The U.S. Presidential Election Cycle and Stock Market Returns

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ABSTRACT

This paper analyzes the relationship between the presidential election year and the stock market returns in the United States by examining the monthly returns of the Standard & Poor’s 500 stock index from January 1959 to December 2019. In essence, I test whether stock market returns improve during presidential election year, consistent with the political business cycle (PBC) and its later offshoot, the 'presidential election cycle (PEC) hypothesis, which assumes that incumbent presidents and their parties improve economic growth and the stock market outlook by embracing expansionary macroeconomic policy. I employ the Least Squares Regression tests on monthly S&P 500 index returns and the presidential election cycle’s binary variables. I find evidence supporting the nexus between the presidential election cycle and stock market returns during this period. Most significantly, I find that, contrary to the assumption of previous studies of the PEC theory, there is not one, but two presidential election cycles. I find the first cycle where the incumbent is not seeking re-election that has a different effect on large-cap stocks from that other cycle where the incumbent is seeking re-election. I also test whether large-stock index is sensitive to partisan politics. I find a robust evidence to conclude that large-cap stocks are quite sensitive to partisan influence during a presidential election year where the incumbent president is also a candidate for re-election. Lastly, I test president-specific effect on the index return and find robust evidence of a highly significant relationship between the president’s policies and the return on S&P 500 index.

Keywords: Stock Market Returns; Presidential Election Cycle; Large-cap stocks

JEL classification: E44, G18, P16.
I. INTRODUCTION

This paper examines the effect of the four-year U.S presidential election cycle on stock market returns, with specific focus on the presidential election cycle (PEC) hypothesis, an offshoot of the broader theory of the political business cycle that has consistently puzzled researchers (Roman et al 2014) since the mid-1970. I aim to show that presidential election cycle has real impact on stock market returns in the United States; that the Presidential election theory consists of two distinct cycles; that returns on large-stock indexes in the presidential election year exhibit significant sensitivity to party politics; and that a president’s policies affect returns on large-cap stocks in the short run; and lastly, that Democratic administrations have higher impacts on large-cap stock returns than their Republican counterparts.

The most prominent early proponent of the political business cycle theory (PBC) is Nordhaus (1975) who laid the groundwork for the concept in his investigation of a model of public intertemporal macroeconomic choice between inflation and unemployment within a political framework. Assuming the Philip’s Curve theory to be true, and that voters are sensitive to the trade-off between the rate of inflation and the level of employment and output in their voting decision, he examines the most likely policies that would be chosen in a democratic political framework to optimize political advantages. He finds evidence that an incumbent would embrace biased policies that produce predictable results that start off their earlier period in office with relative austerity only to taper off with an economic boom right before the next election. Since Nordhaus’ pivotal study, further research work and development of the PBC theory have led to the development of the presidential election cycle, which studies market returns anomalies observed to repeat itself in tandem with the four-year presidential election cycle in the United States (Gartner and Wellershoff, 1995).

My paper is an academic contribution to the ongoing research on the dynamics of the presidential election cycle hypothesis which is an offshoot of the PBC. Using ordinary least squares regression to test the various instances of the relationship between S&P 500 and the presidential election cycle (PEC), I find sufficient evidence to show that presidential election cycle has real impact on stock market returns in the United States; that returns on large-stock indexes exhibit significant sensitivity to party politics; and that a president’s policies affect returns on large-cap stocks in the short run.
My finding agrees with the opportunistic PBC hypothesis of Klein (1996) and Sieg (2006) whose findings show that presidents who are intent on running for reelection can influence the real economy in the short term for political self-preservation. Johnson et al (1999), and Santa-Clara & Valkanov (2003) find that small-cap stocks have higher returns during the tenure of Democratic incumbents than that of Republican incumbents. After examining sixty years of monthly returns on S&P 500 index, I find evidence of this only in the first year (PEC1) of the presidential election cycles.

My findings also agree with earlier studies of the presidential election cycle that identify smaller stock returns in the second year of the PEC. To this point, Kraussl et al (2014) show a strong contraction in stock returns in the first year after presidential elections as investors experience a hiatus from the politically motivated expansionary policies of the presidential election year followed by even more depressing returns in the second year. These researchers are of the view that the observed shrinkage in the first two years after the presidential election is a result of cyclic government policy uncertainty and expectations of contractionary fiscal policy. However, I find no evidence of such contraction in my PEC1 (first year) estimates of S&P 500 returns.

Lastly, I find evidence of more than one presidential election cycle. I identify two distinct presidential election cycles: one in which the incumbent is seeking re-election, and the other, in which the incumbent is not running for re-election. Either one has a different pattern of return behavior from the other. This intriguing phenomenon has not been documented before in prior studies of the PEC theory and so needs to be explored further.

This paper is organized in sections, namely, section one: Literature Review; section two: Data Description; section three: Data Regression and Analysis; and section four: Conclusion.

II. LITERATURE REVIEW

Efficient Market Hypothesis (EMH) assumes that security prices quickly adjust to new information and therefore the prevailing price at any point in time is an unbiased reflection of available information (Vasicek and McQuown, 1972; French, 1988). Simply put, efficient market theory precludes any idea of an exploitable pattern of peaks and troughs such as the presidential election cycle. Hence, EMH sees price and returns as a random walk. The implication of this is that...
information asymmetry and any unforeseen occurrence impacting the market, stock returns over the long run are dependent on the expected return and assumed risk (Allvine and O’Neill, 1980). The presidential election cycle (PEC) hypothesis poses serious conceptual and practical problems to efficient market view of price and return as EMH fails to explain the dynamics of risk and return in the presidential election cycle. Holding the efficient market hypothesis and the PEC theory to be equally true, reasonable investors should aim to exploit that knowledge in their investment strategies in order to receive the higher return associated with the presidential election cycle. Doing that would erase any advantages of the political cycle, eliminate any profit potential, and bring price and market return to equilibrium. Contrary to conventional wisdom, researchers find that equilibrium price theorem advocated by the efficient market theory does not appear to apply to the peaks and troughs of the presidential election cycle hypothesis. In their critic of the efficient market theory, Allvine and O’Neill (1980) observed that in spite of widely available information, the presidential election cycle’s positive abnormal returns persist, raising valid questions about the accuracy of a typical efficient market scenario and its cyclic patterns. In Nordhaus’ model of intertemporal macroeconomic choice, the public does not possess the tools to make sophisticated economic and political analyses to weigh long term economic outcome against short term conditions (Suzuki, 1992). As such, the masses are more concerned at any given point in time, with the immediate economic condition in which they find themselves rather than a theoretical analysis of the long-term outcome of an economic cycle. Hence, they use their votes to either reward incumbent administrations for the immediate economic gains such as full employment and economic expansion or punish it for the perceived immediate economic suffering such as unemployment and economic contraction. However, in examining whether there exists, at all, any cyclical pattern in citizen’s economic expectations, Suzuki finds evidence of four-year economic expectancy cycle brought about by financial and unemployment expectations coupled with other consumer variables. He finds that this cycle coincides with the presidential election cycle. Yet, the persistent recurrence of higher abnormal returns witnessed in the presidential election cycle defies classical finance theories such as efficient market and random walk hypotheses, thereby leading financial researchers to consider this phenomenon a puzzle (Santa-Clara and Valkanov, 2003; Kraussl et al., 2014).
Political business cycle has two broad models, viz: opportunistic and partisan models. Sieg (2006) holds that the opportunistic model argues that an incumbent’s main goal is a re-election. This model claims that an economic expansion phase is usually more likely shortly before the presidential election as the incumbent implements politically favorable economic policies, and a contraction sets in immediately after the election as the expansionary measures cease (Klein 1996). The main objective of driving up economic expansion close to the presidential election is political self-preservation. On the other hand, in the partisan model, politicians implement different policies that are more favorable to their core constituencies even though this does not exclude the overall goal of reelection since a party has to be in office to accomplish ideological objectives. Alesina (1987) is of the opinion that switching from a contraction to a trough immediately after the presidential election, signaling the end of the business cycle, is more likely with a Republican presidential victory than with a Democratic one.

Frey and Schneider (1978) explain that political business cycle is generally linked to the rise and fall in the popularity of the governing party. In their view, during the earlier years of the administration, the incumbent tries to implement personal and party’s political ideological priorities. Doing this creates a political tide against the incumbent and causes a sagging public opinion. Fearing that this might lead to electoral loss, the incumbent responds to the unfavorable public opinion by pushing for popular policy actions. Using U.S data covering the period between 1905 and 1984, Davidson et al (1992) find evidence that the U.S administrations are more likely to implement opportunistic policies in the wake of an uptick in annual unemployment rate.

The number of financial studies on the effects of the U.S presidential elections on the specific aspects of the economy, such as the financial market, grew in the decades after the 1970. Many studies find ample evidence of the presidential election hypothesis in the United States, whereby stock returns are larger during the last two years of an incumbent president than in the first two years of the same administration, giving rise to the theory of the presidential election cycle (Sturm, 2011). One of the early studies of this theory (Allvne and O’Neil, 1980), examine stock returns from 1961 to 1978, and find a strong correlation between stock returns and the presidential elections. Johnson et al. (1999) in addition to confirming the higher stock returns during the last two years of an incumbent presidents, find that small-cap stocks have higher returns during Democratic presidencies than Republican ones; and that adjusted returns to bond indexes are
negative during Democratic administrations but significantly positive during Republican ones. Other studies (Santa-Clara and Valkanov, 2003) see evidence that excess return of value-weighted CRSP portfolio over T-bill average nine percent higher returns under a Democratic presidency than a Republican one. Contrary to the above findings, Jones and Banning (2009) maintain that there is little relationship between American election activities and the stock market performance. They explain that examining monthly returns over a period of 104 years, they could find no significant variance in market returns regardless of the election cycle and the party in office. To investigate and extend the understanding of this puzzle, I state and test the following hypotheses:

1: **Standard and Poor 500 index has significantly larger returns in a presidential election year and significantly smaller returns in the first two years after presidential elections**

2: **There is partisan effect on stock returns during the presidential election cycle.**

3: **Large-cap stocks perform better under Democratic presidents.**

This study builds upon previous studies, especially, Kraussl, Lucas, Rijsbergen, & Vrugt, (2014), as it examines a broad range of variables in search of an explanation for the presidential election cycle puzzle with the singular aim of contributing to a better understanding of the puzzle.

### III. DATA DESCRIPTION

While unadjusted data is valuable in certain research focuses such as price movements, collective bargaining, and pension interests, I use only seasonally adjusted data in this research in order to eliminate cyclic effects (that normally occur at the same time and approximately at the same magnitude every year). This allows us to more accurately measure the effect of changes that are atypical for the time of year. My analysis is based on one key data set used as the dependent variable and two additional sets of monthly data used and control variable, and a range of binary variables. The first set consisting of 732 monthly return data from Standard & Poor 500 index, which is used as market proxy for stock returns in all the estimates in this study denoted SP500, covering January 1959 to December 2019 sample period. The other two sets of data used as control variables are a pair of Federal Open Market Committee’s monetary policy instruments: the
effective federal funds rate, denoted FFR, and the monetary base, denoted MB, each consisting of 732 monthly observations downloaded from St Louis Federal Reserve Economic Data (FRED) website. In addition to these three data sets, I make use of several binary variables to test and analyze the effect of various instances of the presidential election cycle hypothesis on the S&P 500 index returns during the sample period of January 1959 through December 2019.

**Standard & Poor Index**

The Standard and Poor market index, also known as S&P 500, is by far the most popular and commonly replicated index among investors (Elton, Gruber, Comer and Li, 2002). It is a value-weighted large-cap stock index traded on NYSE. It currently includes stocks from eleven economic sectors cutting across all major industries. Its membership is limited to companies headquartered in the United States. The daily weighting of the index changes according to the prevailing stock price of the component firms. However, the entities themselves can only change due to a merger or diminished market capitalization below a set threshold. The main advantages of the S&P 500 over other US-traded indexes include its stability, broad representation of the overall industries, its transparent processes, and simple construction. Above all, it consists of the most profitable set of publicly traded companies in the world. All these features make the S&P 500 a benchmark index for institutional investors and academic researchers. The log monthly returns of the S&P 500 are obtained from Bloomberg.

**Effective Federal Funds Rate:**

The effective federal funds rate is the target interbank overnight lending rate set by the Federal Reserve’s Open Market Committee (FOMC). This target could be reset up to eight times in one year to adjust for prevailing economic conditions, and it influences short-term rates on consumer loans and credits. These adjustments are based on key economic indicators that may signal movements in key economic indicators that affect an economy’s growth and sustainability. These include such factors as inflation expectation and recession. The federal funds rate is particularly important to the U.S economy given its central role in the overall money supply dynamism (BGFRS 2020). In fact, it could be asserted that the federal funds rate is a good measure of
government economic policy (Bernanke and Blinder, 1992). Therefore, it could be regarded as a quasi-predictor of macroeconomic variables. As Bernanke and Blinder put it, the federal funds rate is a better predictor of monetary policy effects than the other economic indicators such as M1, M2, inflation, unemployment and so on, simply because it may be less susceptible to endogenous responses to contemporaneous economic conditions. For this reason, I chose it as one of the two control variables.

**Monetary Base (MB)**

The monetary base, unlike M1 and M2, consists of the total currency in circulation within the economy, including all the most liquid assets such as cash and current bank deposits. Simply put, monetary base is usually the final settlement of financial transactions. Two economic perspectives on monetary base that owe their popularity to Krugman and Friedman, hold that changes in money stock can reliably indicate the Federal Reserve’s policy stance and that the Fed has absolute control over monetary base (Stauffer 2010). While disputing the above conceptions, Stauffer concedes however that changes in the reserve components of the monetary base can trigger strong multiplier effects on the overall money supply, and that the FOMC has a governing authority to manipulate, if it so desires, not only the components of the base but also its mechanisms. This conclusion in other words forms the basis of the assumption that the Federal reserve can influence the overall economy by causing changes in the monetary base and federal funds target rate. Because of the close relationship between the monetary base and the effective federal funds rate, I decided to select the monetary base as my second control variable.

**Binary Variables**

The binary variables studied in this paper include “PRESD” which assumes the value of 1 for every month in the presidential election year, 0 otherwise; “PRESDEM” which assumes the value of 1 for every month that a Democratic president is in office, 0 otherwise; and “PRESREP” which assumes the value of 1 when the incumbent president is a Republican and 0 otherwise. The other binary variables are “PRESINC” which assumes the value of 1 when the incumbent president is a candidate for re-election and 0 otherwise; “PEC1” through “PEC3” which are the proxies for every month of the first through the third year of the PEC cycle, = 1 for PEC1 otherwise 0; 1 for PEC2
otherwise 0; and 1 for PEC3 otherwise 0. The variables PEC1, PEC2, PEC3 and PRESD measure stock market returns in the twelve calendar months of year 1 through year 4, respectively, of the presidential election cycle. I also test “PEC1DEM” through “PRESDDEM” and “PEC1REP” through “PRESDREP” to measure S&P 500 returns in the various years of either party’s tenure in office, corresponding to year one through year four of the president. I use PRESINCDDEM and PRESINCREP to test the impact of a particular party in election year where the incumbent president is equally a candidate for re-election. Lastly, I test every one of the eleven U.S presidents from either party from January 1961 through December 2019 to see the effect of their respective administrations on the return on Standard & Poor 500 index during the sample period.

Summary Statistics

The summary statistics of the financial security variable, Standard and Poor 500 Index (SP500), in Table 1 below, show a mean return of 687.40 from January 1959 through December 2019, and a standard deviation of 745.53 around the mean, with minimum and maximum values of 53.39 and 3230.70, and a median value of 321.18. Meanwhile, monetary base (MB) during the sample period peaked and bottomed at $4095.66 trillion and $38.42 trillion respectively with a mean supply of $811.45 billion. At the same time, the effective federal funds rate (FFR) averaged 4.97% with standard deviation 3.64.

The descriptive statistics indicate that all the data series are positively skewed with long tails with skewness above zero and are all leptokurtic relative to the normal with kurtosis above 3.0. The summary statistics lead us to conclude that none of the variables is normally distributed.

From the graphs (Figure 1 to 3 below), we can see indications of time trend in S&P500 from 1960 to 2000 followed by a period of major disturbance that abated around 2010 and continued upward well beyond 2015. The S&P500 trend test returns t-stat 0.696378 and p-value 0.4864. Likewise, monetary base indicates unbroken trend that went up sharply after 2005 and accelerated from around 2008 all the way beyond 2015 with trend statistic -0.391376 and p-value 0.6956. Both S&P 500 (sp500) and monetary base (MB) equally indicate non-stationarity. Augmented Dickey-Fuller unit root tests indicate that the series are I(1). The federal funds rate (FFR) has no clear trend but
is equally non-stationary. Running the regression with non-stationary data would lead to spurious estimates and results.

I transform the series into stationary data by differencing all the variables, thereby removing the unit root, rendering them stationary as shown in the graphs in Figure 4 to 6 below. While all the variables are rendered stationary at first difference, only SP500 and MB returned statistically significant trend result at first difference. So, it is safe to conclude that only SP500 and MB are trended.

Granger causality test of all the variables was also conducted to ensure that the variables have the predictive power needed to forecast the movement of S&P 500 index. The Granger causality test, first proposed in 1969 by Clive Granger, is a statistical hypothesis test for determining whether one time series is useful in forecasting another. This test searches only for predictive causality or temporal relation between the dependent and the predictor variables. I estimate VAR of the stationary series SP500, MB, and FFR, to determine the lag length using Akaike information criteria (AIC) which indicates a lag length of “2”. The Granger test result indicates that money supply (MB) has significant causal effect on S&P500 index at 5% significance. FFR showed no significance in this regard. However, the two variables are jointly significant at a weak 10% (the result is shown on Table 2 below).

IV. DATA REGRESSION AND ANALYSIS

I apply ordinary least squares regression method throughout this study to test relationships between S&P 500 Index (as the stock market proxy of choice) and various instances of the presidential election cycle. I favored OLS as my method of choice because it is easy to use, estimate, understand, and interpret. It is also the most commonly applied method to linear regressions since it is the optimal technique for analyzing data sets that have normally distributed error terms. Some disadvantages of ordinary least squares regression include but are not limited to overfitting, non-linearity, possibly poor prediction in the presence of collinearity, and generalized sensitivity to outliers. I address the non-normality problem by first differencing the data series. For the nonlinearity problem, I log-transform the series.
**F-Test of Federal Funds Rate and Monetary Base**

1. Before specifying the regression equation for the presidential election cycle, I first conduct F-test on the effective federal funds rate and monetary base to determine their joint predictive power on Standard & Poor 500 index. With a result showing F-stat coefficient 5.589 at 5% significance level, I determine that both MB and FFR jointly have predictive power over S&P500 and including them in my regression model allows me to fit the data better than if I left them out.

2. I also test the impulse response of the dependent variable, SP500, to a standard deviation shock in the federal funds rate (FFR) and monetary base (MB) and find that both variables have significant effects on Standard & Poor index returns (Figures 7 and 8) but the response of SP500 index to MB is more discernible whereby Cholesky one standard deviation in MB leads to roughly three standard deviations in SP500 in a period of ten months. For that reason, I have retained FFR and MB as control variables.

I now estimate the model as follows:

\[ \Delta \log(E_t) = \beta_0 + \beta_1 \Delta \log(MB_t) + \beta_2 \Delta(FFR_t) + \beta_3(D_t) + \mu_t \]  

(1)

where \( \Delta \log(E_t) \) is change in S&P 500 index returns, \( \beta_0 \) is the intercept term, \( \beta_1 \Delta \log(MB_t) \) and \( \beta_2 \Delta(FFR_t) \) represent the two monetary policy instruments: monetary base (MB) and effective federal funds rate (FFR), as well as \( \beta_3(D_t) \) for the various instances of the presidential election cycle tested in this paper with dummy proxies.

SP500 and MB are log-transformed. The fitting of log-transformation plays a vital role in the analysis as it transforms a nonlinear relationship between monetary policy options and stock market performance from an exponential multiplier effect to a linear one. Hence, log transformation renders the relationship measurable in a linear model.
Hypotheses Tests and Analyses

Hypothesis 1: *Standard and Poor 500 index has significantly larger returns in a presidential election year and significantly smaller returns in the first two years after presidential elections*

Table 3 shows the results of the regression on S&P500 in the presidential election cycle in two panels which correspond to two identifiable cycles of the presidential election cycle (PEC) hypothesis. **In Panel A** (Cycle 1) the binary proxies return a positive coefficient 0.007 at 5% significance for PEC1, positive 0.012 at 1% significance for PEC3. PRESD returns a 0.005 at 10% which is considered not significant in most cases. This result indicates a 0.7%, 1.2% and 0.5% higher returns in the first, third, and fourth year respectively. The second year (PEC2) has a statistically non-significant negative coefficient -0.001 indicating a negative relationship between year two and S&P500 index. Prior studies of the presidential election cycle hypothesis have identified similar phenomenon in the second year of the PEC. Kraussl et al (2014) believe in a bearish first half of the PEC cycle which, they explain, is a consequence of a post-election investor-disillusionment where “the sentiment of anticipation would decrease as investors become disappointed with the presidential administration for not realizing their campaign promises” coupled with “the fact that the price for the stimulative policies conducted prior to the elections have to be countered with post-election deflationary measures”. The problem with this view is that as I show in Table 3, Panel A, and contrary to the conclusion of some prior studies that assume a down-trend in the first two years, the first year (PEC1) following the elections trended up to 0.7% from the 0.5% growth recorded in random election year PRESD in Panel A (Cycle 1). This is contrary to the assumption that the first two years after the election have significantly smaller returns. While year two (PEC2) coefficient is true to form and negatively related to S&P500, year one (PEC1) coefficient is not only positive but is larger than the presidential election year (PRESD) coefficient 0.5% when the incumbent is not running for re-election.

The third year (PEC3) returns of 1.2% is significantly higher than PEC1 with 0.7% and PEC2 with negative coefficient -0.001 combined, thereby confirming the political business cycle hypothesis that policy changes close to election time, usually designed for political gain, have significant impact on stock market returns, and the presidential election cycle hypothesis that the last half of
the presidential election cycle has larger returns than the first two years. These results, although generally consistent with prior studies, come with a caveat. Johnson et al (1999), Strum (2011), and Santa-Clara and Valkanov (2003) conclude that all stock returns are larger during presidential election year. However, I find that in my regression results, the coefficient of PEC3 which is the third year of a random presidential election cycle, is 0.012, which is significantly larger than the election year, PRESD, with coefficient 0.005. The estimates show that when stocks are separated into different categories based on capitalization, large-cap stocks (here represented by Standard & Poor index) have higher returns in the third year rather than in the fourth year of a random presidential election cycle when the incumbent is not seeking re-election. Since this has not been identified in prior studies it is worth exploring it in further research.

Controlling for an election year with an incumbent president seeking re-election, PRESINC (Panel B: Cycle 2), I observe a pressure shift from PRESD (a random presidential election year) to PRESINC (an election year with an incumbent vying for re-election). The effect of this shift is seen in the coefficient of PRESD which changes from a positive coefficient 0.005 indicating an average of 0.5% gain in a random presidential election year, to a negative coefficient -0.013 when an incumbent is seeking re-election. However, the interesting finding is a second presidential election cycle, PRESINC (Cycle 2) which is completely different from PRESD (Cycle 1). In this second cycle I find that an election year with PRESINC (in Panel B) has more than four times the excess return of a random election year (PRESD) with a highly significant positive coefficient 0.023 when an incumbent is seeking re-election, whereby PRESD (in Panel A) records a weak positive coefficient 0.005 in a random election year when an incumbent is not seeking re-election. This indicates a 2.3% larger return on S&P500 index in a presidential year where the incumbent is seeking re-election. This translates to a 1.8% difference between PRESD coefficient 0.005 in a random presidential election year and PRESINC coefficient 0.023 in an election year with an incumbent running for re-election. This implies that PEC Cycle 2 (with an incumbent seeking re-election) records an average of 1.8% higher return on S&P500 index over PEC Cycle 1 (when the incumbent is not seeking re-election).

In summary, I find from the results in Tables 3, panels A and B that the presidential election cycle consists of more than one cycle because a presidential election cycle where the incumbent is not seeking re-election has a different return behavior and effect on the stock market than an election
year in which the incumbent is seeking re-election. In the former (Table 3 Panel A), the third year, PEC3, has the largest return on large-cap stocks; while in the later (Table 3 Panel B) the presidential election year, PRESINC, has the largest return on large-cap SP500. Based on this finding, I conclude that there is sufficient evidence to show that i) large-cap stocks exhibit two types of presidential election cycles: one cycle in which the incumbent is seeking re-election, and the other where the incumbent is not seeking re-election; and ii) that the size of returns on large-cap stocks in the presidential election year depends on the cycle in question. While cycle one where the incumbent is not running for re-election records its largest return in the third year PEC3, cycle 2 where the incumbent is certainly seeking re-election, on the other hand, records its largest returns in the fourth year (incumbent’s re-election year PRESINC). This result strongly supports prior studies that find evidence that an incumbent president can positively influence the stock market returns for his own political benefit. Based on these results, we can confidently say that there is sufficient evidence to accept the null that Standard & Poor 500 index has significantly larger returns in a presidential election year and significantly smaller combined average returns in the first two years after presidential elections. In addition, my finding proposes modifying and extending the PEC theory by identifying the two cycles with and without an incumbent running for re-election. This finding needs further research beyond the scope of this paper.

Hypothesis 2: There is partisan effect on stock returns during the presidential election cycle.

Are stock market returns sensitive to the partisan influence during presidential election year? The answer to that depends on the party in question. The estimates I present in Table 4 Panels B and D appear to support this statement. Panel A represents S&P 500 return estimates for the presidential election cycle one, where the incumbent is not seeking re-election while Panel B shows estimates of the same index during the same cycle with specific effect of the party in office. In Panel A PEC1, the average return of S&P 500 is 0.7% in year one but in Panel B the result shows that a Democratic administration outperform its Republican counterpart by 0.013, indicating a 1.3% larger return on the S&P 500 index every first year in office of a Democratic president. Panel A PEC3 shows an average larger return of 1.3% on the index in the third year of the election cycle.
when an incumbent is not seeking re-election. Panel B PEC3 is consistent with this result for both parties. In Panel A PRESD I observe an average of 0.005 coefficient for a presidential election year when an incumbent is not running for re-election. Panel B PRESD shows that a democratic administration outperforms a Republican counterpart by one percentage point in any presidential election year when an incumbent is not running for re-election. In other words, we can conclude that a Democratic administration has stronger influence on large-stock returns in PEC Cycle 1 where an incumbent president is not running for re-election.

However, Panels C and D representing the returns on S&P 500 index in a presidential election cycle 2 where the incumbent is vying for re-election paint a different picture. Panels C and D PEC1 through PEC3 corresponding to year one to three of the presidential election cycle are consistent with the result in Panels A and B. However, we see a dramatic change in the fourth year. Panel C PRESINC is shown with a positive coefficient 0.023 indicating an average of 2.3% larger return on S&P 500 index during an election year in which the incumbent is also running for the election. But in Panel D my estimates show that a Republican president vying for re-election has a coefficient 0.050 larger impact at 1% level of significance on S&P 500 index return than his Democratic counterpart. This indicates a 5% larger return on large-stock index every presidential election year that a Republican president is running for re-election. This is a huge difference. It follows therefore that contrary to the conclusion of Johnson, Chittenden, & Jensen (1999) who maintained that even though they observe larger return on S&P 500 index during election year, their result does not show significant sensitivity to partisan influence, I demonstrate that there is sufficient evidence to reject the null that there is no partisan effect on stock returns during the presidential election cycle. I conclude therefore that large-stock returns are quite sensitive to partisan politics during presidential election year.

Hypothesis 3: *Large-cap stocks perform better under Democratic presidents.*

While some prior research work on the political influence on the U.S stock market conclude that the stock market does feel real impact of political maneuvering from the political parties, some others dispute that assertion and hold that there is no evidence of partisan effect on the financial market. Johnson, Chittenden & Jensen (1999), using annual return data of two stock indexes from
January 1929 through December 1996, examined several large-stock and small-stock returns to test election cycle return patterns and presidential party return patterns to determine the political effect on stock returns. They find that small-cap stocks have larger returns during the tenure of Democratic presidents than the Republican ones and that adjusted returns to bond indexes are negative during Democratic administrations but significantly positive during Republican ones. Using S&P 500 returns to test large-stock sensitivity to partisan politics, they find that the index returns are considerably higher during Democratic administrations than in the Republican ones but the difference in the two is not statistically significant. They therefore conclude that large-stock returns show no sign of partisan influence whatsoever. Santa-Clara and Valkanov (2003) see evidence that excess return of value-weighted CRSP portfolio over T-bill average nine percent higher returns under a Democratic president than a Republican one. Contrary to the above findings, Jones and Banning (2008) maintain that there is little relationship between American election activities and the stock market performance. They explain that examining monthly returns over a period of 104 years, they could find no significant variance in market returns regardless of the election cycle and the party in office. I take a second look at large-stock index using monthly returns of S&P500 index from 1959 through 2019 to examine any partisan effects the presidential administration of the two dominant U.S political parties might have on large-stock returns during the sample period.

Table 5 consists of two panels (A and B) showing the president-specific effect on S&P500 from 1961 through 2019. The results presented in Panel A trace the effect of each president’s separate terms in office for those who had second terms, or the single term of those who served only one term. Beginning with Kennedy who served only two years, to Trump who served only one full term, I find robust evidence of significant positive relationship between presidents of either party and the return on S&P500 index with highly significant coefficients ranging from 0.030 to 0.047 at 1% level. There are only two deviations from this norm. The worse of the two occurred in 1972, the first and the only year of Nixon’s second term leading to his resignation, with a non-significant coefficient. The other is Bush Jr’s second term which had a coefficient 0.025 at a weak 10% level.

It is interesting to observe from the regression estimates how impactful the political environment is on the performance and overall growth of the U.S stock market throughout the sample period (1961 – 2019). Although other economic factors play important roles in the returns on stocks and
other financial assets, the contribution of political factors appear quite impressive. Kennedy’s tragic presidency that lasted only two years led to a 3.4% higher return on S&P 500; and Johnson’s first two years, which completed Kennedy’s four-year term led to as much as a 4.3% larger return on the index. This represents a growth of 0.9% in the returns of S&P 500 index in his first two years in office. However, for some reason, his second term could not keep up with this growth. Although, still highly significant, the political effect of Johnson’s presidency on the index fell back by 0.8%, closing his second term at 3.5% higher return on the index. In Panel B, we see the combined impact of Johnson’s six-year term capping off at 3.8%. The stock market stagnated during Nixon’s first term, and one-year second term before his resignation leaving his overall impact at 3.0% (Table 5, Panel B). The beginning of his administration also happened to coincide with the onset of a recession. It is pertinent to note that for all his troubles, his presidency had a 3 percent positive effect on S&P 500 index. This is so much a function of his administration’s politics as it is a result of the technological revolution taking hold on the global financial markets, starting from the 1950s and sweeping through the early 2000s. In the aftermaths of the Second World War, developed nations experienced wartime-spawned technology boom in different facets of life such as computing, medicine, engineering, information, accounting, and finance that rapidly and completely revolutionized global systems (Bhasin, 2018). The impact of these technological advancements reverberated beyond the second half of the 20th century as global economic systems, various governments and private entities leveraged new technologies that ushered in constant improvement in methods and operations (EPR, 2014). Ford was also a beneficiary of this technology boom. The administrations of Ford and Carter had impressive impacts on the stock market aided by economic expansions that forced the Federal Reserve to target the federal funds rate above 10% at many different points within the decade spanning 1970 – 1980. Among all the presidents in my sample period, Ford, a one-term president who merely served out Nixon’s term, had the highest S&P 500 return of 4.7% from 1974 through 1976. Carter too, a one-term president had a strong showing with a coefficient 0.038 translating to a 3.8% higher return on the index. This however is significantly lower than Ford’s 4.7%. It is worth mentioning that despite the strong performance of the financial market throughout the 1970s, none of the three U.S president of that decade served a second term. Each of them was consumed by other political troubles.

Even though Reagan had to contend with the 1982 recession, his first term indicates a positive 3.3% effect on S&POO while his second term saw an impressive 4.1% bringing the total impact of
his presidency on stock market returns to a positive 3.8%. It is noteworthy that for all the hype on Reaganomics, Reagan administration’s overall effect on large-stock returns was quite lackluster compared to Ford’s 4.7%, Clinton’s 4.2 %, Obama’s 4.0% after half of Obama’s presidency had been ravaged by the worst economic recession since the Great Depression, and Trump’s 4.0% by the end of his third year in office. Bush Sr had a strong effect on the market at 3.9% at the end of his one-term presidency, but the younger Bush had the worst return of all the presidents in my sample period. His first term ended with a 2.8% and his second term fared worse at 2.5%; bringing the combined effect of his entire presidency to a tepid 2.6 return on S&P 500 index. This implies a 1.6% slide from his predecessor’s closing at 4.2 percent. This poor performance could be traced to circumstances beyond his control as well as his administration’s policies. The United States suffered a huge economic setback as a result of the September 11, 2001 attack on Wall Street that led the Bush administration to wade into two expensive wars. In addition, the administration passed a huge tax cut that hampered his government’s ability to successfully fund the wars while at the same time funding domestic consumption. Coupled with these, government policies to stimulate the economy such as loosening of regulations helped create a sense of impunity that encouraged all kinds of financial malfeasance - including subprime lending and collateralized debt obligations (CDOs) – rooted in the large corporations’ firm belief that the government would do anything to protect the economy from systemic risk.

The economic hemorrhaging that started at the tail end of Bush’s second term was inherited by Obama who spent his first term plugging the leaks with expansionary fiscal policies that include increased government spending, increased issuing of contracts and direct checks to Americans. The administration’s efforts were complemented by the Federal Reserve’s unconventional monetary policy: the vilified quantitative easing, and a prolonged zero-bound interest rate. By the close of 2010 the economy had stopped the tailspin and was beginning to show sluggish but steady signs of recovery. Obama presidency, complementing the monetary policy of the Federal Reserve, was able to effect a 4.0 percent return on S&P 500 at the end of his administration. As Table 5 shows, Trump administration was able to match but did not surpass Obama’s numbers on S&P 500 index returns as at December 2019, even though he had better economic conditions during his presidency. Trump also for better or for worse, like his Republican predecessors, within his first year in office passed a steep corporate tax cut legislation which supporters credit with the strong
economic recovery witnessed during his term, and critics believe hampered the country’s growth potential just before the arrival of the coronavirus pandemic.

Having examined sixty years of monthly S&P 500 return data, I find robust evidence from the results of the estimates presented in Table 5, Panels A and B that strongly support prior studies’ conclusion that US political factors have strong effect on stock market returns. Based on these results, we can reject the null hypothesis that there is no relationship between American election activities and stock market performance. In addition, these results, also provide robust evidence to support the PBC hypothesis that presidents can influence real economy in the short term through government policy.

Robustness Check
Table 6 shows the result of the robustness test on the hypothesis that large stocks perform better under Democratic presidents. The estimates show PRESDEM which is the total average returns of S&P 500 index during the five Democratic presidents in the sample period from January 1959 through December 2019, shows a 0.010 coefficient at 1% level of significance, while PRESREP has a 0.003 non-significant coefficient. The result indicates a 1% larger return on S&P 500 index under Democrats than under their Republican counterparts. This is not an exceptionally large difference, but it is highly significant. Therefore, based on its level of statistical significance, I conclude that there is sufficient evidence that large stocks perform better overall under Democratic presidents than under Republican ones.

V. CONCLUSION
After examining monthly S&P 500 return data, from January 1959 to December 2019, I find robust evidence from the results of the estimates presented in this paper that strongly support prior studies’ conclusion that US political factors have strong effect on stock market returns. Based on these results, I conclude that there is a strong relationship between American election activities and stock market performance. This study concludes with evidence from the statistical test results
presented above, that, in line with the political business cycle (PBC) hypothesis, presidents have real influence on the economy in the short term through government policy, and incumbents who are seeking re-election can influence stock market returns by enacting politically favorable policy changes.

This study also finds evidence that supports the assumption of prior studies that stock returns are smaller in the second year of the presidential election cycle. Although this may be the case, unlike Kraussl et al (2014) that show a strong contraction in stock returns in the first year after presidential elections as investors experience a hiatus from the politically motivated expansionary policies of the presidential election year followed by even more depressing returns in the second year, my research finds no evidence of a strong contraction in the first year but rather in the second year after presidential elections.

More significantly, and with strong statistical evidence from the empirical tests of data, this paper presents a new finding concluding that there are two presidential election cycles that exhibit distinct return patterns from each other depending on whether the incumbent is seeking re-election or not. When the incumbent president is not seeking re-election, the cycle records its highest return in the third year (PEC3) and not the fourth year (PRESD) which is a random election year. However, when the incumbent is vying for re-election, the cycle records its highest return in the fourth year, PRESINC, which is the presidential election year with an incumbent that is running for re-election.

Based on the above results, I conclude that there are two PEC cycle; that the presidential election cycles have real impact on stock market returns in the United States; that returns on large-stock indexes exhibit significant sensitivity to partisan politics; that a president’s policies affect returns on large-cap stocks in the short run; and that large stock index performs better under Democratic presidents.
Tables

Table 1

<table>
<thead>
<tr>
<th></th>
<th>SP500</th>
<th>FFR</th>
<th>MB</th>
<th>PECL</th>
<th>PECL2</th>
<th>PECL3</th>
<th>PRESQ</th>
<th>PRESINCP</th>
<th>PRESINCDP</th>
<th>PRESINCREP</th>
<th>PRESDEQD</th>
<th>PRESREP</th>
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<tbody>
<tr>
<td>Mean</td>
<td>687.40</td>
<td>976.28</td>
<td>811.45</td>
<td>0.26</td>
<td>0.27</td>
<td>0.27</td>
<td>0.27</td>
<td>0.17</td>
<td>0.08</td>
<td>0.02</td>
<td>0.00</td>
<td>0.70</td>
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<td>Median</td>
<td>321.75</td>
<td>1.76</td>
<td>271.46</td>
<td>0.26</td>
<td>0.27</td>
<td>0.27</td>
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<td>0.00</td>
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<tr>
<td>Maximum</td>
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<td>1.90</td>
<td>4096.69</td>
<td>1.00</td>
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<td>1.00</td>
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<td>1.00</td>
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<tr>
<td>Minimum</td>
<td>53.39</td>
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<td>0.38</td>
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<td>Std. Dev.</td>
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<td>2.80</td>
<td>1177.73</td>
<td>0.43</td>
<td>0.43</td>
<td>0.43</td>
<td>0.43</td>
<td>0.39</td>
<td>0.29</td>
<td>0.19</td>
<td>0.01</td>
<td>0.00</td>
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<td>Skewness</td>
<td>1.35</td>
<td>2.17</td>
<td>1.75</td>
<td>1.18</td>
<td>1.18</td>
<td>1.18</td>
<td>1.18</td>
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<td>2.69</td>
<td>2.41</td>
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<td>Kurtosis</td>
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<td>3.79</td>
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<td>2.39</td>
<td>2.39</td>
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<td>8.28</td>
<td>8.42</td>
<td>1.03</td>
<td>1.02</td>
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<td>Jarque-Bera</td>
<td>204.22</td>
<td>21.71</td>
<td>185.65</td>
<td>1.82</td>
<td>1.82</td>
<td>1.82</td>
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<td>0.00</td>
<td>0.00</td>
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<td>0.00</td>
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<td>0.00</td>
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<td>503180.4</td>
<td>3635.33</td>
<td>369377.9</td>
<td>180.00</td>
<td>180.00</td>
<td>180.00</td>
<td>180.00</td>
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<td>Sum Sq. Dev</td>
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<td>9700.36</td>
<td>1.01E+09</td>
<td>135.7377</td>
<td>135.7377</td>
<td>135.7377</td>
<td>135.7377</td>
<td>115.0642</td>
<td>64.91803</td>
<td>74.3698</td>
<td>181.7705</td>
<td>182.5574</td>
</tr>
</tbody>
</table>

Notes:

The summary statistics of the financial security variable, Standard and Poor 500 Index (SP500), in Table 1 below, show a mean return of 687.40 from January 1959 through December 2019, and a standard deviation of 745.53 around the mean, with minimum and maximum values of 53.39 and 3230.70, and a median value of 321.18. Meanwhile, monetary base (MB) during the sample period peaked and bottomed at $4095.66 trillion and $38.42 trillion respectively with a mean supply of $811.45 billion. At the same time, the effective federal funds rate (FFR) averaged 4.97% with standard deviation 3.64.

The descriptive statistics indicate that all the data series are positively skewed with long tails with skewness above zero and are all leptokurtic relative to the normal with kurtosis above 3.0. The summary statistics lead us to conclude that none of the variables is normally distributed. All the dummy variables follow the same binary pattern of 1 if and 0 if not.
Table 2: VAR Granger Causality/Block Exogeneity Wald Tests

<table>
<thead>
<tr>
<th>Excluded</th>
<th>Chi-sq</th>
<th>df</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MB</td>
<td>8.523148</td>
<td>2</td>
<td>0.0141</td>
</tr>
<tr>
<td>FFR</td>
<td>0.213820</td>
<td>2</td>
<td>0.8986</td>
</tr>
<tr>
<td>All</td>
<td>8.727332</td>
<td>4</td>
<td>0.0683</td>
</tr>
</tbody>
</table>

Notes:
Granger causality test of all the variables was also conducted to ensure that the variables have the predictive power needed to forecast the movement of S&P 500 index. The Granger causality test, first proposed in 1969 by Clive Granger, is a statistical hypothesis test for determining whether one time series is useful in forecasting another. This test searches only for predictive causality or temporal relation between the dependent and the predictor variables. I estimate VAR of the stationary series SP500, MB, and FFR, to determine the lag length using Akaike information criteria (AIC) which indicates a lag length of “2”. The Granger test result indicates that money supply (MB) has significant causal effect on S&P500 index at 5% significance. FFR showed no significance in this regard. However, the two variables are jointly significant at a weak 10% (the result is shown on Table 2 above).
Hypothesis 1: Standard and Poor 500 index has significantly larger returns in a presidential election year and significantly smaller returns in the first two years after presidential elections

Table 3: Average S&P 500 Index returns in the two Presidential Election Cycles

<table>
<thead>
<tr>
<th>Notes:</th>
<th>Standard errors are reported in parentheses. *** indicates significance at 1%, ** at 5% and * at 10%.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PANEL A (CYCLE 1)</td>
<td></td>
</tr>
<tr>
<td>Random presidential election cycle where the incumbent is not seeking re-election</td>
<td>FFR</td>
</tr>
<tr>
<td></td>
<td>-0.009***</td>
</tr>
</tbody>
</table>

| PANEL B (CYCLE 2) |  |
| Presidential election cycle where the incumbent is seeking re-election | FFR | MB | PEC1 | PEC2 | PEC3 | PRESD | PRESINC | R² | Log L | AIC | DWS |
| | -0.010*** | -0.093*** | 0.007*** | -0.001*** | 0.012*** | 0.013*** | 0.036 | 1292 | -3.52 | 1.96 |

In testing the above hypothesis, I detect two distinct return patterns during the presidential election year. I find that the stock market in an election year when the president is completing his second term has a different return pattern from an election year where the sitting president is running for re-election. I label these cycles 1 and 2. Table 3 Panel A (shows Cycle 1 where the president is completing his second term). PEC1 (the first year) of that cycle returns a coefficient 0.007 at 5% significance corresponding to a 0.7% larger return on the SP500 in that year. The second year (PEC2) of the same cycle indicates a negative relationship between year two and stock returns with a -0.001 coefficient, which translates to -0.1 percent loss in the second year although this is not statistically significant.

Comparing these first two years to the last two years PEC3 and PRESD of the same cycle, we can clearly see the difference. The 3rd year (PEC3) returns a positive 0.013 at 1% significance meaning a 1.3% larger return on the index while the 4th year (PRESD) returns a 0.005 coefficient that is weakly significant at 10% level. If we combine the returns for the first two years of cycle 1 in Panel A and compare it to combined returns of year three and four we will find that the last half of the presidential election cycle has 1.2% larger return on S&P 500 than the first half. This confirms prior research findings that the last half of the presidential election cycle has larger returns than the first two years. Some literature such as Johnson, Lucas, Chittenden & Jensen (1999), Santa-Clara and Valkanov (2003), and Strum (2011) study all classes of stocks together and maintain that all stock returns are larger during presidential election year. But that’s not what we see here in Panel A cycle 1. Instead, we see that PEC3 the
third year has the largest return at 1.3% while PRESD the 4th year return is only a meager 0.5%. However, when I control for an election year where a sitting president is running for re-election with the variable PRESINC in Panel B cycle 2, the result changes quite dramatically. While there is no significant difference between year 1, 2 and 3 of the two cycles, the 4th year is quite different. Here we see that an election year with a president running for re-election (PRESINC) returns a highly significant coefficient 0.023 meaning a 2.3% return which is four times larger than the 0.5% return of a non-reelection year (PRESD) in cycle 1. This implies that an election year where a sitting president is completing his second term has the largest return in the 3rd year but the cycle where he is fighting for re-election has the largest return in the election year itself with an average of 1.8% larger return over the 4th year of Cycle 1 where the incumbent is not seeking re-election. The rational here is everyone guess. These estimates show that when stocks are separated into different categories based on market cap, large-cap stocks have higher returns in the third year rather than in the 4th year of a non-relection cycle.

The result above provides us with sufficient evidence to conclude that i) large-cap stocks exhibit two distinct presidential election cycles: re-election and non-relection cycles; and ii) that the size of returns on large-stocks in a re-election cycle is more than twice larger than the returns in a non-relection cycle. It is possible that because prior studies examined both large and small cap stocks together, they missed the second cycle which I detect here by separating large caps from small caps. I also think that this finding is worth exploring further in subsequent research.
Hypothesis 2: *There is partisan effect on stock returns during the presidential election cycle.*

Table 4: *Partisan effect on stock returns during the presidential election cycle*

*Notes: Standard errors are reported in parentheses. *** indicates significance at 1%, ** at 5% and * at 10%.*

### Cycle 1: PANEL A: Incumbent president not running for re-election

<table>
<thead>
<tr>
<th>Incumbent not seeking re-election</th>
<th>FFR</th>
<th>MB</th>
<th>PEC1</th>
<th>PEC2</th>
<th>PEC3</th>
<th>PRESD</th>
<th>R2</th>
<th>Log Likelihood</th>
<th>AIC</th>
<th>Durbin-Watson Statistic</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>-0.009*** (0.003)</td>
<td>-0.121 (0.082)</td>
<td>0.007*** (0.003)</td>
<td>-0.001 (0.003)</td>
<td>0.013*** (0.003)</td>
<td>0.005* (0.003)</td>
<td>0.030</td>
<td>1287</td>
<td>-3.51</td>
<td>1.94</td>
</tr>
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</table>

### PANEL B: Partisan Effect: Incumbent president not running for re-election

<table>
<thead>
<tr>
<th>Partisan effect incumbent not seeking re-election</th>
<th>FFR</th>
<th>MB</th>
<th>PEC1</th>
<th>PEC2</th>
<th>PEC3</th>
<th>PRESD</th>
<th>R2</th>
<th>Log Likelihood</th>
<th>AIC</th>
<th>Durbin-Watson Statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-0.010*** (0.003)</td>
<td>-0.117 (0.082)</td>
<td>0.013*** (0.005)</td>
<td>0.002 (0.004)</td>
<td>0.004 (0.005)</td>
<td>-0.004 (0.004)</td>
<td>0.010** (0.005)</td>
<td>0.002 (0.004)</td>
<td>0.036</td>
<td>1291</td>
</tr>
</tbody>
</table>

### Cycle 2: PANEL C: Sitting president seeking re-election

<table>
<thead>
<tr>
<th>Incumbent seeking re-election.</th>
<th>FFR</th>
<th>MB</th>
<th>PEC1</th>
<th>PEC2</th>
<th>PEC3</th>
<th>PRESD</th>
<th>PRESINC</th>
<th>R2</th>
<th>Log Likelihood</th>
<th>AIC</th>
<th>Durbin-Watson Statistic</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>-0.010*** (0.003)</td>
<td>-0.093 (0.082)</td>
<td>0.007** (0.003)</td>
<td>-0.001 (0.003)</td>
<td>0.012*** (0.003)</td>
<td>-0.013*** (0.007)</td>
<td>0.023*** (0.008)</td>
<td>0.036</td>
<td>1291</td>
<td>-3.52</td>
<td>1.96</td>
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</table>

### PANEL D: Partisan Effect: Sitting president seeking re-election

<table>
<thead>
<tr>
<th>Partisan effect incumbent seeking re-election</th>
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<th>MB</th>
<th>PEC1</th>
<th>PEC2</th>
<th>PEC3</th>
<th>PRESD</th>
<th>PRESINC</th>
<th>R2</th>
<th>Log Likelihood</th>
<th>AIC</th>
<th>Durbin-Watson Statistic</th>
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</thead>
<tbody>
<tr>
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<td>-0.011*** (0.003)</td>
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<td>0.012*** (0.005)</td>
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<td>0.050*** (0.014)</td>
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Table 4 shows results of the test for partisan effect on stock returns in four panels. Panel A shows average returns in non-reelection cycle while panel B shows partisan effects on returns in a non-relection cycle. In panel A, the average return for PEC1 is 0.7% but in panel B PEC1 we see that that is largely due to the effort of a democratic president who outperforms his republican counterpart by 0.013, implying that stocks have an average of 1.3% larger returns in the first year of a democratic president than that of a republican. We see the same pattern in the first and second year of both Cycle 1 and cycle 2. In year two (PEC2) the market records a loss of -0.1% in both cycles though not statistically significant. We check for partisan effect in PEC2 of Panels B and C and see that while a Democratic President is not gaining but he is not losing either, a Republican president outrightly loses 0.4 percent in year two of a non- reelection cycle and 0.5% in a re-election cycle Panel D. As the election approaches in PEC3 the market starts recovering and both Democrats and Republicans level off at 1.3% market returns. We can see in Panels A, B, C and D that PEC3 has the same
coefficients for both Republicans and Democrats in both cycles. No difference. In the fourth year (PRESD) of a non-reelection cycle in Panel B, a Democratic president exerts a 1% greater influence on market returns than a republican who does not test significant in this election year. But see what happens in the fourth year (PRESINC) of a re-election cycle in Panels C and D.

In the fourth year a dramatic change occurs. As we can see, Panel C year four (PRESINC) shows 2.3% larger return on S&P 500 index during an election year in which the incumbent is running for re-election. As we check Panel D for explanation, we can see (PRESINCREP) which represent a Republican president fighting for re-election outperforming a Democratic counterpart by 5 percentage point at 0.050, indicating a 5% larger return on large-stock index every presidential election year that a Republican president is running for re-election. This is unbelievable. The sleeping giant rises. Why so? We are not sure, but it is possible that Democrats focus more on social issues during re-election year campaigns, while Republicans focus more on the economy. It follows therefore that contrary to the conclusion of Johnson, Chittenden, & Jensen (1999) who maintained that even though they observe larger return on S&P500 index during election year, they find no evidence of sensitivity to partisan influence, my results here demonstrate that there is sufficient evidence to reject the assumption of no partisan effect on stock returns during the presidential election cycle and conclude that large-stock returns are quite sensitive to partisan politics during presidential election year.


Hypothesis 3: *Large-cap stocks perform better under Democratic Party’s presidents.*

Table 5: President-specific Effects on S&P 500 Index returns from January 1961 through December 2019

*Notes:* Standard errors are reported in parentheses. *** indicates significance at 1%, ** at 5% and * at 10%.

**PANEL A:** Effect of first term of office on S&P500

| c.   | ffr | mb | Ken | John | Nix | Ford | Catr | Rgn | Bshl | Cltn | Bsh2 | Obma | Trp | R^2 | AIC  |
|------|-----|----|-----|------|-----|------|------|-----|------|-----|------|------|-----|-----|-----|------|
|      | -0.030** | 0.034** | 0.043*** | 0.047*** | 0.038*** | 0.033** | 0.039*** | 0.042*** | 0.028** | 0.040*** | 0.040*** | 0.040*** | 0.049 | 0.049 | AIC -3.52 |
|      | (0.012) | (0.003) | (0.083) | (0.015) | (0.015) | (0.014) | (0.014) | (0.014) | (0.014) | (0.014) | (0.014) | (0.014) | (0.014) | (0.014) |

**PANEL B:** Effect of second term of office on S&P 500

| c.   | ffr | mb | Ken | John | Nix | Ford | Catr | Rgn | Cltn | Bsh2 | Obma | Trp | R^2 | AIC  |
|------|-----|----|-----|------|-----|------|------|-----|-----|------|------|-----|-----|-----|------|
|      | -0.030** | -0.103 | 0.034** | 0.035** | 0.018 | 0.041*** | 0.043*** | 0.025* | 0.040*** | 0.040*** | 0.040*** | 0.049 | 0.049 | AIC -3.52 |
|      | (0.012) | (0.003) | (0.083) | (0.015) | (0.014) | (0.017) | (0.014) | (0.014) | (0.014) | (0.014) | (0.014) | (0.014) | (0.014) |

**PANEL C:** Overall effect of a presidency on S&P 500

| c.   | ffr | mb | Ken | John | Nix | Ford | Catr | Rgn | Bshl | Cltn | Bsh2 | Obma | Trp | R^2 | AIC  |
|------|-----|----|-----|------|-----|------|------|-----|------|-----|------|------|-----|-----|-----|------|
|      | -0.030*** | -0.103 | 0.034** | 0.038*** | 0.030** | 0.047*** | 0.038*** | 0.037*** | 0.039*** | 0.042*** | 0.026** | 0.040*** | 0.040*** | 0.040*** | 0.049 | 0.049 | AIC -3.50 |
|      | (0.012) | (0.003) | (0.083) | (0.015) | (0.013) | (0.015) | (0.014) | (0.013) | (0.013) | (0.013) | (0.013) | (0.013) | (0.013) | (0.014) |

Table 5 consists of three panels (A, B, and C) showing results of the test of the impact of specific presidents on U.S stock market from 1961 through 2019. Panel A traces the effect of each president’s first term. I find robust evidence of significant positive relationship between presidents of either party and the return on S&P500 index with highly significant coefficients ranging from Bush number two’s overall 2.6% influence to Ford’s 4.7% impact. It is interesting to observe from the regression estimates how impactful the political environment is on the performance and overall growth of the U.S stock market throughout the sample period (1961 – 2019). Although other economic factors play important roles in the returns on stocks and other financial assets, the political factors appear quite influential. The only notable outlier here is Nixon’s second term leading to his resignation, with a non-significant coefficient 0.018. Beginning with Kennedy we see that his two years had a 3.4% influence on large stock returns; Johnson’s first two years had a 4.3% influence on the index. This represents a 0.9% growth in political influence over the stock market in two years. However,
Johnson’s influence weakened by 0.8% as his second term tapers off at 3.5%. In Panel C, Johnson’s six-year term caps off at 3.8%. The stock market stagnated during Nixon’s first term leaving his overall impact at 3.0% (Table 5, Panel C).

The administrations of Ford and Carter had impressive impacts on the stock market aided by economic expansions that forced the Federal Reserve to target the federal funds rate above 10% at different periods during the decade spanning 1970 – 1980. Among all the presidents in my sample period, Ford had the strongest political impact with a 4.7% influence from 1974 through 1976. Carter had a strong showing at 3.8%. Reagan’s first term indicates a positive 3.3% effect while his second term saw an impressive 4.1% bringing the total impact of his presidency on stock market returns to 3.7%. However, Reagan administration’s overall effect on large-stock returns was quite lackluster compared to Ford’s 4.7%, Clinton’s 4.2%, Obama’s 4.0% and Trump’s 4.0%. Bush Sr had a strong effect on the market at 3.9% but the younger Bush had the worst return of all the presidents in my sample period. His first term ended with a 2.7% and his second term fared worse at 2.5%; bringing his overall impact to 2.6%. This implies a 1.6% slide from Clinton’s 4.2 percent. Obama and Trump both leveled off at 4.0%.
Table 6: Robustness test on the hypothesis 3, that Large-cap stocks perform better under Democratic presidents.

Notes:
Standard errors are reported in parentheses.
*** indicates significance at 1%, ** at 5% and * at 10%.

<table>
<thead>
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<th>FFR</th>
<th>MB</th>
<th>PRESDEM</th>
<th>PRESREP</th>
<th>R²</th>
<th>Log L</th>
<th>AIC</th>
<th>DWS</th>
</tr>
</thead>
<tbody>
<tr>
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<td>-0.114 (0.081)</td>
<td>0.010*** (0.002)</td>
<td>0.003 (0.002)</td>
<td>0.020</td>
<td>1286</td>
<td>-3.51</td>
<td>1.95</td>
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Table 6 above shows the result of the robustness test on the hypothesis that large stocks perform better under Democratic presidents. The estimates show PRESDEM which is the total average returns of S&P 500 index under the five Democratic presidents in the sample period from January 1959 through December 2019, shows a 0.010 coefficient at 1% level of significance, while PRESREP has a 0.003 non-significant coefficient. The result indicates a 1% larger return on S&P 500 index under Democrats than under their Republican counterparts. This is not an exceptionally large difference, but it is highly significant. Therefore, based on its level of statistical significance, I conclude that there is sufficient evidence that large stocks perform better overall under Democratic presidents than under Republican ones.
Figures

From the graphs (Figure 1 to 3 below), we can see indications of time trend in S&P500 from 1960 to 2000 followed by a period of major disturbance that abated around 2010 and continued upward well beyond 2015. The S&P500 trend test returns t-stat 0.696378 and p-value 0.4864. Likewise, monetary base indicates unbroken trend that went up sharply after 2005 and accelerated from around 2008 all the way beyond 2015 with trend statistic -0.391376 and p-value 0.6956. Both S&P 500 (sp500) and monetary base (MB) equally indicate non-stationarity. Augmented Dickey-Fuller unit root tests indicate that the series are I(1). The federal funds rate (FFR) has no clear trend but is equally non-stationary. Running the regression with non-stationary data would lead to spurious estimates and results.

I transform the series into stationary data (as shown in figures 4 – 6 below) by differencing all the variables, thereby removing the unit root, rendering them stationary as shown in the graphs in Figure 4 to 6 below. While all the variables are rendered stationary at first difference, only SP500 and MB returned statistically significant trend result at first difference. So, it is safe to conclude that only SP500 and MB are trended.

Figure 1: Standard & Poor 500 index of 500 largest stocks traded on NYSE from January 1959 to December 2019 showing trend line and structural breaks.
Figure 2: Monetary Base comprising all final settlement tenders including coins, notes and current accounts from January 1959 to December 2019 trend and structural breaks.

Figure 3: Effective Federal Funds Rate from January 1959 to December 2019 showing structural breaks.
Figure 4: Detrended and normalized distribution of the Standard & Poor 500 index stock returns from January 1959 to December 2019.

Figure 5: Detrended and normalized distribution of the monetary base from January 1959 to December 2019.
Figure 6: Normalized distribution of the effective federal funds rate from January 1959 to December 2019.

![Chart showing the normalized distribution of the effective federal funds rate (FFR) from January 1959 to December 2019.](chart.png)

Figure 7 & 8: Impulse response of the dependent variable, SP500, to a standard deviation shock in the federal funds rate (FFR) and monetary base (MB) show that both variables have effects on Standard & Poor index returns, but the response to MB is more discernible whereby a standard deviation in MB leads to roughly 3 standard deviations in SP500 in a period of ten months. For that reason, I have retained FFR and MB as control variables.

Response of SP500 index to Cholesky One S.D. Innovations ± 2 S.E.

- **Figure 7**
  - Response of SP500 to FFR

- **Figure 8**
  - Response of SP500 to MB
References


