

Assignment 2: ECON 2220 A (2020 Late Summer)

Due: 13 August 2020 (to be submitted at cuLearn on or before 11:59 pm)

Instructions:

- 1. You should use STATA software for any calculations. You must paste your log/output onto your assignment to show your use of STATA; however, this output does not replace any of the steps outlined below.*
- 2. If you are performing a hypothesis test, make sure you state the hypotheses, the level of significance, the rejection region, the test statistic (and p-value, if requested), your decision (whether to reject or not to reject the null hypothesis), and a conclusion in managerial terms that answers the question posed. These steps must be completed in addition to any STATA output.*
- 3. The required STATA data files can be found in the corresponding folder of cuLearn*
- 4. Please do not forget to write your name and student ID on the cover page of the assignment*
- 5. You need to submit the assignment at cuLearn. No late or email submission will be accepted.*

Project 1:

House prices are subject to a variety of economic factors but are, to some extent, based on the living area of the house. Analysts examined the recent sales of 1080 homes and consider the following three models for predicting the house prices.

$$PRICE = \beta_1 + \beta_2 SQFT + \varepsilon$$

$$\ln(PRICE) = \alpha_1 + \alpha_2 SQFT + \varepsilon$$

$$\ln(PRICE) = \gamma_1 + \gamma_2 \ln(SQFT) + \varepsilon$$

- Using the dataset *project1.dta*, estimate the above three regression models. Please note that *ln* designates ‘natural logarithm’.
- For each of the models, do the following: (i) interpret the estimated regression coefficients (i.e. $\beta_2, \alpha_2, \gamma_2$) (ii) calculate marginal effects (use the average values of *PRICE* or/and *SQFT* as appropriate) (iii) calculate elasticities (use the average values of *PRICE* or/and *SQFT* as appropriate)
- Taking into consideration (i) plots of the fitted equations, (ii) plots of the residuals, (iii) error normality plots, and (iv) values of R^2 , which equation do you think is preferable? Explain.