

## Gender Inequalities in Campaign Finance

In the United States, political fundraising is crucial to the success and eventual election of politicians. Female politicians, however, report more fundraising difficulties than their male counterparts. Female politicians are also underrepresented in state legislatures across the country. In this exercise, we investigate the presence of potential gender inequalities in campaign finance.

This exercise is in part based on: Barber, Michael, Daniel Butler, and Jessica Preece. 2016. "Gender Inequalities in Campaign Finance." *Quarterly Journal of Political Science* 11(2): 219-248.

In this paper, the authors attempt to estimate whether female state legislative incumbents have more trouble fundraising than do male legislative incumbents. Observations consists of information on all U.S. state legislative races in which a male and female candidate ran against each other. The data include their winning margin and their current-cycle fundraising. To mitigate concerns about omitted variable bias (women may run in districts that are fundamentally different than districts in which men are the incumbents), the researchers use a variation of a *regression discontinuity design (RDD)*. As with studies of the incumbency effect, the authors argue that those who barely won last cycle won at random, given the closeness of the previous election.

We will analyze their data to help determine if male candidates raise more money than female candidates.

The data file you will use is `BBP2016_Data.csv`, a CSV data file. The file contains the following variables, which we will make use of in this exercise, as well as other variables that the authors made use of in their paper:

Name	Description
<code>bonica.rid</code>	Candidate ID number
<code>cycle</code>	Year in which the election was held
<code>name</code>	Legislator's name
<code>cand.gender</code>	Legislator's gender
<code>Party</code>	Party affiliation (Democrat = 100, Republican = 200)
<code>seat</code>	Whether the legislator ran for upper or lower house
<code>running.variable</code>	Male candidate vote share minus female candidate vote share in previous election
<code>total.raised.candidate</code>	Total funding raised by legislator after winning election
<code>male.money</code>	Total raised from male donors
<code>female.money</code>	Total raised from female donors
<code>share.district.total</code>	Proportion of total district funding raised by the incumbent

### Question 1

How many observations are included in this dataset? What is the gender composition of the candidates contained in this dataset? What is the party composition? What election cycles are included? Are the number of observations in each cycle increasing or decreasing over time? Give a brief substantive interpretation of the results.

### Question 2

Compare the party composition of female candidates and of male candidates. What proportion of Democratic candidates are male? Female? What proportion of Republican candidates are male? Female? Briefly comment

on the results.

### Question 3

Next, we start looking at fundraising, our outcome of primary interest. What is the mean amount of funding raised by female candidates? And male candidates? What is the difference in these means? Do males or females raise more money, on average? Briefly comment on the results.

### Question 4

Plot the density of the funding raised by male and female candidates, making sure to have an upper limit of 2,000,000. Use a red line for female candidates and blue for male candidates. Add red and blue dashed lines at the mean for women and men. Provide a substantive interpretation of the results.

### Question 5

One problem with comparing fundraising among male and female incumbents is that they may run in very different types of districts. In order to estimate a gender effect, we are going to look at candidates who won in close races, where `running.variable` is within 1 percentage point of zero. For what values of `running.variable` did the male candidate win by 1 percentage points or less? For what values of `running.variable` did the female candidate win by 1 percentage point or less? Use these results to subset the data into two data frames: close races where the female won in the last election and close races where the male won in the last election. (You can use either `<` and `>` or `<=` and `=>`.) How many observations are in each subset? If we took the mean difference between female and male fundraising in these new subsets, would we get a causal effect? Why or why not?

### Question 6

Estimate the average causal effect of gender on fundraising by regressing `log.total.raised.candidate` on `running.variable` in each of the newly created subsets and then taking the difference in predicted outcomes at the discontinuity (i.e., `running.variable = 0`). Express the causal effect in dollars (as opposed to log dollars). Give brief substantive comments on the viability of this estimate as a causal effect, as well as its internal and external validity.

### Question 6

Visualize the analysis in Question 5 by plotting data points and fitted regression lines. Briefly comment on the plot.

### Question 7

A key concern in this design is how we designate a “bandwidth,” or how far from zero we look with our running variable when we fit our regression. In the previous question, we took a bandwidth of 1 percentage point. Repeat calculations for the difference in predicted outcomes at the discontinuity using bandwidths of 2, 1, 0.5, 0.25, and 0.1. Do the results change as you vary the bandwidth? If so, why? Briefly comment on the results.

### Question 8

Last, we look at patterns attributable to the gender of the donors. Maintain the 1% bandwidth in the running variable that was used above, and compare the donations by female donors and by male donors to candidates at the discontinuity, respectively. Comment on the results.