Econometrics with R

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Homework 2

Due day: November 20,

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Software: R

Format: R script, R markdown

Max Pts. = 100

Install R package “Wooldridge”:

install.packages("wooldridge")

library(wooldridge)

To find description of data use *?twoyer* in R console.

Use the data in TWOYEAR.RAW for this exercise.

(**1, Pts. 15**) The variable *stotal* is a standardized test variable, which can act as a proxy variable for unobserved ability. Find the sample mean and standard deviation of *stotal*.

(**2, Pts.15**) Run simple regressions of *jc* and *univ* on *stotal*. Are both college education variables statistically related to *stotal*? Explain.

(**3, Pts. 15**) Add *stotal* to equation



and test the hypothesis that the returns to two- and four-year colleges are the same against the alternative that the return to four-year colleges is greater.

(**4, Pts. 15**) Add *stotal*2 to the equation estimated in part (iii). Does a quadratic in the test score variable seem necessary?

(5**, Pts.15**) Add the interaction terms *stotal·jc* and *stotal·univ* to the equation from part (iii). Are these terms jointly significant?

(**6, Pts. 25**) What would be your final model that controls for ability through the use of *stotal*?

Justify your answer.