Economics 571
Problem Set #4

(1) Go back to problem set 3, exercise 2.3 in Wooldridge.

(1a) Using the data provided, and formulas presented in the lectures, calculate an unbiased estimator of the error variance parameter, $\sigma^2$.

(1b) Use your result in (1a) to estimate $\text{Var}(\hat{\beta}_0)$ and $\text{Var}(\hat{\beta}_1)$.

(2) Consider a regression model with just an intercept (i.e., no $x$ variable):

$$ y_i = \beta_0 + u_i. $$

What will be the $R^2$ value for this regression? Hint: Consider the least squares estimator $\hat{\beta}_0$, as discussed in class, and the formula defining $R^2$.

(3) Wooldridge, Exercise C2.1. Note: This is a computer exercise. Use the commands discussed during our lab session to load the data and perform the regression analysis. Note that the data set is provided in STATA format, so, to load the data, you will use the “use” command rather than “infile.”

(4) Wooldridge, Exercise C2.3. (Be sure to pay particular attention to the units in which the dependent and independent variables are measured).