Introduction to Econometrics

Summer Term 2020 - Review Questions to Prepare for the Class

R practices 1

(i) Use the R package datasets to load ToothGrowth dataset on your environment. **(ii)** Find documentation explaining the dataset. **(iii)** Find average tooth growth for the animals that had 1 mg/day for each supplement. **(iv)** Plot the effect of different doses on tooth growth for supplement ascorbic acid. Your plots should always have clear labels, titles and legends when you have multiple types of observations. **(v)** Most importantly, don't cheat. Write a code that not only works for this specific database, but also for one with additional observations that are added to the end of this database. Therefore, your code should have almost no numbers (such as number of observations) in it. Utilize R packages and functions. Shorter the code you write, the better. The complete answer for this question can be coded in 4-5 lines if you write a good code.

R practices 2

(i) Use the R package datasets to load LakeHuron dataset on your environment. **(ii)** Find documentation explaining the dataset. **(iii)** Plot the data across time where the x-axis is properly labeled. **(iv)** Plot a demeaned version of the data. **(v)** Compute 1 year and 2 year correlations in the data. **(vi)** Don't cheat.

R practices 3

(i) Load College Scorecard dataset on your environment from http://www2.stetson.edu/ jrasp/data.htm. **(ii)** Find documentation explaining the dataset. **(iii)** Make a plot of average admission shares of each race in public, private non-profit and private profit schools. Make sure you properly handle missing observations. **(iv)** Plot how net tuition revenue per student changes with average SAT scores of students admitted. **(v)** Compare average instructional expenditure per student of doctoral and master colleges with baccalaureate colleges. **(vi)** Don't cheat.

Stats practices

(i) Solve first 11 questions from `https://ocw.mit.edu/courses/mathematics/18-05-introduction-to-probability-exams/MIT18_05S14_Prac_Exam1a.pdf` **(ii)** Solve questions 9-14 from `https://ocw.mit.edu/courses/mathematics/18-05-introduction-to-probability-and-statistics-spring-2014/exams/MIT18_05S14_Prac_Exa1b.pdf` **(iii)**Solve first 5 questions from `https://ocw.mit.edu/courses/mathematics/18-05-introduction-t exams/MIT18_05S14_Prac_Fnal_Exm.pdf`