Questions to answer for the January 25 class

**Questions on the Angrist and Lavy “Maimonides’ Rule” paper**

*Note: I will not ask any questions concerning the Instrumental Variables estimation strategy because we have not learned this method yet. It will be the focus of our next unit. Please save your questions on this part of the Angrist-Lavy paper for then.*

A. Focus of the paper

1. What research questions do the authors ask?
2. Describe the conventional method for addressing this question
3. Provide an example to illustrate the problem with the conventional analysis method.
4. What conclusions do the authors reach about the answer to their research questions? (Do their findings provide an estimate of the impact of a single year’s impact of class size on student achievement or an estimate of the cumulative impact? Please explain your answer.)
5. To what groups do the authors’ findings pertain? (*In reading Section V.A., pay attention to this question and be less concerned with the notation*.)

B. Data

1. What data sources do the authors use for their study?
2. What are the characteristics of the samples? (i.e., who is included and who is excluded?)
3. What is the range of class sizes in the data?
4. How do the authors measure student achievement?
5. What is the unit of analysis in the research? Why does this matter?

C. Methodology

1. What is the authors’ identification strategy?
2. What assumptions must hold for this to be a legitimate way to generate an unbiased estimate of the causal impact of class size? (Hint: see page 549.)
3. What are the “sizes of the enrollment windows” that the authors use in their analysis?
4. What is the nature of the tradeoff in choosing the sizes of the windows?
5. Why do the authors decide to predict class sizes from beginning of the year measures of enrollment instead of from measures of enrollment, say, two months later when enrollments have stabilized?
6. Why is the index of socioeconomic status such an important control variable?
7. Explain the method the authors use to control for enrollment effects in the models that they fit using the narrow “windows” (p. 559).
8. How do the authors test the hypothesis that the effects of class size on student achievement are greater for economically disadvantaged students?
9. Explain the logic underlying fitting the equations that included a “piecewise linear trend” with slopes identical to the slopes of ***fsc***.

D. Details of the findings

1. In what respects do the findings for the samples at different grade levels differ?
2. Describe the authors’ conjectures about the reasons the findings differ by grade level.
3. Do you find the authors’ conjectures compelling? Explain your thinking.
4. Do you agree with the authors that the grade 3 findings are not of interest? Explain your reasoning.

E. Threats to validity

1. Describe the threats to the validity of the Angrist-Lavy identification strategy
2. How do the authors deal with these threats?
3. Do you think that Angrist and Levy needed to worry about any of the concerns that led Urquiola and Verhoogen to decide that the data from Chile were not suitable for estimating the impact of class size on student achievement (see *MM* Ch. 9)? On what evidence do you base your answer? Do Angrist and Lavy mention these concerns? If so, what were their responses?

**Questions on the Ludwig and Miller paper**

1. Focus of the paper
2. What questions do the authors ask? What answers do they provide?
3. Describe the causal mechanisms through which the authors envision Head   
   Start affecting health and education outcomes for participating children.
4. Data
5. Describe the data that the authors bring to bear. (Make a list of the data sets used, and describe briefly the use of each.)
6. What years of child mortality data do the authors use? What is the reason for this choice?
7. Methodology
8. What is the authors’ identification strategy?
9. How do the authors make a judgment about the number of years that the discontinuity in the availability of Head Start remained in effect? What conclusion did they reach?
10. What functional form do the authors use in modeling *m(Pc)*?
11. What is the “treatment” that the authors investigate? Is it a dichotomous variable?
12. Details of the findings
13. Describe the findings in a way that a policymaker like Oregon Governor Kate Brown could understand. Your description should include any caveats about interpretation that you feel Governor Brown should know.
14. Threats to Validity
15. Explain the threat to validity caused by “selective migration”, including an explanation of why it would occur and the problem it would cause.
16. What are other threats to validity? How do the authors deal with them? What datasets do the authors use in responding to these threats?

**Questions on Chapter 9 of *Methods Matter***

1. What conditions need to be satisfied for a regression discontinuity approach to provide an unbiased estimate of the answer to a causal question?
2. Modern researchers interested in defending the assumptions under which regression discontinuity strategies return unbiased causal estimates often refer to the “Big Three” graphs. They argue that all regression discontinuity studies should minimally include three graphs justifying their assumptions. What are these graphs? (*note: Murnane and Willett do not explicitly reference the “Big Three,” but in describing the conditions under which RD assumptions are met, they do so implicitly. Can you figure it out?*)
3. Was compliance with the class size maximum rule better in the data set from Israel that Angrist and Lavy analyzed or in the dataset from Chile that Urquiola and Verhoogen analyzed? Be prepared to explain the evidence supporting your answer.
4. Why did Urquiola and Verhoogen conclude that the application of the regression discontinuity (RD) methodology to the data from Chile would not provide an unbiased estimate of the impact of an offer of class size on student achievement?
5. What lessons do you take away from the Urquiola and Verhoogen paper about the steps you should take in examining data to determine whether the RD method is appropriate for providing an unbiased estimate of the impact of a particular policy?
6. Explain how MDRC made use of the RD methodology to examine the impacts of the *Reading First* program that was the centerpiece of President George W. Bush’s No Child Left Behind legislation. How did a school district’s policy regarding the allocation of *Reading First* funds play a role in determining which districts would participate in the evaluation of the *Reading First* program?