Práctica6_2

Gonzalo Carretero Ursúa

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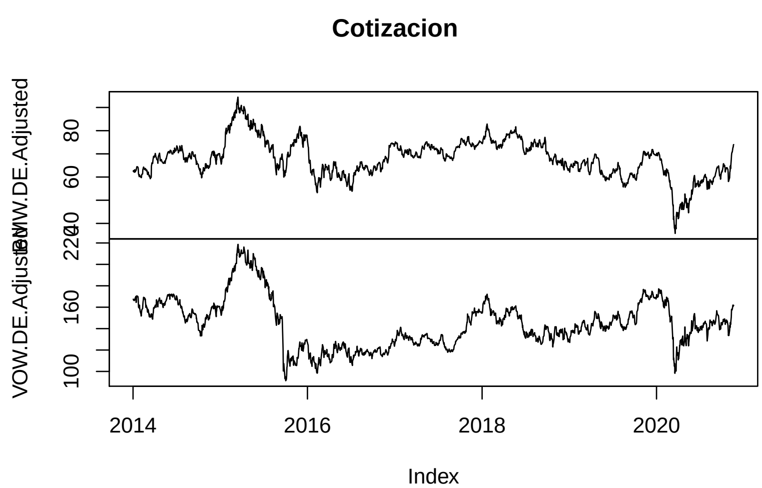
Contents

1 Introducción

La finalidad que se realiza con este breve informe es conocer la estacionariedad de las series de BMW y de Volkswagen. Además, se quiere saber si la contización de los dos activos está cointegrada.

```
## [1] "BMW.DE"
```

```
## [1] "VOW.DE"
```



2 Estacionariedad de las series

```
##
```

```
##  Augmented Dickey-Fuller Test
##
## data:  PTrading$BMW
## Dickey-Fuller = -3.1769, Lag order = 12, p-value = 0.09188
## alternative hypothesis: stationary
```

```
##
##  Augmented Dickey-Fuller Test
##
## data:  PTrading$VOW
## Dickey-Fuller = -2.5168, Lag order = 12, p-value = 0.3596
## alternative hypothesis: stationary
```

```
##
## ###############################################
## # Augmented Dickey-Fuller Test Unit Root Test #
## ###############################################
##
## Test regression none
##
##
## Call:
## lm(formula = z.diff ~ z.lag.1 - 1 + z.diff.lag)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -5.9705 -0.5844 -0.0039  0.5808  5.4708
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## z.lag.1     -6.261e-05  3.881e-04  -0.161   0.8718
## z.diff.lag1  5.358e-02  2.403e-02   2.230   0.0259 *
## z.diff.lag2  2.242e-02  2.404e-02   0.933   0.3511
## z.diff.lag3  4.897e-02  2.404e-02   2.037   0.0418 *
## z.diff.lag4 -4.757e-02  2.405e-02  -1.978   0.0481 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 1.104 on 1728 degrees of freedom
## Multiple R-squared:  0.007868,   Adjusted R-squared:  0.004998
## F-statistic: 2.741 on 5 and 1728 DF,  p-value: 0.0179
##
##
## Value of test-statistic is: -0.1613
##
## Critical values for test statistics:
##       1pct  5pct 10pct
## tau1 -2.58 -1.95 -1.62
```

```
##
## ###############################################
## # Augmented Dickey-Fuller Test Unit Root Test #
## ###############################################
```

```
##
## Test regression trend
##
##
## Call:
## lm(formula = z.diff ~ z.lag.1 + 1 + tt + z.diff.lag)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -24.5598  -1.4618  -0.0037   1.4652  12.1883
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  1.130e+00  4.650e-01   2.431  0.01517 *
## z.lag.1     -8.006e-03  2.956e-03  -2.708  0.00683 **
## tt           2.212e-05  1.341e-04   0.165  0.86893
## z.diff.lag   6.797e-02  2.400e-02   2.832  0.00467 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 2.754 on 1729 degrees of freedom
## Multiple R-squared:  0.008534,   Adjusted R-squared:  0.006813
## F-statistic: 4.961 on 3 and 1729 DF,  p-value: 0.001975
##
##
## Value of test-statistic is: -2.708 2.5723 3.8561
##
## Critical values for test statistics:
##       1pct  5pct 10pct
## tau3 -3.96 -3.41 -3.12
## phi2  6.09  4.68  4.03
## phi3  8.27  6.25  5.34
```

En ambos casos comprobamos que no son estacionarias las series. Presentan variabilidad en varianza y tampoco son constantes en media. De todos modos, tras la realización del Test de Dickey-Fuller Aumentado, se corrobora que no son estacionarias.

3 Representación gráfica y cointegración