**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 |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |