

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 Blackboard¹) contains a random sample of house prices. Below you can find the variables names and their descriptions.

1. <code>price</code>	house price, \$1000s
2. <code>assess</code>	assessed value, \$1000s
3. <code>bdrms</code>	number of bedrooms
4. <code>lotsize</code>	size of lot in square feet
5. <code>sqrft</code>	size of house in square feet
6. <code>colonial</code>	=1 if home is colonial style

Considering the following econometric model,

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

analyze your data, run the OLS regression 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) Print out the **output of your regression** (*in R, use 'stargazer' command*).
- (c) Write the **OLS regression function** with the estimates for the parameters and the standard errors under them.
- (d) What is the estimated increase in price for a house with one more bedroom, holding square footage constant?
- (e) What percentage of the variation in price is explained by square footage and number of bedrooms?
- (f) The last observation in the sample has *sqrft* = 1,795 and *bdrms* = 3. What is the predicted selling price for this house?
- (g) The actual selling price of this house in the sample was \$246,000 (so *price* = 246). Find the residual for this house. Did the buyer underpaid or overpaid for the house?

¹This question was based on **Computer Exercise C2** (Chapter 3, page 98) from *Introductory Econometrics* by Jeffrey M. Wooldridge (2015). However, the original dataset and some items in the question were modified.