

**Advanced Regression
Problem Set 4
Due: November 30, 2009**

During the past few weeks, we have focused on empirical techniques used to evaluate public policies using observational data (panel data methods, instrumental variables, and difference-in-differences). Each of these techniques is intended to help us surmount the classic identification problem in policy research, namely that agents self-select into interventions and programs aimed at improving health, increasing education levels, offering wages, etc. If program participants and non-participants differ systematically in ways that are not captured by the researcher, the impact of the policy reform will be biased. These techniques have strengths and weaknesses, and your goal as an analyst is to determine when a given empirical “tool” is suitable for answering well-defined research questions using an appropriate dataset.

Your task in this problem set is to provide a critical evaluation of *one* of the papers utilizing any of the empirical techniques covered in the last few weeks. As a reminder, please select a paper to critique from the following list:

Panel Data Methods: Bitler et al., (2004) or Donohue & Levitt (2001)

Instrumental Variables: Levitt (1997) or McClellan et al., (1994)

Difference-in-Differences: Card & Krueger (1994) or Eissa & Liebman (1996)

Your critique need not be long (no more than 5 pages in length), but it should pay close attention to one or more of the following issues:

- Assess the data structure used and the time period covered in the analysis. Do you think the dataset is appropriate for the research question? What are the benefits and drawbacks associated with the dataset?
- What is the nature of the endogeneity problem that is preventing the author from simply estimating an OLS regression? Can you speculate on the type of bias (positive/negative and magnitude) that would be likely rendered by an OLS regression? Be specific.
- Describe the econometric technique that the author has chosen to deal with the endogeneity problem. In other words, how is the author *identifying* the impact of the public policy? What are the assumptions underlying the empirical strategy? What has the author done to convince you of the validity of the strategy? Are you persuaded by the author’s story? Why or why not?
- Do the empirical results seem reasonable to you? Do the coefficients on the key policy variables take the “correct” sign? Are the magnitudes of the effects believable? Assess whether the author uses multiple strategies/robustness tests to conduct analysis, and if so, whether you believe they are appropriate and lead to further confirmation of the author’s main results.

As with all other problem sets, please submit this one in hard-copy form, in class.