Final Paper Assignment (50 points)

November 18, 2019

1. Introduction (3 points)

1. clear identification of what you are trying to find out (research question) [1.5 points]
2. why the research question is worthwhile answering [1.5 points]

2. Data description and exploration (7 points)

1. the nature of the data with summary statistics table [2 point]
2. visualize a few key variables in a meaningful way [5 points]

Important:

Do not just present summary statistics and graphs. Discuss what you get out of them. Without any such discussions, you will get 0.

3. Econometric Methods (30 points)

The process of how you end up with the final econometric models and methods. [50 points (or more)]

4. Results, Discussions, and Conclusions (10 points)

1. interpret and describe the results [7 point]
2. conclusions [3 point]

Econometric Methods (30 points)

Model Specification

- justification of your choice of independent variables and their functional forms
- functional form mis-specification?
  - F-test (nested)
  - DM-test (non-nested)
- are regression equations different across groups?
  - Chow-test
- do you have multicollinearity problems? should you leave one of the very highly correlated variables or not? explain.
  - omitted variable bias vs efficiency gain

Potential endogeneity problems?

- any important variables omitted (unobserved for you)?
  - are any of the included variables endogenous due to the omitted variables? why? exapling the mechanism why they are endogenous.
  - expected direction of the bias? why? explain using the bias formula.
- measurement errors in the variables of interest? expected direction of bias?

What did you do to address the endogeneity problems?

- Fixed Effects (FE) estimation
  - How can FE estimation mitigate the bias you expect?
  - Are ommitted variables time-invariant (or very slow to change over time)?
- Instrumental variable estimation
  - Can any of the variables work as a good instrument?
    - weak instrument
    - exclusion restriction
  - If you do not have any appropriate insturments in your dataset, can you think of an ideal IV you would have liked to have? Why do you think that variable is a good instrument?
  - If you cannot find any appropriate instruments, discuss why some of the variables you observe are NOT appropriate.

Identify appropriate standard error estimation methods

- Does the use of robust standard error estimation methods make a large difference compared to the conventinal naive (default) standard error estimator?
- Do your conlcusions about the statistical significance of coefficients change?

Key to writing a successful paper (high grade)

- Justify and explain everything you did in the paper!!
  - I tested the joint statistical significance of these interactions terms because ...
- (Re-emphasized) I do not care much about your results. What I care is the process!!