

## EE435-Minitest1-6104640542.R

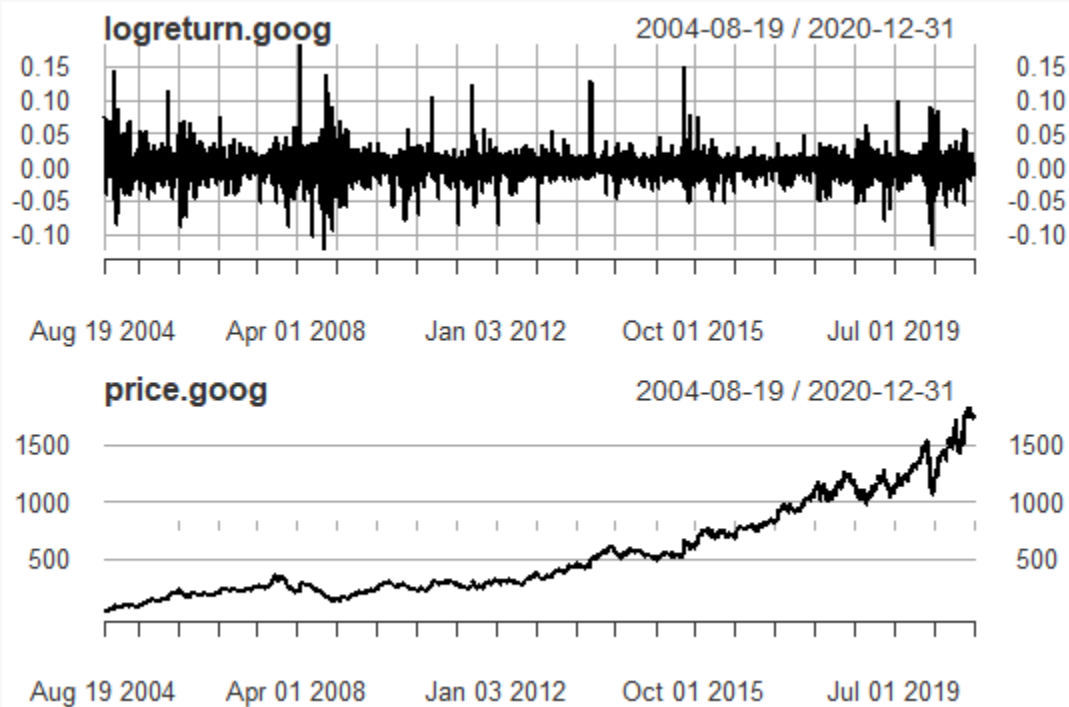
ASUS

2021-02-11

```
#a
price.goog=goog[,6]
logprice.goog=log(price.goog)
logreturn.goog=diff(log(price.goog))
simplereturn.goog <-exp(logreturn.goog)-1
dev.off()

## null device
##          1

par(mfrow=c(2,1))
plot(logreturn.goog,type='l')
plot(price.goog,type='l')
```



```

#b
table.Stats(logreturn.goog)

##           GOOG.Adjusted
## Observations      4121.0000
## NAs                1.0000
## Minimum           -0.1234
## Quartile 1        -0.0074
## Median             0.0007
## Arithmetic Mean    0.0009 (Sample mean)
## Geometric Mean     0.0007
## Quartile 3         0.0100
## Maximum            0.1823
## SE Mean            0.0003
## LCL Mean (0.95)    0.0003
## UCL Mean (0.95)    0.0014
## Variance           0.0004
## Stdev              0.0191
## Skewness           0.4528
## Kurtosis           9.1391 (Excess kurtosis)

#c
newlogreturn.goog <- logreturn.goog[2:nrow(logreturn.goog),]
newsimplereturn.goog <- simplereturn.goog[2:nrow(simplereturn.goog),]

#H0: distribution is normal
#H1: distribution is not normal
jarque.bera.test(newlogreturn.goog)

##
## Jarque Bera Test
##
## data: newlogreturn.goog
## X-squared = 14482, df = 2, p-value < 2.2e-16

#p-value Less than 0.05, H0 is rejected. The distribution is normal at 95% CI

#d
#H0: E(Log return of google) = 0.08
#H1: E(Log return of google) != 0.08
t.test(newlogreturn.goog, mu=0.08)

##
## One Sample t-test
##
## data: newlogreturn.goog
## t = -265.51, df = 4120, p-value < 2.2e-16
## alternative hypothesis: true mean is not equal to 0.08
## 95 percent confidence interval:
##  0.0002787253 0.0014474425

```

```

## sample estimates:
##   mean of x
## 0.0008630839

#p-value < 0.05, computed t-value fall in rejection region. H0 is rejected.
#Expected mean of log return of google not equal to 0.08

#e
#95 percent confidence interval:
[0.0002787253,0.0014474425]

#f
T=length(newlogreturn.goog)
s3=skewness(newlogreturn.goog)
tst=s3/sqrt(6/T)
tst

## [1] 11.8664

pv=1-pnorm(tst)
pv

## [1] 0

#the computed value fall into rejection region. H0 is rejected.
#That is, skewness of log return is > 0

#g
T=length(newlogreturn.goog)
s4=kurtosis(newlogreturn.goog) #excess kurtosis
K=s4+3 #kurtosis
tst=(K-3)/sqrt(24/T)
tst

## [1] 119.7564

pv=2*(1-pnorm(tst))
pv

## [1] 0

#the computed value fall into rejection region. H0 is rejected.
#That is, kurtosis of log return is not equal to 3

```