**TESTE DE COINTEGRAÇÃO UNIEQUACIONAL ENGLE GRANGER**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Date: 10/31/19 Time: 10:05 | | |  |  |  |  |
| Series: SPREAD SELIC INAD IHH IBC | | | |  |  |  |
| Sample: 2011M03 2017M12 | | |  |  |  |  |
| Included observations: 82 | | |  |  |  |  |
| Null hypothesis: Series are not cointegrated | | | |  |  |  |
| Cointegrating equation deterministics: C IGP | | | |  |  |  |
| Automatic lags specification based on Schwarz criterion (maxlag=11) | | | | | |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
| Dependent | tau-statistic | Prob.\* | z-statistic | Prob.\* |  |  |
| SPREAD | -5.540186 | 0.0110 | -63.92320 | 0.0000 |  |  |
| SELIC | -1.150293 | 0.9983 | -6.249850 | 0.9935 |  |  |
| INAD | -2.264788 | 0.9495 | -10.61401 | 0.9453 |  |  |
| IHH | -3.606074 | 0.4533 | -20.12250 | 0.5670 |  |  |
| IBC | -5.226050 | 0.0243 | -40.73470 | 0.0232 |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
| \*MacKinnon (1996) p-values. | | |  |  |  |  |
| Warning: p-values do not account for user-specified deterministic regressors. | | | | | | |
|  |  |  |  |  |  |  |
| Intermediate Results: | | |  |  |  |  |
|  |  | SPREAD | SELIC | INAD | IHH | IBC |
| Rho - 1 | | -0.589744 | -0.077159 | -0.131037 | -0.248426 | -0.502897 |
| Rho S.E. | | 0.106448 | 0.067077 | 0.057858 | 0.068891 | 0.096229 |
| Residual variance | | 0.001107 | 0.004061 | 0.000466 | 1940.063 | 4.90E-05 |
| Long-run residual variance | | 0.002032 | 0.004061 | 0.000466 | 1940.063 | 4.90E-05 |
| Number of lags | | 1 | 0 | 0 | 0 | 0 |
| Number of observations | | 80 | 81 | 81 | 81 | 81 |
| Number of stochastic trends\*\* | | 5 | 5 | 5 | 5 | 5 |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
| \*\*Number of stochastic trends in asymptotic distribution | | | | |  |  |

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| Date: 10/31/19 Time: 10:08 | | |  |  |  |
| Sample: 2011M03 2017M12 | | |  |  |  |
| Included observations: 79 | | |  |  |  |
| Series: SPREAD SELIC INAD IHH IBC | | | |  |  |
| Exogenous series: IGP | | |  |  |  |
| Warning: Rank Test critical values derived assuming no exogenous series | | | | | |
| Lags interval: 1 to 2 | | |  |  |  |
|  |  |  |  |  |  |
| Selected (0.05 level\*) Number of Cointegrating Relations by Model |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
| Data Trend: | None | None | Linear | Linear | Quadratic |
| Test Type | No Intercept | Intercept | Intercept | Intercept | Intercept |
|  | No Trend | No Trend | No Trend | Trend | Trend |
| Trace | 1 | 1 | 1 | 2 | 2 |
| Max-Eig | 1 | 1 | 1 | 2 | 2 |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
| \*Critical values based on MacKinnon-Haug-Michelis (1999) | | | | |  |
|  |  |  |  |  |  |
| Information Criteria by Rank and Model |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
| Data Trend: | None | None | Linear | Linear | Quadratic |
| Rank or | No Intercept | Intercept | Intercept | Intercept | Intercept |
| No. of CEs | No Trend | No Trend | No Trend | Trend | Trend |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  | Log Likelihood by Rank (rows) and Model (columns) |  |  |  |  |
| 0 | 548.5229 | 548.5229 | 550.4914 | 550.4914 | 555.2460 |
| 1 | 569.7689 | 572.2062 | 574.1587 | 574.3472 | 578.8808 |
| 2 | 576.4663 | 582.0269 | 583.0336 | 593.3430 | 597.8655 |
| 3 | 580.4236 | 588.5193 | 589.5256 | 599.9672 | 602.8119 |
| 4 | 583.5373 | 592.2639 | 592.4489 | 604.1092 | 606.6997 |
| 5 | 584.2139 | 595.1872 | 595.1872 | 606.8926 | 606.8926 |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  | Akaike Information Criteria by Rank (rows) and Model (columns) |  |  |  |  |
| 0 | -12.62083 | -12.62083 | -12.54409 | -12.54409 | -12.53787 |
| 1 | -12.90554 | -12.94193 | -12.89009 | -12.86955 | -12.88306 |
| 2 | -12.82193 | -12.91207 | -12.86161 | -13.07198 | -13.11052\* |
| 3 | -12.66895 | -12.79796 | -12.77280 | -12.96119 | -12.98258 |
| 4 | -12.49462 | -12.61428 | -12.59364 | -12.78758 | -12.82784 |
| 5 | -12.25858 | -12.40980 | -12.40980 | -12.57956 | -12.57956 |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  | Schwarz Criteria by Rank (rows) and Model (columns) |  |  |  |  |
| 0 | -11.12118\* | -11.12118\* | -10.89447 | -10.89447 | -10.73829 |
| 1 | -11.10596 | -11.11236 | -10.94055 | -10.89001 | -10.78355 |
| 2 | -10.72242 | -10.75258 | -10.61213 | -10.76251 | -10.71108 |
| 3 | -10.26951 | -10.30854 | -10.22339 | -10.32181 | -10.28321 |
| 4 | -9.795245 | -9.794933 | -9.744308 | -9.818267 | -9.828540 |
| 5 | -9.259278 | -9.260537 | -9.260537 | -9.280329 | -9.280329 |
|  |  |  |  |  |  |
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