

Final Project

Econ 526 - Introduction to Econometrics

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1. The file *hprice_edited.RData* (or the file *hprice_edited.csv* - both of them are stored on Blackboard) contains a random sample of house prices. Below you can find the variables names and their descriptions.

1. price	house price, \$1000s
2. assess	assessed value, \$1000s
3. bdrms	number of bedrooms
4. lotsize	size of lot in square feet
5. sqrft	size of house in square feet

Analyze your data, run the OLS regressions and answer the questions below.

- (a) Print out the **descriptive statistics** of your dataset. What is the sample size? What is the maximum number of bedrooms in the sample? What was the minimum price paid for a house? What is the (sample) average price paid for a house? (*in R, use 'stargazer' command*)
- (b) Consider the following econometric model:

$$\text{price} = \beta_0 + \beta_1 \text{bdrms} + \beta_2 \text{sqrft} + u \tag{1}$$

Run this regression and print out the **output of your regression** (*in R, use 'stargazer' command*).

- (c) Write the **OLS regression function** with the estimates for the parameters from model (1) above and the standard errors under them.
- (d) Based on your regression model (1) above, what is the estimated effect in your dependent variable for a house with one more bedroom, holding square footage constant?
- (e) Based on your regression model (1) above, what percentage of the variation in price is explained by square footage and number of bedrooms?
- (f) Consider the following econometric model:

$$\log(\text{price}) = \beta_0 + \beta_1 \text{bdrms} + u \tag{2}$$

Run this regression and print out the **output of your regression** (*in R, use 'stargazer' command*).

- (g) Based on your regression model (2) above, what is the estimated effect in your dependent variable for a house with one more bedroom?

(h) Consider the following econometric model:

$$\log(\text{price}) = \beta_0 + \beta_1 \text{bdrms} + \beta_2 \text{sqft} + u \quad (3)$$

Run this regression and print out the **output of your regression** (*in R, use 'stargazer' command*).

- (i) Based on your regression model (3) above, what is the estimated effect in your dependent variable for a house with one more bedroom, holding square footage constant?
- (j) Based on your regression model (3) above, which independent variable(s) is(are) statistically significant at 5% significance level? What about 1% significance level?