Testes de cointegração

Testes de co-integração para várias combinações das variáveis

Philips-Ouliaris

$$\text{spread} = \beta_0 + \beta_1 \text{selic} + \beta_2 \text{inad} + \beta_3 \text{pib\_mensal} + \beta_4 \text{igp\_di} + \beta_5 \text{ihh}$$

```
     [,1]         [,2]    [,3]
[1,] "selic"      "selic" "inad_ipea"
[2,] "inad_ipea" "ihh"   "ihh"
```

serie1	serie2	po_test
selic	spread	0.15
inad_ipea	spread	0.15
ihh	spread	0.15
spread	selic	0.15
inad_ipea	selic	0.15
ihh	selic	0.15
spread	inad_ipea	0.15
selic	inad_ipea	0.15
ihh	inad_ipea	0.15
spread	ihh	0.15
selic	ihh	0.15
inad_ipea	ihh	0.15

Teste de Engle-Granger

```
Response: series %>% select(spread) %>% as.matrix
Input: series %>% select(-spread, -date, -igp_di, -pib_mensal) %>% as.matrix
Number of inputs: 3
Model: y ~ X + 1
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Engle-Granger Cointegration Test
alternative: cointegrated

Type 1: no trend
    lag      EG p.value
   1.00   -2.15    0.10
-----
 Type 2: linear trend
    lag      EG p.value
   1.00    1.16    0.10
-----
 Type 3: quadratic trend
    lag      EG p.value
    1.0    -2.9     0.1
-----------
```

```
Note: p.value = 0.01 means p.value <= 0.01
    : p.value = 0.10 means p.value >= 0.10
```

Teste de Johansen

```
######################################################
# Johansen-Procedure Unit Root / Cointegration Test #
######################################################

The value of the test statistic is: 1.626 7.9659 13.4695 23.8849 41.3976 49.9424
```