Projet R

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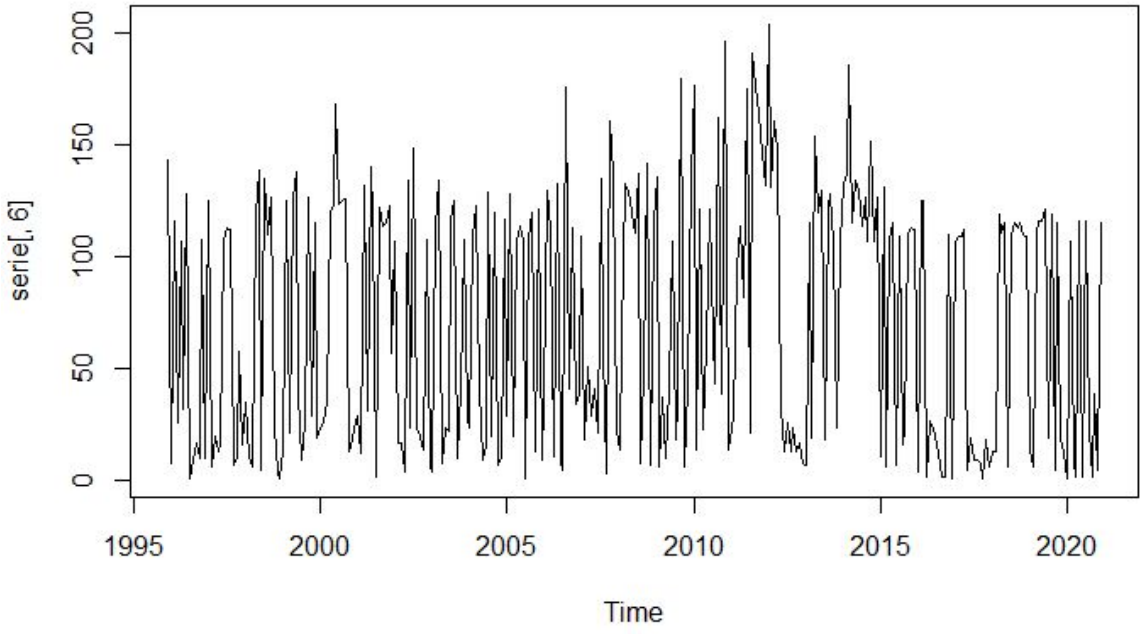
	ï..Date	Dernier	Ouv.	Plus.Haut	Plus.Bas	Variation..
Dec 1995	2404	738	702	742	735	143
Jan 1996	2315	709	703	716	729	8
Feb 1996	2142	714	702	720	719	116
Mar 1996	1925	708	719	739	724	26
Apr 1996	981	730	718	752	748	107
May 1996	28	729	743	751	754	32
Jun 1996	2055	749	728	750	752	128

```
#representation graphique
plot.ts(serie[,6])
```




```
#I)Test de dickey-fuller pour verifier la presence
#de stationnarite

View(serie[,6])
adf.test(serie[,6])
#Pvalue<0.05==>La serie est stationnaire
```

```
        Augmented Dickey-Fuller Test

data:  serie[, 6]
Dickey-Fuller = -5.6116, Lag order = 6, p-value = 0.01
alternative hypothesis: stationary
```

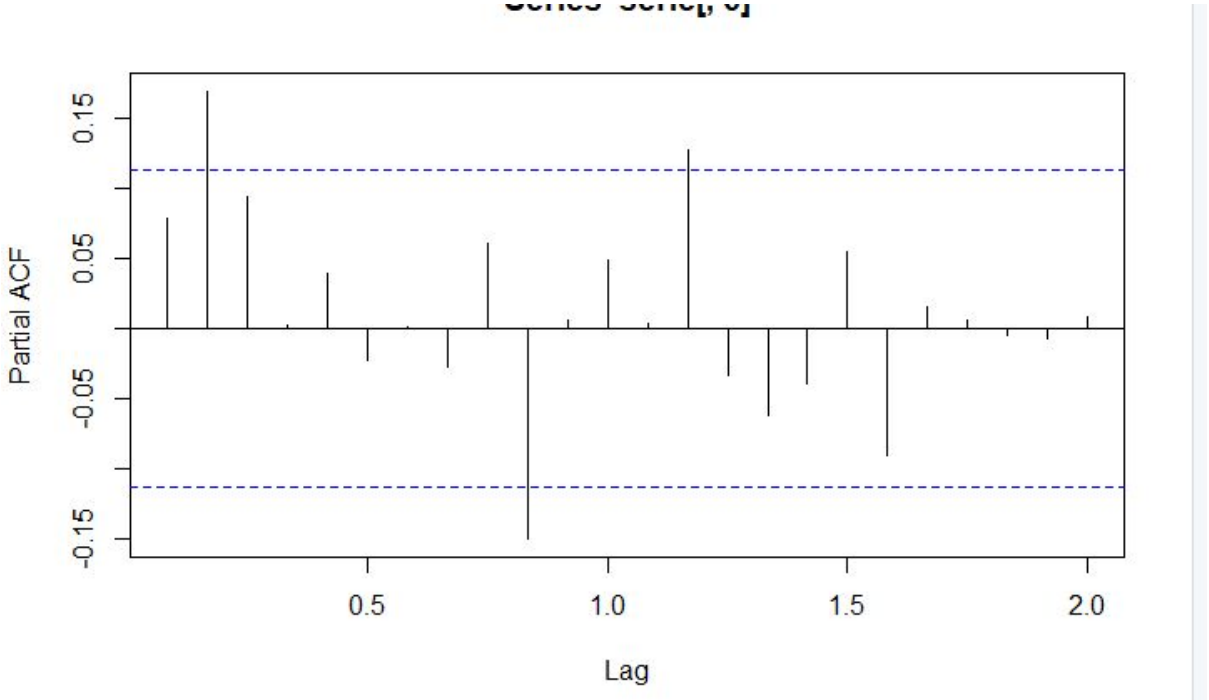
```
#test de la presence d'autocorrelation

Box.test(serie[,6])
#p_value>0.05===>absence d'autocorrelation
```

```
        Box-Pierce test

data:  serie[, 6]
X-squared = 1.8297, df = 1, p-value = 0.1762
```

```
pacf(serie[,6])
```



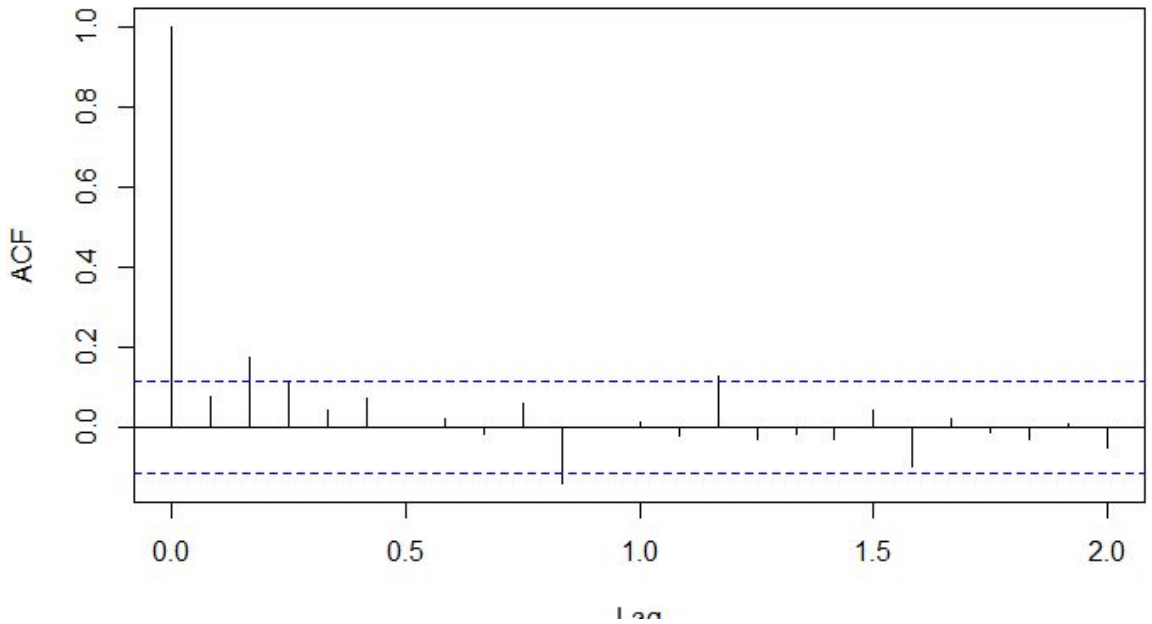

```
#estimation d'un modèle AR
ar(serie[,6])
```

```
Call:
ar(x = serie[, 6])

Coefficients:
     1        2        3
0.0490   0.1625   0.0938
```

```
#Modele AR(3)=X(t)=0.049x(t-1)+0.162x(t-2)+0.093x(t-3)+ep(t)
```

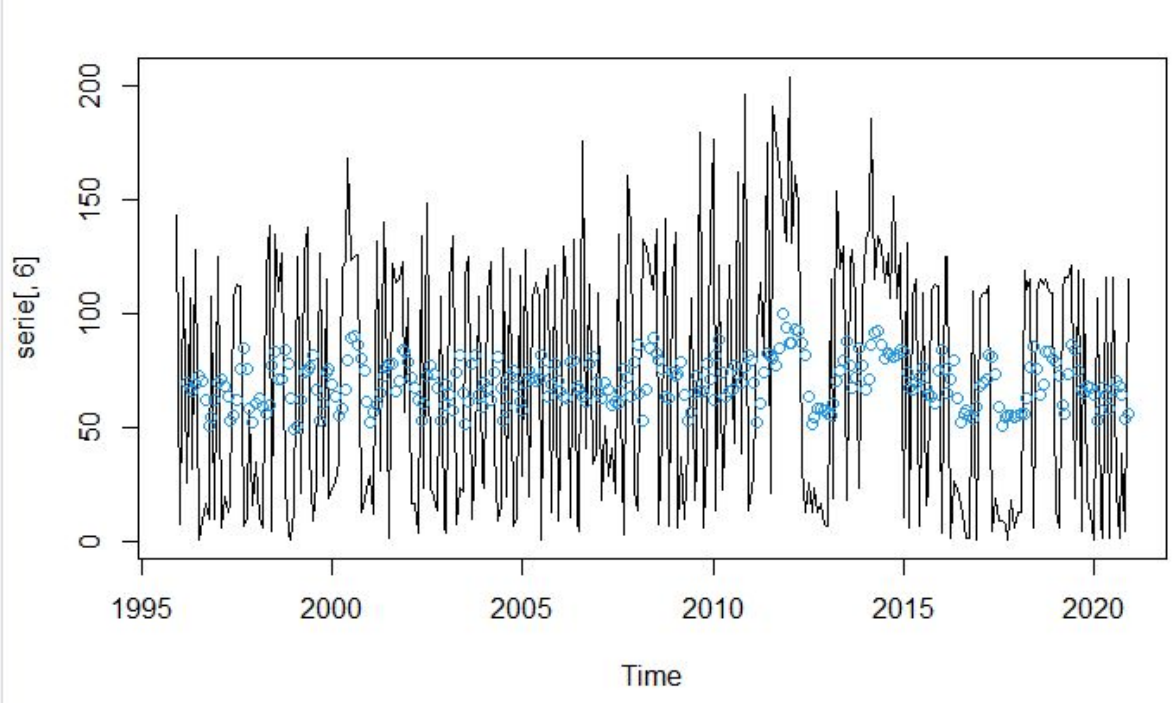
```
#estimation d'un modèle MA
acf(serie[,6])
msft_ma =arma(x = serie[,6], order = c(0,3))
msft_ma
residuals <- residuals(msft_ma)
msft_fitted <- serie[,6] - residuals
```



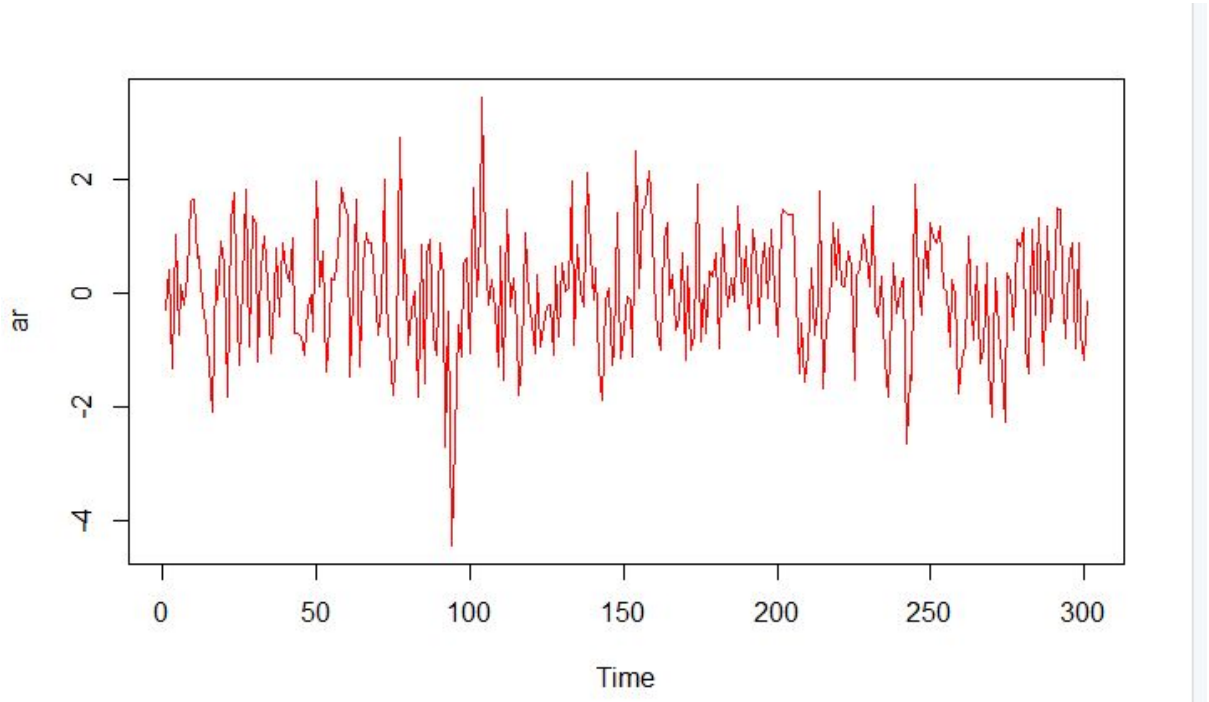
```
Call:
arma(x = serie[, 6], order = c(0, 3))

Coefficient(s):
      ma1         ma2         ma3   intercept
  0.05863     0.14181     0.10736    69.82616
```

```
#VisualisationMA
ts.plot(serie[,6])
points(msft_fitted, type = "p", col = 4, lty = 2)
```



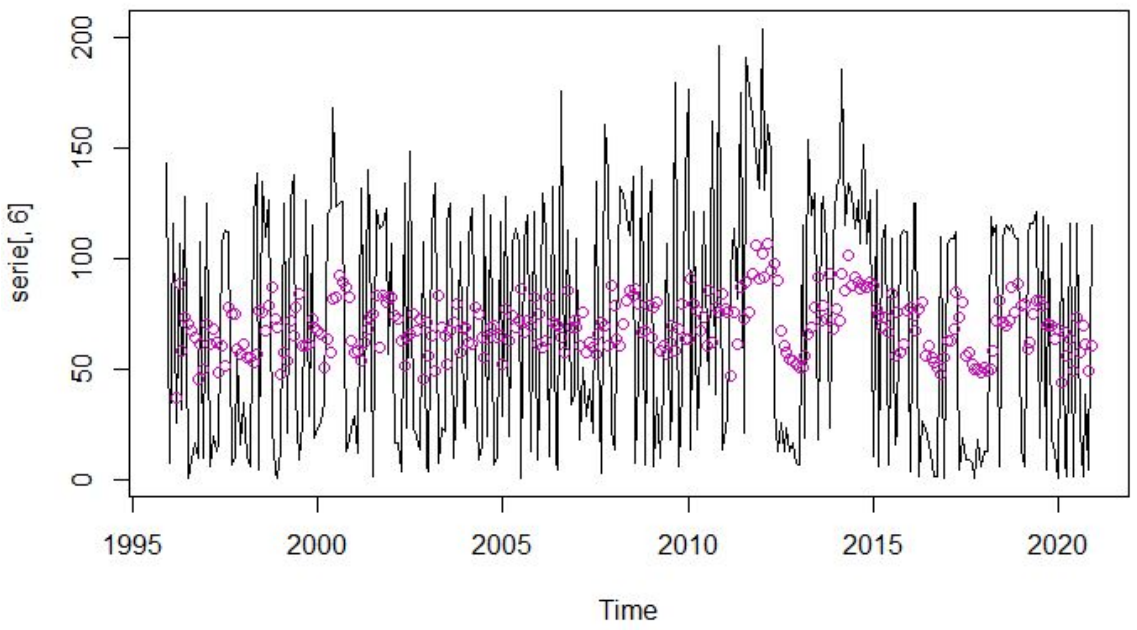

```
#VisualisationAR
ar=arima.sim(list(ar=c(0.049,0.162,0.093)),n=301)
plot.ts(serie[,6])
plot.ts(ar,col="red")
```




```r
#VisualisationARMA
msft_arma =arma(x = serie[,6], order = c(3,3))
msft_arma
residuals <- residuals(msft_arma)
msft_fitted <- serie[,6] - residuals
ts.plot(serie[,6])
points(msft_fitted, type = "p", col = 6, lty = 2)
```

```
Call:
arma(x = serie[, 6], order = c(3, 3))

Coefficient(s):
      ar1        ar2        ar3        ma1        ma2
  -0.7143     0.4396     0.3792     0.7847    -0.2386
      ma3  intercept
  -0.2016    62.3253
```


serie[, 6]
0
50
100
150
200
1995
2000
2005
2010
2015
2020
Time