

Econ 845 - Industrial Organization I.
Winter 2011
Homework No. 2

Due Date: April 12, 2011

Download the data set from the course web page. The data set “house.out” is in ASCII format. house.out:

- Column 1: sample id.
- Column 2: house price
- Column 3: 1 if there is a garage, 0 otherwise
- Column 4: number of rooms
- Column 5: unit square feet
- Column 6: 1 if the owner is single. 0 otherwise
- Column 7: age of the owner
- Column 8: income of the owner
- Column 9: number of dependents
- Column 10: 1 if Midwest, 0 otherwise
- Column 11: 1 if South, 0 otherwise
- Column 12: 1 if West, 0 otherwise

Notice that if Midwest, South, and West are all 0, that means the house is in the Northeastern region of the U.S.

Question 1

- 1) Derive the sample statistics (sample mean, sample standard error, maximum and minimum values) for each data except for Column 1. (10 pts)

- 2) Price equations: Run the following regression. Dependent variable: Price (convert into annual housing price by multiplying the housing price by multiplying it by 0.075). Right hand side variables: constant, garage, number of rooms, unit square feet. Try to interpret the coefficient estimates. They are related to the price of each characteristics. That is, the regression describes the competitive market price of each characteristics component of a house. Then, in this regression, why should we not include the variables representing individual characteristics such as age, income, number of dependents? (20 pts)

- 3) Run the above price equation regression separately for each region. What can you say about the regional differences in housing prices? (20 pts)

Question 2 (20 pts each)

- 1) Run the following regression. Dependent variable: Price (convert into annual housing price by multiplying the housing price by multiplying it by 0.075). Right hand side variables: constant, garage, number of rooms, number of rooms squared, unit square feet, for Midwest, South, West and Northeast. Interpret the square term of the number of rooms.
- 2) From the above price regression, derive the marginal price of rooms, and estimate the demand equation for number of rooms, where the RHS variables include the single dummy, age, income and the number of dependents by using OLS.
- 3) Estimate the demand equation using the IV for number of roomw, where the instruments are, income, region dummies, and region dummies times income. Interpret your results by comparing the OLS and IV.