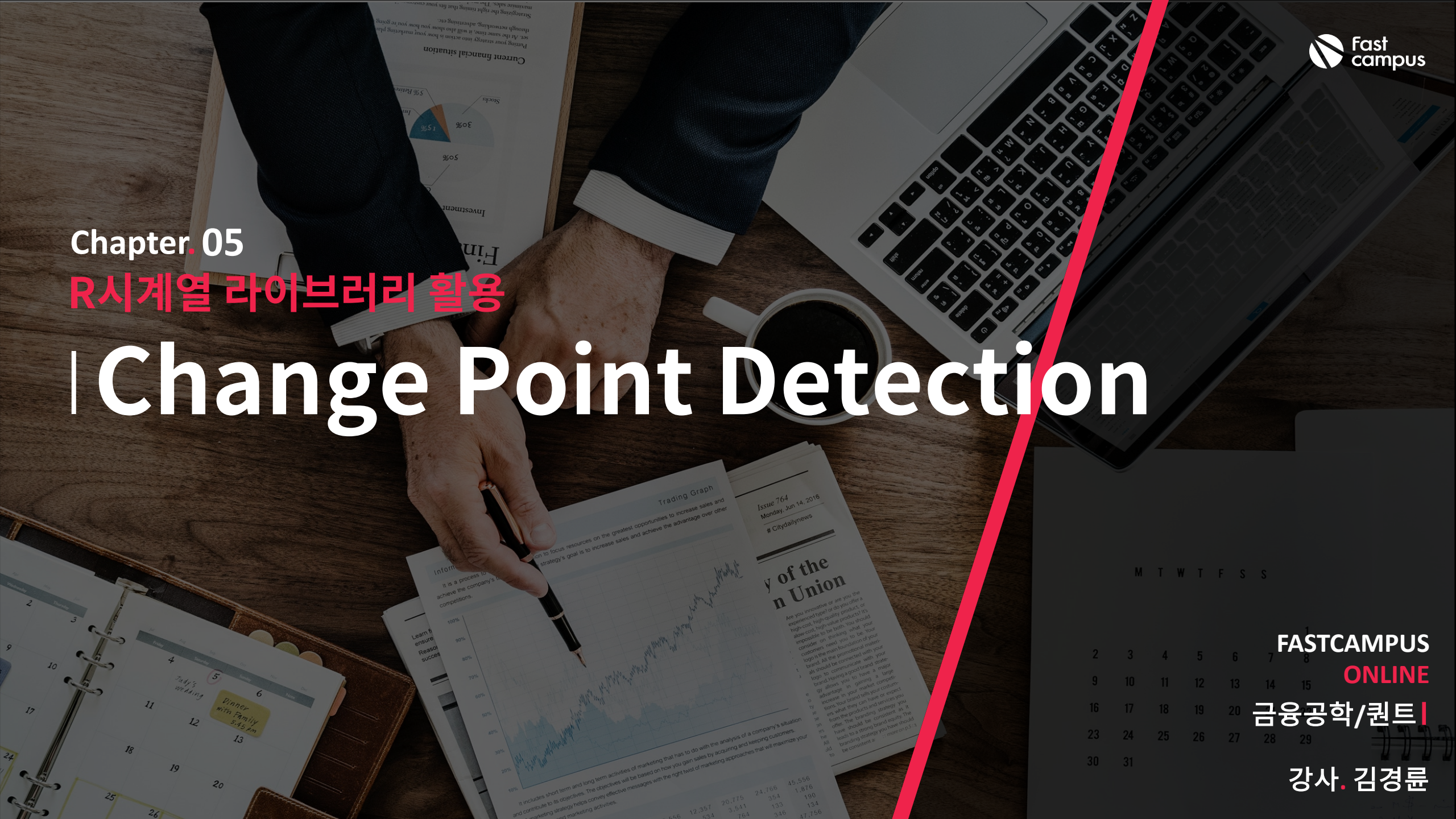

Chapter. 05

R시계열 라이브러리 활용

Change Point Detection

FASTCAMPUS
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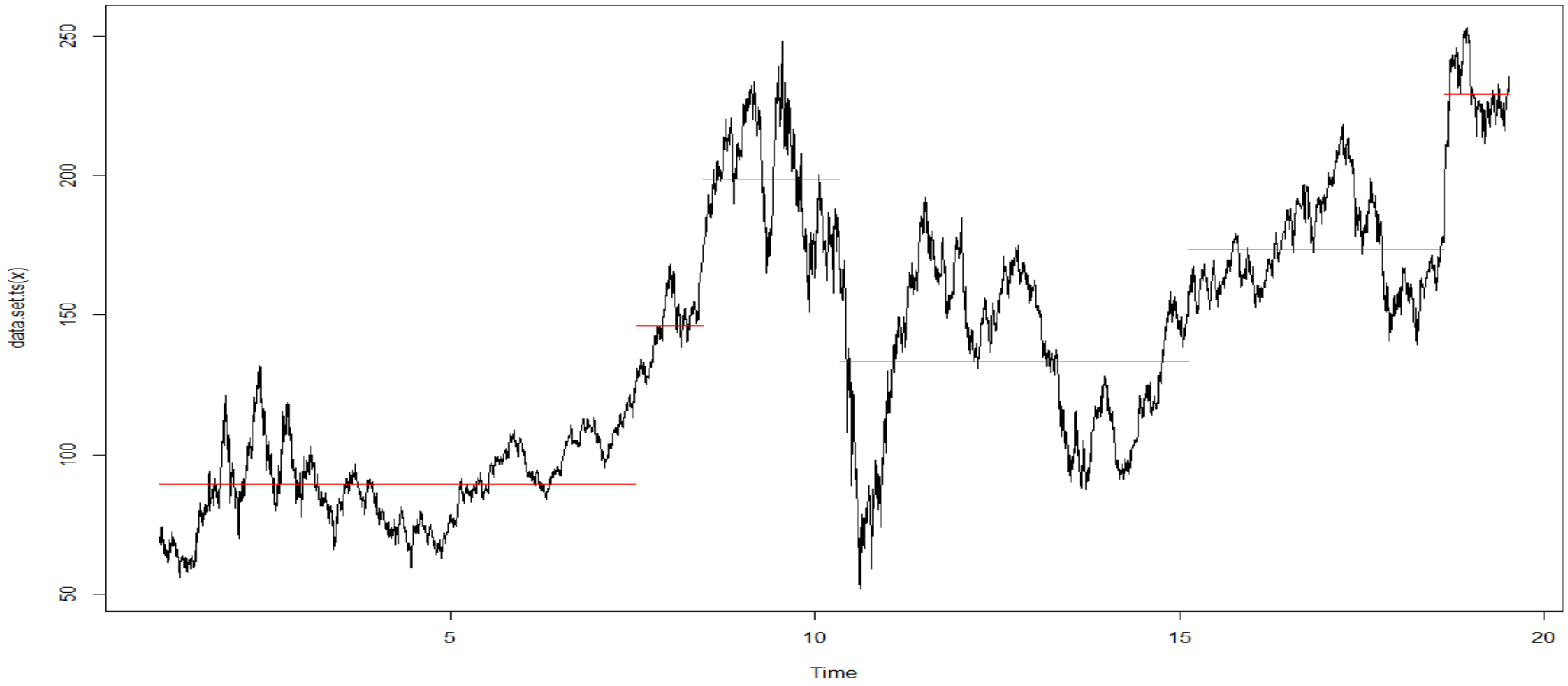
금융공학/퀀트

강사. 김경륜

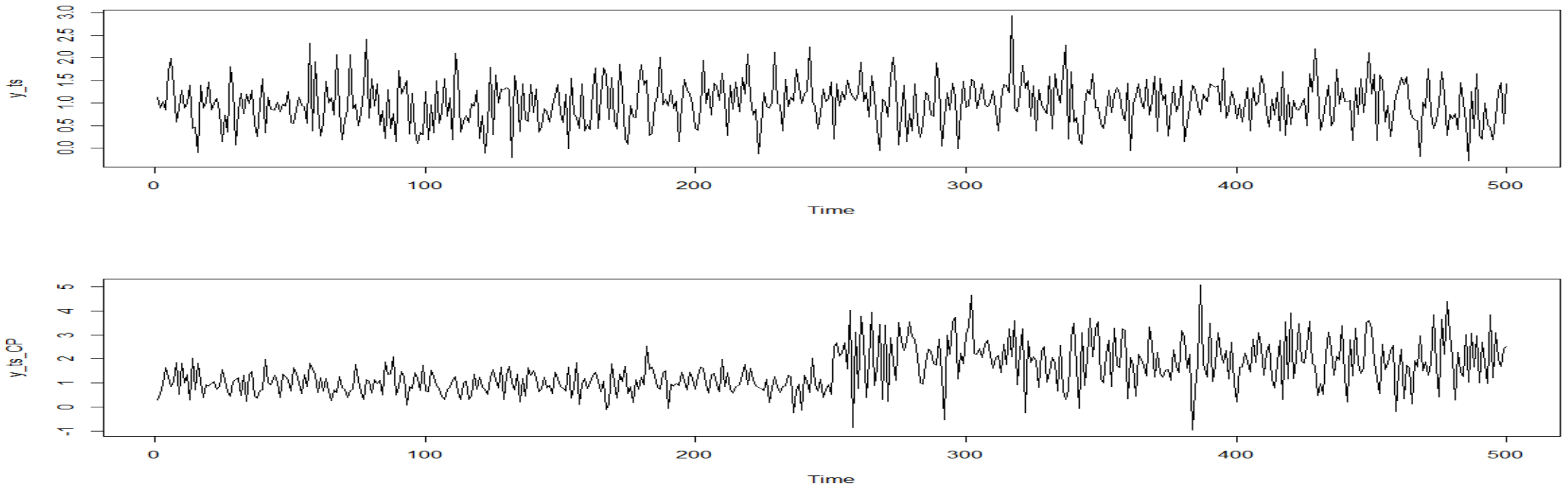
Change Point Detection

Change Point Detection: 시계열데이터의 평균, 분산, 분포 등의 변화를 감지하는것



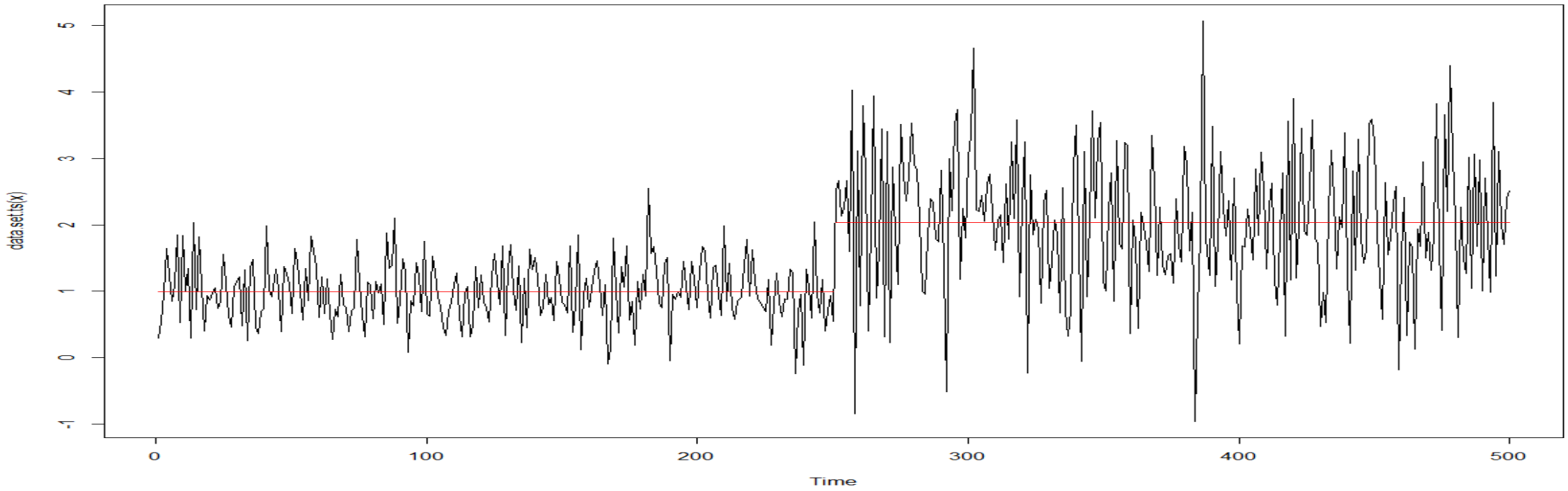
Change Point Detection

```
library(changepoint)
y_ts    <- ts(rnorm(500,mean=1,sd=.5)) # random signal without a changepoint
y_ts_CP <- ts(c(rnorm(250,mean=1,sd=.5), rnorm(250,mean=2,sd=1))) # random signal with changepoint
```



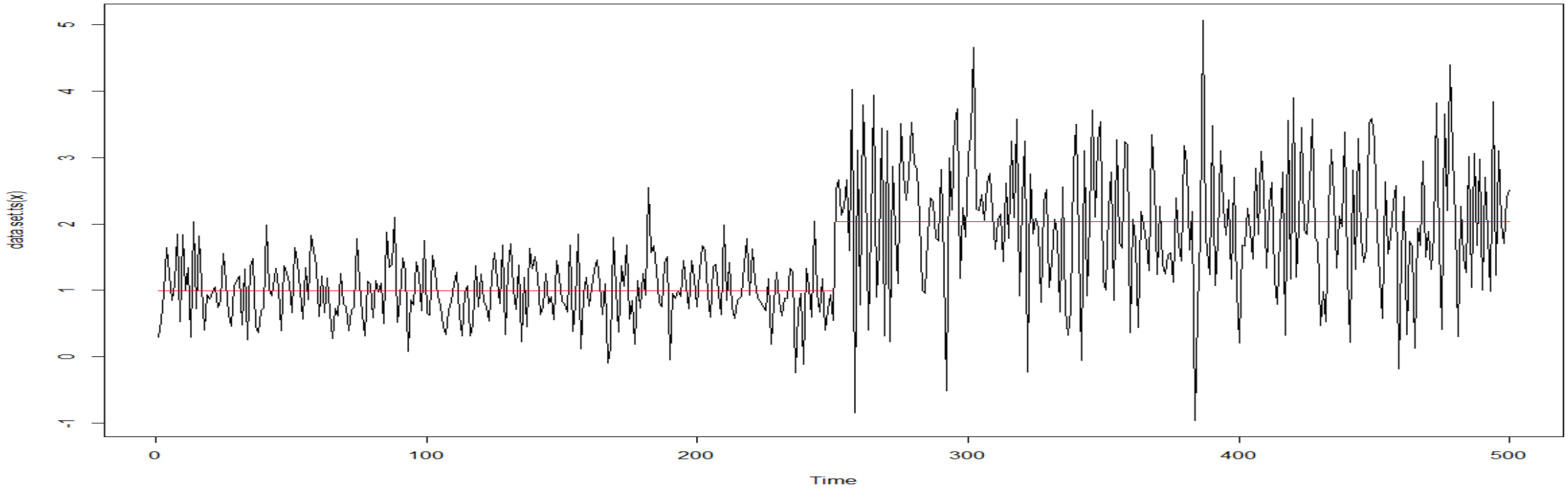
Change Point Detection

```
mvalue <- cpt.mean(y_ts_CP, method = "PELT")
cpts(mvalue) # change point detection
[1] 250
plot(mvalue)
```



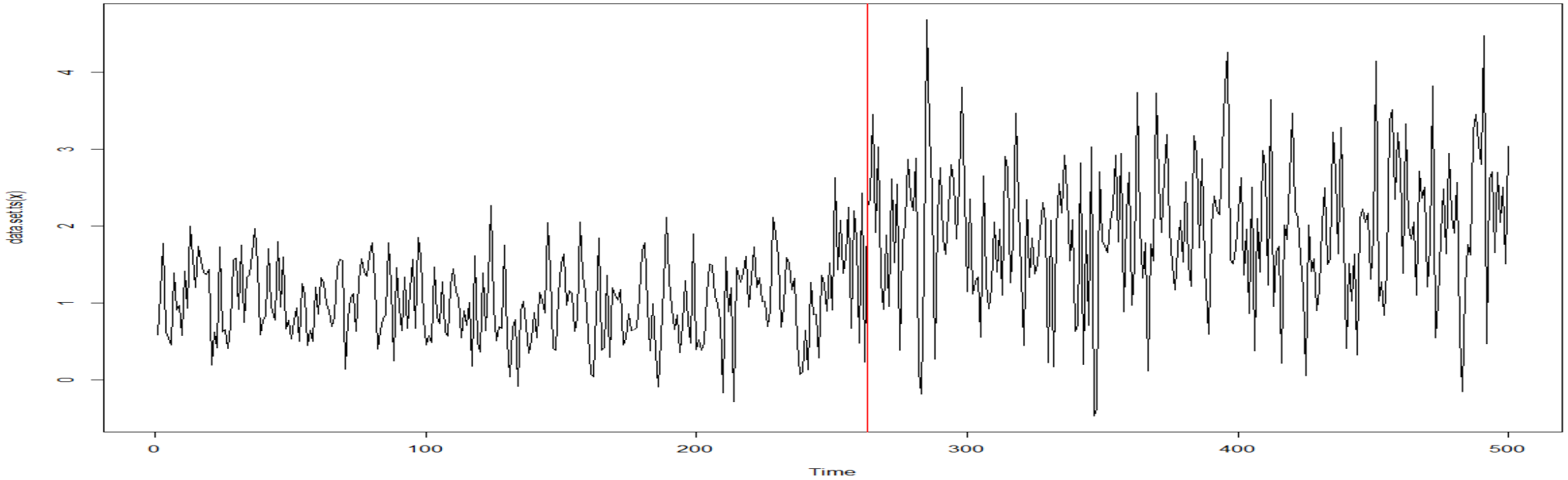
Change Point Detection : mean change

```
mvalue <- cpt.mean(y_ts_CP, method = "PELT")
cpts(mvalue) # change point detection
[1] 250
plot(mvalue)
```



Change Point Detection : variance change

```
varvalue <- cpt.var(y_ts_CP, method = "PELT")
cpts(varvalue)
plot(varvalue)
```



Change Point Detection

```
# 골드만삭스 주가데이터
gs <- read.csv("C:/Users/kyongryun/Documents/TS2/gs_ts.csv", header=T)
gs_ts <- ts(gs$price, frequency = 250)
mvalue <- cpt.mean(gs_ts, method = "BinSeg")
cpts(mvalue) ; [1] 1635 1866 2334 3529 4411
plot(mvalue)
```