Economics 8379
Prof. Williams
Spring 2020

Paper Assignment

This assignment has two separate deadlines – a proposal must be submitted by March 2nd and the final paper must be submitted by Friday, May 8th. Please read this entire document carefully.

1. The purpose of the paper and potential topics

The goal of this paper is to give you an opportunity to practice implementing, and to develop a deeper understanding of, some of the econometric methods studied in class. Your paper should focus on methods discussed in one or more of the lectures from the course. The paper should take one of the following approaches:

1. **Original research.** You may wish to use this as an opportunity to get feedback on independent research that is in early stages. For students further along in their studies, this could be related to your third year paper or dissertation research. However, you cannot use a paper that will be submitted for a grade in another course.

2. **Replication.** You can replicate published research (working papers are fine too). Many journals now publish the authors' code and data along with the article. If you choose this option, you must extend the work in some way, either by applying what they have done to a new dataset or by conducting additional analysis beyond what the original authors did.

3. **Monte Carlo exercise.** You can conduct a simulation study for methods studied in class. The Monte Carlo study should provide some contrast between different data generating processes that lead to better or worse performance. The model used to generate your data can be empirically motivated or completely hypothetical.

Below are a few potential topics based on methods we have studied in the first half of the semester.

- Replicate the Monte Carlo studies in Chapter 8 of Mostly Harmless Econometrics and Imbens and Kolesar (2016), and then extend these studies in several ways.

- Replicate a study that uses linear regression to estimate average treatment effects of a policy or treatment with observational data. Then implement various matching estimators to explore the robustness of the paper's findings.

- Replicate and extend Bound, Jaeger and Baker (1995)'s analysis of the weak instruments problem in Angrist and Krueger (1991).

- Investigate evidence of heterogeneous treatment effects in a new context using the marginal treatment effect methodology of Heckman, Urzua and Vytlacil (2006) and Carneiro, Heckman, and Vytlacil (2011).
- Estimate a regression discontinuity (or kink) design.
- Estimate a panel data model using diff-in-diff, synthetic control, fixed effects, or fixed effects with instruments.
- Use simulations to illustrate the relative advantages of diff-in-diff versus synthetic controls.

2. Proposal

You must submit a proposal to me by March 2nd. Feel free to submit the proposal earlier if you want feedback sooner. The proposal must include the following:

(i) A description of your topic.

(ii) A description of the data you will use, if applicable.

(iii) A brief outline of the methods you will use.

3. Final draft of paper

The final paper will be due May 8th. The paper must be 8-12 pages, double-spaced, size 12 font, excluding tables and figure. You must also submit your code to me via email. The focus of the paper should be on the methodology and empirical results, rather than the context of the work within the literature, an (implicit or explicit) economic model, or the broader implications of the results. *This is not expected to be a complete research paper.*