

POL 681 Problem Set 2: From Output to Interpretation

Analysis of Florida Voting Data from the 2000 Presidential Election

Objective: The purpose of this assignment is to give you practice in using Stata to generate coefficient estimates as well as give you practice in interpreting the regression model.

Directions: Please answer the questions below and turn in your Stata log file and any additional work you may have had to do to answer the questions. Use the data set `2000flor.dta` that was sent to you last week. Answers should be word-processed (i.e. not handwritten).

Bivariate Analysis

1. Estimate a regression model where the dependent variable is the Buchanan vote and the independent variable is the Bush vote. Substantively interpret the two regression coefficients. (10 points)
2. What is the standard error of the regression estimate from this model, how is it interpreted, and how is it computed? (6 points)
3. Graph the predicted regression line by the Bush vote (include in the graph the observed values of y). What are some noteworthy features of this graph? (5 points)
4. Now, reestimate the regression model, this time omitting Palm Beach County. This will require you to type:
`regress Buchanan Bush if County ~="PALM BEACH"`
How do the regression coefficients change and what is the substantive interpretation of them in this model? (8 points)
5. Why does the standard error of the estimate change so dramatically when Palm Beach County is omitted from the analysis? (8 points).

Multiple Regression

1. *Without using `regress`*, compute estimates of the following regression model:

$$\text{BuchananVote} = a + b_1(\text{BushVote}) + b_2(\text{GoreVote}) + e.$$

Specifically, compute the following quantities: $a, b_1, b_2, SSE, SSR, MSE, RMSE, r^2$. (15 points; be sure to show all work).

2. Verify your answers from above by using the `regress` module to generate parameter estimates (and estimates of the variance components). Substantively interpret the regression coefficients from your output (12 points).