

ECON7350: Applied Econometrics for Macroeconomics and Finance

Tutorial 1: R and Basic Operations

At the end of this tutorial you should be able to:

- use R to read, manipulate and save data and workfiles;
- use R to compute descriptive statistics;
- use R to conduct hypothesis tests concerning a population mean.

Problems

1. The text file `consumption.txt` contains observations on the weekly family consumption expenditure (`CONS`) and income (`INC`) for a sample of 10 families.

- (a) Read the data into R.
- (b) Draw a scatter diagram of `CONS` against `INC`.
- (c) On checking the data, you find that your assistant has recorded the weekly consumption expenditure for Family 8 as \$900 instead of \$90. Correct this error and redraw the scatter diagram.
- (d) Compute the mean, median, maximum and minimum values of `INC` and `CONS`.
- (e) Compute the correlation coefficient between `CONS` and `INC`. Comment on the result.
- (f) Create the following new variables:

$$\begin{aligned} \text{DCONS} &= 0.5\text{CONS}, \\ \text{LCONS} &= \log(\text{CONS}), \\ \text{INC2} &= \text{INC}^2, \\ \text{SQRTINC} &= \sqrt{\text{INC}}. \end{aligned}$$

- (g) Delete the variables `DCONS` and `SQRTINC`.
- (h) Delete everything.

2. At the Famous Fulton Fish Market in New York city, sales of whiting (a type of fish) vary from day to day. Over a period of several months, daily quantities sold (in pounds) were observed. These data are in the file `fultonfish.dat`. Description of the data is in the file `fultonfish.def`. Describe the first four columns.
- (a) Use R to open the data file and name the series in the first four columns as `date`, `lprice`, `quan` and `lquan`.
 - (b) Compute the sample mean and standard deviation of the quantity sold (`quan`).
 - (c) Test the null hypothesis that the mean quantity sold is equal to 7,200 pounds a day at the 5% level of significance.
 - (d) Construct the 95% confidence interval for part (c).
 - (e) Plot `lprice` against `lquan` and label the variable `lprice` as “log(Price) of whiting per pound” and `lquan` as “log(Quantity)”. Then, comment on the nature of the relationship between these two variables.
 - (f) Save this workfile to any folder on any drive.

Assignment Project Exam Help

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