Homework #2
Economics 113
Introduction to Econometrics
Professor Spearot
Due Friday, December 4th

Problem 1
Using the WageData.dta dataset from the website, we wish to compare the determinants of wages. Use a 5% significance level for all regressions, and conduct hypothesis tests where necessary. Suppose that we start with the following model, where all variables are standardized.

\[ \text{wage}^* = \beta_1 \text{educ}^* + \beta_2 \text{exper}^* + \beta_3 \text{tenure}^* + u \]

a. Interpret the coefficient \( \beta_1 \).
b. Which variable appears to be the most important in determining wages? Run the required hypothesis tests to support your answer.
c. What happened to \( \beta_0 \)?

Problem 2
Using the BWdata dataset from the website, we wish to predict the probability of smoking by expectant mothers. That is, we wish to test the following:

\[ \text{Smoke} = \beta_0 + \beta_1 \text{meduc} + \beta_2 \text{feduc} + \beta_3 \text{cigprice} + u \]

where Smoke equals 1 if the mother smokes, and zero otherwise.

a. Generate the variable, Smoke.
b. Does a mother’s education level affect the probability of smoking while pregnant? Test this hypothesis, and interpret the parameter of interest.
c. Does father’s education have the same effect as mother’s education on the likelihood of smoking?