

2.R

Toshiba

Mon Dec 01 10:30:28 2014

```
library(TSA)
```

```
## Loading required package: leaps
## Loading required package: locfit
## locfit 1.5-9.1    2013-03-22
## Loading required package: mgcv
## Loading required package: nlme
## This is mgcv 1.8-0. For overview type 'help("mgcv-package")'.
## Loading required package: tseries
##
## Attaching package: 'TSA'
##
## The following objects are masked from 'package:stats':
##
##   acf, arima
##
## The following object is masked from 'package:utils':
##
##   tar
```

```
library(astsa)
library(datasets)
library(tseries)
library(forecast)
```

```
## Loading required package: zoo
##
## Attaching package: 'zoo'
##
## The following objects are masked from 'package:base':
##
##   as.Date, as.Date.numeric
##
## Loading required package: timeDate
##
## Attaching package: 'timeDate'
##
## The following objects are masked from 'package:TSA':
##
##   kurtosis, skewness
##
## This is forecast 5.6
##
## Attaching package: 'forecast'
##
```

```
## The following object is masked from 'package:astsa':  
##  
##      gas  
##  
## The following object is masked from 'package:TSA':  
##  
##      fitted.Arima  
##  
## The following object is masked from 'package:nlme':  
##  
##      getResponse
```

```
library(sapa)
```

```
## Warning: package 'sapa' was built under R version 3.1.2
```

```
## Loading required package: ifultools
```

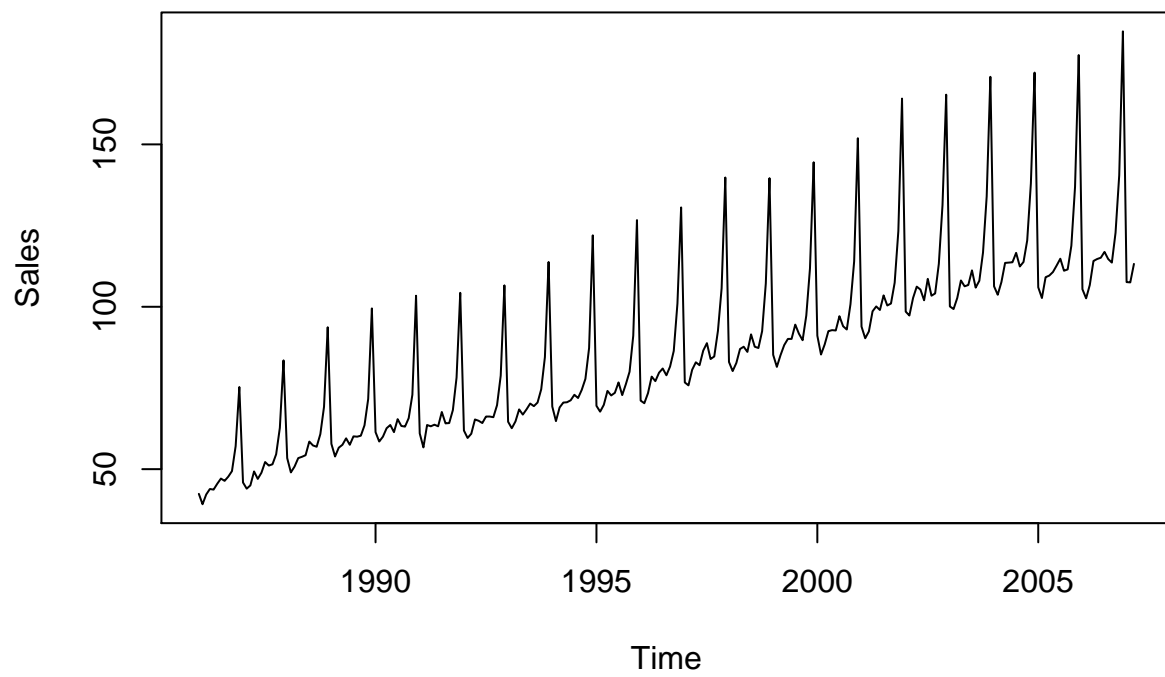
```
## Warning: package 'ifultools' was built under R version 3.1.2
```

```
## Loading required package: splus2R
```

```
## Warning: package 'splus2R' was built under R version 3.1.2
```

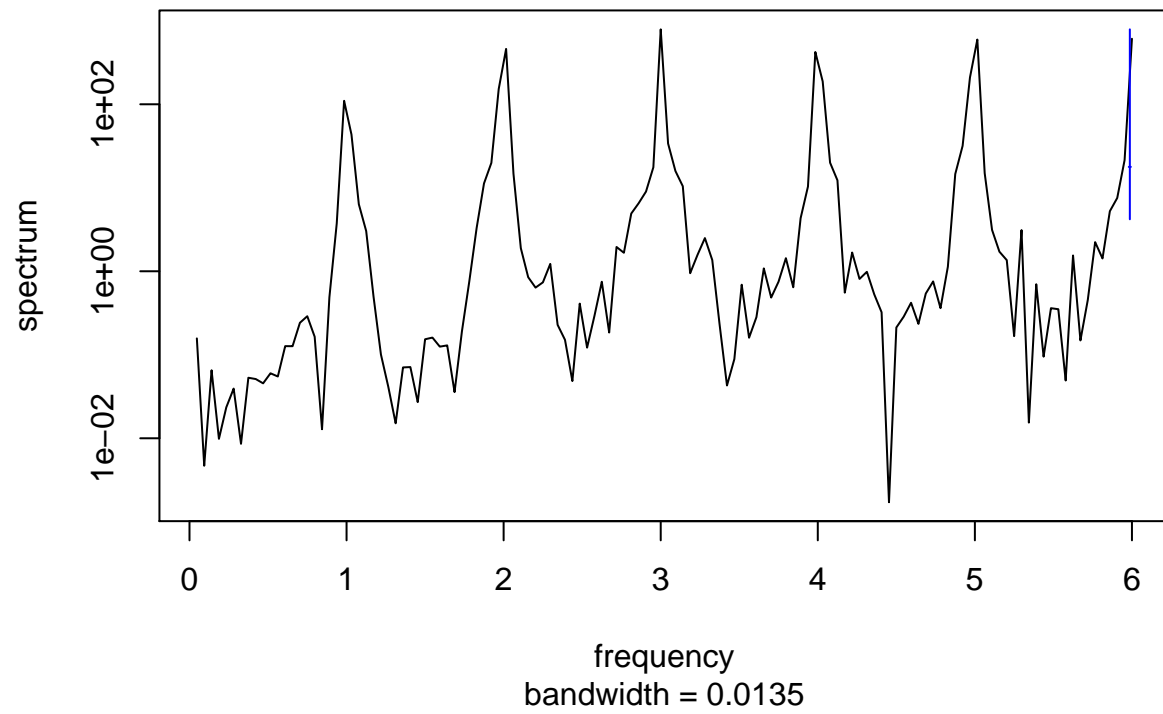
```
## Loading required package: MASS
```

```
library(ppcor)  
#library(itsmr)  
data(retail)  
#retail_new=retail[1:255]  
plot(retail,type='l')
```



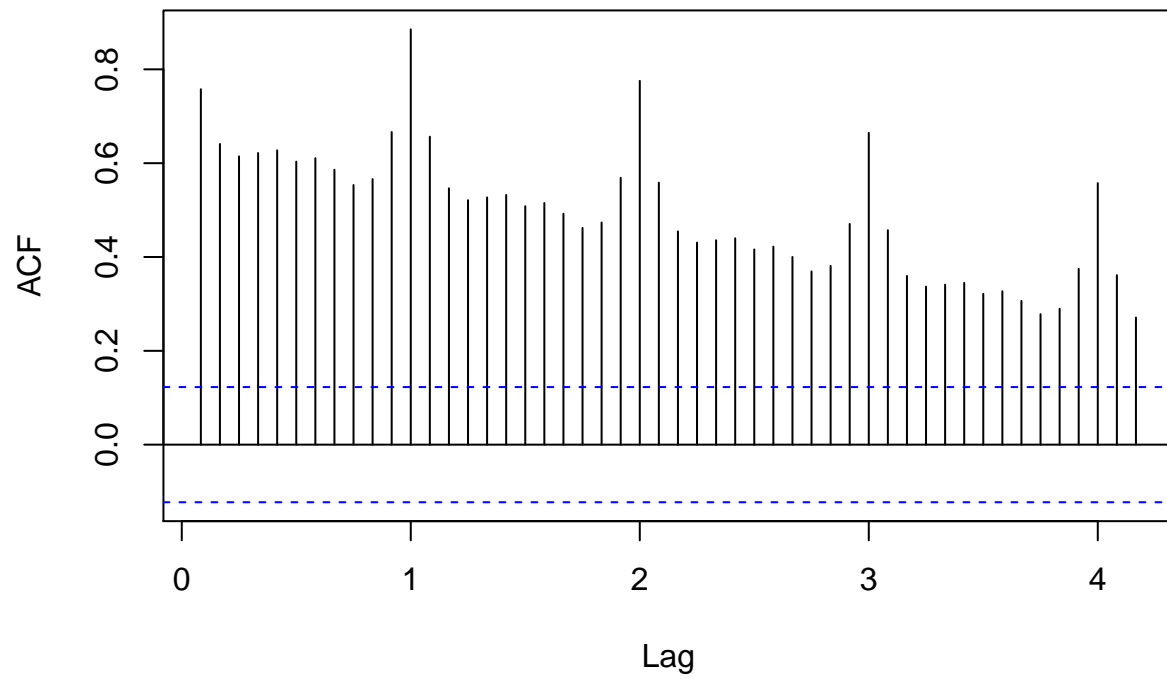
```
retail_diff=diff(retail)
spectrum(retail_diff)
```

Series: x
Raw Periodogram

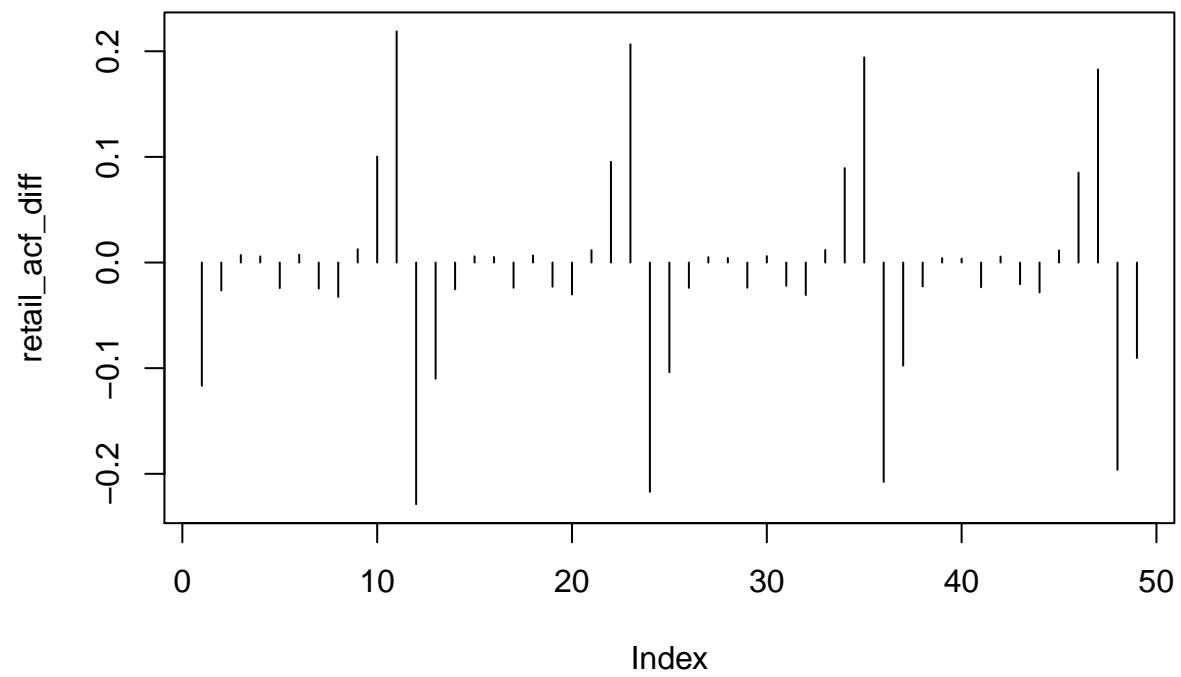


```
retail_acf=acf(retail,lag.max=50)# S=12
```

Series retail

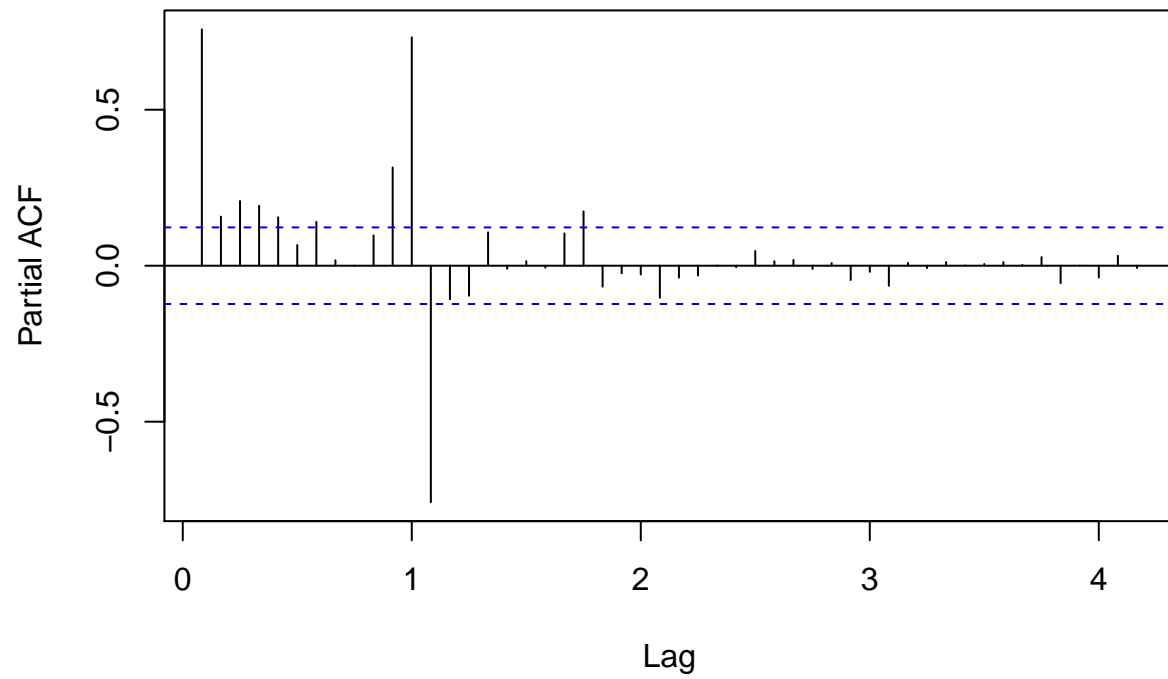


```
retail_acf_diff=diff(retail_acf$acf)
plot(retail_acf_diff,type='h')
```

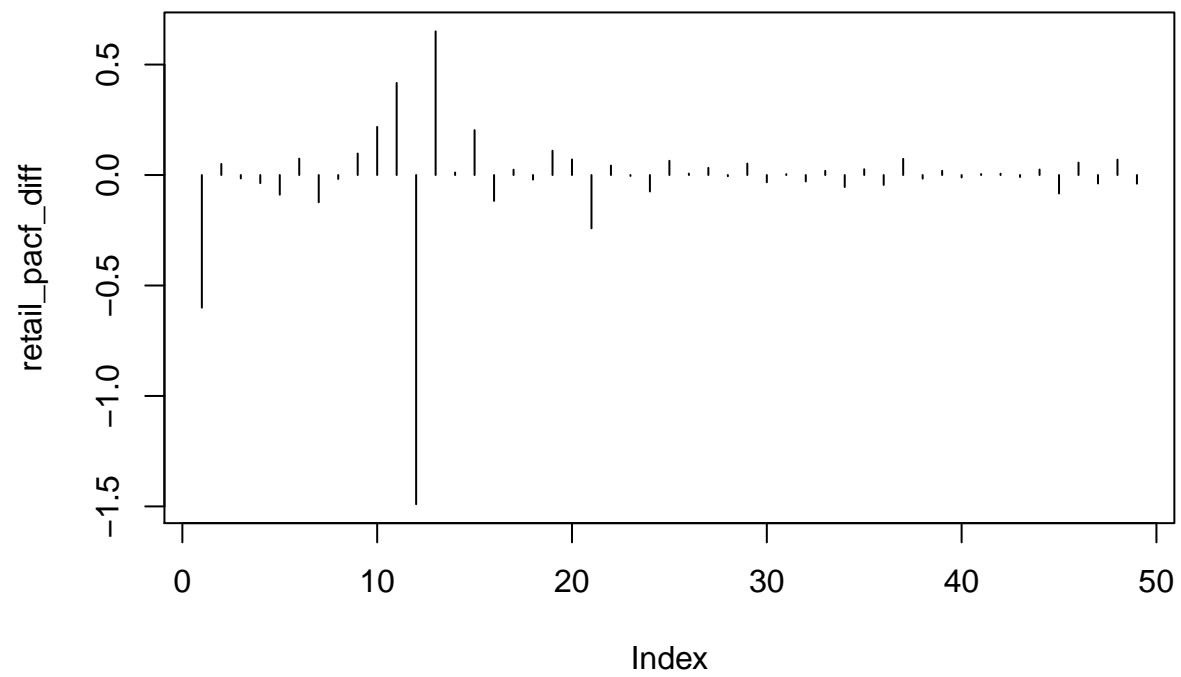


```
retail_pacf=pacf(retail,lag.max=50)
```

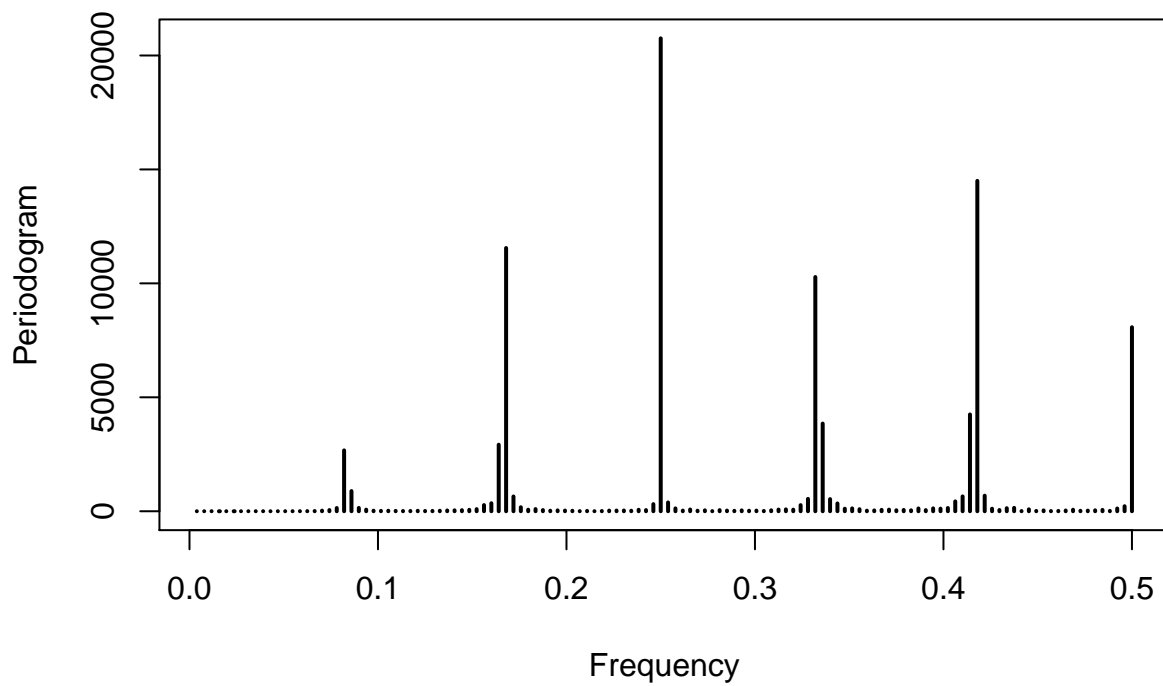
Series retail



```
retail_pacf_diff=diff(retail_pacf$acf)
plot(retail_pacf_diff,type='h')
```



```
arima_auto=auto.arima(retail_diff)
periodogram(retail_diff)
```

```
retail_test=sarima(retail,2,1,2,D=1,Q=1,S=12)
```

```
## initial value 0.840627
## iter 2 value 0.685920
## iter 3 value 0.645495
## iter 4 value 0.645147
## iter 5 value 0.644846
## iter 6 value 0.644707
## iter 7 value 0.644628
## iter 8 value 0.644592
## iter 9 value 0.644499
## iter 10 value 0.644275
## iter 11 value 0.643740
## iter 12 value 0.642994
## iter 13 value 0.642226
## iter 14 value 0.641474
## iter 15 value 0.641163
## iter 16 value 0.641076
## iter 17 value 0.641016
## iter 18 value 0.640740
## iter 19 value 0.640226
## iter 20 value 0.639682
## iter 21 value 0.639121
## iter 22 value 0.638806
## iter 23 value 0.638802
```

```
## iter 24 value 0.638802
## iter 25 value 0.638802
## iter 26 value 0.638802
## iter 27 value 0.638802
## iter 28 value 0.638802
## iter 29 value 0.638802
## iter 30 value 0.638802
## iter 31 value 0.638801
## iter 32 value 0.638801
## iter 32 value 0.638801
## iter 32 value 0.638801
## final value 0.638801
## converged
## initial value 0.632797
## iter 2 value 0.632772
## iter 3 value 0.632748
## iter 4 value 0.632689
## iter 5 value 0.632626
## iter 6 value 0.632520
## iter 7 value 0.632494
## iter 8 value 0.632480
## iter 9 value 0.632477
## iter 10 value 0.632475
## iter 11 value 0.632475
## iter 11 value 0.632475
## iter 11 value 0.632475
## final value 0.632475
## converged
```

