

Fall 2009: Econometrics I

Homework Assignment #3 (Due Wednesday, 10/14, in class)

1. Show that 2SLS is the most efficient estimator among all estimators using instruments linear in IV  $\mathbf{z}$ .
2. (page 108-109) 5.3
  - e. Some states or cities have laws that restrict smoking in any public places; while some other states or cities only allow smoking in bars and restaurants. Suppose we also can find out when these laws are put into place. Do you think these can serve as good instruments? How to set up the IVs?
3. (page 111) 5.8
4. (page 135) 6.3
  - d. Suppose we know how many people in each household. Can this become a valid IV? Intuition: a larger household may have economies of scale in food consumption (why?)
5. (page 137) 6.8