Political Parties and their Effect on the U.S. Economy

Logan Parker
Abstract:

(Democrat, Republican, GDP, Inflation)

The relationship between political parties and the economy in the United States is investigated from 1953 and 2012. Regression models are used to calculate the effect political parties have on the percent change in real gross domestic product (RGDP) and the percent change in the consumer product index for urban consumers (CPI). RGDP is the proxy for the growth of the American economy, and the CPI is the proxy for inflation. The empirical results that are presented in this paper will suggest that Republican Party presidents, Republican Party controlled Senates, and Democratic Party controlled House of Representatives have a positive effect on the percent change in RGDP. This analysis also concludes neither political party has a direct effect on the percent change in CPI.
POLITICAL PARTIES AND THEIR EFFECT ON THE U.S. ECONOMY

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“Experience has shown that even under the best forms of government those entrusted with power have, in time, and by slow operations, perverted it into tyranny.”

— Thomas Jefferson
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Section 1: Introduction

As the 2014 midterm elections draw closer, political pundits will look to bolster their political party’s chances by associating their party with real gross domestic product (RGDP) growth and low inflation. In addition, these same pundits will associate slow or no RGDP growth and high inflation with the opposition party. Using data from 1953 to 2013, I will investigate the relationships the Republican Party and Democratic Party have with RGDP and inflation.

The data for this research begins in 1953, the year Dwight D. Eisenhower was inaugurated as President of the United States, and continues through 2013. The decision was made not to include years from the Roosevelt and Truman administrations, because those years are outliers produced by the Great Depression, subsequent recovery, and World War II.

The next section will be a synopsis of the current research that pertains to political parties and their effect on the U.S. economy. It will also include a brief history of both parties and their stance on economic issues. This paper will then present two regression equations that model the relationship of the political parties and the economy. The results of these models and the implications will be discussed afterwards.

Section 2: Literature Review

Subsection 2.1 and 2.2 of this section discuss historical points in the life of each political party and their respective policy orientations. These sections are meant to provide context to the 150 year rivalry between the Republican Party and the Democratic Party, and to provide information for readers who want the ability to relate history and policy to empirical results.

2.1 The Democratic Party

The Democratic Party, the world’s oldest existing political party, was first formed in 1792 by Thomas Jefferson and his followers. The members of the party first called themselves
Republicans or Jeffersonian Democratic-Republicans (Wormser 2002). They called for the “return to Revolutionary principles.” Among these were a strict view of the Constitution, payment of the national debt, hard money, and balanced budgets (Schweikart et al. 2007, pp. 159). It was between 1824 and 1828 when the Republicans transformed themselves into the modern Democratic Party (pp. 197). The effort was led by President Andrew Jackson and Senator Martin Van Buren (Bianco et al. 2009, pp. 220).

The updated Democratic Party ushered in a new era of politics. They were the first to cultivate electoral support in order to strengthen party power and they were the first to mobilize at the local level (pp. 221). The Democrats also introduced the party principle, an idea that the party is not a tag associated with elected officials, but a living organization made up of all likeminded citizens (pp. 221). The party principle also created the spoils system that is so infamously attached to Jackson and Van Buren (Schweikart et al. 2007, pp. 199-200).

After the Civil War and reconstruction, the hot button issue shifted from slavery to, “scope of the federal government: should it help farmers and rural residents, inhabitants of rapidly expanding cities, or neither group?” (Bianco et al. 2009, pp. 221-222). The Democratic Party, led by William Jennings Bryan, pushed for government action to help both groups. When Franklin D. Roosevelt (D) was elected president, he pushed this agenda and called it the New Deal (pp. 222). Roosevelt’s policies are what created the continuously expanding role of the federal government.

In 2012 the Democratic Party convened its quadrennial convention and respective delegates crafted the new party agenda. Most of initiatives promoted federal expansion or intervention. Evan Soltas, journalist for Bloomberg News, said the most important economic initiatives included farm subsidies, increased investment in infrastructure, free trade, increased
federal spending to promote research and STEM\(^1\) curriculums, public health investments, and a new immigration policy that will promote economic growth (Soltas).

These are many of the same policies that the Democrats implemented in the aftermath of the 2008 financial crisis. Speaker Nancy Pelosi insisted that the economy needed stimulating through public-works projects, health care expenditures, and additional entitlement spending (Hulse). One example is the Patient Protection and Affordable Care Act, commonly referred to as Obama Care. The bill requires everyone to be insured, subsidizing the purchase for some, and it originally forced the states to expand Medicaid using state funds. A majority of the economic policies the Democratic Party has implemented and/or promotes follow a similar pattern: increased federal intervention and more expenditures.

### 2.2 The Republican Party

After the demise of the Whig Party in the early 1850s, two new parties rose to challenge the rival Democrats. The American Party, commonly known as the “Know-Nothings,” had strong anti-Masonic beliefs and objected to the arrival of Irish and German Catholic immigrants (Schweikart et al. 2007, pp. 275). The party did well in several state elections, but was unable to make a strong showing at the federal level. The Republican Party was established on March 20, 1854 when the first meeting took place in Ripon, Wisconsin ("This Day in History: March 20, 1854" 2014). The party united former members of the Liberty, Free-Soil, and Whig Party with the main purpose of eliminating slavery (Schweikart et al. 2007, pp. 276). “The name ‘Republican’ was chosen, alluding to Thomas Jefferson’s Democratic-Republican Party…conveying a commitment to the inalienable rights of life, liberty, and the pursuit of happiness ("Our History" 2013).”

\(^1\) STEM refers to science, technology, engineering, and mathematics.
The party’s first presidential candidate, John C. Frémont, was chosen by the convention in 1856. He lost to the Democratic Party candidate, James Buchanan. Frémont carried 33 percent of the vote, Buchanan carried 45 percent, and the American Party candidate carried 22 percent of the vote (Schweikart et al. 2007, pp. 276). Buchanan won the South, because he was a strict constitutionalist and believed the president did not have any authority over the slavery issue (pp. 278). The first Republican Party president, Abraham Lincoln, was elected in 1860 and again in 1864 (pp. 290). The foremost issue was slavery—Douglas, the Democratic Party candidate, stated the issue in terms of popular sovereignty, while Lincoln coated it in morality and rule of law (pp. 288-290).

The Republican Party has run candidates in every presidential election. Out of the last 29 presidents, 18 have been Republicans (starting with Lincoln). The following are some of the successes and notable events in Republican Party history: the Republican-controlled Congress abolished slavery through the 13th amendment in 1865 and passed the 14th amendment in 1866; Pinckney Pinchback was inaugurated as governor of Louisiana in 1872 and was the first African American to become a governor; in 1919 the Republican-controlled Congress passed the 19th amendment; in 1957 President Dwight Eisenhower (R) signed the 1957 Civil Rights Act; and in 1981 President Reagan appointed the first female to the Supreme Court ("Our History" 2013).

The modern Republican Party is similar to the original Democrats, more commonly known as the Jeffersonian Republicans. As mentioned earlier, the Jeffersonian Republicans were the impetus behind payment of national debt, balanced budgets, and state power (Schweikart et al. 2007, pp. 159). Today’s Republicans declared in the 2012 convention that their priorities included shrinking the scope of Fannie Mae and Freddie Mac, having an annual audit of the Federal Reserve, reductions in unnecessary federal expenditures, and reducing regulations.
(Republican Party 2012, pp. 9-12). In addition, the Republicans wish to provide for a stronger foreign policy and presence and freer trade through, “The deregulation and opening of vast new global markets for services in areas such as energy, airlines, finance, and entertainment.” (Zoellick 2000, pp. 72-73).

### 2.3 Economic Performance

Undoubtedly, there is extensive disagreement on whether Democrats or Republicans are better for the economy, or whether political parties have no effect on the economy. Some of the analysts simply analyze the political party of each president with respect to RGDP or inflation, while others delve deeper by looking at the stock market and unemployment. My research looks at presidents, Congress, and state governorships with respect to the percent change in RGDP and the percent change in the CPI.

Santa-Clara and Valkanov (henceforth referred to as Santa-Clara) and Dunne claim the Democratic Party presidents have higher RGDP growth than Republican Party presidents. Dunne uses labor force participation, the growth of fiscal spending, and a dummy variable for the political party of each president (Dunne 2008, pp. 45-46). Her model shows Democrats and growth in labor force participation have a positive effect on RGDP (pp. 47). The $R^2$ is only 25%, but the p-value for the f-statistic is 0.007 (pp. 49).

Santa-Clara states that Democratic Party presidents have a higher RGDP growth rate than Republican Party presidents in order to prove that the higher excess returns in the stock market under Democratic Party presidents are not influenced by business cycles. On average, the stock market performs around five percent better under Democratic Party presidents than under Republican Party presidents (Santa-Clara & Valkanov 2003, pp. 1841). Market volatility is also lower under Democratic Party presidents. However, there is a possibility that these higher returns
are a result of a higher perceived risk when electing a Democratic Party president (Santa-Clara & Valkanov 2003, pp. 1843). Santa-Clara also contends that, “Presidential parties…capture variations in returns that are largely uncorrelated to what is explained by business cycles” (pp. 1842). They use a monthly data sample dating from 1927 to 1998, a total of 864 months (pp. 1845).

Although Santa-Clara attributed higher RGDP growth to Democratic Party presidents, they also claim Republican Party presidents have significantly lower inflation rates than Democratic Party presidents (pp. 1842). Republicans tend to base their approval ratings of a president on the inflation rate, while the opposite is true for Democrats. This is likely why Republican Party presidents target the inflation rate (Lebo & Cassino 2007, pp. 740). President George W. Bush averaged a low 1.8 percent inflation rate, which is third best since President Harry S. Truman. Republicans actually hold four of the top five spots for low inflation rates. President Richard Nixon had the highest average inflation rate for a Republican Party president and is ranked in the bottom five, along with four Democratic Party presidents, for inflation (Carroll).

Looking at the gamut of the current research it seems that both Republican Party presidents and Democratic Party presidents are equally well suited to run the economy. Besley et. al. puts forth a new idea that political competition is highly similar to market competition, in that competition creates advancement and promotes efficiency (Besley et. al. 2010, pp. 1330). The basic feature of Besley’s model is that as political competiveness increases each political party will implement programs and policies that will promote economic growth in order to capture the Independent voters. When political competiveness is relatively low, the party with
the electoral advantage has less of an incentive to promote the economic growth policies that appeal to the Independent voters (pp. 1331).

Besley et al’s analysis shows that political competiveness is correlated with economic growth and is a significant causal variable. Political competition is associated with higher per capita income, lower tax revenue at the state levels, a higher level of infrastructure expenditures, and an increase in state right-to-work laws (Besley et. al. 2010, pp. 1348). This research is indifferent on whether Republicans or Democrats are in political control, because it states that political competiveness will work like a market and force suitable economic policies regardless of which party is in power.

**Section 3: Economic Growth**

**3.1 RGDP Hypothesis and Methodology**

This is the first of the two multiple regression models. The Democratic Party is expected to have a positive effect on the percent change in inflation (Santa-Clara et al. 2003; Dunne 2008). The data is yearly and begins in 1953, President Dwight D. Eisenhower’s first term, and ends in 2013, the beginning of President Barack Obama’s second term. The model is below and is estimated by the ordinary least squares method.

\[
\Delta RGDP = \alpha + \beta_1 President_{t-2} + \delta_i Senate_{t-2} + \nu_i House_{t-2} + \rho_i Governors_{t-2} \\
+ \zeta_i \Delta Population + \omega_i \Delta FederalDebt + \kappa_i \Delta DJI + e_i
\]

The dependent variable, the percent change in RGDP, is the variable being explained in this model. RGDP is the dollar value of final output produced within the United States,
controlled for inflation (Williamson 2011, pp. 39, 49). The percent change in RGDP represents
the growth of the American economy.

The model is composed of four dummy variables that represent different elected positions
at the federal and state level. Each variable is lagged two years. \( \beta_i \) represents the office of the
President of the United States; \( \delta_i \) represents the majority\(^2\) party in the Senate\(^3\), \( \nu_i \) represents the
majority party in the House of Representatives; and \( \rho_i \) represents the party that held the majority
of governorships each year. Years when the majority party is the Republican Party are equal to
one, and years when the majority party is the Democratic Party are equal to zero. This is also the
same for the presidential dummy variable.

The model also has three control variables. The first control is the percent change in total
population in the United States, and its corresponding coefficient is \( \zeta_i \). It is used to control for the
increase in household demand for goods and services that population growth should create. The
second is the percent change in total federal debt from year to year, and its corresponding

coefficient is \( \omega_i \). The third is the percent change in the Dow Jones Industrial Average (DJI), and
its corresponding coefficient is \( \kappa_i \). The DJI is an average of the nation’s 30 largest corporations.
It is an average value of these companies based on their output and profits. The DJI will control
for the private sector. None of these variables are lagged.

Table 1 lists all of the variables, along with a description and the expected correlation. A
correlation matrix is available in the appendix.

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\(^2\) When the word “majority” is used in reference to any of the political variables, it will be defined as 50 plus one
percent.

\(^3\) In the year 2001, the majority in the Senate changed three times. No datum was recorded for that year, and it was
dropped during the OLS estimation.
Table 1: RGDP Regression Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Corresponding Coefficient</th>
<th>Description</th>
<th>Expected Effect On RGDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presidential Dummy Variable</td>
<td>$\beta$</td>
<td>Democratic Presidents equal 0 and Republican Presidents equal 1</td>
<td>-</td>
</tr>
<tr>
<td>Senate Dummy Variable</td>
<td>$\delta$</td>
<td>Equals 1 when the Republican caucus is the majority, and equals 0 when the Democrat caucus is the majority</td>
<td>-</td>
</tr>
<tr>
<td>House Dummy Variable</td>
<td>$\nu$</td>
<td>Equals 1 when the Republican caucus is the majority, and equals 0 when the Democrat caucus is the majority</td>
<td>-</td>
</tr>
<tr>
<td>Governorship Dummy Variable</td>
<td>$\rho$</td>
<td>Equals 1 when Republicans control the majority of the state governorships, and equals 0 when Democrats control the majority of the state governorships</td>
<td>-</td>
</tr>
<tr>
<td>Total Population</td>
<td>$\zeta$</td>
<td>U.S. population: all ages including armed forces overseas</td>
<td>+</td>
</tr>
<tr>
<td>Total Debt—Federal</td>
<td>$\omega$</td>
<td>The total federal debt accumulated by the U.S. federal government</td>
<td>+</td>
</tr>
<tr>
<td>Dow Jones Industrial Average</td>
<td>$\kappa$</td>
<td>An average that shows how 30 large publicly traded stocks are trading in the U.S.</td>
<td>+</td>
</tr>
</tbody>
</table>

The table on the following page is a list of seven different summary statistics for each variable. The means of the political variables suggest that the Democratic Party has had more control over the U.S. government than the Republican Party. The mean of the presidential variable is .59, which means that the president has been a member of the Republican Party more times than he has been a member of the Democratic Party. More specifically, there has been a Republican Party president in office 34 of the 59 years in the sample. The other three political variables are much different. The mean for the Senate is 0.30, the House is 0.27, and the governor variable is 0.29. These numbers show that the majority party for each of these elected bodies has been Democratic many more times than it has been Republican. (These four political variables are not characterized by percent changes like all of the other variables.)
Table 2: RGDP Model Summary Statistics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Median</th>
<th>Min.</th>
<th>Max.</th>
<th>Std. Dev.</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presidenti 1 Dummy Variable</td>
<td>0.590164</td>
<td>1.00000</td>
<td>0.00000</td>
<td>1.00000</td>
<td>0.495885</td>
<td>-0.366667</td>
<td>-1.86556</td>
</tr>
<tr>
<td>Senate Dummy Variable</td>
<td>0.300000</td>
<td>0.00000</td>
<td>0.00000</td>
<td>1.00000</td>
<td>0.462125</td>
<td>0.872872</td>
<td>-1.23810</td>
</tr>
<tr>
<td>House Dummy Variable</td>
<td>0.278689</td>
<td>0.00000</td>
<td>0.00000</td>
<td>1.00000</td>
<td>0.452075</td>
<td>0.987218</td>
<td>-1.02540</td>
</tr>
<tr>
<td>Governor Variable</td>
<td>0.295082</td>
<td>0.00000</td>
<td>0.00000</td>
<td>1.00000</td>
<td>0.459865</td>
<td>0.898606</td>
<td>-1.19251</td>
</tr>
<tr>
<td>Real GDP</td>
<td>3.06892</td>
<td>3.26757</td>
<td>-2.84244</td>
<td>7.00761</td>
<td>2.21061</td>
<td>-0.498292</td>
<td>-0.068277</td>
</tr>
<tr>
<td>Total Population</td>
<td>1.15100</td>
<td>1.08437</td>
<td>0.71098</td>
<td>1.78955</td>
<td>0.287824</td>
<td>0.883701</td>
<td>-0.21649</td>
</tr>
<tr>
<td>Total Debt</td>
<td>8.30638</td>
<td>8.50000</td>
<td>0.00000</td>
<td>17.8000</td>
<td>4.30699</td>
<td>0.159179</td>
<td>-0.51885</td>
</tr>
<tr>
<td>Dow Jones Industrial Average</td>
<td>6.57937</td>
<td>7.11476</td>
<td>-23.5400</td>
<td>30.0279</td>
<td>12.3737</td>
<td>-0.183111</td>
<td>-0.39587</td>
</tr>
</tbody>
</table>

The average percent change of RGDP has been about 3 percent. The lowest percent change in RGDP was -2.84 percent, and that is 2.65 standard deviations from the mean. The highest change in RGDP was 7.01 percent, and that is 1.8 standard deviations from the mean. RGDP is also skewed to the right, as opposed to a normal distribution. The distribution is also platykurtic, with the tails being slightly fatter than a normal distribution.

The following are graphs of the percent change in RGDP. Figure 1 is a time series plot that shows the percent changes in RGDP since 1953. The gray bars mark periods of recessions. Figure 2 is the same plot as Figure 1, but it is marked with a best fitting linear line. This line shows that growth in the United States is becoming anemic. We are on a downward path to either no percent change in RGDP or negative change in RGDP.
Figure 1: Percent Change in RGDP

Figure 2: Best Fitting Linear Line—Percent Change in RGDP
3.2 RGDP OLS Results

The OLS results from the percent change in RGDP regression are located in Table 3. Two of the three control variables, three of the four political variables, and the constant have statistically significant effects on the percent change in RGDP.

Table 3: Percent Change in RGDP Regression Results

Dependent variable: Percent Change in Real GDP

<table>
<thead>
<tr>
<th></th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-ratio</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>constant</td>
<td>5.63013</td>
<td>2.55874</td>
<td>2.200</td>
<td>0.0339  **</td>
</tr>
<tr>
<td>Presidential Dummy Variable</td>
<td>1.37720</td>
<td>0.710804</td>
<td>1.938</td>
<td>0.0601  *</td>
</tr>
<tr>
<td>Senate Dummy Variable</td>
<td>1.63773</td>
<td>0.839112</td>
<td>1.952</td>
<td>0.0584  *</td>
</tr>
<tr>
<td>House Dummy Variable</td>
<td>-2.45292</td>
<td>1.15156</td>
<td>-2.130</td>
<td>0.0397  **</td>
</tr>
<tr>
<td>Governors Variable</td>
<td>0.106577</td>
<td>0.902319</td>
<td>0.1181</td>
<td>0.9066</td>
</tr>
<tr>
<td>Total Population</td>
<td>-1.34290</td>
<td>2.12602</td>
<td>-0.6316</td>
<td>0.5314</td>
</tr>
<tr>
<td>Total Debt-Federal</td>
<td>-0.311384</td>
<td>0.100485</td>
<td>-3.099</td>
<td>0.0036  ***</td>
</tr>
<tr>
<td>Dow Jones Industrial Average</td>
<td>0.0698340</td>
<td>0.0226978</td>
<td>3.077</td>
<td>0.0039  ***</td>
</tr>
</tbody>
</table>

Mean dependent var 2.895488 S.D. dependent var 2.109790
Sum squared residuals 128.7349 S.E. of regression 1.840587
R-squared 0.357304 Adjusted R-squared 0.238913
F(7, 38) 3.017994 P-value(F) 0.012697

The R-squared for this model is 0.357 or 35.7 percent, and the unknown term is 0.643 percent. This means that the model explains 35.7 percent of the variation in the change of RGDP. The p-value associated with the R-squared’s F-test is 2.30e-11. This means that there is less than a one percent chance that the regression coefficients are all equal to zero, and explain none of the variation in the change in RGDP.
The constant is 5.63 percent, and it is significant at the 95 percent level. This means that if there was no change in the independent variables, then there would still be a 5.63 percent increase in the percent change in RGDP.

Of the three control variables, only the percent change in population is found to be insignificant. It has a high p-value of 0.5314, and its coefficient is -1.34290. The percent change in total federal debt and the percent change in the Dow Jones Industrial Average are both significant at the 99 percent level. The percent change in total federal debt has a -0.311384 percent effect, holding all other things constant, on the percent change in RGDP. It has a p-value of 0.0036. The percent change in the Dow Jones Industrial Average has a 0.0698 percent effect, holding all other things constant, on the percent change in RGDP.

The presidential, Senate, and House of Representatives variables are found to be statistically significant. The governorship dummy variable is the only political variable that is statistically insignificant, and it has a large p-value of 0.9066. The House variable has a -2.45292 percent effect on the percent change in RGDP, meaning that a Republican Party controlled House of Representatives will have a negative effect on economy. The Senate variable has a 1.63773 percent effect on the percent change in RGDP, and is significant at the 90 percent level. The presidential variable has a 1.37720 percent effect on the percent change in RGDP, and is also significant at the 92 percent level.

These results for the presidential and Senate coefficients differ from the expected outcome, but the House of Representatives coefficient had the negative effect that was hypothesized (Dunne 2008; Santa-Clara et al. 2003).
Section 4: Inflation

4.1 CPI Hypothesis and Methodology

This regression equation analyzes the relationship that the Democratic Party and the Republican Party have on the percent change in the inflation rate (CPI). The Republican Party is expected to have a positive effect on the percent change in inflation (Santa-Clara et al. 2003; Carroll). The time period for this model is the same as the RGDP model. The data is yearly and begins in 1953, President Dwight D. Eisenhower’s first term, and ends in 2013, the beginning of President Barack Obama’s second term. The model is below and is estimated by the ordinary least squares method.

\[
\Delta CPI = \alpha + \beta_t President_{t-2} + \delta_t Senate_{t-2} + \nu_t House_{t-2} + \rho_t Governors_{t-2}
+ \zeta_t \Delta Unemployment_{t-1} + \kappa_t \Delta Currency_{t-1} + e_t
\]

The dependent variable is the percent change in the CPI. It serves as a proxy for the nation’s inflation rate. The CPI is a measure of the average change in the price of goods and services purchased by consumers (FRED). “This particular index includes roughly 88 percent of the total population, accounting for wage earners, clerical workers, technical workers, self-employed, short-term workers, unemployed, retirees, and those not in the labor force” (FRED).

The inflation rate is very important, because it measures how much a person can purchase with a dollar. If the prices of goods are steadily rising, you will not be able to purchase as much as you could the period before. Politicians, businesses, and the public have always been glued to this number. Grier et. al. (1998) states why this is such a perplexing issue: “While surprise inflation redistributes wealth, it is difficult to show significant welfare losses from moderate, predictable inflations. Yet inflation is extremely unpopular with the public. One answer to this
dilemma is that average inflation has indirect real costs through its effect on nominal uncertainty” (Grier et. al. 1998, pp. 671-672).

This model also has the same four political dummy variables and the same letters for coefficients. Just as a reminder, $\beta_i$ represents the office of the President of the United States; $\delta_i$ represents the majority party in the Senate; $\nu_i$ represents the majority party in the House of Representatives; and $\rho_i$ represents the party that held the majority of governorships each year. Years when the majority party is the Republican Party are equal to one, and years when the majority party is the Democratic Party are equal to zero. This relationship is also the same for the presidential dummy variable.

The model has two control variables. The first control is the percent change in the civilian unemployment rate, and its corresponding coefficient is $\zeta_i$. The Phillips Curve hypothesizes a downward sloping relationship among unemployment and inflation. When unemployment increases inflation will decrease (Gwartney et al. 2011, pp. 333). The second is the percent change in the currency in circulation, and its corresponding coefficient is $\kappa_i$. There is a positive correlation between currency in circulation and inflation. If the amount of currency in circulation increases at a rate greater than gross domestic product, then inflation should increase. A rapid expansion in the money supply will also have harmful effects on the economy (Gwartney et al. 2011, pp. 186-187). The percent change in unemployment rate and the percent change in currency in circulation are lagged one year.

Table 4 lists all of the variables, along with a description and the effect each variable is expected to have on the percent change in CPI. Table 5 is a list of seven different summary statistics for each variable. The explanation for the political dummy variables and their

---

4 In the year 2001, the majority in the Senate changed three times. No datum was recorded for that year, and it was dropped during the OLS estimation.
corresponding summary statistics are the same as in the percent change of RGDP section, and will not be restated here. Also, a correlation matrix is available in the appendix.

### Table 4: CPI Regression Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Corresponding Coefficient</th>
<th>Description</th>
<th>Expected Effect on CPI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presidential Dummy Variable</td>
<td>( \beta )</td>
<td>Democratic Presidents equal 0 and Republican Presidents equal 1</td>
<td>-</td>
</tr>
<tr>
<td>Senate Dummy Variable</td>
<td>( \delta )</td>
<td>Equals 1 when the Republican caucus is the majority, and equals 0 when the Democrat caucus is the majority</td>
<td>-</td>
</tr>
<tr>
<td>House Dummy Variable</td>
<td>( \nu )</td>
<td>Equals 1 when the Republican caucus is the majority, and equals 0 when the Democrat caucus is the majority</td>
<td>-</td>
</tr>
<tr>
<td>Governorship Dummy Variable</td>
<td>( \rho )</td>
<td>Equals 1 when Republicans control the majority of the state governorships, and equals 0 when Democrats control the majority of the state governorships</td>
<td>-</td>
</tr>
<tr>
<td>Civilian Unemployment Rate</td>
<td>( \zeta )</td>
<td>Number of unemployed dividing by the total labor force; does not included the armed forces or those who are institutionalized</td>
<td>-</td>
</tr>
<tr>
<td>Currency in Circulation</td>
<td>( \kappa )</td>
<td>Total of all paper currency and coin in the U.S.</td>
<td>+</td>
</tr>
</tbody>
</table>

The mean change in the CPI from one year to the next is 3.59 percent. The median is at 2.97 percent, which is 0.62 percentage points lower than the mean. The lowest change in CPI has been -0.32 percent and the highest has been 12.67 percent. The standard deviation is 2.66, making the maximum change in CPI 3.41 standard deviations from the mean. The minimum change in CPI is only 1.48 standard deviations from the mean. The skewness is 1.46 and excess kurtosis is 2.16. This means that the distribution is skewed to the right and is much taller than a normal distribution.
The following graph, Figure 3, shows the change in CPI since 1953. The gray bars show periods of recessions. For the most part, it seems as if the inflation rate always drops during a recession. Figure 4 shows the percent change in the CPI with a best fitting linear line and Figure 5 shows the percent change in the CPI with a best fitting cubic line. Unlike the RGDP graphs, these best fitting lines tell two different stories. The linear line assumes a constant change of 4 percent, while the cubic line shows a period of great increase until the 1980’s and a gradual decrease since then.
Figure 3: Percent Change in CPI

Figure 4: Best Fitting Linear Line—Percent Change in CPI
4.2 CPI OLS Results

The results for this regression are located in Table 6. The constant and both controls were found to be statistically significant, but none of the political variables were found to be statistically significant.

The R-squared is 0.42 or 42 percent. This essentially means that the model explains a little less than half of the variation in the percent change in CPI. The p-value for the R-squared statistic is 0.000069, an extremely minute number. This means that there is less than a one percent chance that the regression coefficients are all equal to zero, and explain none of the variation in the percent changes in CPI.

The constant, or the y-intercept, is 2.75 percent, and it is significant at the 90 percent level. A closer look will also reveal that the variable is only one percent away from being significant at the 95 percent level. This means that if the coefficients for all of the independent
variables and controls were zero or if there was no change in the variables, then there would still be a 2.75 percent increase in the percent change in CPI.

**Table 6: CPI Regression Results**

Model 1: OLS, using observations 1953-2013 (T = 58)
Dependent variable: CPI

<table>
<thead>
<tr>
<th></th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-ratio</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>2.75450</td>
<td>1.43374</td>
<td>1.921</td>
<td>0.0604  *</td>
</tr>
<tr>
<td>Presidential Dummy</td>
<td>0.349516</td>
<td>0.655183</td>
<td>0.5335</td>
<td>0.5961</td>
</tr>
<tr>
<td>Senate Dummy Variable</td>
<td>-0.921229</td>
<td>0.920723</td>
<td>-1.001</td>
<td>0.3219</td>
</tr>
<tr>
<td>House Dummy Variable</td>
<td>0.267542</td>
<td>1.27208</td>
<td>0.2103</td>
<td>0.8343</td>
</tr>
<tr>
<td>Governors Dummy Variable</td>
<td>-1.12240</td>
<td>0.954045</td>
<td>-1.176</td>
<td>0.2450</td>
</tr>
<tr>
<td>Civilian Unemployment Rate</td>
<td>-0.430894</td>
<td>0.223110</td>
<td>-1.931</td>
<td>.0591   *</td>
</tr>
<tr>
<td>Currency in Circulation</td>
<td>0.633690</td>
<td>0.119464</td>
<td>5.304</td>
<td>2.58e-06 ***</td>
</tr>
</tbody>
</table>

|                        |            |            |         |         |
| Mean dependent var     | 3.724235   | S.D. dependent var | 2.662426 |
| Sum squared resid      | 228.2834   | S.E. of regression | 2.136743 |
| R-squared              | 0.424916   | Adjusted R-squared | 0.355906 |
| F(6, 50)               | 6.157304   | P-value(F)      | 0.000069 |

Both controls are statistically significant. The first control is the percent change in the civilian unemployment rate. It has a coefficient of -0.430894 and a p-value equal to .0591, which means the civilian unemployment rate is significant at the 94 percent level. This is the expected result because of the relationship between inflation and unemployment that the Phillips Curve characterizes. As unemployment increases, inflation should decrease (Gwartney et al. 2011, pp. 332-333). During the hyperinflationary periods of the 1970s, politicians and economists believed the public could put up with small rises in the inflation rate in order to lower the unemployment number. They used the Phillips Curve to illustrate the relationship between inflation and
unemployment (pp. 333). Gwartney further states that, “The adaptive–expectations theory implies that there will be a time lag—perhaps one to three years—before people are able to anticipate and adjust fully to a high rate of inflation. But once the higher rate of inflation is anticipated, it will not lead to an expansion in either output or employment” (pp. 333-334).

The second control variable is the percent change in currency in circulation. Its coefficient is 0.633690. The p-value is 2.58e-06 and the coefficient is significant at the 99 percent level. Economic theory states that if the amount of currency in circulation increases at a rate greater than gross domestic product, then inflation should increase (Gwartney et al. 2011, pp. 186-187). “The old saying is that prices rise because ‘there is too much money chasing too few goods’” (pp. 186).

All four of the political variables were found to be statistically insignificant. The House of Representatives variable is the variable with the highest p-value at 0.8343. This means that there is basically an 88 percent chance that the coefficient is zero and the House of Representatives has no effect on the percent change in CPI. The p-value for the Senate is 0.3219 and the p-value for the governor variable in 0.2450.

The presidential variable is also statistically insignificant. According to Santa-Clara, Democratic Party presidents usually have higher rates of inflation growth than Republican Party presidents (1842). Also, Carroll ranked the most recent 12 presidents according to the inflation rate during each president’s term(s), and states that Republican Party presidents actually hold four of the top five spots for low inflation rates. He also states that four of the bottom five spots are held by Democratic Party Presidents (Carroll). Inflation may be lower when there is a Republican Party president, but correlation does not imply direct causation.
Section 5: Discussion and Conclusion

The conclusion of this paper is that political parties at the national level do have a significant effect on the percent change in RGDP, but political parties do not have a significant effect on the percent change in inflation. This section will discuss some of the changes that the models underwent, and how it has improved the models. It will also discuss the indirect effect that political parties might have on economy and inflation.

The question of how long to lag each of the four political variables was a pertinent question when formulating these two models. Each political variable was originally lagged one year. When each political variable is lagged one year in the percent change in CPI model, the R-squared is 80.23 percent; opposed to the 42.49 percent R-squared when political variables are lagged two years. Although the R-squared is higher with a one year lag, the percent change in civilian unemployment is not significant. When the political variables are lagged two years, the percent change in civilian unemployment comes 0.09 percent away from being significant at the 95 percent level. This is more in line with economic theory (Gwartney et al. 2011, pp. 332-333).

When the political variables are lagged two years in the percent change in RGDP model, the R-squared is 35.73 percent and five of the independent variables become significant at the 90 percent level or higher. When political variables are lagged one year, the R-squared drops to 22.07 percent and only the percent change in the Dow Jones Industrial Average is significant.

Political parties could also have a real indirect effect on the economy. Presidents make appointments to vacant judgeships, and the Senate must confirm them. These judges then rule on the validity of laws, and even tighten or expand the law’s reach. More importantly, the President appoints members to the Federal Reserve. The Federal Reserve controls interest rates, the money supply, and in recent years they have engaged in quantitative easing. Once appointed these
appointees do not always conform to the President’s plan. Policies can artificially inflate RGDP and/or cause inflation to rise. Similar problems can even occur at the state level. These are all possible points that could be analyzed in future research. Variables would have to be created to control for these possibilities, but I believe there would be many issues dealing with collinearity.
### Appendix

**Table 7: RGDP Correlation Matrix**

5% critical value (two-tailed) = 0.2521 for n = 61

<table>
<thead>
<tr>
<th>Presidential Dummy Variable</th>
<th>Senate Dummy Variable</th>
<th>House Dummy Variable</th>
<th>Governor Variable</th>
<th>Real GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0000</td>
<td>0.1107</td>
<td>-0.1511</td>
<td>-0.3379</td>
<td>-0.1927</td>
</tr>
<tr>
<td>1.0000</td>
<td>0.5922</td>
<td>0.3148</td>
<td>0.0706</td>
<td>Senate Dummy Variable</td>
</tr>
<tr>
<td>1.0000</td>
<td>0.7202</td>
<td>-0.0258</td>
<td>House Dummy Variable</td>
<td></td>
</tr>
<tr>
<td>1.0000</td>
<td>0.0778</td>
<td>Governor Variable</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.0000</td>
<td>Real GDP</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total Population</th>
<th>Total Debt-Federal</th>
<th>Dow Jones Industrial Average</th>
<th>Presidential Dummy Variable</th>
<th>Senate Dummy Variable</th>
<th>House Dummy Variable</th>
<th>Governor Variable</th>
<th>Real GDP</th>
<th>Total Population</th>
<th>Total Debt-Federal</th>
<th>Dow Jones Industrial Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.0307</td>
<td>0.3177</td>
<td>-0.0310</td>
<td>Presidential Dummy Variable</td>
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<td></td>
<td></td>
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<tr>
<td>-0.1436</td>
<td>0.0163</td>
<td>0.2799</td>
<td>Senate Dummy Variable</td>
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<tr>
<td>-0.1175</td>
<td>-0.4246</td>
<td>0.1588</td>
<td>House Dummy Variable</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>-0.1771</td>
<td>-0.5543</td>
<td>0.0735</td>
<td>Governor Variable</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>0.0967</td>
<td>-0.1610</td>
<td>0.3686</td>
<td>Real GDP</td>
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<td>1.0000</td>
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<td>Total Debt-Federal</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>1.0000</td>
<td>Dow Jones Industrial Average</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 8: Inflation Correlation Matrix

5% critical value (two-tailed) = 0.2521 for n = 61

<table>
<thead>
<tr>
<th>Presidential Dummy Variable</th>
<th>Senate Dummy Variable</th>
<th>House Dummy Variable</th>
<th>Governors Variable</th>
<th>Inflation: CPI</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0000</td>
<td>0.1107</td>
<td>-0.1511</td>
<td>-0.3379</td>
<td>0.0796</td>
</tr>
<tr>
<td>1.0000</td>
<td>0.5922</td>
<td>0.3148</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.0000</td>
<td>0.7202</td>
<td>-0.2929</td>
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<td>1.0000</td>
<td>-0.2269</td>
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</table>

<table>
<thead>
<tr>
<th>Civilian Unemployment Rate</th>
<th>Currency in Circulation</th>
<th>Presidential Dummy Variable</th>
<th>Senate Dummy Variable</th>
<th>House Dummy Variable</th>
<th>Governors Variable</th>
<th>Inflation: CPI</th>
</tr>
</thead>
<tbody>
<tr>
<td>-0.0026</td>
<td>-0.2521</td>
<td>Presidential Dummy Variable</td>
<td>Senate Dummy Variable</td>
<td>House Dummy Variable</td>
<td>Governors Variable</td>
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</tr>
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<td>-0.0078</td>
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<tr>
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<tr>
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<td>Currency in Circulation</td>
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</tbody>
</table>
References


