Econometrics: Problem Set 1 - Tuo Wang

> install.packages("miscTools")

trying URL 'https://mirrors.nics.utk.edu/cran/bin/macosx/mavericks/contrib/3.2/miscTools\_0.6-16.tgz'

Content type 'application/x-gzip' length 55807 bytes (54 KB)

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downloaded 54 KB

The downloaded binary packages are in

/var/folders/k6/53lprdwx64v0rb3j30n3hg480000gn/T//RtmpuL0lZA/downloaded\_packages

> read.csv("/Users/TariesW/Desktop/ECON 345/HW 1/One X Column.txt",header=F)

> data=read.csv("/Users/TariesW/Desktop/ECON 345/HW 1/One X Column.txt",header=F)

> colMeans(data)

V1

-0.03178884

> colMedians(data)

V1

-0.01067

> summary(data)

V1

Min. :-3.50596

1st Qu.:-0.65559

Median :-0.01067

Mean :-0.03179

3rd Qu.: 0.62879

Max. : 3.22980

> dim(data)

[1] 1000 1

> length(data)

[1] 1

> source("/Users/TariesW/Desktop/ECON 345/HW 1/One Y Column.txt")

> read.csv("/Users/TariesW/Desktop/ECON 345/HW 1/One Y Column.txt",header=F)

> data1=read.csv("/Users/TariesW/Desktop/ECON 345/HW 1/One Y Column.txt",header=F)

> dim(data1)

[1] 1000 1

> length(data1)

[1] 1

> colMeans(data1)

V1

3.804855

> colMedians(data1)

V1

2.093885

> summary(data1)

V1

Min. :-256.1954

1st Qu.: -0.4327

Median : 2.0939

Mean : 3.8049

3rd Qu.: 4.6133

Max. :1203.0640

>

2. What is the standard error of the sample means?

-The standard error is the sample’s standard deviation divided by √n. It is used to estimate the standard deviation of the sample mean based on the population mean.

Sample mean x= -.0317

Sample mean y= 3.8049

Sample median x= -.01067

Sample median y= 2.09388

Stnd Err mean x= .03235

Stnd Err mean y= 1.3995

(See attached STATA)

3. What is the standard error of the sample medians?

-The standard error of sample median should be : standard error of mean \* 1.25

It is thus less efficient and more subject to sampling fluctuations. It is usually to estimate a data that are not drawn from a normally distributed population and rarely used.

Stnd Err Median x= .03235 \* 1.25 = 0.0404375

Stnd Err Median y= 1.3995 \* 1.25 = 1.748375

4. See Attached Shazam Run

mean of variable X using OLS y x/resid = olse = 0.0247

mean of variable Y using OLS y x/resid = olse = 1.0247

mean of variable X using ROBUST y x/resid = lade = 0.0246

mean of variable Y using ROBUST y x/resid = lade = 0.5242

mean of OLSE = -0.27531E-14

median of OLSE = -1.9051

mean of LADE = 1.9039

median of LADE = 0.00000E+00