

STAT 330

Homework 6.2

- 1) **Campaign Contributions:** I wanted to look at candidates running for the same office, in the same district, and see how much more money the incumbent is spending on the campaign than the other candidates. You will need the CSV file *HOR2010.CSV*. Whatever you may think, HOR stands for House of Representatives here. In this file, we have all candidates running for House of Representatives seats in 2009, 2010 and 2012, their state, district, and total contributions to date.
- Read the data into SAS using a `DATA` step. Use the filename reference `readCSV`. If you like, you can use my SAS data set version, *HOR2010.sas7bdat*, for the later parts.
 - Run some appropriate `PROC`s to check whether your data is read in correctly. Use `PROC FREQ` and `PROC MEANS` to check the values of your variables.
 - Use a single `DATA` step to create 2 SAS data sets: one for the incumbents in the data set, and one for all others. If you like, you can use my SAS data set versions, *incumbents.sas7bdat* and *others.sas7bdat*, for the later parts.
 - The goal is to compare the incumbents contributions received to the average contributions of their opponents, in the same race. For example, in 2010, in AL district 10, there was one incumbent and 5 challengers/non-incumbents. I want to compare the contributions of the incumbent to the average contributions received by the 5 challengers. I will also want to look at the total contributions for the 5 challengers combined, versus the single incumbent.

To this end, use a `PROC` to generate the average contributions for the other candidates, averaged for each race; that is, averaged for each year, state, and district combination. Also compute the total contributions for the non-incumbents. You should use the `PROC` to save the averages and totals for the non-incumbents for each year/state/district combination. [The `NWAY` option and `OUTPUT` statement of `PROC MEANS` should come in handy, among other statements and options.] If you like, you can use my SAS data set version, *othersAve.sas7bdat*, for the later parts.

- From (c) you have a data set that has the contributions for each incumbent. From (d) you have the average and total contributions for all others for each year/state/district race combination. Combine these now in an appropriate way. We want to end up with records that match incumbents with the appropriate average/total non-incumbent contributions for each race. Keep only those records for which you have both incumbent and non-incumbent data. I believe you should end up with 404 records.

Calculate the difference between the incumbent's contributions and the average of the non-incumbents for each race. Calculate the difference between the incumbent's contributions and the total of the non-incumbents for each race.

Use data set options to rename the variable for the name of the incumbent to be `incumbName`; rename the contributions variable for the incumbent to be `incumbCont`; rename the party variable for the incumbent to be `incumbParty`. Rename the non-incumbents average and total contributions variables to be `othersAveCont` and `othersTotCont`. Use data set options to drop unnecessary variables at this point too. If you like, you can use my SAS data set version, *compare.sas7bdat*, for the later parts.

- f. Calculate the average difference between the incumbent's contributions and the average of the non-incumbents. Calculate the average difference between the incumbent's contributions and the total contributions for the non-incumbents.

Here's what I got:

Variable	N	Mean	Std Dev	Minimum	Maximum
<code>diffAve</code>	404	748387.67	608106.75	-974186.25	6201830.18
<code>diffTot</code>	404	392726.45	881522.25	-6529754.00	4053086.00

It looks like, on average, incumbents outspend the average of their challengers by \$748,387. On average, incumbents outspend their challengers by \$392,726. The most lopsided campaign had the incumbent outspend all of the challengers by \$4,053,086.

- g. Use a `DATA` step to figure out which record corresponds to that most lopsided campaign we saw above. In commented code, tell me who the incumbent for this race is.
- h. Among incumbents, compute the average contributions by party.