Problem Set 8
Econometrics 410
Prof. Taber
Due: Thurs April 30

Problem 1. Consider the model

$$Y_i = \beta_0 + \beta_1 w_{1i} + \beta_2 w_{2i} + \beta_3 x_i + u_i$$

Assume that

$$E(u_i \mid z_{1i}) = 0$$
$$E(u_i \mid z_{2i}) = 0$$
$$E(u_i \mid x_i) = 0$$

Explain how to estimate this model by Instrumental Variables. That is there are 4 parameters. Come up with 4 equations depending on the data and the 4 unknown parameter estimates.

Problem 2. Suppose that

$$y_i = \beta_0 + \beta_1 x_i + u_i$$

and that for some variable z_i,

$$cov(z_i, u_i) = 0.$$

What is

$$\frac{cov(z_i, y_i)}{cov(z_i, x_i)}?$$

Problem 3. Wooldridge 15.7

Problem 4. Wooldridge C15.1

Problem 5. Wooldridge C15.8 (i)-(iii) Then also do (v) but don't worry about "heteroskedasticity-robust standard errors."