POL-GA 1251
Quantitative Political Analysis II
Homework 7

We are going to work with the following paper,

> Dal Bo, Ernesto, Pedro Dal Bo, and Jason Snyder. 2009. "Political Dynasties." *The Review of Economic Studies*. 76(1):115-142.

It's a great paper, and it contains the laugh-out-loud quote, "political mistakes by confused electorates may impose costs that are more long-lasting than simply conferring office to a bad candidate" (117).

The paper and replication materials are posted on Pedro Dal Bo's webpage,

> `http://www.brown.edu/Departments/Economics/Faculty/Pedro_Dal_Bo/`

Carry out the following (you are most likely going to have to use Stata for this):

1. Read Dal Bo et al.'s discussion of identification problems in estimating dynastic self-perpetuation effects and then explain how the regression discontinuity approach helps to overcome these (pp. 120-129). (5 points)

2. Replicate Tables 2, 3, and 4 as well as Figures 3 and 4. (5 points)

3. (20 points) Redo the RD analysis based on the current best practices described in Imbens and Lemieux (2008), Lee and Lemieux (2010), and Calonico et al. (2017) (these are all in the readings Dropbox). That is,

   - Check for sorting or manipulation of the forcing variable by conducting the graphical analysis and test proposed by McCrary (2008). To do so, you can either program the estimator yourself, or try the following (for R or Stata):
     - Cattaneo et al.'s programs:
       > `https://sites.google.com/site/rdpackages/rddensity`

     Is there any evidence of manipulation or sorting, or do things look okay? Explain.

   - Carry out a graphical analysis of the treatment variables, `win` and `longterm`, over the forcing variable, `marginvote`. Do so by plotting mean values of the treatment variables within reasonably-sized bins over `marginvote`. Overlay local linear regressions (with confidence intervals) fit separately to the left and right of the cut-point using a local linear regression (of degree 1). In R you can use the `locpol` package, in Stata the `lpoly` function (NB: do not use lowess, that is not the appropriate estimator). The graphs should look sort of like Figure 3 in Dal Bo et al., but with the treatments on the *y* axis rather than the outcomes. Does the graphical analysis reveal anything suspect, or does it look okay? Explain.

   - Carry out a graphical analysis of the outcome variable, `postrelative`, over the forcing variable, `marginvote`, by plotting mean values of the outcome within reasonably-sized bins over the `marginvote` variable. Overlay local linear regressions (with confidence intervals) fit separately to the left and right of the cut-point. Again, the graph should look something like Figure 3 in Dal Bo et al. Is an effect visible at the cut point?

- Re-estimate the effects that Dal Bo et al. report in Tables 2 and 3 using local linear regression inside an optimal bandwidth as per the recommendations of Calonico et al.:

  `https://sites.google.com/site/rdpackages/rdrobust`

  Do these results differ appreciably from the quartic polynomial estimates of Dal Bo et al.?

- Estimate a placebo regression that replaces with the outcome, `postrelative`, with a covariate and then applies the same estimation routine that you used in the previous step. Do this for the full range of covariates. Do the results suggest any violations of smoothness in covariates, or do things look okay? Explain.