PLSC 502: "Statistical Methods for Political Research"

Exercise Nine
December 2, 2016

Introduction

This homework is an opportunity to demonstrate your mastery of bivariate linear regression. The topic is the relationship between economic development and democratization, if any (e.g., Lipset 1959; Jackman 1973; Bollen and Jackman 1985; Burkhart and Lewis-Beck 1994). Your job is to address the connection between the two, using data on economics and levels of democracy during the years 1980-1987. (These data are a teeny, tiny subset of the data used in Poe and Tate, 1994, "Repression of Human Rights to Personal Integrity in the 1980s: A Global Analysis," *American Political Science Review* 88(December):853-900).

The data consist of eight years worth of data for each of 142 nations in the world system (so, $N = 142 \times 8 = 1136$), and contain two variables. (For the moment, we'll conveniently leave aside the fact that these are time-series cross-sectional data). The response variable (Y) is Vanhanen's (1990) `democracy` index, defined as the percentage of the population voting in a given election times the difference between the proportion of votes won by the largest party and 1.0; this variable thus ranges in theory from zero (in cases where either no voting occurred, or when a single party received all of the vote) to 50 (when 100 percent of the eligible population voted and the largest party received 50 percent of the vote). The sole covariate (X) is per capita `GNP`, measured in thousands of constant U.S. dollars. The data reside in `.csv` format on the course github repo.

Exercise

Your assignment is to use OLS regression to examine the relationship between development and democracy, and to prepare a short (1000 words or less) report on that relationship, as if you were writing up the results for a paper or journal submission. Accordingly, this report should contain *at least* the following:

1. Very brief summaries of the dependent and dependent variables, including a graphical presentation of the relationship;
2. Results of your OLS estimate(s), including coefficients, standard errors, and other relevant statistics;
3. A discussion, in words, of those results, including matters relating to marginal effects and statistical inference.

This homework is due by 5:00 p.m. EST on **Friday, December 9**, 2016, and is worth 50 points.