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BOND YIELDS AND SPREADS  
DURING PRESIDENTIAL CAMPAIGNS AND ELECTIONS

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## **ABSTRACT**

Government and corporate bonds historically have indicated market expectations about the future paths of interest rates and the credit strength of corporations. Policy changes in Washington affect the numbers on Wall Street, and understanding individuals', companies', and governments' reactions to policy remains an important goal of economists and political scientists. Subsequently, much research has evaluated certain assets', mainly stocks', performance during administrations, elections, and campaigns. In regards to bonds, much analysis traces the movements of their yields during the previous terms of different presidents. Little research analyzes the fluctuation in bond yields during elections and campaigns. This paper seeks to determine if bond yields respond differently to Republican versus Democrat victories. Furthermore, this paper uses polling data to test whether the market's anticipation of a winner influences the movement in bond yields. I contend market realization of a Republican winner, or the increased chances of a Republican winner, lowers the demand for government bonds and narrows the difference in yield rates between government and corporate bonds. I confirm that government bond yields rise and the spread between government and corporate bonds narrow when a Republican winner is announced in a close race. To conclude, I discuss the implications of my findings and suggest areas of future research.

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## **Chapter 1**

### **Introduction**

The United States' 10-Year Treasury bond represents one of the most powerful measurements of America's economy. The value of a government security's yield and price directly reveals investors' expectations of the path of interest rates. When considered in context, these numbers aggregate companies', banks', governments', and even individuals', predictions about America's economic future. A very influential event in determining growth or recession represents the bid for the American presidency, and of course, Election Day itself. This study seeks to how government bond prices respond to presidential campaign polling and outcomes.

Interest rates are the most important tool available to the Federal Reserve of the United States. If economic analysts at the Fed recognize or predict a slowing economy with potential recession ahead, it will lower rates in an attempt to stimulate consumption and investment, thereby "jumpstarting" growth. If relatively fast growth and inflation are looming, rates will rise, thereby encouraging saving and cooling down the heating economy. Government securities run along Fed policy. The world's most financially savvy investors drive the market for government bonds, revealing the anticipated policy of the Fed and the path of interest rates. Market responses are immediate, especially for a U.S. government bond, which contain the strongest credit rating of any asset on the globe. The emergence of new economic policies in the White House surely triggers a market response.

Understanding how government securities respond to elections reveals how the financial world views certain executive policies. Recognizing patterns in how government bond yields and prices move in relation to certain politicians winning office can indicate more than simply how

to make money trading bonds during campaign season. It can reveal how perceptions from the Fed and the financial world respond to specific economic policies that confront our economy every four years.

In this paper, I will elaborate in detail on the connection between bonds and economic outlook, while reviewing literature discussing the impact of presidential policies on bonds in America's financial history. Through this literature, I will identify hypotheses and thoroughly explain my methodology in testing these theories. Analysis of the results will follow, as well as the implications of these findings (Mishkin 2010).

## Chapter 2

### Literary Review

#### Understanding Treasury Bond Yields and Prices

Each bond bought earns a return every year said owner holds the bond. Government bonds are coupon bonds, meaning each year of holding the bond, the owner of the bond receives a set payment already determined at the purchasing time of the bond. The real value of this “coupon payment” will change over the course of the year the owner holds the bond due to inflation. For example, receiving a “coupon payment” of \$100 in 2018 holds less value than it did in 2009, a year after purchasing the original 10-year bond. To compensate for inflation over the next 10 years, the initial price of the bond is discounted. The basic formula for the price of a 10-year government security is as follows:

$$P_{10\text{-yr,GS}} = (\text{coupon payment})/(1+i)^1 + (\text{coupon payment})/(1+i)^2 + (\text{coupon payment})/(1+i)^3 + \dots + (\text{coupon payment})/(1+i)^{10} + ((\text{face value})/(1+i)^{10})$$

Each year’s coupon payment is subject to the yield rate (i), a set interest rate associated with the bond when calculating the market price of the bond. The yield rate is in the denominator of the price formula, and thus bond prices and yields/interest rates are inversely related (United States, SEC, 2). The yield rate itself is simply equal to the current interest rate experienced in the economy, as well as the yearly rates anticipated during each of the next ten years. The formula of the yield rate is as follows:

$$i_{10\text{-yr,GS}} = (i_t + i_{t+1}^e + i_{t+2}^e + i_{t+3}^e + \dots + i_{t+10}^e)/10$$

In summary, the yield rate of a government bond is formulaically valued as the interest rate of the current year averaged with the future expected interest rates during each of the years to come over the bond's life (Mishkin 2010, 113-139). Furthermore, this value has an inverse relationship with the price of the respective bond (United States, SEC, 2-3).

### **Standard Federal Reserve Policy**

A primary goal of the Federal Reserve Bank of the United States represents controlling inflation. High inflation, or fast rising prices of goods and assets in the economy, can entail dangerous effects, as the economy “heats up” too fast. When relatively high inflation strikes, or is anticipated to occur in the future, the Federal Reserve raises interest rates. Interest rates represent the returns associated with saving. Higher rates will incentivize individuals and firms in America to save their money, rather than spend or invest it, the typical cause of inflation in the first place. When slow economic growth occurs or is anticipated, the Federal Reserve will lower interest rates, removing the incentive to save (Mishkin 2010, 94). Subsequently, entities in the economy will proceed with greater consumption and investment (Mishkin 2010, 620-651). The yield rate found in the denominator of bond prices is the financial market's best approximation of where the Fed will set interest rates in the future. To specify, the yield rate on a ten-year government security is the market's prediction of how the Fed will set interest rates in each of the next ten years. What investors believe will occur in the economy, or very well what is

occurring, will be reflected in the yield rate value (United States, SEC, 2-3). For example, if congress votes to lower the corporate tax rate, thereby increasing business earnings and allowing them to spend and invest more, the yield rate will rise, driven by the market's anticipation of the Fed raising rates to combat this upturn (Mishkin 2010, 94).

### **Demand of Government Bonds**

Government bonds are one of the most heavily traded assets in the world, representing the highest credit rated investment in the market. The moment the heads of Congress announce their new policy, immediately the market price of bonds change in response. When news affects the anticipated path of the economy, particular that relating to interest rate influencers, the market implants this news into the yield rate of government securities (Mishkin 2010, 147-154). If released news compels the market into believing interest rates will rise in the future, the yield rate will immediate jump up. As we discussed earlier, the price of government bonds will drop also. Holders of these tradable securities will immediate want to sell their government bonds, as falling prices of the existing bonds they own threatens to drop below a price they paid for the bonds. "Buy low and sell high"- logic persists. This rapid selling of government securities reflects lowering demand. As with any good or commodity, low demand means prices will drop even further beyond the initial shock. The opposite story holds true as follows. If a disappointing jobs and unemployment rate announcement is release, the market is more inclined to predict slow growth and/or recession. This is traditionally complimented by an expectation the Federal Reserve will lower rates. The yield rate falls, and prices of bonds rise. Investors at said jobs

announcement will demand more bonds, hoping to buy quickly and eventually sell when yield rates peak in height due to this news. This high demand rises prices (Mishkin 2010, 88-92).

More elements of market demand compliment the patterns of bond response to news. Investor strategy views stocks and bonds very differently. News alluding to times of economic growth, increasing price levels, and more spending and investment very conventionally means business earnings will rise. Stock prices, similar to the formation of bond prices, mathematically aggregate the current and expected earnings of businesses over many years to come. An announcement of policy entailing cutting regulation of corporations typically means productions in many firms will rise, and expenses will decrease. If this effect holds, business profits will rise, and thus their stock valuations will increase. The market demand of stocks will greaten, as investors see investment in businesses less risky with positive earning opportunities ahead. They would want to buy stocks immediately, to ride the upward valuation of their stock in the coming future. With good days ahead, investment in business stock, deemed naturally more risky than the solid government bond, are perceived as a safer bet with higher return to yield as compared to bonds. The market's demand and money will be removed from bonds and allocated into stocks (Tillier 2016). In correlation with the demand logic discussed in the previous paragraph, perceptions of booming economic times lowers the demands for bonds, and subsequently, raises the demand of stocks. Conversely, news which influences investor perception toward anticipating recession in the future, will raise demand for bonds, the notably safe asset guaranteeing repayment, as business earnings are threatened. Uncertainty surrounding the health of the economy means investors will buy bonds, a sure and calculable return on their money. Demand for bonds pushes prices high beyond the initial effect of the yield rate lowering in the denominator of bond prices due to Federal Reserve expectations (Mishkin 2010, 88-92).

Viewing demand of government bonds, in regards to the pure expectations theory of the path of interest rates, as well as the powers of the standard stock and bond binary investment strategy, truly measures perception of the economy.

### **Corporate Bond Spread**

Not only does analyzing government securities reveal economic outlook through market forces, comparing the yield rate of the 10-Year to other types of bonds also produces insight. Corporations, just as governments, issue bonds of their own, with the credit strength, or payment ability, of the company being its backing. This ability of the company to pay the coupon payments to its bond holder is reflected in the bond's yield rate (United States, SEC, 2-3). If a company contains a strong history of performance, and its future encourages hopes of high earnings and prosperous business, then its ability to pay bondholders is predicted as high. On the contrary, news indicating poor economic times ahead (as perceived by the financial market) will lower investor's belief in the ability of companies to honor their bond payments until maturity. Corporate bond yield rates act as compensation for the doubt of payment. Rising yield rates in a corporate bond, means the market gradually doubts, more and more, the financial strength of the company. In extremely comparable fashion to how market perception of interest rates is built into the yield rate of government securities, market perception of a company's strength is built into said company's corporate bond rate. Government bond yields are the benchmark, as the value compensates only for changes in interest rate. As previously mentioned, their perfect credit rating indicates a sure chance of repayment. Corporate bond prices are structured to compensate

for changes in interest rates as well. However, further compensation is built into the yield rate to compensate for the potential inability (weakness of the company) of repayment. Thus, the yield rates on corporate bonds are higher than those on government bonds. Although both forms of coupon payments face the same exact interest rates, the remaining difference between the yields reflect the compensation of potential payment inabilities. The “yield spread” is this difference. A bond issued by a strong company will contain a relatively small yield spread, relative to the 10-year government security, and a bond issued by a weak company will contain a relatively large yield spread. The larger the doubts of repayment, the larger the spread. The smaller the doubts, the smaller the spread (Elton et al, 2001, 273).

News releases encouraging negative economic outlooks will cause the yield rates on treasuries to fall. Furthermore, if this news contains poor implications for the financial strength of corporations, the yield rate on corporate bonds may rise, as bond buyers will demand more compensation for the risky future. Corporate rates in this scenario can still fall as a net. However, they will fall less than their government bond counterparts. Subsequently, the yield spread widens when negative news emerges and the supply and demand of the bond market’s forces lowers treasury yields and lifts, stagnates, or more gradually drops, corporate yields. Positive news works in the same manner, however in the opposite direction, shrinking the yield spread (SF FED, 2004).

This paper utilizes these bonds as measurers of outlook and perception, more specifically during elections and campaigns.

### **Stocks and Bonds amongst Previous Administrations**

Elections determine the executive role for the subsequent four years, a long portion of time by which one individual presides with influence over the economy. Election season provides shocks to markets as they learn of who will come into this role. Gerald R. Hobbs and William B. Riley, in 1984 with “Profiting from a Presidential Election,” reference an array of previous research where “cumulative average residuals was found to be strongly positive following a Republican victory but negative following a Democratic victory” in previous U.S. presidential elections (Hobbs and Riley 1984, 46). Their study aggregated stock returns over the course of the previous elections to find the retrospective best strategy of profiting off the Dow Jones Industrial Average index during both Republican and Democrat victories. They found stock prices, on average, rise following both Republican and Democrat victories. However, the jumps following Republican victories are more drastic and sustainable for a longer duration post-Election Day. In nine of the previous ten Republican victories, a profit of 7.33 percent would result from buying DJIA 39 days before Election Day, and selling 27 days afterwards. In seven of the previous ten Democrat victories, a profit of 2.4 percent would result from purchasing Dow stock 49 days prior to Election Day, and selling only one to three days following the election. Selling short (betting on a downturn of the DJIA) two days after the election of a Democrat, and closing out this position 42 days later, would push this profit from 2.4 to 5 percent (Hobbs and Riley 1984, 49).

Chris R. Hensel and William T. Ziemba (1995) test the legitimacy of these perception shocks by documenting returns over the course of entire presidential terms. They most notably add bonds to the analysis, as well as distinguishing different tiers of stocks by noting the size of the companies’ market capitalizations. During Republican administrations, corporate bonds and

government bonds of various maturity lengths all produced higher yields during Republican administrations. Hensel and Ziemba (1995) created investment strategies which account for political consideration, sensitive to which party holds the executive office. A very standard portfolio, as alluded to earlier, is the 60/40 (60 percent large-cap stocks to 40 percent bonds) portfolio, which rebalances monthly to take advantage of the inverse trend between stock and bond prices. Both strategies created by this study (considering only political party presents in the executive role) produce higher yields than the standard 60/40 stock-bond balance. One strategy always invests 100 percent of a portfolio into small capitalization stocks with Democrats and into large capitalization stocks with Republicans. The second invested in small-cap stocks during Democrat terms and invest 100 percent of the portfolio instead in bonds during Republican administrations.

Legitimacy is provided to the movements found in the Hobbs and Riley (1984) study. Past performance data shows stocks of large corporations do relatively well under Republican administrations. Furthermore, both corporate and government bond yields are higher (Hensel and Ziemba 1995). Raising bond yields induce stock attractiveness, as discussed toward the beginning portion of this literature review. If investors are aware of this pattern, the market would respond as news of an election winner is announced. Market response is immediate, and it is in every investor's interest to act early. Much foresight into how stocks and bonds will move is found in the enactment of policy. Predicting policy becomes feasible when recognizing which politician will win election and contain the power to enact (Vuchelen 2003). Anticipating a victory for one candidate and a loss for the other is best assisted by polling data.

### **Polling Data and Investment Strategies**

Frank Smith and Ajar K. Aggarwal (2015) aggregated stock returns by industry for over 80 industries. They analyzed their movements over the duration of every election cycle between 1976 and 2012. For each campaign season, industry performance is tracked, and stock returns for each are compared between their performance in campaign seasons in which Republicans versus Democrats are victorious. Furthermore, these returns are highlighted if three months out, the eventual winner had a lead in Gallup polling data (Smith and Aggarwal 2015, 627). The findings show certain industries perform significantly well under conditions in which a Republican winner leads in the polls three months prior to Election Day (Smith and Aggarwal 2015, 629). Furthermore, the returns of particular industries are also significant if an eventual Democrat winner is leading in the polls three months prior to his victory (Smith and Aggarwal 2015, 630). For seasons where Republicans lead three months prior and also eventually win, positive returns award August investments in the Pharmaceuticals, Computer Hardware, Semiconductors, Consumer Finance, Restaurants, Tobacco, Homebuilders, Hotels, Resorts & Cruise Line Industries. Investment three months into Democrat Gallup leaders, whom eventually win, produce significant returns in the Pharmaceutical companies, and negative or insignificant returns in the other industries mentioned previously. These industries are of the most volatile of the 80. The study as a whole concludes “the odds of making an economically significant return based on Gallup poll data does exist three months prior to the election” (Smith and Aggarwal 2015, 631). Furthermore, emphasis is placed on how investing in the 80 industries three months prior to Election Day when a Republican leads, produces large returns if said Gallup poll proves accurate. Of the 80 industries, “Three industries have double digit positive returns during Republican wins, tobacco (+14.1%), homebuilders (+13.9%) and transportation (+10.5%), while

two industries exhibit negative returns, semiconductors (-6%) and builders (-1.1%)” (Smith and Aggarwal 2015, 631).

My study will fill a gap in previous literature. An overwhelming majority of studies analyze the movements of stocks during administrations, the election of administrations, and the campaigns of those administrations. Dufrene, as discussed later in the “Methodology” section, even extends analysis of movements of exchange rates in relation to election outcomes (Dufrene 1997, 27). Hensel and Ziemba (1995) do track bonds during their study. However, previous literature fails to evaluate bonds during elections. My study will fill this void, attempting to recognize patterns in market perception of candidates by means of evaluating the bond market. This study will report patterns of movement and compare the differences in anticipation and reaction to a Republican versus a Democrat win. I will not make conclusive comments regarding the meaning of any perceptions, but instead suggest a meaning given particular patterns within the framework of a market’s typical response to different forms of economic policy. This study will provide the framework for further explorations of the bond market’s reactions to election polls and results, given the pattern of yield movements of previous administrations.

## Chapter 3

### Hypotheses

The findings of previous literature inspire a potential observable connection between bond yields and the results of polling data and election outcomes. This connection extends from the construction of bond prices and yields themselves, to the investment implications of polling data. The sustainability of this proposed connection represents the core of this paper's hypotheses.

**Hypothesis One: The yield rate of the 10-Year Government Security generally rises following the release of polling data reflecting increase chances for the Republican candidate.**

This hypothesis emerges from the fundamental market forces of bond supply and demand. Stock demand and bond demand are inversely related (Tillier 2016). Hensel and Ziemba (1995) point out the relatively successful returns of large capitalization stocks during Republican administrations. Furthermore, their research shows an overwhelming rise in bond yield rates during Republican administrations. A market conscious of this pattern, and allocating assets purely off this pattern alone, would demand large-cap stocks and subsequently sell their bonds during Republican administrations. Yield rates rising during the term would lower prices, thus decreasing bondholders' chances of selling above their purchasing price. This paper theorizes this historical trend results from typical policy positions of Republican presidents. Their treatment of corporations relatively encourages earnings increase. Republicans, during past presidential administrations of the last century, have been more inclined to support and enact

policies reflecting deregulation of business, corporate tax cuts, and a lower minimum wage. This stimulation in aggregate demand means businesses consume and invest more, encourage a potential interest rate hike in response to a heating economy (Mishkin 2010, 619-637). As discussed, interest rates and the anticipation of interest rates rising formulaically raises the yields and lows the prices of the 10-Year (United States, SEC, 2). The perception of Republican administrations as friendly to corporate earnings is further reinforced through Hobbs and Riley (1984). Republican victories appreciate the DJIA with a larger and more sustainable reaction around Election Day, as compared to democrat victories.

The market reacts instantaneously to news. If these theories hold, increased demand for stocks and decreased demand for bonds would adjust accordingly at the announcement of a Republican winner (Mishkin 2010, 147-154). Motivation for this response can come earlier, prior to Election Day, if polls favor a Republican victory (Smith and Aggarwal 2015, 631). Therefore, this paper hypothesizes the yield rate of government bonds will rise when news favoring a Republican win is released, reflecting a lowering of bond demand as prices drop and high expected path of interest rates forms (raising interest rates would follow enactment of standard Republican policies toward corporations.) Conversely, this paper hypothesizes the yield rate will decrease when news favoring a democrat victory correlates with released polling data (enactment of high taxes and more regulation would decrease profits in corporations.)

**Hypothesis Two: The corporate bond yield spread will narrow following the release of polling data reflecting increased chances for the Republican candidate.**

According to the aforementioned theory, as the yield on the 10-Year rises with positive news for the Republican candidate, the yield on corporations' bonds will also rise as the expected path of future interest rates rises. However, if the effect of this news correlates with association between Republican policies appreciating expected corporate earnings, the yield on the corporate bond will not rise as much as the 10-Year. On a net, corporate yields rise with interest rates, however, they fall when the perception of said company's strength rises (SF FED, 2004). Thus, in the theoretical construction, if a Republican wins reports well at a specific time in the polls, the yield spread between corporate and government bonds will narrow. Positive results for democrats will narrow the spread, as the 10-Year rate falls and corporate bond rates do not fall comparably to the Republican effect.

**Hypothesis Three: In close campaign races, the immediate period following Election Day will experience a more pronounced effect of hypothesis one and two.**

Inspiration for hypothesis three, as well as motivation for elements of this paper's methodology, comes in a study by Uric B. Dufrene titled "The Impact of Presidential Elections on Exchange Rates." Dufrene (1997) runs regressions between election results and the appreciation and depreciation of the U.S. dollar. In similar nature to the 10-Year Government Security, the dollar's exchange rates adjusts because of an infinite amount of variables. Just as the 10-Year represents one of the most common tradeable assets, so too does the U.S. dollar. It is the basis behind a majority of trade in the world as well as many other currencies. Uric

established an “event window” as a tactic of controlling the abundant amount of economic events throughout the world affecting the exchange rate. When an election outcome is close and unpredictable, the announcement of the winner of the U.S. executive seat is bound to be largest and most impactful news affecting foreign exchange in early November. The same goes for treasuries. An election outcome that is well anticipated weeks or months before Election Day will mean the market reaction is already built into the yield rate. Dufrene states, “Frequent reliable polling results and increased media coverage are likely to induce changes in the currency composition of international investment portfolios as the election’s outcome becomes more certain. Additionally, continued monitoring of news for important policy announcements by the president-elect after the election is most likely to occur immediately subsequent to voting day” (Dufrene 1997, 29-30). The 10-Year Government Security should be affected in the same manner. The market cannot react to a probable election outcome in an attempt to gather returns when the polls are tight. The Election Day itself, and the immediate days following, will shock markets one direction or the other as that is said time when future policy enactments become a reality (Dufrene 1997, 29-30).

## Chapter 4

### Data

The Federal Reserve Bank of the United States creates, houses, and maintains its own mass dataset. Specially, operations for this database is found in the Federal Reserve Bank of St. Louis. Half of a million datasets provides thorough insight on all areas of the American economy. Federal Reserve Economic Data (FRED) is the main source of my data, and is the most popular storage of historical bond data. On almost every day, between current day and January 5, 1962, the week's average yield rate is posted. These values represent the "10-Year Treasury Constant Maturity Rate", the value of the current and expected future path of interest rates and situated in the denominator of the price formula. The price of the bonds is not noted. For the purposes of a primary regression in this study, these daily values are averaged over the course of each month of the 12 campaign seasons examined. The other variable considered in said regression, the Gallup polling data of each campaign season, is reported during inconsistent dates of each month. Thus, the motivation of organizing the security data into one value for each month is for the purpose of testing correlation with the Gallup data, which is also averages into one observation per month. As discussed later on in the "Methodology" portion of this paper, a strategy is taken to mimic Durfrene's "event window."

With the actual data of the Election Date noted, this study further considers each week's 10-Year bond observation roughly two weeks before and after the election date. The two-week extension on either end of the Election Day allows to contextualize the path of the yield rate and its alterations specific to the week of the election itself. Further description of the "event window" strategy comes later in "Methodology." Figure 1 is the presentation of the data as seen on the website of the Saint Louis Fed. Interpretation of the graph correlations with the previous

review regarding movements in the yield rate. The gray portion of the graph represents recessionary periods. The yield rate falls during and/or shortly after these periods, displaying the expected interest rates of the Fed to drop in order to stimulate consumption (FRED, 2018).

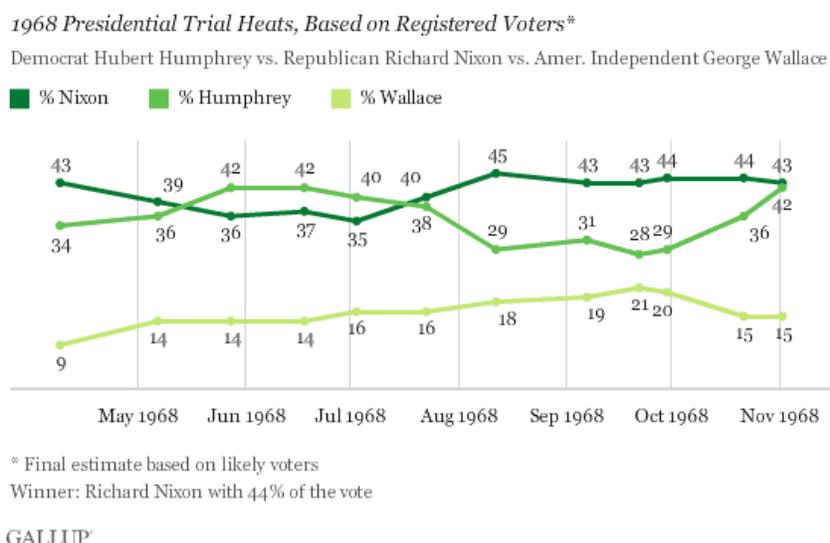
**Figure 1. Yield of 10-Year Government Bond, 1962-2018**



Polling data emerges from Gallup. Gallup, for the campaign seasons from 2012 extending back to 1968, contains observations as far before Election Day as April. Prior to 1968, this consistent extension of data is sparse. Gallup for these years, held large credential among the public, and was the most widely viewed polling service. The dates when polling was released varies between differing times of the month. Thus, as mentioned previously, this study averages the observations by month for a monthly total in order to test against the 10-Year government

bond monthly averages. Figure 2 is a graphic from Gallup's website. The bulleted portions of the lines (representing percent support from registered voters for a specific candidate) are the actual observation points. They reveal the inconsistency by which these polls were released during the course of a month (Gallup, Inc. 2008).

**Figure 2. Gallup Polling Data, 1968 Campaign Race**



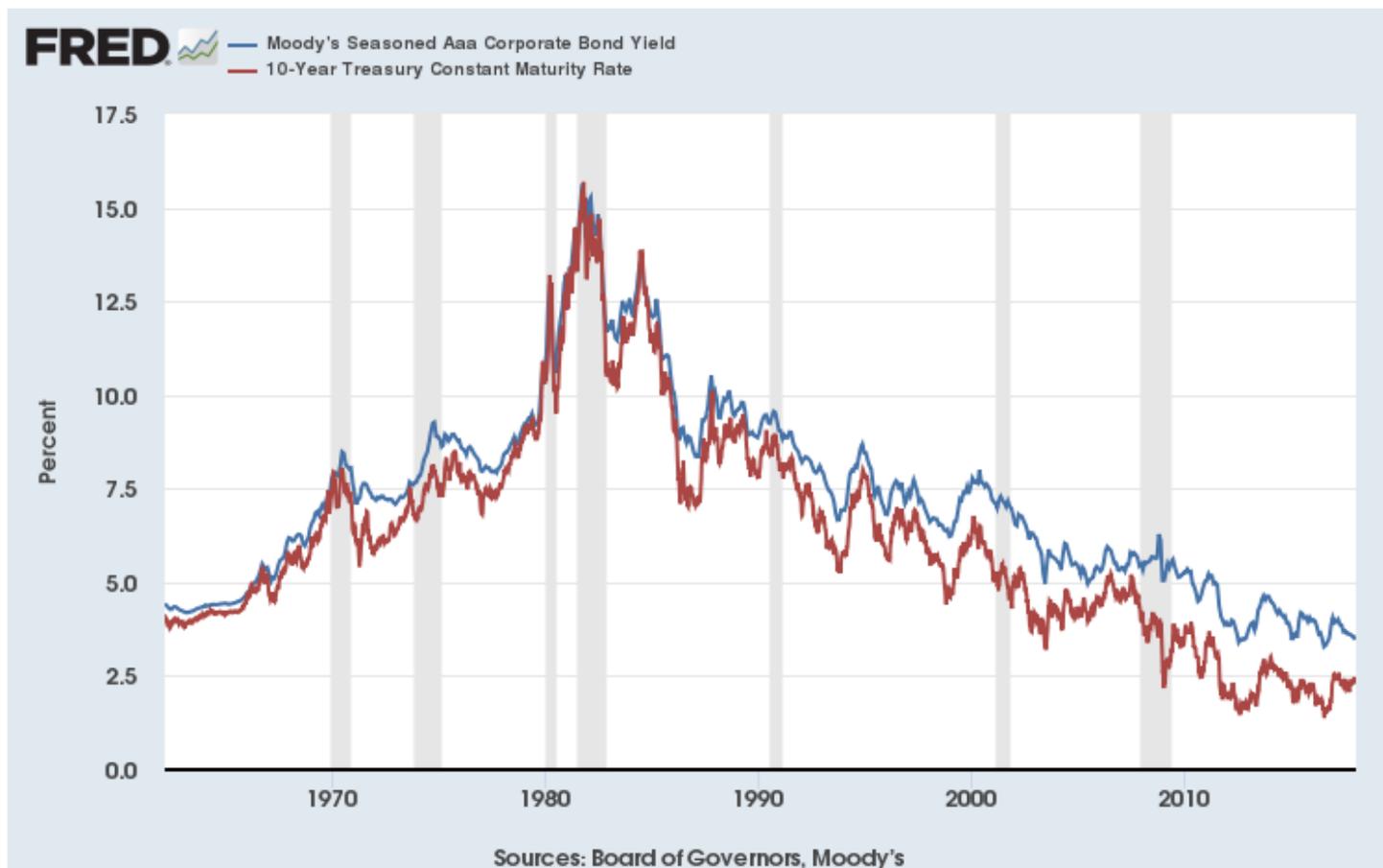
The campaign seasons of 2012 and 2016 were not included in this Gallup dataset. However, Real Clear Politics did have polling data for Gallup in 2012 (RCP, 2012). Gallup did not poll for the 2016 election. Thus, data points were collected from Real Clear Politics, and monthly averages were formulated for Reuters polling, the most popular polling service with observations in each month (RCP, 2016).

Corporate bond data was also collected from FRED. Very similar to the data organization of the government bonds, the yield curve itself is the focused value. The frequency of the data is

reported at least monthly. Daily averages are posted, but only for years following 1982.

Moody's, one of the largest and most credentialed credit ratings agencies in the financial world, produces the yield values. The single yield rate is an average of the yield rates of the bonds of the largest corporations in the world. The bonds are rated AAA, the highest rating issued by Moody's, meaning these bonds are the most secure investment of all corporate bonds. This being said, the yield rates will naturally be close to the treasury's yield, indicating a very small chance of default on the bonds by the corporations. Compared to lower rated bonds, this AAA yield average will experience a relatively small amount of volatility. This volatility is almost a calm as that experienced by the super-secure 10-Year government bond. Bonds of all credit ratings, and issued by varying sizes of corporations, will move in very similar patterns, as all follow the path of interest rates. However, the lower rated bonds will carry higher yields to account for their relative riskiness. Thus, a wider array of shocks affecting the strengths of businesses will move the lower rated bonds more, attributing to their volatility. However, only the largest shocks will affect the yield on the AAA Moody's, given the relative strength of the corporations in the first place. Utilizing these AAA bonds controls for minor shocks, they note only large shocks such as the announcement of a new president. Yield spreads are formulated by subtracting the differences in percentage yields between the monthly averages on the 10-Year and the month averages on the AAA Moody's. Figure 3 is a graph of both the 10-Year and the corporate bond yield rates. As detailed in the literature review, wide spreads indicate a larger rate compensation for credit riskiness associated with struggling business. Towards the ends, or directly following, the indicated recession, the yield spread widens, illustrating this point (FRED 2018).

Figure 3. Yield of 10-Year Government Bond and Yield of Moody's Aaa Corporate Bond Yield,  
1962-2018



## Chapter 5

### Methodology

Simple time series models were situated for testing the correlation between polls and bond yields during election seasons. A series of ARIMA, “auto-regressive moving average”, tests were run during the modeling of regression analysis. The motivation for these tests involved attempting to lag the effect of the polling data on that of the bond yields. However, built-in lags and moving averages did not adjust regression output as anticipated. Data limitations with the aforementioned infrequency and inconsistency of the Gallup polls forced me to average all observations of both polling and bond data into one observation per month. The proposed effect of polling data on bond yields would result almost instantaneously and within a period of no longer than a day. Thus, given the monthly time intervals, adjusting for lags and moving averages interferes with real world assumptions. Simple linear regressions are utilized in this study.

Polling data was reorganized to account for third party candidate presence. This study adopts the focus of previous literature on accounting for only Republican and Democrat effects on bond yields. For all election seasons considered, the two-party system dominated in the sense of an eventual winner was predicted only from these two parties. With a third party present, their increase in voter support could skew data as the support of the Republican and Democrat would move for reasons beyond their own merit. With the desire to only recognize changing in polling support between the two primary parties, a differential became the main independent variable. Republican support (in form of percentage) was subtracted from Democrat support. For example

if a Democrat is leading in the polls with 45 percent support and the Republican only has 43 percent support, the independent variable is represented as -2.

Regression analysis is performed between these independent variable values and the bond yield data. The government security data is utilized as produced by the FRED dataset. Yield spread data (manually aggregated by taking the difference between government bond yields and corporate bond yields) is used as the dependent portion of the second set of regressions, to track changes as influenced by polls in pre-election race.

Dependent variable analysis is performed in adoption of Durlauf's (1997) "event window" tactic. Fourteen days before and fourteen days after Election Day, movements in security yields and spread data are analyzed in an attempt to control for intervening variables and to isolate the effect of the announcement of the winner himself. This analysis is only utilized for "close races," deemed close if the October or November polls differential between Republicans and Democrats is within three percentage points (Wooley and Hensel, 2016). Election outcomes where a particular candidate has a convincing lead in the polls greater than three percentage points come November is not considered for this analysis, as the anticipation of said winner is already well built into the market expectations earlier on in the election season.

## Chapter 6

### Results

All 13 election seasons were used to test both hypothesis one and two. With the yield on the 10-Year treasury as the dependent variable, and the polling results as the independent variable, eight total sets of observations were used, correlating to each month of the campaigns. The results of the standard regression analysis for both the 10-Year and the corporate bond spread are listed in Tables 1 and 2. The right most column of each table answers whether 1.) the regression proved significant and 2.) the hypothesis was upheld by the sign on the coefficient itself. For the regression analysis involving the 10-Year yield, the dependent value simply represents the yield rate of the 10-Year and the independent represents the polling lead differential (positive values attached to this variable indicate a Republican lead.) Thus, a positive coefficient results if both a Republican lead increases and the yield rate increases, or if both a Democrat gains polling support and the yield rate falls. A negative coefficient shows an increase either in Republican support with a decrease of the yield rate, or a falling Republican support with an increase of the yield rate. In Table 2, the independent variable remains the same and the dependent variable now represents the corporate yield spread. The nature of hypothesis two predicts a decreasing (or narrowing) spread is matched with an increase in Republican support. Thus, negative coefficients in the second table provide support for my second hypothesis.

The 10-Year regression analysis produced results supportive of hypothesis one in seven of 13 election seasons. Of these supportive regressions, only one produces results that were significant. Of the six cases in which the coefficient failed to support hypothesis one, two were significant. The first hypothesis was convincingly rejected.

The corporate bond yield spread regression analysis results proved supportive of hypothesis two in eight of 13 election seasons. All 13 election seasons failed to contain significant results, further rejecting hypothesis two.

**Table 1. Summary of Regression Statistics, 10-Year Bond**

Election Year	Coefficient	Standard Error	P-Value	Significant?, Hyp. Upheld?
1968	-.0145973	.0095138	0.125	No, No
1972	.023104	.0220813	0.295	No, Yes
1976	-.0155876	.0043463	0.000	Yes, No
1980	.0185909	.09012	0.837	No, Yes
1984	-.0922708	.0693417	0.183	No, No
1988	-.0062937	.0180666	0.728	No, No
1992	.0300635	.0085152	0.000	Yes, Yes
1996	-.0803731	.027239	0.003	Yes, No
2000	.0326287	.0377851	0.388	No, Yes
2004	-.0566667	.0379226	0.135	No, No
2008	.0140435	.0180896	0.438	No, Yes
2012	.0156263	.0457297	0.733	No, Yes
2016	.0083937	.0760738	0.912	No, Yes

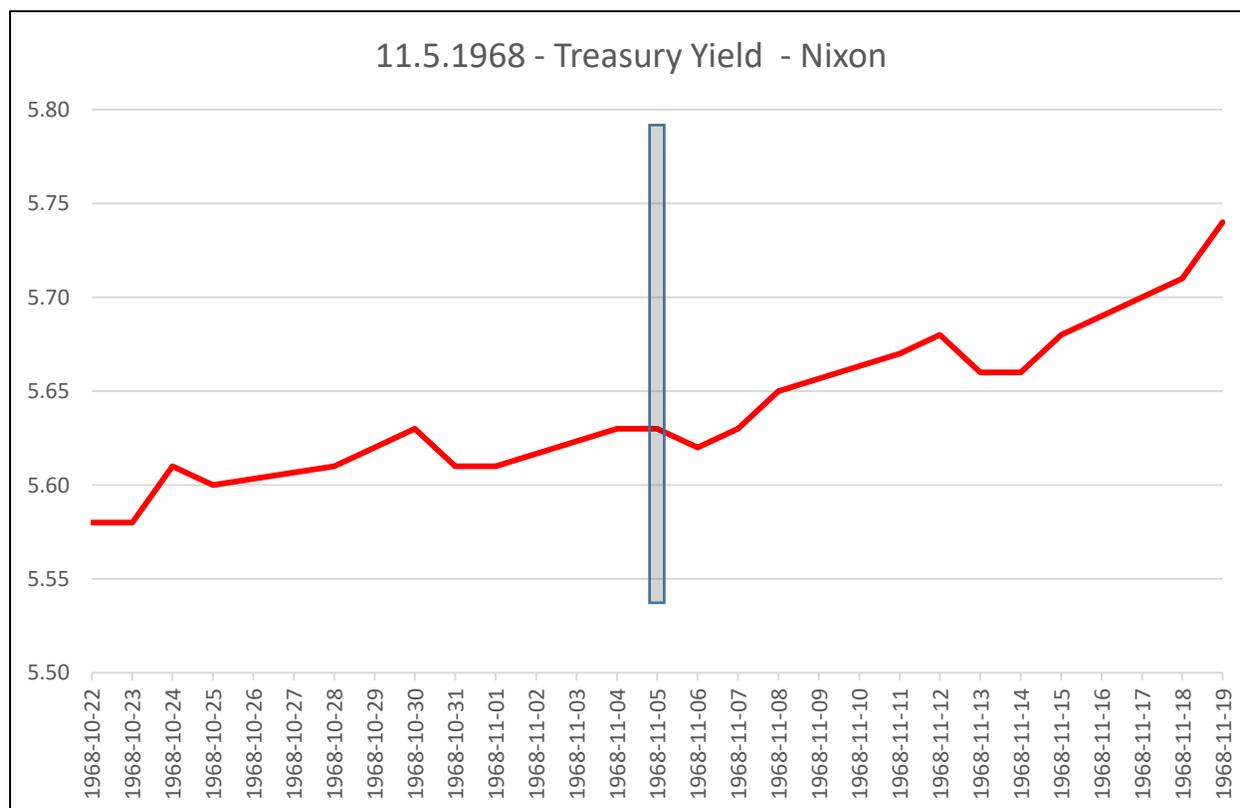
**Table 2. Summary of Regression Statistics, Spread**

Election Year	Coefficient	Standard Error	P-Value	Significant?, Hyp. Upheld?
1968	.0053779	.0040178	0.181	No, No
1972	-.0269977	.024164	0.264	No, Yes
1976	.0037327	.0037327	0.838	No, No
1980	1.156909	6.574221	0.860	No, No
1984	-.0080805	.0393467	0.837	No, Yes
1988	-.015562	.0089961	0.084	No, Yes
1992	-.0219864	.0092256	0.017	No, Yes
1996	-.014403	.0401756	0.720	No, Yes
2000	-.0329346	.0363743	0.365	No, Yes
2004	.0185	.0343852	0.591	No, No
2008	-.0460018	.0672044	0.494	No, Yes
2012	-.0103696	.02652	0.696	No, Yes
2016	.0006752	.0149346	0.964	No, No

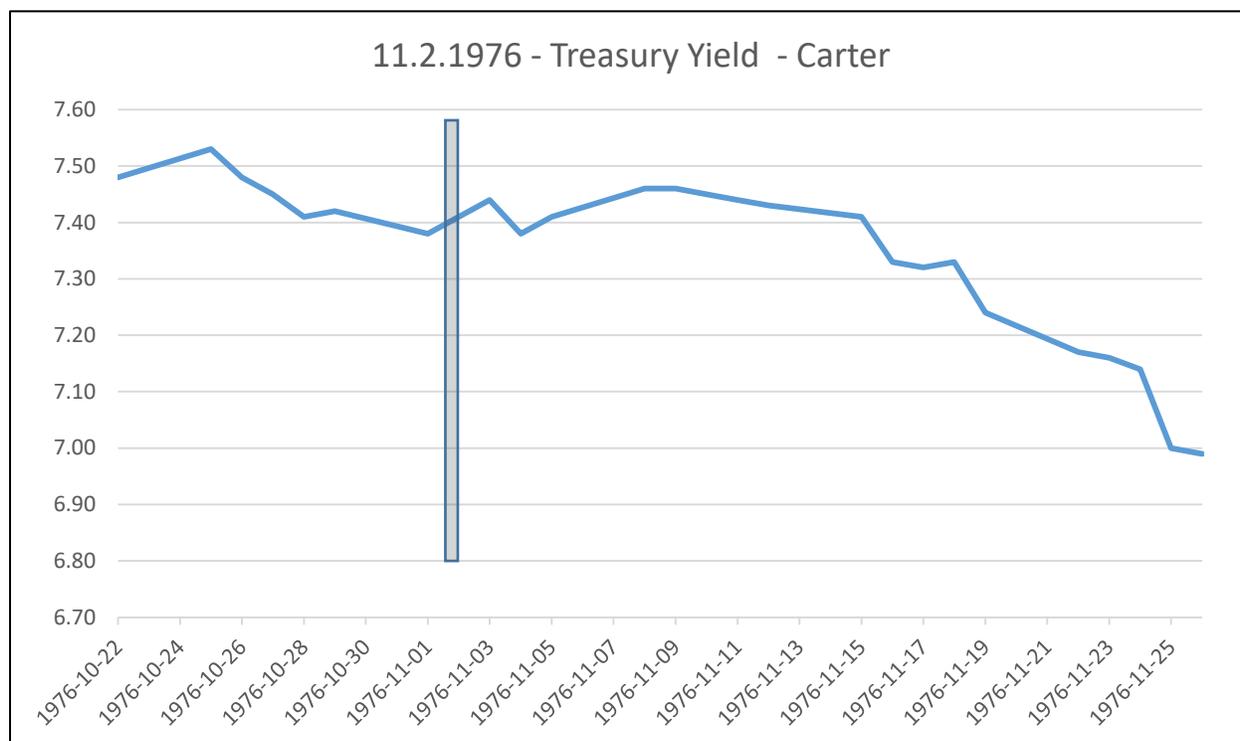
The employment of Durfrene's (1997) strategy proved favorable to my third hypothesis. As hypothesized for close races (less than or equal to three percentage point difference in November's polling numbers), in the rough 30-day period surrounding Election Day, movements

in the treasury yield generally rose and the corporate bond spread generally narrowed when Republicans won the election. Figures 4 through 10 that follow display the movements in the treasury yield and Figures 11 through 17 display spread. The line color corresponds with the political party of the winner, whose name is listed in the legend. The actual date of the election is listed in the legend and an illustrative indicator, colored grey, displays the day itself on the graph.

**Figure 4. Yield of 10-Year, 1968 Election Season**



**Figure 5. Yield of 10-Year, 1976 Election Season**



**Figure 6. Yield of 10-Year, 1980 Election Season**

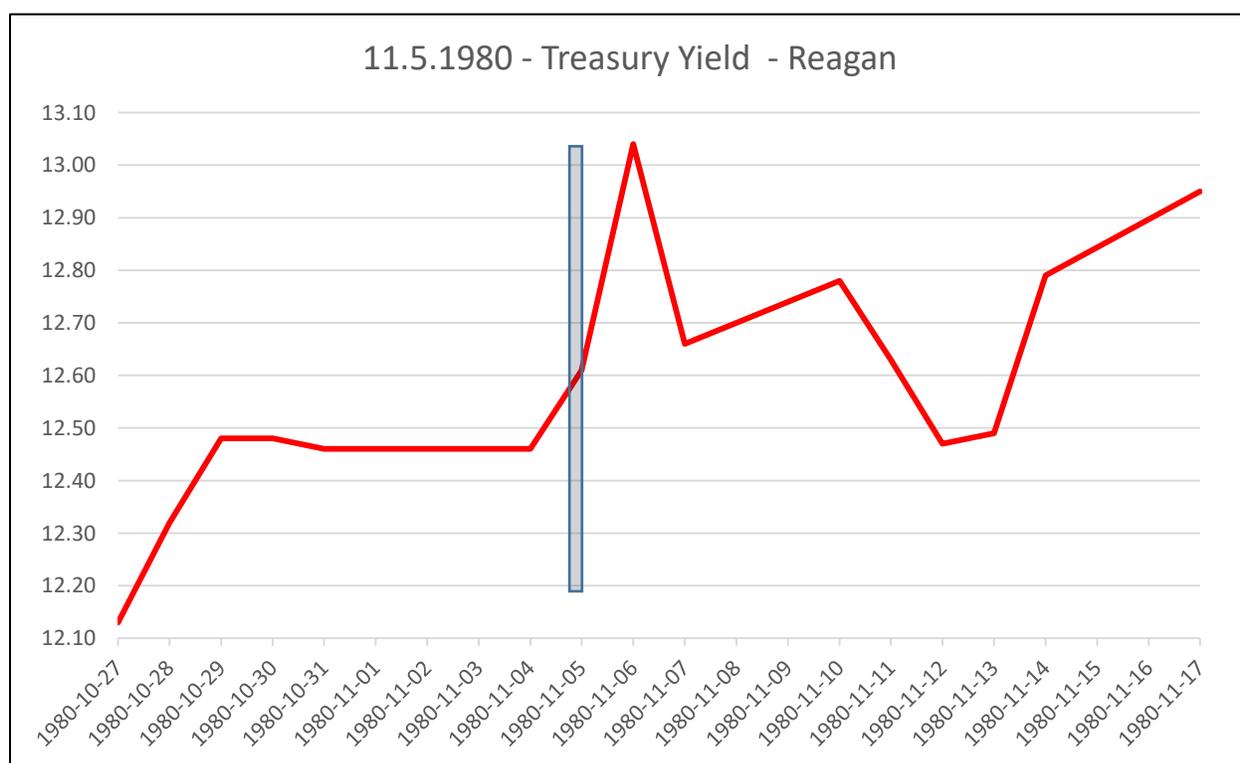


Figure 7. Yield of 10-Year, 2000 Election Season

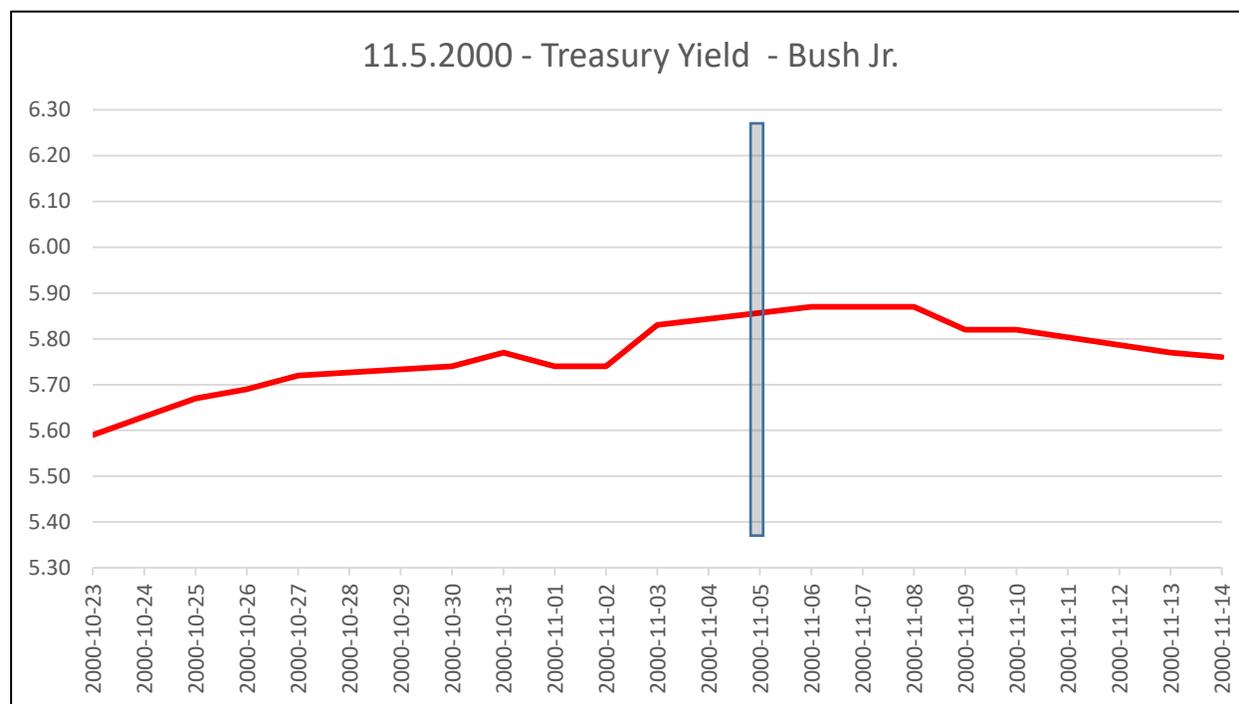
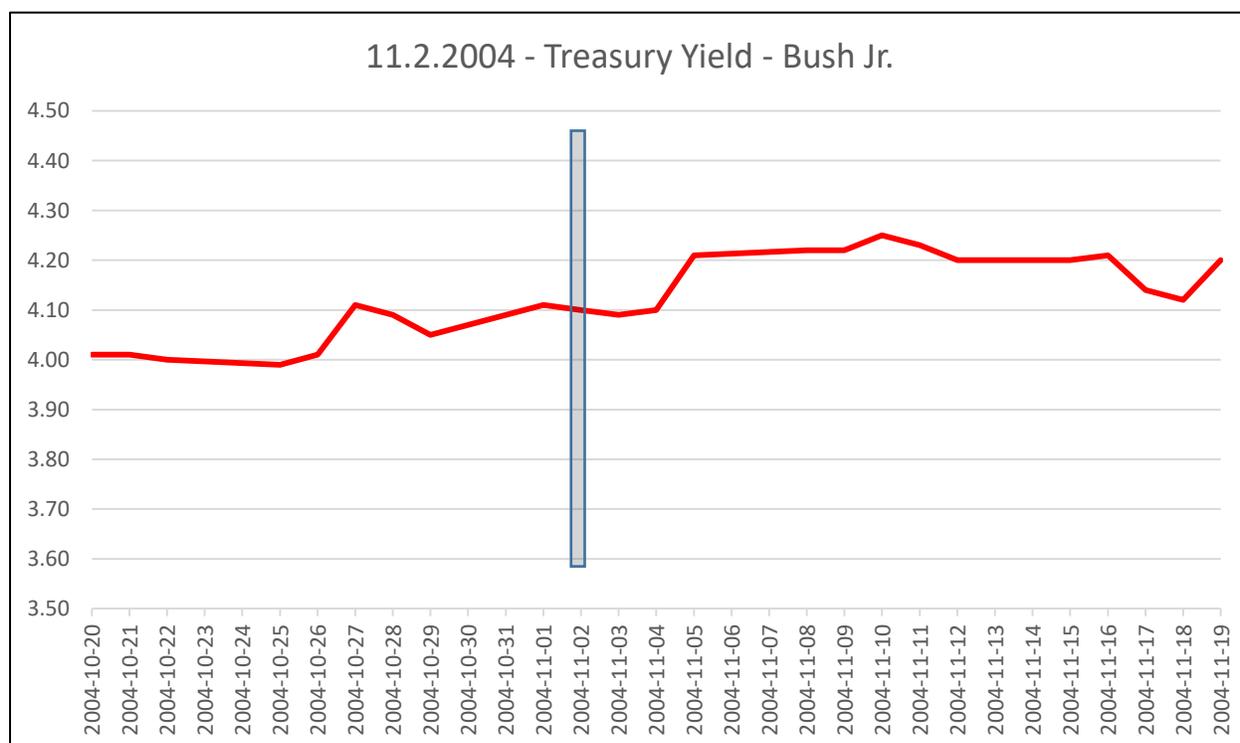
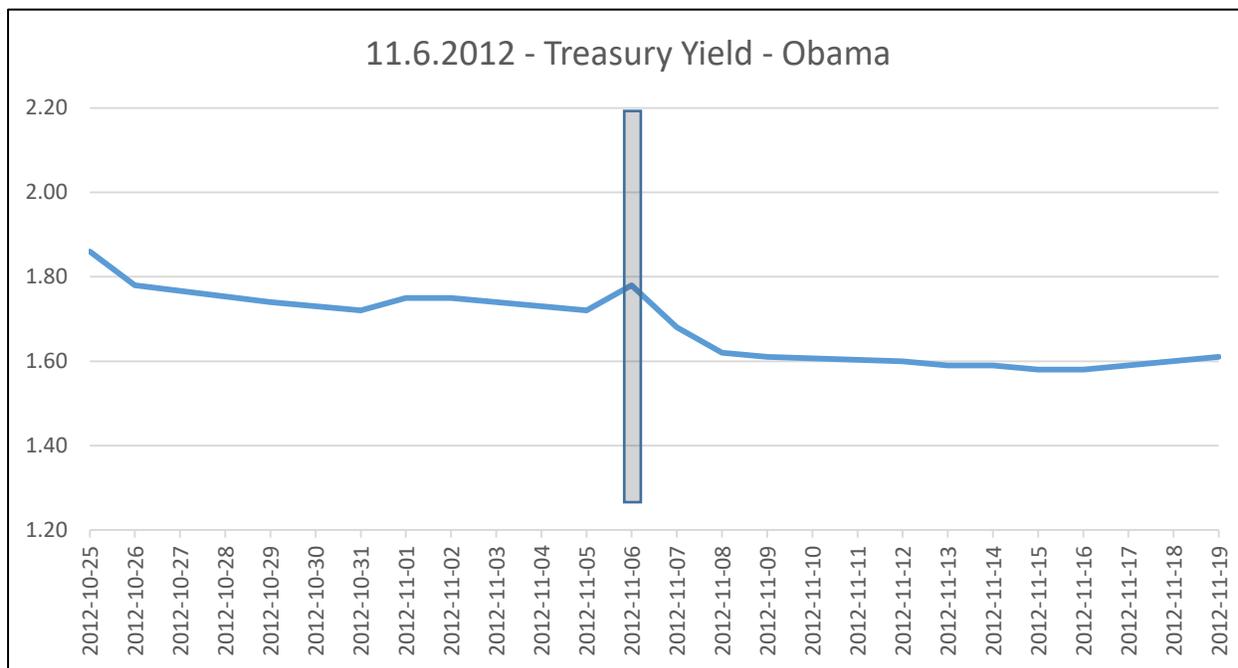


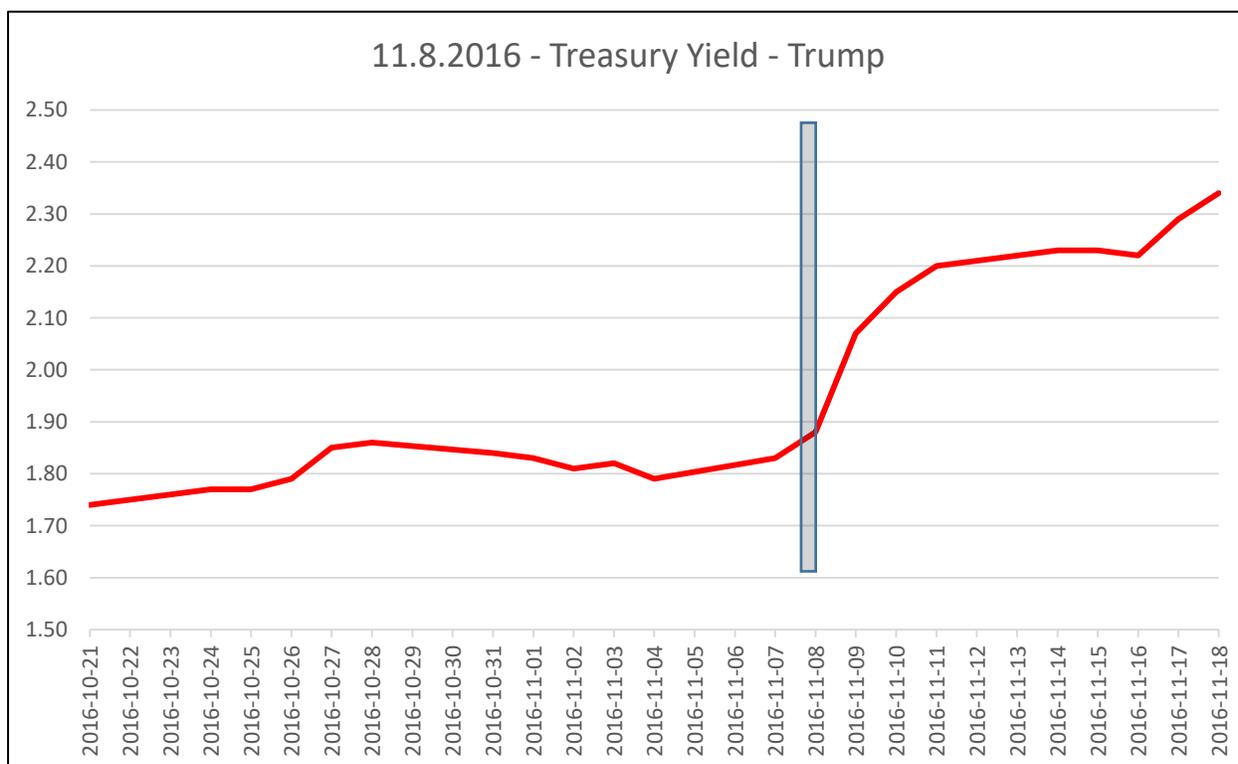
Figure 8. Yield of 10-Year, 2004 Election Season



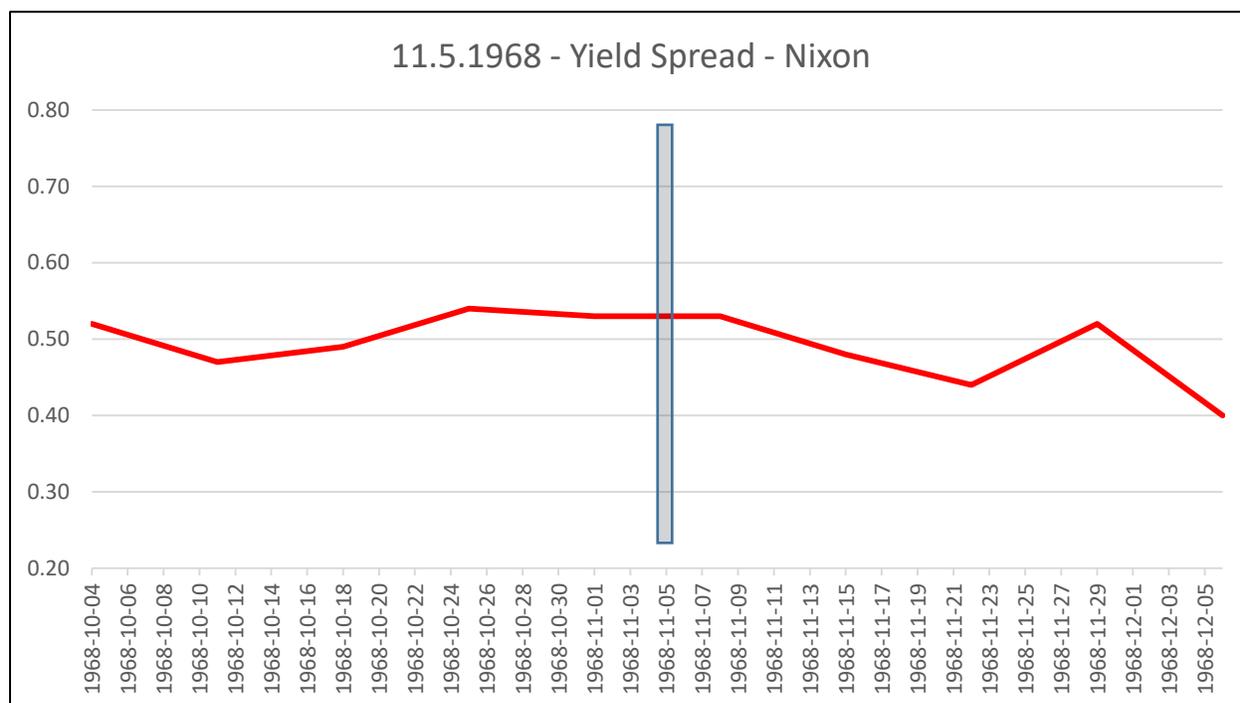
**Figure 9. Yield of 10-Year, 2012 Election Season**



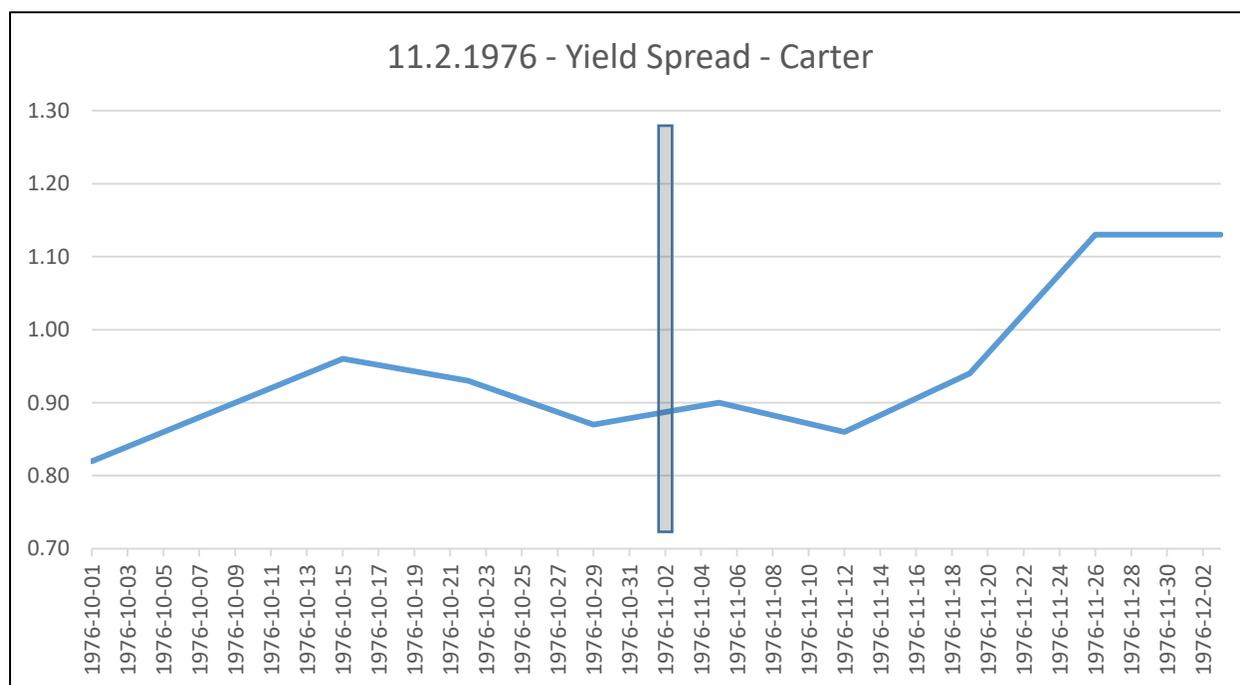
**Figure 10. Yield of 10-Year, 2016 Election Season**



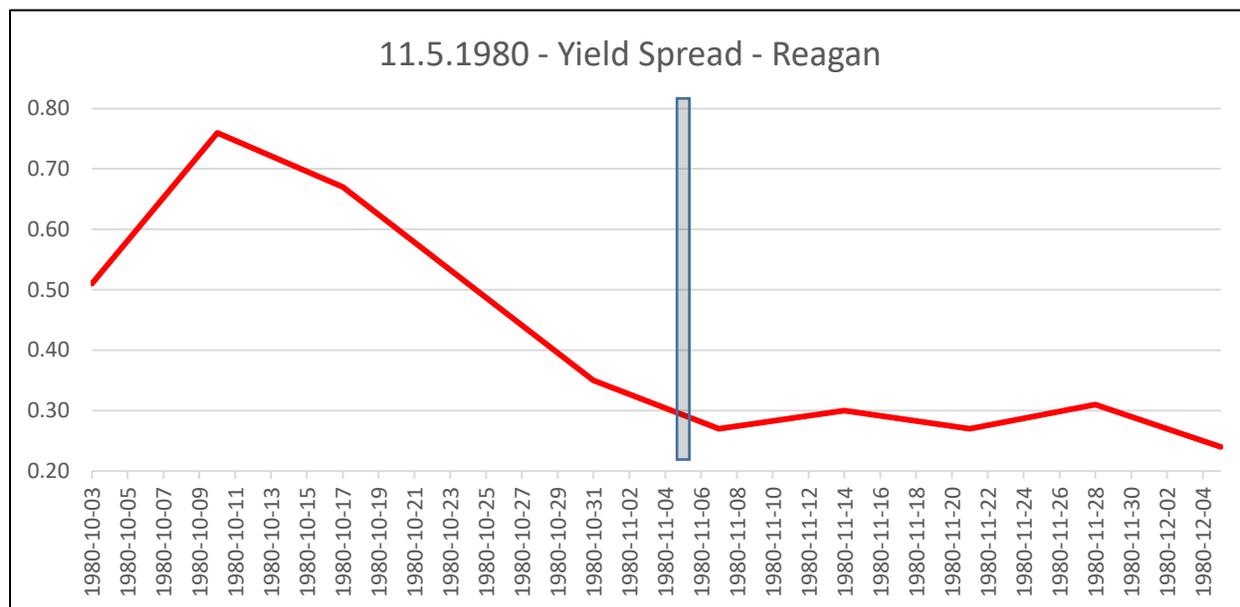
**Figure 11. Yield Spread of Government 10-Year and Moody's AAA Corporate Bond,  
1968 Election Season**



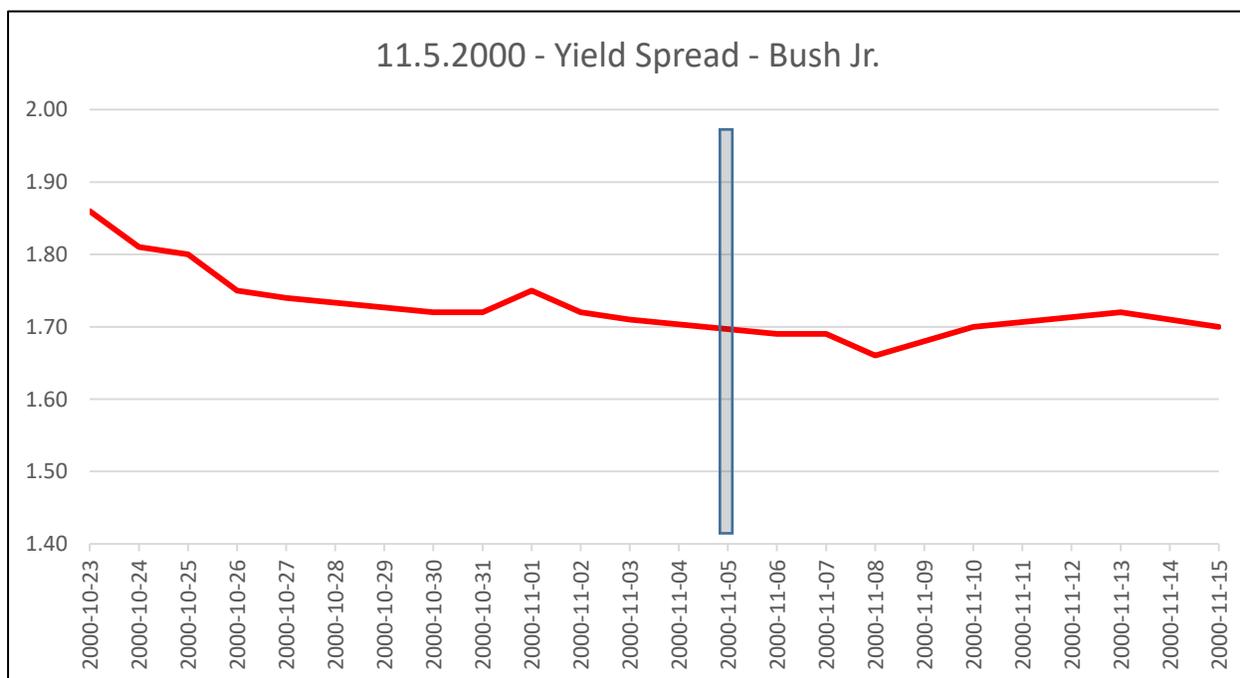
**Figure 12. Yield Spread of Government 10-Year and Moody's AAA Corporate Bond,  
1976 Election Season**



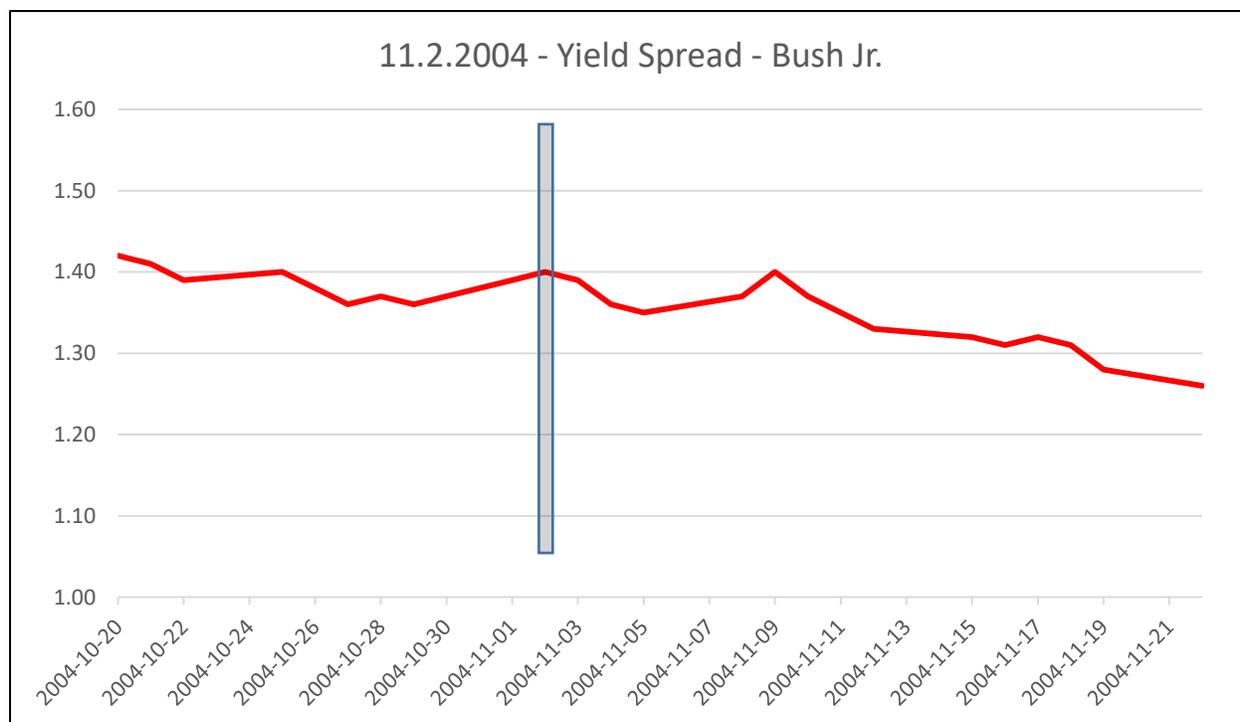
**Figure 13. Yield Spread of Government 10-Year and Moody's AAA Corporate Bond,  
1980 Election Season**



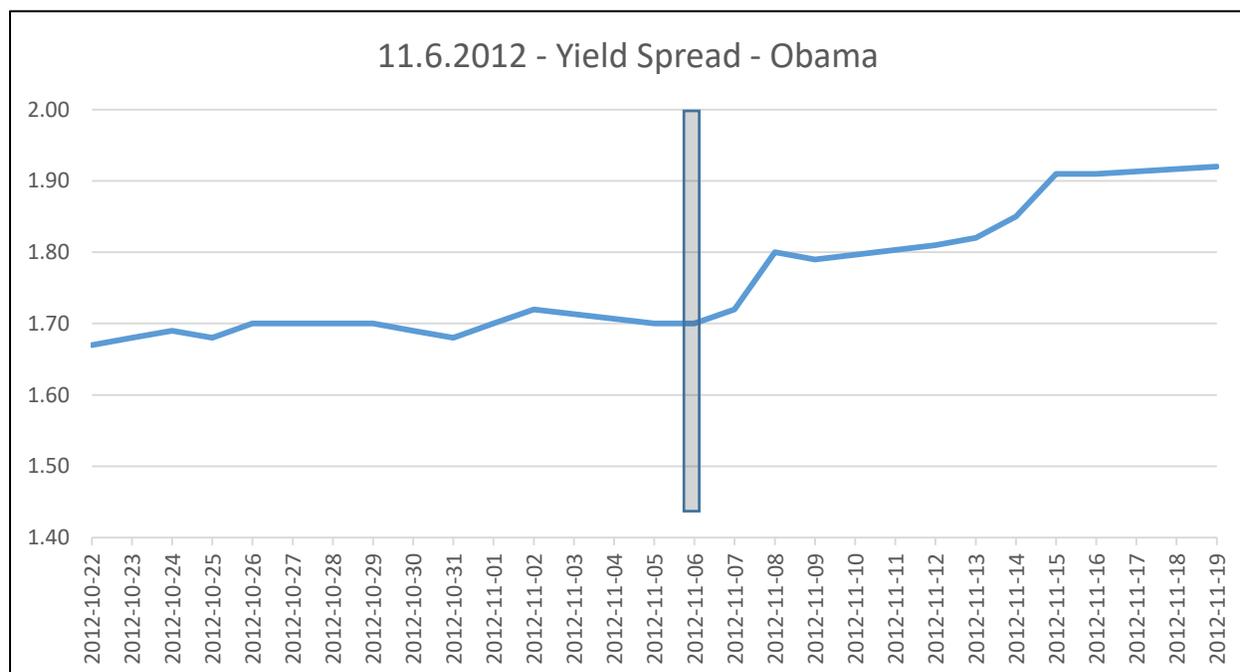
**Figure 14. Yield Spread of Government 10-Year and Moody's AAA Corporate Bond,  
2000 Election Season**



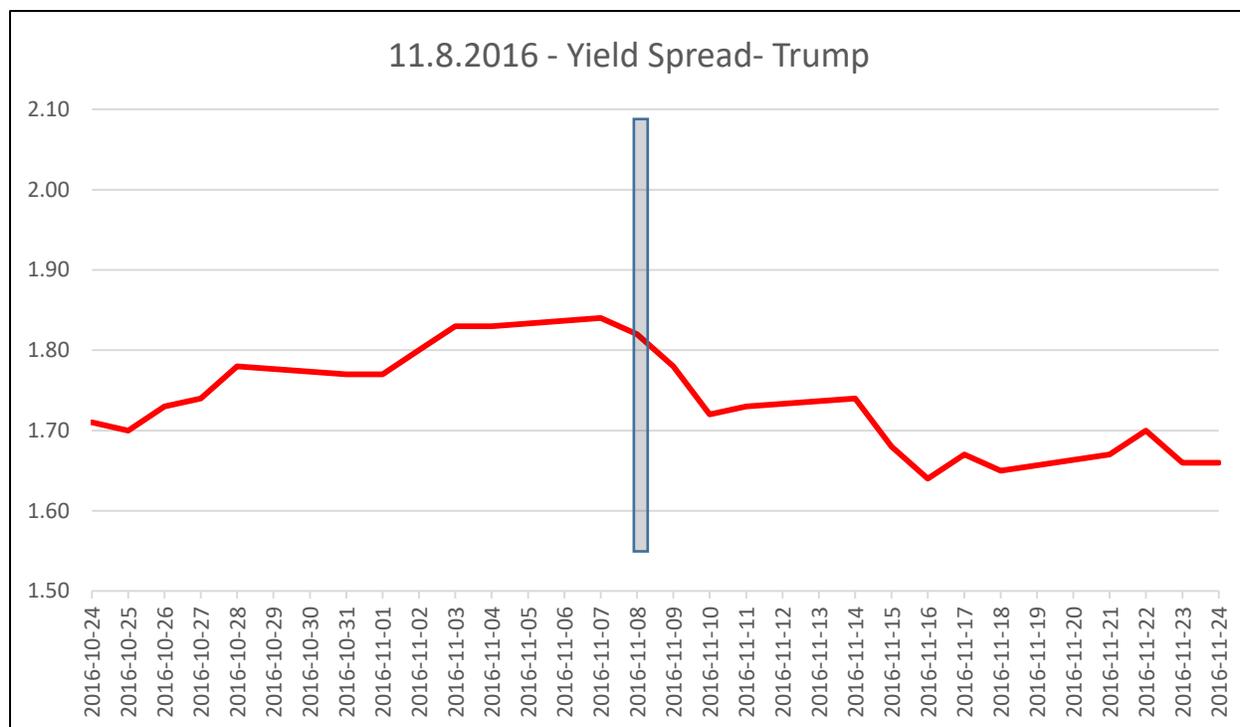
**Figure 15. Yield Spread of Government 10-Year and Moody's AAA Corporate Bond, 2004 Election Season**



**Figure 16. Yield Spread of Government 10-Year and Moody's AAA Corporate Bond, 2012 Election Season**



**Figure 17. Yield Spread of Government 10-Year and Moody's AAA Corporate Bond,  
2016 Election Season**



## Chapter 7

### Discussion

The insufficient statistical significance attached to my regressions holds implications. The latter portion of my literature review discussed the findings that buying stock in certain industries, those of which are indicated by a Republican or Democrat lead in the polls, represents a sufficient investment strategy with historical trends. A majority of the 80 industries tracked experienced positive returns in the three months leading up to a Republican win (Smith and Aggarwal 2015, 631). My attempt tried to detect similar trends in bond data. I am not completely surprised by the outcome of the regressions due to a series of theories as to why statistical significance was void. As mentioned previously in my literature review, high credit bonds move in response to a whole array of global news. I tested a whole half year prior to Election Day. Surely larger news, and infinite amount of uncontrollable variables during the campaigns extending back to 1968 could have affected the yield rates (Mishkin 2010, 146-148). Events in our economy have persistently affected the path of interest rates, and potentially overwhelming enough to outweigh the influence of polling data fluctuations months before an election. Stagflation occurred drastically as American transitioned from the late 1970s and into the early 1980s. The Federal Reserve was extremely aggressive in raising interest rates to counter the excessive high inflation. This persistent inflation fought off the rate increase for many years. Eventually, inflation began to subside in toward the latter portion of Reagan's first term. The Fed subsequently responded by lowering interest rates. The goal of decreasing inflation eventually was achieved and the Federal Reserve wanted to remove the high rates to attempt to jumpstart economic growth in this period of high unemployment. The election season during 1984 was subject to the inevitable rate drops. This necessary Federal Reserve response was surely

anticipated by the markets and dominated any early polling news influence (Bowley 2008). From May 1984 to Election Day five months later, the yield rate dropped by two percentage points from 13.5 to 11.5. The Republican did well in the polls during this year, and the yields dropped.

Furthermore, the pure relationship between stocks and bonds requires placement into a context. As explained thoroughly, yield rates and stock prices move together and typically in the same direction. However, sometime periods of market lags do exist as the bond market anticipates the actions by the Federal Reserve. Consider the following narrative. In a period of solid economic growth with rising prices, stock prices will be rising. Surely, if this growth is anticipated for a long period of time, the yield rates on bonds will rise, as investors will traditionally expect the Fed to raise rates counteracting the inflationary trend. At some point, the interest rates enacted will start diminishing the growth of stocks. Investors may be indecisive as to whether the Fed sees this downturn as a result of their rate hikes, or rather other market factors. Periods of a stagnant yield rates may result as the market waits on a Fed chairman's meeting, and subsequent press conferences, which occur months apart. Thus, rates could still be rising, or be stagnant, and stocks already begin to drop. Varied portions of time pass between a rate hike, or lowering, and the subsequent effect on the market/stock prices themselves. Given the anticipatory factors of both yield rates and stock prices, lag timing may result in brief periods of inconsistency in the traditional relationship between bonds and stock prices (Mishkin 2010, 437-470). This inconsistency very well could have interfered with my inspirations from the literature finding stock returns are positively associated with Republicans.

Given assumptions about the real world, the market will not change its expectations of a winner if the polling differential remains large in favor of one candidate over the course of a whole campaign (Mishkin 2010, 147). Three incumbents experienced relatively easy races over

the years considered for this study. Nixon in 1972 averaged a 22 percentage point lead over the democrat between April and election day. This lead never dropped below a margin of 19. Reagan experience an average 14 point lead never dropping below seven in 1984. Clinton in 1996 held an average 15-point lead that never dropped below 11 points. Any proposed connection between yield rates and bond spreads reflecting changes in the market's expectation of a winner becomes not applicable to these races. A comfortable lead sustained for the whole race would not presumably motivate an investor to reallocate his money in this model.

These comments regarding the array of uncontrollable variables, as well as the lack of poll influence in early races (or in landslide races), helps explain the lack of significance in the regression tests. Coming closer to certainty is important for investors. Markets will grow more volatile as more sure bets can be placed in an expected winner (Goodell and Vähämaa 2013). This real-world assumption served as motivation to utilize Durfrene's "event window" method.

A majority of the analyses within the month-long event window helped back my third hypothesis. In five of the seven close races, the 10-Year yield rose for Republican wins and fell for Democrat wins. The spread narrowed for Republican wins, and widened for Democrat wins, in six of the close races. 2000 proved not corparative with my hypothesis, as both the treasury rate and yield spread remains relatively steady and flat. In 2004, the treasury also remained flat, however the spread did narrow with the Bush re-reelection. Granted, this study did not value the exact return on investments associated with trading bonds during these periods, however the movements do match the findings of Hobbs and Riley (1984) given the traditional relationships between bonds and stocks. Their study, found larger returns were associated with buying stock around elections when Republicans win, as compared to elections where Democrats were victorious. The most advantageous time to buy during Republican victories, represented the

period 39 days prior to Election Day and 27 days following Election Day. This positive movement in stocks is comfortably situated within my month-long “event window.” This study implied an explanation as carried through with Hensel and Ziemba (1995). They found large cap stocks performed better during Republican rather than Democrat administrations. Surely, a market aware of this pattern would demand stock during the announcement of a Republican winner. As stock prices rise, bond yields do as well. Hensel and Ziemba (1995) further found that bond yields rose a greater amount during Republican, as compared to Democrat administrations. If truth lies in the theory that investors have attempted to capitalize on their anticipations regarding a market response to Republican and Democrat administrations, then bond yields would rise right at the announcement of a Republican winner. Sure enough, my dependent variable analysis reaffirms this thinking. A rise in yield rates of government bonds solely affirms Republican administrations have warranted relatively more rate hikes, or expected rate hikes, from the Federal Reserve. However, the narrowing of the corporate bond spread during Republican wins provides statistical evidence markets have traditionally anticipated a future of more stable corporations when they do occur. Surely, the stock performance during Republican administrations justifies this anticipation.

## **Chapter 8**

### **Conclusion**

This study found that during Republican victories in the previous thirteen elections, the yield rate on the 10-Year government security was more likely to rise and the corporate bond spread was more likely to narrow during close races. Specifically, seven of the last 13 campaigns saw no more than a three-point percentage point difference in the final polling between Republicans and Democrats. Of those seven elections, the yield on government securities rose and the corporate spread narrowed during Republican wins, and respectively fell and widened during Democrat wins. Furthermore, this study provided evidence a lack of significant correlation between polling data and bond rate movements over the course of six months prior to and election.

Bonds rates are volatile in response to a large array of economic news occurring all across the world. Explaining bond rate movements through polling results prior to an election proves daunting, as polling reports can serve as an explanation to a very small fraction of yield rate movements. Given the inability to account for, and predict, bond-influencing news during a campaign, it is a stretch to deem any movement in yield rates a result of polling data before a distant Election Day. Furthermore, the relationship between market expectations and bond movements states an anticipated increase in aggregate demand will follow with a response in rate hikes and higher bond yields. Additionally, a narrowing corporate bond spread indicates risk premiums in the bonds administered by corporations are diminishing. Anticipation of an economic future with a low risk of corporate default means this spread will decrease. Combining the empirical results of this study with the connection between bond movements and market

perception, investors are more likely to anticipate an increase in aggregate demand and a lower risk of corporate default with Republican wins as compared to Democrat wins.

The findings in this study hold implications for the real world of market and monetary economics. Presidential elections in the United States are among the most impactful events to occur in a given four years. With understanding patterns in how the market responds to this event, economists can better rationalize and predict anticipations about the future for America's economy. Much of the market's expectation regarding aggregate demand, interest rates, and business earnings then determine the values of these said items. Allan Greenspan, long-time tenured Federal Reserve Chairman, would watch the movement of the 10-Year government security endlessly. Many times if the market expected him to raise rates, he would, knowing it would not come as a surprise and negatively shock the economy. Market sentiment and skepticism drives a large portion of consumption and investment. The 10-Year government security is an indicator of what people, businesses, and governments expect to spend, save, or invest during the days to come.

The goal of any personal investor, whether a wealth manager or a hedge fund, remains to recognize market patterns and place money in a position to earn return. My study highlights previous literature recognizing patterns, while elaborating on those attaching bond returns to different administrations. Furthermore, my study provides explanation as to when the patterns of bond returns reflected during administrations begins to materialize.

My findings provide the framework for more specific bond analysis. Hobbs and Riley (1984) tested numerous investment-timing strategies in order to highlight the most optimal time to buy stock during certain elections. Surely, the same detail of extensive work could be

achieved with bond returns and prices. Smith and Aggarwal (2015) carried out a similar methodology of tests to find the optimal time in advance of elections (three months) to invest in certain industries depending on polling data. My limits and inconsistency in my polling data would have limited my tests at three months to only four observations. Future studies could aggregate polling data of more recent elections and collect more observations to pinpoint a point in time when polling data tactically implies bond purchases.

Extensive work could address my “event window” in providing more specific explanations for adjustments in bond yields. As Dufrene explained in his study, some historical cases show press conferences just before or after the Election Day largely impacted the foreign exchange market. In these instances, the market can grow aware of the candidate’s policy plans (Dufrene 1997, 29-30). Much sharp volatility is found in the dependent variable movements in my “event window” graphs. Taking note of policy plan announcements could even further reveal a market’s response to certain policies.

The goal of this study was to determine if pre-election polling data has been an indicator of predicting changes in the 10-Year government security and the corporate bond spread. Furthermore, this study attempted to take note of how these two values changed within 14 days before and after an election. By recognizing the incalculable amount of influencers of the yield rate, regression analysis proved insignificant, rejecting the hypotheses polls largely influence yield rates well before an election. Controlling for these factors through dependent variable analysis within the “event window”, this study showed evidence the 10-Year rate rises during Republican wins and falls during Democrat wins in close races. Furthermore, the corporate bond spread narrows during Republican wins and widens during Democrat wins in close races. By

recognizing these patterns of market perception during elections, economists and investors can understand the motivation behind movements in the yield of bonds.

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# ACADEMIC VITA

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## Academic Vita of Luke Chassard

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### Education

The Pennsylvania State University, University Park, PA, 2018

- Schreyer Honors College
- Degrees: B.S. Economics; B.S. Political Science; Minor Degree in Spanish

University College Freiburg, Freiburg, Germany, 2016

- Liberal Arts study abroad experience, January 2016-July 2016

Thesis Title: Bond Yields during Presidential Campaigns and Elections

Thesis Supervisor: Professor Bumba Mukherjee

### Work Experience

BB&T, Allentown, PA (Summer 2017)

- Intern; summer internship in Northern PA region within departments of the Community Bank (i.e. small business lending, large commercial and corporate lending, commercial real estate, retail and merchant services, credit analysis and underwriting)
- Joined lenders calling on clients, studied underwriting and created risk assessment scorecards, shadowed management during intra-bank sales and strategy meetings, traveled with management presenting the bank's donations to community organizations for economic growth, attended a BB&T Mission Dinner where executive leadership promoted the bank's client-prioritized culture

Lehigh Country Club (2009-2016)

- Caddy; serviced members to provide an enjoyable experience on the golf course, worked high-stakes golf tournaments for the club, built lasting relationships with the members of the club (2009-2017)
- Grounds Department; labored outdoors perfecting golf course aesthetic (2016)

### Grants Received and Awards

William A. Schreyer Scholarship

Schreyer Study Abroad Travel Grant

### Language Proficiency- Spanish