Questions to answer in preparing for January 21 class

**The Liebowitz, Porter & Bragg paper**

1. Research Questions
   1. What is/are the authors’ research question(s) (again, think about the big, underlying question)?
   2. What are their answers to the research questions?
2. Data and Sample
   1. From what sample do the authors draw their data? What are its properties? What does each row of the dataset represent? What properties of the data constrain the authors’ analyses?
   2. What is the unit of observation in this study? Imagine you have unlimited powers; what unit of observation would you prefer be the level of analysis in this study?
   3. What are the criteria under which observations appear in the authors’ main analytic sample?
   4. Can you fill in this simplified dataframe to describe the structure of their data:

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| --- | --- | --- | --- | --- | --- | --- |
| id | year | implement\_year | eval | grade | run\_time | ODR |
|  |  |  |  |  |  |  |
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1. Methodology
   1. What is the identification strategy the authors use to justify causal inferences? (can you use the term *staggered implementation timing*?)
   2. What are the key assumptions this identification strategy makes to support the claim that it identifies causal effects:
      * About the enactment of the policy:
      * About the counterfactual:
      * About competing explanations:
   3. What is the critical assumption that underlies the authors’ use of *staggered implementation timing* to identify causal effects? Give an example of how a violation of this assumption would undermine their claims.
   4. Look at Equation 2. Can you describe in words what this regression does?
      * Which fixed effects do the authors estimate?
      * Why do the authors include covariates (**X*jt***) describing school characteristics in their estimates? What assumptions do the authors make about the nature of these covariates? What risks exist in including these covariates?
      * How do the authors address serial correlation in their panel data through adjustments to their standard errors?
   5. Look at Equation 1 (and the last few slides from Week 2 class). What is a *non-parametric* difference-in-difference estimate? What is happening in the first right-hand-side term? What effects does this term describe?
2. Results
   1. The authors find that the introduction of higher-stakes teacher evaluation policies did not change the rate at which students were removed from the classroom. What range of effects are they able to confidently exclude through these estimates? Be prepared to use the terms *precise null effect* and *95 percent confidence interval*.
   2. What insight should we draw from Figure 2? Can you draw how you would expect this to look if the authors observed a different effect of the policy change?
   3. Look at Table 2. What can we learn about the difference-in-difference assumptions of this study from it (think about *parallel trends* and *equal in expectation* assumptions)?
      1. Given the results in Table 2, with which coefficient would you most like to summarize the study’s results? Why?
   4. Look at Figure 3 (and the associated Appendix Table A2). What can we learn about the difference-in-difference assumptions of this study from it (think about *parallel trends* and *equal in expectation* assumptions)?
3. Threats to validity and robustness checks
   1. Read carefully the authors’ assumption checks on page 24 through midway on page 28 (*you needn’t worry as much about the last three paragraphs of section 7*).
      1. What are the key threats to validity the authors face?
      2. How do they address each of these threats? (be prepared to discuss what a *placebo* or *falsification test* means in this context)
      3. Can you describe what a triple-difference estimate is? What is the third difference that the authors use in this study?