Homework #6
Economics 113
Introduction to Econometrics
Professor Spearot
Due Friday, December 5th, 2008 – Beginning of class

1. Please run the following regression in STATA using the Wage2.dta dataset

$$\log(wage) = \beta_0 + \beta_1 educ + \beta_2 educ * \text{exper} + \beta_3 \text{exper} + \varepsilon$$

a) Please test the hypothesis that the returns to education depend on the level of experience. Use the 95% confidence level. In what way does experience affect the returns to eduction?

b) In previous homework, we ran regressions which reported that the returns to experience were positive. Is this the case in 2a? What is different?

2. Using the same dataset, please examine the effect of marriage on labor market outcomes (wages).

$$\log(wage) = \beta_0 + \beta_1 educ + \beta_2 married + \varepsilon$$

a) Please construct a 99% confidence interval on the effect of being married on the log wage. How do we interpret this interval?

Next, run the following regression:

$$\log(wage) = \beta_0 + \beta_1 educ + \beta_2 married + \beta_3 educ * married + \varepsilon$$

b) Suppose that I reject the hypothesis that $\beta_3 = 0$ in favor a two-sided alternative. What is the probability that I'm wrong?

c) What is the big difference between 2a and 2b? Why do you think there is a big difference? Can you run a regression that helps explain this difference? If so, please do so and discuss.