up to elections because no one takes the time to look at how the markets have actually reacted to Republicans. There are a large percentage of the swings in the stock market that can be explained away by psychology. Investors and day traders alike need to be weary of these changes and why they are present. Unfortunately the stock market doesn't care why the orders are buys or sells. It just reacts.

Bento J. Lobo used similar dependent variables to correlate the effects election years and partisan politics had on mean stock returns and volatility. He found election years were negatively correlated with mean stock returns and volatility was higher in midterm election years.⁶ His model predicted midterm election years had a more significant effect on returns and volatility than Presidential election years.⁷ This could be due to the President in power losing majority in both the Senate and the House. The results from Lobo's partisan research were similar to the ones found in this paper. He found Democratic regimes are positively correlated with stock returns.

⁶ Lobo, Bento J. "Jump Risk in the U.S. Stock Market: Evidence Using Political Information." *Review of Financial Economics* 8, no. 2 (1999): 154.

⁷ Ibid

Steven Jones and Kevin Banning found mixed results across the board. Though their methodology was similar to this paper, they found little statistical significance between market returns and election events. Using the same dummy variables for Presidency, Senate and House, he found the coefficients to be for the most part insignificant.⁸ They found Republican Presidents to be negatively correlated with stock market returns while Republican majority in the House was positively correlated. They also discovered Republican majority in the Senate had a negative sign⁹ which is opposite of the results I found. The discrepancies could have to do with the much larger sample size as these scholars used monthly returns from the past 104 years instead of yearly returns for 42 years. With Herbert Hoover's presidency removed, the results were even more similar this paper's. Now, Republican majority in the Senate had a positive coefficient just as in both the growth and value models created in this paper. However, this must be taken with a grain of salt considering their independent variables didn't have considerable statistical significance.

Ovlia's article that regressed percentage controls of the House and Senate looked at by how much a political party had control over their counterpart in Congress. He found the variable relating the percentage of the House controlled by Democrats to be negatively correlated with future stock returns in the S&P 500.¹⁰ This variable was significant at the 5 % level. It is hard to compare his results to this paper because the variable *house* was statistically insignificant in both the growth and value models for the

⁸ Jones, Steven T., and Kevin Banning. "US Elections and Monthly Stock Market Returns." *Journal of Economics and Finance* 33, no. 3 (2009): 287.

⁹ Ibid, 277

¹⁰ Ovlia, Vincent Louis, David Enke, and Michael C. Davis. "The Effects of Congressional Elections on Future Equity Market Returns." *Global Journal of Business Research* 2, no. 1 (2008): 12.

S&P. Ovlia did however find there was a positive correlation between stock returns and Democratic presidents. This agrees with both the value and growth models constructed in this paper. Ovlia's results argued the percentage of the Senate controlled by Democrats was positively correlated to future stock returns.¹¹ This goes against the model in this paper. However, it was not found statistically significant in Ovlia's models.

In the second article by Snowberg, the probabilities of Republicans having the majority in the Senate and House were regressed against the S&P 500. Both the House and Senate variables were positively correlated with stock returns meaning stocks did better as more people thought Republicans would have control of congress.¹² This agrees with the Senate variable used in the growth and value models created in this paper. However, the magnitude of these variables was much less than the variable used to represent the probability of a Republican controlling the presidency.¹³ Snowberg's Presidential variable was also found to be positively correlated with stock returns going against the growth and value models. All three of these variables were found to be statistically significant in Snowberg's work.

IMPLICATIONS

The variables that were found to be significant need to be compared to past levels of growth and value for the S&P 500. The relevance of the magnitudes for each variable can be determined to see if they really matter for the respective dependent variables. If the difference between normal standard deviations of the S&P 500 and the magnitudes of

¹¹ Ibid

¹² Snowberg, Erik, Justin Wolfers, and Eric Zitzewitz. "Party Influence in Congress and the Economy." *Quarterly Journal of Political Science* 2, no. 3 (2007): 282.

¹³ Ibid

the variables are indistinguishable, then it will be hard to prove the variables mean anything. To do this, a table must be constructed including magnitudes from both regressions and standard deviations of the S&P 500 levels and growth.

TABLE 5.1
MAGNITUDES FOR S&P 500 VALUE MODEL

Variable	Magnitude
Year	39.02
unemp	-40.48
sen	141.75
repub	-68.22
electionyr	39.38
midtermelect	-25.11

S&P 500 Standard Deviation (Value) = 477.273

The significance of the variables is in question after looking at the values from Table 5.1 compared to the standard deviation of the S&P 500 for the past 43 observations. The variable *sen* was the exception with a magnitude of 142.75. However, this magnitude was still much less than yearly fluctuation.

TABLE 5.2
MAGNITUDES FOR S&P 500 GROWTH MODEL

Variable	Magnitude
Electionyr	6.94
Repub	-8.98
Sen	8.63
midtermelect	-8.47

S&P 500 Standard Deviation (Growth) = 14.515

The same table was constructed for the growth model. As seen previously, no variable was as large as the standard deviation (14.515), making it difficult to argue their significance. That being said, crowds of investors would jump at the chance for an 8% percent edge when republicans are in control of the Senate. But given the standard deviation is 14.515, any edge could be washed away by the average yearly movement of S&P 500 growth.

CHAPTER VI

CONCLUSION

Republicans have always felt their policies are better suited for the stock market. This paper is not completely biased towards Republicans. General economic theory does say policies enforced by Republicans through tax cuts and deregulations are good for the stock market. Several articles in the literature review section began their papers with the same theories. It was the goal of this paper to solidify correlations by fashioning a new regression and comparing it to previous work. Partisan effects were not the only thing researched. Election timing was also a determining factor. The hypothesis of this paper was that volatility should be higher in midterm election years since most of the time; the president incumbent will lose part of their majority in the House and Senate. This will cause increasing uncertainty resulting in higher market volatility and decreasing stock market returns. In Presidential election years, the value of the S&P500 should be higher considering presidents tend to implement policy in the beginning and end of their presidential term. By creating a new model, some conclusions were drawn for each hypothesis.

In both the growth and value models, the hypothesis that Republican presidents are positively correlated with market returns must be rejected. This is interesting considering most voters today believe Republican interests are well aligned with investors on Wall Street. There was further evidence rejecting this hypothesis in several

of the articles researched.^{12 3}The reasons for this negative correlation are limitless. However, this variable should probably be ignored completely considering its low levels of significance. This is often a problem when trying to correlate politics and the stock market. There was still some question as to which party is better for the stock market in regards to the presidency. However their tends to be more evidence rejecting the notion Republican presidents will always be positively correlated with stock returns.

The next variables that were supposed to have positive correlations to stock returns were *house* and *senate*. Since Republican presidents are thought to have a good impact, Republican majority in congress should have the same effect. Since *house* was statistically insignificant in the value and growth models, its implications cannot be discussed. However, Republican majority in the House was positively correlated in two of the articles from the Literature Review to stock returns.⁴ Since its statistical significance was in question in one of those articles,⁵ concrete conclusions cannot be made. The more prudent deduction should be House majority has no effect on stock returns.

Republican majority in the Senate is a different story. It was one of the most significant variables in several models including the ones from this paper. It was positively correlated in both growth and value models. It is hard to solidify a reason for

¹ Lobo, Bento J. "Jump Risk in the U.S. Stock Market: Evidence Using Political Information." *Review of Financial Economics* 8, no. 2 (1999): 154.

² Jones, Steven T., and Kevin Banning. "US Elections and Monthly Stock Market Returns." *Journal of Economics and Finance* 33, no. 3 (2009): 277.

³ Ovlia, Vincent Louis, David Enke, and Michael C. Davis. "The Effects of Congressional Elections on Future Equity Market Returns." *Global Journal of Business Research* 2, no. 1 (2008): 12.

⁴ Ibid

⁵ Jones, Steven T., and Kevin Banning, 277.

this strong positive correlation besides it agreed with theories arguing Republicans are better for stocks. The magnitude of this variable was relatively large in both models meaning not only was it a significant player, but the amount by which growth of the S&P and the level of the S&P changed with Republican majority was surprising. Since it was also a significant variable in several models from previous work, it can be said that Republican Senate majority is correlated with stock returns.

Political timing is key in determining expected market volatility for the given year. This includes election years and midterm election years. The hypothesis was political uncertainty in midterm election years should drive stock prices and growth down. This was proven to be correct in the value and growth models. Presidential election years on the other hand were supposed to be positively correlated with stock returns because voters believe Presidents will perform better in the beginning and end of their terms. The positive correlation was also found to be present in both of the models.

These conclusions are subject to questioning given the data was only readily available for 42 observations. If stronger correlations are to be made, it would be necessary to go back farther. The senate variable needs to be further scrutinized to solidify a more concrete conclusion because it was noticeably more significant. Next, a volatility or variance term should be included in the models. This would help paint a stronger picture when correlating higher volatility in midterm election years to lower stock market returns. Since many of the papers argued completely opposite findings, it is impossible to say any of these results are significant. After all, if there was some sort of advantage to playing the stock market when certain parties were in control and in certain

years, then everyone would be doing it. This would slowly eat away at any advantage investors thought they had.

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