

Homework

Introduction to Econometrics

Fall 2005

Instructions

Using the 526 observations on workers available from Wooldridge's site <http://fmwww.bc.edu/ec-p/data/wooldridge/WAGE1.dta>, answer each of the following. Remember, you can use the `USE` command in STATA, e.g.,

```
use http://fmwww.bc.edu/ec-p/data/wooldridge/WAGE1
```

Questions

Consider the following linear model of log wages:

$$\ln(\text{wage}_i) = \beta_1 + \beta_2 \text{educ}_i + \beta_3 \text{exper}_i + \beta_4 \text{tenure}_i + u_i \quad (1)$$

where $i = 1, 2, \dots, 526$.

1. Estimate the model's parameters using least squares.
2. Test the overall significance of this regression at the 5% level.
3. Reformulate the model so that you can test the hypothesis that the effect of another year of schooling is the same as another year of experience using a t-ratio (again, at the 5% level).
4. Repeat the test using the `test` statement in Stata.
5. Impose the restrictions implied by the null hypothesis on the model and estimate the parameters of the restricted model using least squares.