**APPENDIX**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Null Hypothesis: D(EXR) is stationary | | | |  |
| Exogenous: Constant, Linear Trend | | | |  |
| Bandwidth: 7 (Newey-West automatic) using Bartlett kernel | | | | |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  | LM-Stat. |
|  |  |  |  |  |
|  |  |  |  |  |
| Kwiatkowski-Phillips-Schmidt-Shin test statistic | | | | 0.171192 |
| Asymptotic critical values\*: | | 1% level |  | 0.216000 |
|  |  | 5% level |  | 0.146000 |
|  |  | 10% level |  | 0.119000 |
|  |  |  |  |  |
|  |  |  |  |  |
| \*Kwiatkowski-Phillips-Schmidt-Shin (1992, Table 1) | | | | |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
| Residual variance (no correction) | | | | 293015.6 |
| HAC corrected variance (Bartlett kernel) | | | | 142131.6 |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
| KPSS Test Equation | | |  |  |
| Dependent Variable: D(EXR) | | |  |  |
| Method: Least Squares | | |  |  |
| Date: 11/03/16 Time: 23:22 | | |  |  |
| Sample (adjusted): 2010Q2 2016Q1 | | | |  |
| Included observations: 24 after adjustments | | | |  |
|  |  |  |  |  |
|  |  |  |  |  |
| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|  |  |  |  |  |
|  |  |  |  |  |
| C | 53.36957 | 238.2227 | 0.224032 | 0.8248 |
| @TREND("2010Q1") | 9.600435 | 16.67212 | 0.575838 | 0.5706 |
|  |  |  |  |  |
|  |  |  |  |  |
| R-squared | 0.014848 | Mean dependent var | | 173.3750 |
| Adjusted R-squared | -0.029931 | S.D. dependent var | | 557.1031 |
| S.E. of regression | 565.3790 | Akaike info criterion | | 15.59252 |
| Sum squared resid | 7032374. | Schwarz criterion | | 15.69070 |
| Log likelihood | -185.1103 | Hannan-Quinn criter. | | 15.61857 |
| F-statistic | 0.331589 | Durbin-Watson stat | | 1.995209 |
| Prob(F-statistic) | 0.570569 |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Null Hypothesis: IDX is stationary | | | |  |
| Exogenous: Constant, Linear Trend | | | |  |
| Bandwidth: 2 (Newey-West automatic) using Bartlett kernel | | | | |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  | LM-Stat. |
|  |  |  |  |  |
|  |  |  |  |  |
| Kwiatkowski-Phillips-Schmidt-Shin test statistic | | | | 0.135394 |
| Asymptotic critical values\*: | | 1% level |  | 0.216000 |
|  |  | 5% level |  | 0.146000 |
|  |  | 10% level |  | 0.119000 |
|  |  |  |  |  |
|  |  |  |  |  |
| \*Kwiatkowski-Phillips-Schmidt-Shin (1992, Table 1) | | | | |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
| Residual variance (no correction) | | | | 135071.9 |
| HAC corrected variance (Bartlett kernel) | | | | 228725.5 |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
| KPSS Test Equation | | |  |  |
| Dependent Variable: IDX | | |  |  |
| Method: Least Squares | | |  |  |
| Date: 11/04/16 Time: 00:04 | | |  |  |
| Sample: 2010Q1 2016Q1 | | |  |  |
| Included observations: 25 | | |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|  |  |  |  |  |
|  |  |  |  |  |
| C | 3313.920 | 148.7801 | 22.27394 | 0.0000 |
| @TREND("2010Q1") | 80.33000 | 10.62715 | 7.558940 | 0.0000 |
|  |  |  |  |  |
|  |  |  |  |  |
| R-squared | 0.712994 | Mean dependent var | | 4277.880 |
| Adjusted R-squared | 0.700515 | S.D. dependent var | | 700.1660 |
| S.E. of regression | 383.1674 | Akaike info criterion | | 14.81144 |
| Sum squared resid | 3376797. | Schwarz criterion | | 14.90895 |
| Log likelihood | -183.1430 | Hannan-Quinn criter. | | 14.83848 |
| F-statistic | 57.13757 | Durbin-Watson stat | | 0.827323 |
| Prob(F-statistic) | 0.000000 |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
| Null Hypothesis: D(BI\_RATE) is stationary | | | |  |
| Exogenous: Constant, Linear Trend | | | |  |
| Bandwidth: 1 (Newey-West automatic) using Bartlett kernel | | | | |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  | LM-Stat. |
|  |  |  |  |  |
|  |  |  |  |  |
| Kwiatkowski-Phillips-Schmidt-Shin test statistic | | | | 0.125395 |
| Asymptotic critical values\*: | | 1% level |  | 0.216000 |
|  |  | 5% level |  | 0.146000 |
|  |  | 10% level |  | 0.119000 |
|  |  |  |  |  |
|  |  |  |  |  |
| \*Kwiatkowski-Phillips-Schmidt-Shin (1992, Table 1) | | | | |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
| Residual variance (no correction) | | | | 0.127142 |
| HAC corrected variance (Bartlett kernel) | | | | 0.158617 |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
| KPSS Test Equation | | |  |  |
| Dependent Variable: D(BI\_RATE) | | | |  |
| Method: Least Squares | | |  |  |
| Date: 11/03/16 Time: 23:21 | | |  |  |
| Sample (adjusted): 2010Q2 2016Q1 | | | |  |
| Included observations: 24 after adjustments | | | |  |
|  |  |  |  |  |
|  |  |  |  |  |
| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|  |  |  |  |  |
|  |  |  |  |  |
| C | 0.044384 | 0.156921 | 0.282843 | 0.7799 |
| @TREND("2010Q1") | -0.002717 | 0.010982 | -0.247436 | 0.8069 |
|  |  |  |  |  |
|  |  |  |  |  |
| R-squared | 0.002775 | Mean dependent var | | 0.010417 |
| Adjusted R-squared | -0.042553 | S.D. dependent var | | 0.364745 |
| S.E. of regression | 0.372425 | Akaike info criterion | | 0.942092 |
| Sum squared resid | 3.051404 | Schwarz criterion | | 1.040263 |
| Log likelihood | -9.305101 | Hannan-Quinn criter. | | 0.968137 |
| F-statistic | 0.061224 | Durbin-Watson stat | | 1.330074 |
| Prob(F-statistic) | 0.806866 |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Null Hypothesis: D(PRIV\_DEBT) is stationary | | | | | | | | | | | |  | | |
| Exogenous: Constant, Linear Trend | | | | | | | | | | | |  | | |
| Bandwidth: 23 (Newey-West automatic) using Bartlett kernel | | | | | | | | | | | | | | |
|  | |  | | |  | | |  | | | |  | | |
|  | |  | | |  | | |  | | | |  | | |
|  | |  | | |  | | |  | | | | LM-Stat. | | |
|  | |  | | |  | | |  | | | |  | | |
|  | |  | | |  | | |  | | | |  | | |
| Kwiatkowski-Phillips-Schmidt-Shin test statistic | | | | | | | | | | | | 0.500000 | | |
| Asymptotic critical values\*: | | | | | 1% level | | |  | | | | 0.216000 | | |
|  | |  | | | 5% level | | |  | | | | 0.146000 | | |
|  | |  | | | 10% level | | |  | | | | 0.119000 | | |
|  | |  | | |  | | |  | | | |  | | |
|  | |  | | |  | | |  | | | |  | | |
| \*Kwiatkowski-Phillips-Schmidt-Shin (1992, Table 1) | | | | | | | | | | | | | | |
|  | |  | | |  | | |  | | | |  | | |
|  | |  | | |  | | |  | | | |  | | |
|  | |  | | |  | | |  | | | |  | | |
| Residual variance (no correction) | | | | | | | | | | | | 361370.2 | | |
| HAC corrected variance (Bartlett kernel) | | | | | | | | | | | | 25129.89 | | |
|  | |  | | |  | | |  | | | |  | | |
|  | |  | | |  | | |  | | | |  | | |
|  | |  | | |  | | |  | | | |  | | |
|  | |  | | |  | | |  | | | |  | | |
| KPSS Test Equation | | | | | | | |  | | | |  | | |
| Dependent Variable: D(PRIV\_DEBT) | | | | | | | | | | | |  | | |
| Method: Least Squares | | | | | | | |  | | | |  | | |
| Date: 11/03/16 Time: 23:24 | | | | | | | |  | | | |  | | |
| Sample (adjusted): 2010Q2 2016Q1 | | | | | | | | | | | |  | | |
| Included observations: 24 after adjustments | | | | | | | | | | | |  | | |
|  | |  | | |  | | |  | | | |  | | |
|  | |  | | |  | | |  | | | |  | | |
| Variable | | Coefficient | | | Std. Error | | | t-Statistic | | | | Prob. | | |
|  | |  | | |  | | |  | | | |  | | |
|  | |  | | |  | | |  | | | |  | | |
| C | | 34.89855 | | | 264.5538 | | | 0.131915 | | | | 0.8963 | | |
| @TREND("2010Q1") | | -4.055917 | | | 18.51491 | | | -0.219062 | | | | 0.8286 | | |
|  | |  | | |  | | |  | | | |  | | |
|  | |  | | |  | | |  | | | |  | | |
| R-squared | | 0.002177 | | | Mean dependent var | | | | | | | -15.80042 | | |
| Adjusted R-squared | | -0.043179 | | | S.D. dependent var | | | | | | | 614.7394 | | |
| S.E. of regression | | 627.8711 | | | Akaike info criterion | | | | | | | 15.80220 | | |
| Sum squared resid | | 8672886. | | | Schwarz criterion | | | | | | | 15.90037 | | |
| Log likelihood | | -187.6264 | | | Hannan-Quinn criter. | | | | | | | 15.82825 | | |
| F-statistic | | 0.047988 | | | Durbin-Watson stat | | | | | | | 2.261349 | | |
| Prob(F-statistic) | | 0.828621 | | |  | | |  | | | |  | | |
|  | |  | | |  | | |  | | | |  | | |
|  | |  | | |  | | |  | | | |  | | |
| **ARDL Bounds Test** | | | | | | | |  | | |  |
| **Null Hypothesis: No long-run relationships exist** | | | | | | | | | | | |
|  | |  | | |  | | |  | | |  |
|  | |  | | |  | | |  | | |  |
| Test Statistic | | Value | | | K | | |  | | |  |
|  | |  | | |  | | |  | | |  |
|  | |  | | |  | | |  | | |  |
| F-statistic | | 8.749687 | | | 3 | | |  | | |  |
|  | |  | | |  | | |  | | |  |
| Critical Value Bounds | | | | | | | |  | | |  |
|  | |  | | |  | | |  | | |  |
|  | |  | | |  | | |  | | |  |
| Significance | | I0 Bound | | | I1 Bound | | |  | | |  |
|  | |  | | |  | | |  | | |  |
|  | |  | | |  | | |  | | |  |
| 10% | | 2.72 | | | 3.77 | | |  | | |  |
| 5% | | 3.23 | | | 4.35 | | |  | | |  |
| 2.5% | | 3.69 | | | 4.89 | | |  | | |  |
| 1% | | 4.29 | | | 5.61 | | |  | | |  |
|  | |  | | |  | | |  | | |  |
|  | |  | | |  | | |  | | |  |
| **Dependent Variable: D(EXR)** | |  | | |  | | |  | | |  | | | |
|  | |  | | |  | | |  | | |  | | | |
| **Variable** | | **Coefficient** | | | **Std. Error** | | | **t-Statistic** | | | **Prob.** | | | |
|  | |  | | |  | | |  | | |  | | | |
|  | |  | | |  | | |  | | |  | | | |
| D(IDX) | | -0.642375 | | | 0.292694 | | | -2.194697 | | | 0.0456 | | | |
| D(IDX(-1)) | | -0.374169 | | | 0.328555 | | | -1.138829 | | | 0.2739 | | | |
| D(IDX(-2)) | | 0.692998 | | | 0.261328 | | | 2.651831 | | | 0.0190 | | | |
| C | | -811.7676 | | | 737.0941 | | | -1.101308 | | | 0.2893 | | | |
| IDX(-1) | | 0.245941 | | | 0.168072 | | | 1.463306 | | | 0.1655 | | | |
| D(BI\_RATE(-1)) | | 175.0970 | | | 296.9401 | | | 0.589671 | | | 0.5648 | | | |
| D(PRIV\_DEBT(-1)) | | 0.099113 | | | 0.149835 | | | 0.661482 | | | 0.5190 | | | |
| D(EXR(-1)) | | -1.227963 | | | 0.213533 | | | -5.750707 | | | 0.0001 | | | |
|  | |  | | |  | | |  | | |  | | | |
|  | |  | | |  | | |  | | |  | | | |
| R-squared | | 0.841717 | | | Mean dependent var | | | | | | -16.36364 | | | |
| Adjusted R-squared | | 0.762575 | | | S.D. dependent var | | | | | | 816.4255 | | | |
| S.E. of regression | | 397.8135 | | | Akaike info criterion | | | | | | 15.08513 | | | |
| Sum squared resid | | 2215578. | | | Schwarz criterion | | | | | | 15.48187 | | | |
| Log likelihood | | -157.9364 | | | Hannan-Quinn criter. | | | | | | 15.17859 | | | |
| F-statistic | | 10.63558 | | | Durbin-Watson stat | | | | | | 1.935072 | | | |
| Prob(F-statistic) | | 0.000116 | | |  | | |  | | |  | | | |
|  | |  | | |  | | |  | | |  | | | |
|  | |  | | |  | | |  | | |  | | | |
|  | |  | | |  | | |  | | |  | | | |
| **ARDL Cointegrating And Long Run Form** | | | | | | | | | | | | | |  | | |
| **Dependent Variable: D(EXR)** | | | | | | | | | |  | | | |  | | |
|  | | | |  | | |  | | |  | | | |  | | |
|  | | | |  | | |  | | |  | | | |  | | |
| **Cointegrating Form** | | | | | | | | | | | | | | | | |
|  | | | |  | | |  | | |  | | | |  | | |
|  | | | |  | | |  | | |  | | | |  | | |
| Variable | | | | Coefficient | | | Std. Error | | | t-Statistic | | | | Prob. | | |
|  | | | |  | | |  | | |  | | | |  | | |
|  | | | |  | | |  | | |  | | | |  | | |
| D(IDX) | | | | -0.598825 | | | 0.305901 | | | -1.957577 | | | | 0.0705 | | |
| D(IDX(-1)) | | | | -1.119615 | | | 0.449617 | | | -2.490150 | | | | 0.0260 | | |
| D(IDX(-2)) | | | | 0.654157 | | | 0.312236 | | | 2.095069 | | | | 0.0548 | | |
| D(BI\_RATE, 2) | | | | 209.718454 | | | 305.760721 | | | 0.685891 | | | | 0.5040 | | |
| D(PRIV\_DEBT, 2) | | | | 0.018577 | | | 0.153245 | | | 0.121227 | | | | 0.9052 | | |
| CointEq(-1) | | | | -1.261582 | | | 0.225610 | | | -5.591876 | | | | 0.0001 | | |
|  | | | |  | | |  | | |  | | | |  | | |
|  | | | |  | | |  | | |  | | | |  | | |
| Cointeq = D(EXR) - (0.1848\*IDX + 166.2345\*D(BI\_RATE) + 0.0147 | | | | | | | | | | | | | | | | |
| \*D(PRIV\_DEBT) -587.3604 ) | | | | | | | | | | | | | |  | | |
|  | | | |  | | |  | | |  | | | |  | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Long Run Coefficients** | | | | |
|  |  |  |  |  |
|  |  |  |  |  |
| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|  |  |  |  |  |
|  |  |  |  |  |
| IDX | 0.184849 | 0.133077 | 1.389044 | 0.1865 |
| D(BI\_RATE) | 166.234504 | 233.479025 | 0.711989 | 0.4882 |
| D(PRIV\_DEBT) | 0.014726 | 0.121775 | 0.120924 | 0.9055 |
| C | -587.360406 | 593.158305 | -0.990225 | 0.3389 |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |