

Homework Assignment #6 (due March 22, 2:00 p.m.)

Written problems:

1. Wooldridge: Chapter 4, Problem 6
2. Wooldridge: Chapter 4, Problem 8
3. Wooldridge: Chapter 4, Problem 10
4. Suppose that you have a MLR with two X variables. Both are statistically insignificant in the regression (i.e., you do not reject that either slope is equal to zero at a 5% level). Your R-squared value, however, is extremely high (0.95), so you overwhelmingly reject the null hypothesis that the variables are *jointly* insignificant (the null would be written $H_0: \beta_1 = \beta_2 = 0$). How could this be possible?

Computer problems (show any relevant Stata output):

1. Wooldridge: Chapter 4, Computer Exercise C2
2. Wooldridge: Chapter 4, Computer Exercise C9

In addition, answer the following pertaining to this situation:

- a. Consider the regression model in part (i). Suppose that you are interesting in testing the null hypothesis that the effect of the poverty proportion on $\log(psoda)$ is twice as large as the effect of the black proportion on $\log(psoda)$ --- that is, $H_0: \beta_{prppov} = 2\beta_{prpbck}$. Write out the “restricted” regression model. Then, run the restricted regression in Stata (you’ll need to create a new variable to do this) and compute the F-statistic for this test.
- b. Do the “shortcut” version of the test in Stata and verify that you get the same answer as in the previous part.