

# **Predicting the US Presidential Approval and Applying the Model to Foreign Countries.**

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Date: May 01, 2013

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**ABSTRACT**

Economic factors play a significant, but sometimes subtle role in the world that we live in. Understanding how these factors interact locally, as well as on a global scale could provide our policy makers with valuable insight when contemplating or shaping policy. A further benefit would be to be able to apply these factors into a predictive and useful tool to understand world economies.

There are multiple studies that are designed to examine economic factors that play a role in determining the domestic presidential popularity rate, however an additional element would be to extend the studies to include the examination of these data points as it pertains to foreign countries. A simplistic view is that healthy economic conditions normally translate into higher presidential popularity rates, but a clearer benefit would be to study what factors contribute to the reelection of presidents of foreign countries. The prediction of presidential popularity rates by the United States could provide the significant and insightful shaping of foreign policy with the respective country. The ability to identify who will win an election will also have a political impact in our country's alignment and interaction with world leaders. Using the United States model for predicting the presidential popularity rate as a base line model, and its application to other countries can aid domestic policy makers in understanding what factors have the most impact within the concept of a political system.

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## **I. Introduction**

The focus of my research is to study the effect of the performance of economic indicators and how they correlate to the presidential popularity rate as a predictive tool. In essence, trying to answer the question, “Is it possible to employ an equation that can act as a determining factor in predicting presidential popularity through the use of economic indicators”? The presidential popularity rate indicates what percentages of people who respond to opinion polls approve the way that governments, or politicians in general, are performing at their respective jobs. These numbers are relevant because they attempt to provide theoretical guidelines that are used by both the incumbent government, as well as by governmental opposition. They provide an insight that may suggest how voters think, resulting in how campaigns are structured, and how best to reach potential voters.

If the numbers that are generated prove to be predictive in nature, or if their causes could be identified based on the impact that they make in a presidential popularity rate, they may strongly influence the actions taken by politicians.

## **II. Literature Review**

There have been several papers published that focus on the presidential popularity rate and the functions that determine the rate. My initial review of the literature has led me to choose only a select few papers that I feel most strongly relate to my research question and the data I will be using in my paper. I have chosen a few papers initially to base the beginning of my research on. The presidential popularity rating represents an index of the public’s opinion on how well they believe the current president is doing at his job.

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Berlemann, Michael and Soren Enkelmann [2012] have argued in their paper “The Economic Determinants of U.S. Presidential Approval - A Survey”, that three economic variables perform fairly stable in the presidential popularity functions of the United States. Those three variables are inflation, unemployment and the budget deficit. They conclude that if the popularity functions are assumed to be stable throughout the period being observed that an increase in these three variables will lead to a decrease in the presidential popularity rate. They also go on to argue that the samples period that is chosen will have a huge effect on the results. They suspect this is a major reason for the inconclusive findings reported in most of the literature, due to the fact that there is a big heterogeneity. Their final conclusion is that future research on the determinants of popularity in the U.S. could be determined in two major lines. They, first, argue that looking into the stability of the popularity function is definitely necessary. The other conclusion about future research is that the exact functional relationship between the presidential popularity rate and economic variables needs to be studied in a more systematic way. They argue researching into these two lines of research would greatly help understanding the interaction between the political and the economical spheres much more than the current research. For this research, it is easy to agree with their conclusion that further research must be done to understand this complex relationship. This relationship not only needs to be studied more about the functional relationships, but also the economic indicators that are regularly chosen as the independent variables.

In “History, Heterogeneity, and Presidential Approval. A Modified ARCH Approach”, Gronke, Paul and John Brehm. [2002] they argue that volatility is an important factor in considering the presidential popularity rate. Not only in unexpected outcome of indicators, but also in history and significant events. They go on to talk about how domestic politics matter and

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how scandals and conflict will affect the popularity rate significantly. Their model is completely focused around historical events and volatility in the economy and the country as a whole. This paper helped shape this thesis in the fact that it pointed out how scandal and volatility can have a substantial effect on the popularity rate, thus the time chosen has the least amount of volatility and the most data for a specific time.

Paldam, Martin [ 2008] in his paper, “Vote and Popularity Functions”, finds that despite many attempts into research and economic regressions that most of these papers come up with negative results. He claims many economists are sad that their studies fail and the results go against what is widely believed in economics. He states that, “Voters do not behave like the *economic man* of standard theory”. Voters act more irrationally depending on several factors, from what political party they affiliate with to what is important to them at the time. He goes on to conclude even those who we consider to be the most likely to be economic thinking such as bankers in NYC will also act counter to basic economic theories. Based on the conclusions of Paldam’s paper this study wanted to focus only on the economic indicators that the general public ultimately understands in how they are affected by them. This is why it focuses on unemployment and inflation and the Real GDP. These factors are fairly common to hear and be understood and also will tend to have the largest impact on the general public, thus helping shape their view of the presidential leadership.

In his paper, Lanoue, David J. [1987] “Economic Prosperity and Presidential Popularity. Sorting out the Effects”, he talks about how a great deal of effort has gone into figuring out which economic variable directly influence the presidential popularity rate. Throughout the years the three main variables that have been focused on have been inflation, unemployment, and real disposable income. The outcome of testing these variables has ranged from very significant in

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determining the popularity rate to having no significance whatsoever. He goes on to discuss the lack of study on how exactly these variable may be related, and affect each other, and how it affects the models being tested. He states in particular that unemployment and real disposable income are highly correlated. To avoid this problem this thesis removed the variable of disposable income and focuses more on the other two variable and then looks at another economic variable that is also highly publicized which is Real GDP.

Berlemann, Michael, Soren Enkelmann, and Torben Kuhenkasper [2012] in their paper, “Unraveling the complexity of US presidential approval: A multi-dimensional semi-parametric Approach.” they try to determine the popularity functions in the U.S. using a modern semi-parametric estimation approach. They avoid using a specific functional form, which they claim is arbitrarily chosen, and allow for a more data-driven connection between the approval rating and what is likely to determine it. They found that the commonly used linearity assumption is not a correct fit for the complex relationships between the presidential approval rating and its determinants. Their findings state that based on economic variables is not linearly related to the presidential approval rating, but they used just the economic indicators as they are presented. Though this paper did not find a perfectly linear relationship between these economic indicators, a simple model still may be useful in determining the approval rating and still may be useful in application to foreign countries.

The final paper that is important to mention in this review of the literature is, “The Economy and Presidential Approval”, by Kleykamp, David L. [2012]. He used the paper to attempt to test the most obvious economic variables to find the determinants of presidential approval rating. He argues that based on the data presented in his paper that the strongest determinant of the presidential approval rating is the actual rating itself, but lagged one period.

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He also finds that approval ratings are slow to change as a direct consequence of his first conclusion that the rate determines the new rate. He ultimately finds that the economics variables that have been tested over and over again do a poor job in explaining almost any of the variation in the presidential approval rating. He does admit that both inflation and unemployment have a statistically significant effect on the approval rating but he considers it to be miniscule. The author finds that using the most common and obvious economic variables play a small role if any in determining the presidential popularity rate, but that the rate affects the future rates. I agree that based on previous research that the obvious economic indicators have not provided any one set conclusive result. That being said, I believe that the variables I have chosen that compare the expected, or natural, rates of these variable compared to the actual values will be much more useful in determining the relationship of the presidential popularity rate to its economic indicators. This is because the popularity or approval rate is based on public opinion and it appears to be logical that public opinion will be most strongly affected by how these economic indicators meet the public's expectations.

Based on the extensive research done into the prediction of the presidential popularity rate in the USA, it is easy to see that the popularity rating is an important factor for many different reasons. Despite the overwhelming amount of research done in the USA there appears to be very little research done into how a model of the USA's presidential popularity rate may be applied to similar governmentally structured economies, and the importance of doing so. Of course, it is important to understand how the USA's political realm and the economic realm are linked, but now there is a much larger focus on a worldwide economy. This is why it is much more important to begin to focus on foreign governments and being able to accurately predict who, and what political party, will be running the country and controlling their foreign policy.



### **III. Description of Data**

My data is based on two specific groups of data. First, there are the variables that directly related to the public based on employment and the increasing price level: unemployment (**U**) and inflation (**I**). The second group is based on two other important economic indicators: Consumer Price Index and Gross Domestic Product which are used to determine the real gross domestic product (**RGDP**).

The data collected for the USA is all averaged quarterly throughout each year, along with the presidential approval rating. This will be used to make the data easier to compare and more useful in fitting this model. Averaging this data quarterly over the twenty year span of 1993-2012 will give me a sample of  $n=80$  for each variable. This makes the sample large thus making it more normalized.

In contrast, the data used for the foreign countries will be different in a couple of ways. First, the data collected is based on the annual recorded values due to the available data provided by the International Financial Statistics (IFS) and the World Bank database. Second, the data is collected from 1993 till 2011 giving a value of 19 data points for each of the nine foreign countries because of the amount of current data available from these countries. Finally, and the most important way, the countries data varies from the USA's data is that the equation dependent variable is based on a dummy dependent variable. The dummy variable in these cases are used to determine when a change in the political party in the presidency changes for any reason. The dummy variable is set equal to one if the political party from the previous year remains in power and is set to zero if there is a change in the ruling political party. A change in the political party

can happen for many reasons; ranging from the end of the term to resignation, and is often a good view of the popularity rate of the president.

#### **IV. Theoretical Model Development and Specification**

This paper will demonstrate if certain economic factors have a certain effect on the presidential popularity rate, and to what extent they affect it. Using regression models and mapping I will test if using every day economic indicators is a helpful way of predicting the presidential popularity rate and determine what is most important for politicians to consider in achieving higher popularity rates. What is important about these economic factors that will be studied is based on what are important factors to the citizens of the USA in today's society. They will measure ultimately how relevant each factor is to determining how citizens view the quality of the leadership of the American President.

My general model for this paper will be based on a multiple regression model using 4 independent variables: Inflation (**I**), Real Gross Domestic Product (**RGDP**), and the Unemployment Rate (**U**). This data will be used to determine the presidential popularity/approval rating (**PPR**). The data will focus on the time period of 1993-2012 based on data available. These factors have been chosen because the variables of Inflation and Unemployment are important economic factors in determining how the public views how well the president is performing in his job and how well the economy is being managed.

$$\text{Approval Rate} = \beta_0 + \beta_1\mathbf{I} + \beta_2\mathbf{U} + \beta_3\mathbf{RGDP} + \varepsilon$$

By looking at this model we should be able to see how significant these factors in the economy are into how society believes the president is performing. This model focuses on the three factors that should have the greatest impact on the citizen's livelihood. The Inflation rate

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affects the value of money, thus is linked closely to the price level. The unemployment rate is a useful economic indicator of the overall health of the economy, and, naturally, it is fairly safe to assume that people will be less happy with the president if more of them are unemployed.

Theoretically, this model should be useful across other countries as well. Taking the data from the United States of America we can develop a working model and look at similar data for other countries with similar governmental structures. Specifically this paper will focus on how this model for the USA fits when applied to Argentina, Brazil, Chile, Costa Rica, Cyprus, Mexico, the Philippines, Peru, and Sri Lanka. The USA model will be tested using a linear regression model. This will determine the significance of the variables in explaining the presidential approval rate. Next the logistic Procedure and the Probit Procedure will be run on the four foreign countries. This will be accomplished by combining the four countries into one data file and creating three dummy variables for separating the four countries. Once the data is formatted the regressions are run using the logistic descending function and the probit function. The model for the logistic function is:

$$\mathbf{P(Party=1)} = \beta_0 + \beta_1\mathbf{d1} + \beta_2\mathbf{d2} + \beta_3\mathbf{d3} + \beta_4\mathbf{d4} + \beta_5\mathbf{d5} + \beta_6\mathbf{d6} + \beta_7\mathbf{d7} + \beta_8\mathbf{d8} + \beta_9\mathbf{Inflation} + \beta_{10}\mathbf{Unemployment} + \beta_{11}\mathbf{gt} + \varepsilon$$

And the model for the probit function is:

$$\mathbf{P(Party=0)} = \beta_0 + \beta_1\mathbf{d1} + \beta_2\mathbf{d2} + \beta_3\mathbf{d3} + \beta_4\mathbf{d4} + \beta_5\mathbf{d5} + \beta_6\mathbf{d6} + \beta_7\mathbf{d7} + \beta_8\mathbf{d8} + \beta_9\mathbf{Inflation} + \beta_{10}\mathbf{Unemployment} + \beta_{11}\mathbf{gt} + \varepsilon$$

Where **Party** refers to the dummy variable where 1 = the incumbent party remaining in power and 0 = the change in political party leadership,  $\beta_0$  is the intercept variable for the Argentina,  $\mathbf{d1} = 1$  if the country is Brazil and  $\mathbf{d1} = 0$  otherwise,  $\mathbf{d2} = 1$  if the country is Chile and

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$d_2 = 0$  otherwise,  $d_3 = 1$  if the country is Costa Rica and  $d_3 = 0$  otherwise,  $d_4 = 1$  if the country is Cyprus and  $d_4 = 0$  otherwise,  $d_5 = 1$  if the country is Mexico and  $d_5 = 0$  otherwise,  $d_6 = 1$  if the country is Philippines and  $d_6 = 0$  otherwise,  $d_7 = 1$  if the country is Peru and  $d_7 = 0$  otherwise,  $d_8 = 1$  if the country is Sri Lanka and  $d_8 = 0$  otherwise. **Inflation** and **Unemployment** are the reported numbers for those two variables from the International Financial Statistics Database (IFS), and  $gt = \log(\mathbf{RGDP}) - \log(\text{lag}(\mathbf{RGDP}))$ .

### V. Results and Interpretation

A basic linear regression was executed first to see if the variables used in the USA were initially significant. The regression based on the data for the USA (Figure A) gives us the equation:

$$\mathbf{Approval Rate} = 140.17 - 4.07 \mathbf{Inflation} - 3.48 \mathbf{Unemployment} - .94 \mathbf{RGDP}$$

The variable for Inflation and Unemployment give us the expected sign based on economic knowledge, but the Real GDP gives us a negative sign when we would expect it to be positive. The intercept,  $\beta_0$ , for the function based on USA data is 140.17, which theoretically means the if Inflation, Unemployment and RGDP were all equal to zero the approval rate would be over 100%, which is not possible, but makes sense since the three other variable all subtract from the total approval rating. The value of  $\beta_1 = -4.07$ ,  $\beta_2 = -3.48$ , and  $\beta_3 = -0.94$ . Based on the P values for each variable we would expect all the variables to be significant at a 5% confidence interval. The Inflation Rate has a P value of 0.0007, the Unemployment Rate has a P value of 0.0041, and the Real GDP has a P value of  $<.0001$ , thus all the variables are statically significant. This model is a good model for predicting the Approval Rate for the USA economy, based on a F Value of 7.98. Now the model is applied to the nine other foreign countries.

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The countries of Argentina, Brazil, Mexico, and the Philippines were tested using the Logistic and Probit Procedures (Figure B). Based on the results of the Logistic Procedure you can see that for these four countries that the USA model does fit where the variables of Inflation and Unemployment have the expected signs and are both significant. Also, like the USA model the RGDP and the gt are negative which is the opposite of expected, but for these countries the RGDP is not significant. The model for the four countries using the Logistic results is:

$$\mathbf{P(\text{Party}=1)} = 2.826 + 1.420 \mathbf{d1} - 0.269 \mathbf{d2} - 0.137 \mathbf{d3} - 0.481 \mathbf{d4} - 0.583 \mathbf{d5} + 0.432 \mathbf{d6} - 0.383 \mathbf{d7} + 0.831 \mathbf{d8} - 0.002 \mathbf{Inflation} - 0.165 \mathbf{Unemployment} + 0.359 \mathbf{gt}$$

Where the intercept,  $\beta_0$ , is the intercept of the Philippines,  $d_1=1$  if Argentina, zero otherwise,  $d_2=1$  if Brazil, zero otherwise, and  $d_3=1$  if Mexico, zero otherwise. This model gives an equation for all four countries with the same slope, but different intercepts. In the logistic model the intercept is  $\beta_0=2.826$ , and the coefficients are  $\beta_1=1.420$ ,  $\beta_2=-0.269$ ,  $\beta_3=-0.137$ ,  $\beta_4=-0.481$ ,  $\beta_5=-0.583$ ,  $\beta_6=0.432$ ,  $\beta_7=-0.383$ ,  $\beta_8=0.831$ ,  $\beta_9=-0.002$ ,  $\beta_{10}=-0.165$ , and  $\beta_{11}=0.359$ . Based on the P Values for each variable, it appears the Inflation and Unemployment rates are the most significant to the foreign model.

The Probit Procedure gives models the probabilities of levels of the Political Party having lower ordered values (that is Party = 0) in the response profile table (Figure C). The Probit regression is used to model dichotomous or binary outcome variables. In the probit model, the inverse standard normal distribution of the probability is modeled as a linear combination of the predictors. From these results we still see that the two most important variables are Inflation and Unemployment because they are both significant. From this model we see that for every one unit increase in Inflation, the z-score increases by 0.001 and for every one unit increase in

Unemployment, the z-score increases by 0.175. The model for the Probit Procedure ends up looking like:

$$\mathbf{P(\text{party}=0)} = -1.656 - 0.794 \mathbf{d1} + 0.146 \mathbf{d2} + 0.086 \mathbf{d3} + 0.275 \mathbf{d4} + 0.341 \mathbf{d5} - 0.250 \mathbf{d6} \\ + 0.221 \mathbf{d7} - 0.465 \mathbf{d8} + 0.001 \mathbf{Inflation} + 0.095 \mathbf{Unemployment} - 0.192 \mathbf{gt}$$

Again, the P values for the variable are most significant for Inflation and Unemployment rates. In the probit model the intercept is  $\beta_0 = -1.656$ , and the coefficients are  $\beta_1 = -0.794$ ,  $\beta_2 = 0.146$ ,  $\beta_3 = 0.086$ ,  $\beta_4 = 0.275$ ,  $\beta_5 = 0.341$ ,  $\beta_6 = -0.250$ ,  $\beta_7 = 0.221$ ,  $\beta_8 = -0.465$ ,  $\beta_9 = 0.001$ ,  $\beta_{10} = 0.095$ , and  $\beta_{11} = -0.192$ .

## **VI. Conclusions and Comments on Future Research**

The regressions revealed mostly valid results and was only unexpected in the sign of the influence of Real GDP in the USA model. The expected results of Inflation and Unemployment have a significant and negative impact on the Presidential Approval Rate in the USA. This also appears to be true in other countries with similar governmental structures. The variable for the Real GDP proved to not be as significant in foreign countries and doesn't necessarily as important to focus on when trying to predict the political movement of these foreign countries.

The research and the findings reported in this paper shows a need for further research and investigation into other important factors in foreign countries that could affect the popularity rate and any change in the political leadership. The effects of culture and geographic location on how citizens view the presidential approval rating need to be looked into further to help determine what aspects are more important in each country individually. This paper showed that in countries with similar presidential structured governments, that unemployment is one of the most important and significant variables politicians need to consider while trying to be re-elected or

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while trying to keep the same political party in power. Though further research is needed for each country individually to determine exactly which variables affect the popularity rate and the turnout of elections, it is clear to see that the employment of the citizens is largely responsible for how they, the citizens, view the president's performance and how well he or she is doing his or her job.

**VII. Appendixes**

**Table 1.**

Variable	Descriptive Statistics for USA			
Approval Rate	Mean	51.355	Variance	127.866
	Median	50.665	Range	58.444
	Mode	32.500	Interquartile Range	14.633
	Std. Deviation	11.308		
Unemployment Rate	Mean	5.980	Variance	2.879
	Median	5.500	Range	6.000
	Mode	5.700	Interquartile Range	2.000
	Std. Deviation	1.697		
Inflation Rate	Mean	2.971	Variance	4.186
	Median	3.207	Range	6.003
	Mode	0.087	Interquartile Range	3.968
	Std. Deviation	2.046		
Real Gross Domestic Product	Mean	59.243	Variance	52.906
	Median	59.348	Range	22.990
	Mode	.	Interquartile Range	13.199
	Std. Deviation	7.274		



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**Table 2.**

Variable	Descriptive Statistics for Foreign Countries			
Political Party	Mean	0.819	Variance	0.149
	Median	1.000	Range	1.000
	Mode	1.000	Interquartile Range	0.000
	Std. Deviation	0.386		
Unemployment Rate	Mean	7.517	Variance	10.866
	Median	7.700	Range	16.460
	Mode	7.700	Interquartile Range	4.090
	Std. Deviation	3.296		
Inflation Rate	Mean	31.061	Variance	46366.000
	Median	5.786	Range	2077.000
	Mode	1.977	Interquartile Range	6.232
	Std. Deviation	215.327		
GT	Mean	0.004	Variance	0.030
	Median	0.042	Range	1.082
	Mode	.	Interquartile Range	0.040
	Std. Deviation	0.173		

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**Figure A.**

The REG Procedure  
Model: MODEL1  
Dependent Variable: Appr

Number of Observations Read					80
Number of Observations Used					80

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	2420.61672	806.87224	7.98	0.0001
Error	76	7680.81326	101.06333		
Corrected Total	79	10101			

Root MSE		10.05303	R-Square	0.2396
Dependent Mean		51.35548	Adj R-Sq	0.2096
Coeff Var		19.57537		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr >  t
Intercept	1	140.17065	18.73371	7.48	<.0001
Inf	1	-4.06836	1.14734	-3.55	0.0007
Unemp	1	-3.47668	1.17407	-2.96	0.0041
RGDP	1	-0.94418	0.20437	-4.62	<.0001

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**Figure B.**

The LOGISTIC Procedure  
Model Information

Data Set	WORK.FOREIGN	
Response Variable	Party	
Number of Response Levels	2	
Model	binary logit	
Optimization Technique	Fisher's scoring	
Number of Observations Read	171	
Number of Observations Used	170	

Response Profile

Ordered Value	Party	Total Frequency
1	1	139
2	0	31

Probability modeled is Party=1.

Analysis of Maximum Likelihood Estimates

Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	2.8262	1.5280	3.4211	0.0644
d1	1	1.4198	1.2125	1.3711	0.2416
d2	1	-0.2692	0.9879	0.0742	0.7853
d3	1	-0.1374	1.1260	0.0149	0.9029
d4	1	-0.4806	1.2871	0.1394	0.7088
d5	1	-0.5829	1.3418	0.1887	0.6640
d6	1	0.4322	0.9051	0.2280	0.6330
d7	1	-0.3834	0.8996	0.1817	0.6699
d8	1	0.8306	1.0123	0.6732	0.4119
Inflation	1	-0.00159	0.000931	2.9146	0.0878
Unemployment	1	-0.1654	0.1082	2.3361	0.1264
gt	1	0.3588	1.1117	0.1042	0.7469

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**Figure C.**

The Probit Procedure

Model Information

```

Data Set                WORK.FOREIGN
Dependent Variable      Party
Number of Observations 170
Name of Distribution     Normal
Log Likelihood          -75.7185653
Number of Observations Read 171
Number of Observations Used 170
Missing Values         1
    
```

Class Level Information

```

Name      Levels  Values
Party      2      0 1
    
```

Response Profile

```

Ordered      Total
Value  Party  Frequency
1      0      31
2      1      139
    
```

PROC PROBIT is modeling the probabilities of levels of Party having LOWER Ordered Values in the response profile table.

Analysis of Maximum Likelihood Parameter Estimates

Parameter	DF	Estimate	Standard Error	95% Confidence Limits		Chi-Square	Pr > ChiSq
Intercept	1	-1.6564	0.8668	-3.3552	0.0425	3.65	0.0560
d1	1	-0.7942	0.6276	-2.0243	0.4359	1.60	0.2057
d2	1	0.1457	0.5702	-0.9719	1.2634	0.07	0.7983
d3	1	0.0863	0.6415	-1.1711	1.3437	0.02	0.8930
d4	1	0.2748	0.7377	-1.1710	1.7206	0.14	0.7095
d5	1	0.3407	0.7641	-1.1569	1.8383	0.20	0.6557
d6	1	-0.2498	0.5181	-1.2653	0.7656	0.23	0.6296
d7	1	0.2207	0.5265	-0.8112	1.2526	0.18	0.6750
d8	1	-0.4653	0.5599	-1.5626	0.6320	0.69	0.4059
Inflation	1	0.0009	0.0005	-0.0002	0.0020	2.82	0.0929
Unemployment	1	0.0949	0.0618	-0.0262	0.2160	2.36	0.1245
gt	1	-0.1923	0.6508	-1.4678	1.0832	0.09	0.7676

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## IX. Data Sources

Federal Reserve Economic Data. (FRED) <http://research.stlouisfed.org/fred2>

International Financial Statistics. (IFS) <http://elibrary-data.imf.org/QueryBuilder.aspx?s=321&key=1445284>