

Practical Class 3 Simple Regression and EViews

Seminar Questions

Dougherty p56 considers a simple earnings function of the form

$$EARNINGS_i = \beta_1 + \beta_2 S_i + u_i \quad [1]$$

Where $EARNINGS_i$ measures the earnings of individual i in dollars per hour and S_i measures the number of years of schooling completed by individual i .

(Note: Dougherty always uses β_1 as the symbol for the constant intercept rather than β_0)

Based on 2002 data from 540 respondents from the United States National Longitudinal Survey of Youth 1979 Dougherty reports the following fitted equation

$$\hat{EARNINGS}_i = -13.93_1 + 2.46S_i \quad [2]$$

(1) Carefully interpret this estimated equation. Use it to predict the hourly earnings of an individual who has completed 10 years of schooling.

(2) Dougherty also reports a t value of 10.59 for the estimate of β_1 and an R-squared value of 0.1725. Draw some conclusions from these statistics.

(3) Another lecturer who sees you working on this practical sheet asks you whether, given the information that you have, it is possible to obtain a 95% confidence interval for β_1 . How would you reply?

Dougherty provides the results obtained by a researcher who having mistakenly regressed S on $EARNINGS$, obtaining the fitted model

$$\hat{S}_i = 12.29 + 0.070EARNINGS_i \quad [3]$$

then rearranged this equation to derive the result

$$\hat{EARNINGS}_i = -175.57_1 + 14.295S_i \quad [4]$$

(4) Explain why this equation is different to Dougherty's first estimated equation [2] and why the results from it are flawed.

See the next page for information about the Computer Practical Session to go with this exercise.

Computer practical session

Dougherty has made available via his website <http://econ.lse.ac.uk/courses/ec220/G/iedata/eecs/> a number of data samples from the United States National Longitudinal Survey of Youth for the estimation of earnings functions. I have extracted data from one of these samples on the two variables described above and saved them as an Excel file `prac3data.xls`

Use this data set with EViews to estimate the model described in equation [1]. Write some brief notes interpreting your results.

NOTE: The file with the data for this exercise is available on the L drive at `L:\PBS\LectData\JudgeG\INEMET[U13783]\prac3data.xls` and via the INEMET website

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