**Assignment 2: Pre-registration of Lott and Mustard (1997) for the final projet**

**Due Week 7**

**Directions**:

This week’s exercise will *not include programming*. Rather, it will include a careful reading and discussion of the two papers as well as a detailed pre-registration plan. The papers are Lott and Mustard (1997) and Donohue, et al. (2011). Most of the following questions will have simple answers as they are merely prompts designed to help you focus on the important parts of the paper. Please provide easy to read answers. Before each answer, on your document, please first reproduce the question so that anyone could read your document without referencing this one. When done, please submit the document to me, but then separately post the pre-registration plan to your substack.

First, please summarize the two papers by answering the following questions.

Questions regarding Lott and Mustard (1997)

1. What theory do the authors put forth to motivate their paper? How do this laws theoretically deter crime?
2. Describe the “treatment” in this case?
3. What dataset do they use, what years and what is the panel unit (e.g., country, school, state-level, etc.)?
4. What outcomes do they evaluate and what controls do they consider?
5. What is their estimation equation?

Questions regarding Donohue, et al. (2011)

1. What is the authors’ criticism of Lott and Mustard (1997)? What is the evidence that they produce for that criticism? How skeptical should we be of Lott and Mustard (1997) in your opinion?
2. With respect to their state data, what is their estimation equation?

Basic descriptions of the data

1. Focus on Tables 8a and 8b. Using the do files available on the website, and focusing only on murder, explain what the following lines mean. For each answer, write down the econometric specification, the treatment variable, and the interpretation of the coefficient on the relevant treatment variable.
   1. Dummy model (lines 12-19)
   2. Trend model (lines 22-28)
   3. Hybrid model (lines 31-37)
2. Please create a summary statistics table of the state dataset for all outcomes (see Table 8a for a list). This summary should be based on your own analysis, not the author’s. The Table should be “easy to read” and “beautiful to look at” in your opinion. Please produce means, standard deviations, mins and maxes, as well as indicate the name of the dataset and what years it includes.
3. Please create an “exhibit” – meaning a graphic, diagram or table whichever you prefer – showing the adoption of shall issue laws (or “right to carry”) over time by state. Answer the following questions.
   1. How many never-treated groups are there?
   2. How many separate (1) groups and (2) states ultimately receive the treatment? What’s the difference here between a state and a group?
   3. Please list all treatment dates in your exhibit.
4. Produce a table based on a simple TWFE regression of the shall-issue treatment variable onto all of the control variables listed in the footnote of Table 8a. Which ones appear most important for explaining adoption? Which ones do not? Explain your interpretation of this evidence.

Pre-registration plan

Now that you have dived into the two papers as well as reviewed the do file, I would like you to write down a pre-registration plan. Please read David McKenzie’s “A Pre-Analysis Plan Checklist” as well as the JPAL document in our shared github repo under /Assignments. You will now write your own pre-registration plan for the final project. Answer the following:

1. Provide some basic information about the project with a short abstract about what you are studying and how it connects to both this class as well as Lott and Mustard (1997) and Donohue, et al. (2011).
2. What data source will you use?
3. What level of aggregation will you be using – county or state?
4. What scientific hypothesis will you be testing? Follow McKenzie’s instructions in for bullet point 3
5. You will be conducting original analysis using two of the new DiD models we have learned in class. Describe which two you are planning on using. What econometric estimation equation will you be implementing, as well as what software package?
6. What sorts of heterogeneity analysis do you intend to explore?
7. Will your model include covariates? If so, use between 3-5. If you are to limit yourself to only 3-5, then which ones? Why did you choose those?