Student Version

Title: Who will win the 2020 Presidential election?

Abstract: Using previous Presidential election results, polling data, and relevant economic data we will test various models of Presidential election outcomes to offer a prediction on who will win the 2020 Presidential election. This module will introduce students to basic statistical analysis as well as the importance of "fundamentals" in determining election outcomes

Individual or group project: groups of 2-3 students

Data: all relevant data will be provided to students in an Excel spreadsheet along with a codebook detailing what the variables are and data sources.

Procedure/Plan of Action to Complete the Project: This project will take place in conjunction with the section on Elections. Students will be sorted into groups of 2 or 3 and assigned an election model to test. Each group will be required to produce descriptive statistics and run a multiple regression of the model assigned to them . We will use class time to go over how to use the statistical software JASP, what descriptive statistics are and how to run a multiple regression in JASP and how to interpret it. Description of dependent and independent variables in our proposed mode are given in the "example" section. Once groups have their results they are required to write a brief report explaining the results (including using appropriate graphs and tables). Additionally, the report should use the results of the analysis, and appropriate data about the 2020 election to make a prediction about who will win the 2020 election. Finally, each group will be required to present their findings to the entire class (5-10 minute presentation)

Example:

"Using the Political Economy Model to predict the 2020 Presidential Election"

The Political Economy model of election forecasting is a simple model that predicts incumbent party vote as determined by presidential popularity and economic growth (Lewis-beck and Tien (2016). The model only includes two independent variables but those variables capture both economic (economic growth) and non-economic issues (presidential popularity). Generally speaking, the assumption is that the better the incumbent party's President does on these issues the better it is for the incumbent party's candidate. In other words, the more likely the incumbent party's candidate will win the election. The years covered for this assignment will be from 1948 to 2016.

The dependent variable used is the Presidential incumbent party's share of the popular vote. Of course, the winner of the Presidential election is determined by the winner of the Electoral College vote not the popular vote but utilizing the popular vote allows for the use of a more useful statistical tests – OLS regression. Additionally, the winner of the popular vote and the winner of the Electoral College vote are strongly correlated. The data sources used here are from the American Presidency Project and Gallup

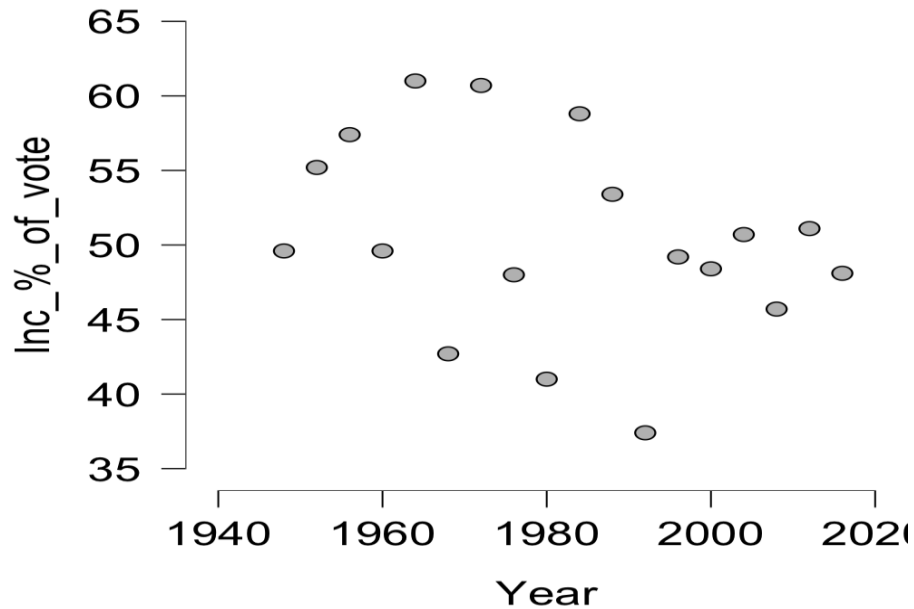**Figure 1 Incumbent Party's Share of the Popular Vote**

Figure 1 present the distribution of incumbent party vote share from 1948 to 2016. The average value for this period is 50.44%. This indicates that over the course of 18 Presidential elections incumbency is not a guarantee of victory.

The measure of Presidential popularity that will be used is the approval rating of the President in the June Gallup Poll. Gallup has Presidential approval rating data going back to 1948 which makes the measure useful for covering a larger range of Presidential elections. Furthermore, using approval ratings from June squares with previous political science research that voters make up their mind about who they are going to vote for President well before the election happens.

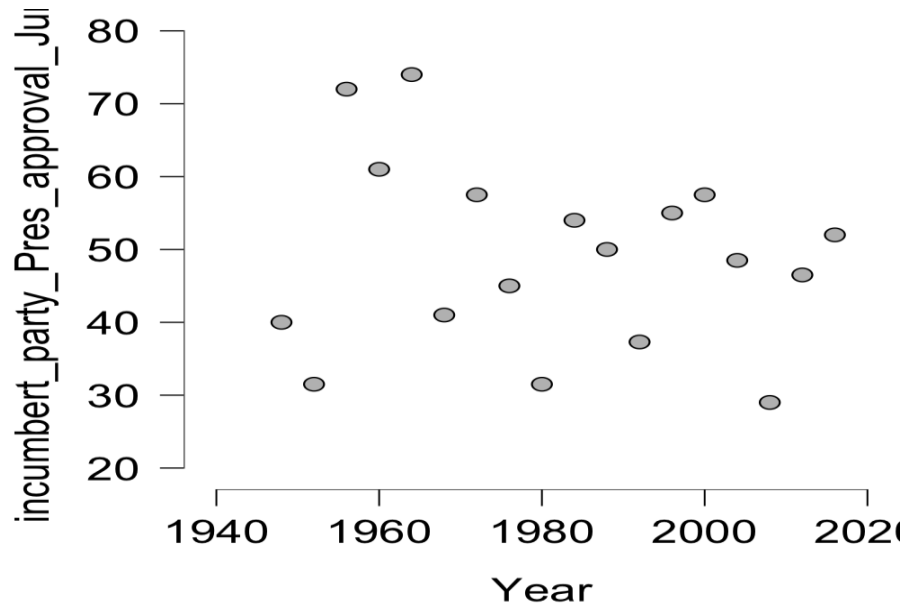**Figure 2 Incumbent President Approval Rating (June)**

Figure 2 contains the distribution of incumbent President approval rating in June of each Presidential election year. The range of observations is wide from a low of 20% to a high of 74% with the mean approval rating across 18 elections at 49.1%

Finally, the measure of economic growth used in this analysis is level of GDP growth (as a percentage) during the first two quarters of an election Year. As with Presidential approval we use data well before the actual date of the Presidential election to capture the idea that voters make up their minds on who they will vote for President well before election day.

Figure 3 Year – GDP Growth in first 2 Quarters of Election Year
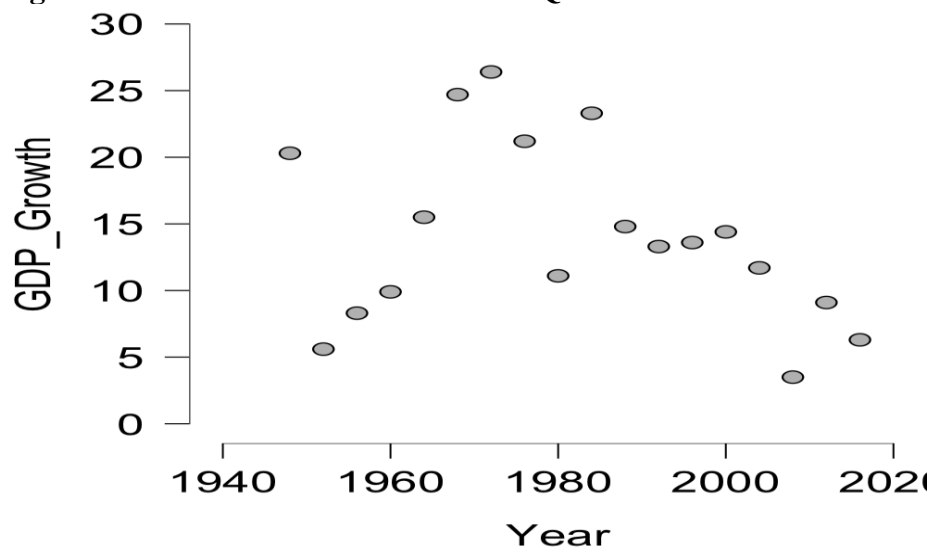

Figure 3 presents GDP growth in the first 2 quarters of an election year. The observations range from a low of 3.5% to a high of 26.4% and the average is 14.1%
The results of the regression analysis are presented in Table 1.

Table 1. Political Economy Model Regression Results

Coefficients

Model		Unstandardized	Standard Error	Standardized	t	p
H_0	(Intercept)	50.444	1.541		32.725	< .001
H_1	(Intercept)	33.682	5.395		6.244	< .001
	incumbert_party_Pres_approval	0.318	0.101	0.628	3.147	0.007
	GDP_Growth	0.081	0.193	0.084	0.421	0.680

The results for both variables are positive showing that, as we expected, the higher the values on those two variables the greater the changes of the incumbent President's party winning the election. The coefficient for Presidential approval rating is .318 meaning that for every 1 percentage increase in Presidential approval the incumbent party's vote share increases by .32 percent on average. Presidential approval is also statistically significant as the p value is less than .05. The coefficient for GDP growth is .081 which means that for every 1 percentage point increase in GDP growth the vote share of the incumbent party increases by .08 percent on average. Unlike Presidential approval rating GDP growth is not statistically significant. Also, the much smaller size of the coefficient tells us that Presidential approval rating is a stronger predictor of incumbent party vote share than in GDP growth

How can we use these results to predict the winner of the 2020 Presidential election? Using the following equation, we can put in current numbers to predict the next President of the United States:

Vote = 33.68 + .31(current Pres approval rating) + .08(GDP growth in first 2 quarters of 2020)

President Trump's approval rating in June was 38.5% and GDP growth was -5. Plugging those numbers into the equation above we come up with the following answer: 45.22% of the popular vote for the Republican candidate (Donald Trump). This most likely would mean an election loss for the Republicans and a win for the Democratic Party and their nominee Joe Biden

Duration: One week and then discussion or results after the election

Deliverables and evaluation: the groups of students will briefly present their findings to the entire class and submit a short, written report. Evaluation of presentation and report is done by using a rubric which includes scoring for three components: methodology/content, organization, and delivery.