VAM RDD Exercises

Salomo Hirvonen

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To install rdrobust package in Stata type:

```
net install rdrobust, from(https://sites.google.com/site/
    rdpackages/rdrobust/stata) replace
```

In R type:

```
install.packages('rdrobust')
```

Exercise 1. With rdrobust_senate dataset plot your data (vote as dependent variable and margin as forcing variable with rdplot command) using both evenly-spaced and quantile-spaced mimicking variance bin choice (Hint: You need specify binselect option). Can you spot differences?

Exercise 2. Plot your data using both evenly-spaced and quantile-spaced IMSE-optimal bin choice. Can you spot differences?

Exercise 3. We want to find what is the effect of incumbency on the vote share in next election. Use a global polynomial RDD specification and do this for quadratic, cubic and quartic function (Hint: Create a new variable for treatment status from election margin) without using the rdrobust command.

Exercise 4. Now using a non-parametric specification redo your analysis using local linear estimation within 15% bandwidth. Run regressions separately for non-treated and treated units and compute the estimate for treatment effect.

Exercise 5. Repeat **Exercise 4** but now conduct the analysis in one regression instead of two separate ones. Make sure that your estimate is the same as computed in the previous exercise.

Exercise 6. Up until this point we have given equal weight for all observations (within the bandwidth). Redo **Exercise 5** with a triangular kernel.

Exercise 7. Replicate your result from previous exercise using rdrobust package.

Exercise 8. Now use MSE-optimal bandwidth selection in order to choose the bandwidth together with a local linear specification. Is the robust bias corrected confidence interval larger or smaller compared to the conventional one? You can test different order of polynomials.

Exercise 9. Conduct a covariate smoothness test using available variable(s). What do you conclude in terms of falsification of the RDD?

Exercise 10. Run placebo cut-off tests. Do your findings support the validity of our design?

Exercise 11. Using rddensity package, find out whether there is evidence for manipulation at the cut-off.

To install rddensity package in Stata type:

```
net install rddensity, from(https://sites.google.com/site/
    rdpackages/rddensity/stata) replace
```


In R type:

```
install.packages('rddensity')
```