**Appendices**

**ATM**

|  |  |
| --- | --- |
| Null Hypothesis: ATM has a unit root |  |
| Exogenous: Constant, Linear Trend |  |
| Lag Length: 1 (Automatic - based on SIC, maxlag=9) |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  | t-Statistic |   Prob.\* |
|  |  |  |  |  |
|  |  |  |  |  |
| Augmented Dickey-Fuller test statistic | -3.341894 |  0.0732 |
| Test critical values: | 1% level |  | -4.186481 |  |
|  | 5% level |  | -3.518090 |  |
|  | 10% level |  | -3.189732 |  |
|  |  |  |  |  |
|  |  |  |  |  |

|  |  |
| --- | --- |
| Null Hypothesis: ATM has a unit root |  |
| Exogenous: Constant |  |  |
| Bandwidth: 4 (Newey-West automatic) using Bartlett kernel |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  | Adj. t-Stat |   Prob.\* |
|  |  |  |  |  |
|  |  |  |  |  |
| Phillips-Perron test statistic | -3.195104 |  0.0270 |
| Test critical values: | 1% level |  | -3.588509 |  |
|  | 5% level |  | -2.929734 |  |
|  | 10% level |  | -2.603064 |  |
|  |  |  |  |  |
|  |  |  |  |  |

**BANK**

|  |  |
| --- | --- |
| Null Hypothesis: D(BANK) has a unit root |  |
| Exogenous: None |  |  |
| Lag Length: 0 (Automatic - based on SIC, maxlag=9) |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  | t-Statistic |   Prob.\* |
|  |  |  |  |  |
|  |  |  |  |  |
| Augmented Dickey-Fuller test statistic | -2.057631 |  0.0393 |
| Test critical values: | 1% level |  | -2.619851 |  |
|  | 5% level |  | -1.948686 |  |
|  | 10% level |  | -1.612036 |  |
|  |  |  |  |  |
|  |  |  |  |  |

|  |  |
| --- | --- |
| Null Hypothesis: BANK has a unit root |  |
| Exogenous: Constant, Linear Trend |  |
| Bandwidth: 3 (Newey-West automatic) using Bartlett kernel |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  | Adj. t-Stat |   Prob.\* |
|  |  |  |  |  |
|  |  |  |  |  |
| Phillips-Perron test statistic | -4.056767 |  0.0137 |
| Test critical values: | 1% level |  | -4.180911 |  |
|  | 5% level |  | -3.515523 |  |
|  | 10% level |  | -3.188259 |  |
|  |  |  |  |  |
|  |  |  |  |  |

**CPS**

|  |  |
| --- | --- |
| Null Hypothesis: CPS has a unit root |  |
| Exogenous: Constant |  |  |
| Lag Length: 1 (Automatic - based on SIC, maxlag=9) |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  | t-Statistic |   Prob.\* |
|  |  |  |  |  |
|  |  |  |  |  |
| Augmented Dickey-Fuller test statistic | -3.727406 |  0.0070 |
| Test critical values: | 1% level |  | -3.592462 |  |
|  | 5% level |  | -2.931404 |  |
|  | 10% level |  | -2.603944 |  |
|  |  |  |  |  |
|  |  |  |  |  |

|  |  |
| --- | --- |
| Null Hypothesis: CPS has a unit root |  |
| Exogenous: Constant |  |  |
| Bandwidth: 4 (Newey-West automatic) using Bartlett kernel |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  | Adj. t-Stat |   Prob.\* |
|  |  |  |  |  |
|  |  |  |  |  |
| Phillips-Perron test statistic | -4.545829 |  0.0007 |
| Test critical values: | 1% level |  | -3.588509 |  |
|  | 5% level |  | -2.929734 |  |
|  | 10% level |  | -2.603064 |  |
|  |  |  |  |  |
|  |  |  |  |  |

**DEPOSITORS**

|  |
| --- |
| Null Hypothesis: D(DEPOSITORS) has a unit root |
| Exogenous: Constant |  |  |
| Lag Length: 0 (Automatic - based on SIC, maxlag=9) |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  | t-Statistic |   Prob.\* |
|  |  |  |  |  |
|  |  |  |  |  |
| Augmented Dickey-Fuller test statistic | -2.673000 |  0.0870 |
| Test critical values: | 1% level |  | -3.592462 |  |
|  | 5% level |  | -2.931404 |  |
|  | 10% level |  | -2.603944 |  |
|  |  |  |  |  |
|  |  |  |  |  |

|  |
| --- |
| Null Hypothesis: D(DEPOSITORS) has a unit root |
| Exogenous: Constant |  |  |
| Bandwidth: 2 (Newey-West automatic) using Bartlett kernel |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  | Adj. t-Stat |   Prob.\* |
|  |  |  |  |  |
|  |  |  |  |  |
| Phillips-Perron test statistic | -2.851838 |  0.0596 |
| Test critical values: | 1% level |  | -3.592462 |  |
|  | 5% level |  | -2.931404 |  |
|  | 10% level |  | -2.603944 |  |
|  |  |  |  |  |
|  |  |  |  |  |

**EMPL**

|  |  |
| --- | --- |
| Null Hypothesis: D(EMPL) has a unit root |  |
| Exogenous: None |  |  |
| Lag Length: 0 (Automatic - based on SIC, maxlag=9) |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  | t-Statistic |   Prob.\* |
|  |  |  |  |  |
|  |  |  |  |  |
| Augmented Dickey-Fuller test statistic | -1.716010 |  0.0815 |
| Test critical values: | 1% level |  | -2.619851 |  |
|  | 5% level |  | -1.948686 |  |
|  | 10% level |  | -1.612036 |  |
|  |  |  |  |  |
|  |  |  |  |  |

|  |  |
| --- | --- |
| Null Hypothesis: D(EMPL) has a unit root |  |
| Exogenous: None |  |  |
| Bandwidth: 2 (Newey-West automatic) using Bartlett kernel |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  | Adj. t-Stat |   Prob.\* |
|  |  |  |  |  |
|  |  |  |  |  |
| Phillips-Perron test statistic | -1.801055 |  0.0685 |
| Test critical values: | 1% level |  | -2.619851 |  |
|  | 5% level |  | -1.948686 |  |
|  | 10% level |  | -1.612036 |  |
|  |  |  |  |  |
|  |  |  |  |  |

**HCE**

|  |  |
| --- | --- |
| Null Hypothesis: HCE has a unit root |  |
| Exogenous: None |  |  |
| Lag Length: 1 (Automatic - based on SIC, maxlag=9) |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  | t-Statistic |   Prob.\* |
|  |  |  |  |  |
|  |  |  |  |  |
| Augmented Dickey-Fuller test statistic | -5.162565 |  0.0000 |
| Test critical values: | 1% level |  | -2.619851 |  |
|  | 5% level |  | -1.948686 |  |
|  | 10% level |  | -1.612036 |  |
|  |  |  |  |  |
|  |  |  |  |  |

|  |  |
| --- | --- |
| Null Hypothesis: HCE has a unit root |  |
| Exogenous: None |  |  |
| Bandwidth: 2 (Newey-West automatic) using Bartlett kernel |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  | Adj. t-Stat |   Prob.\* |
|  |  |  |  |  |
|  |  |  |  |  |
| Phillips-Perron test statistic | -3.967551 |  0.0002 |
| Test critical values: | 1% level |  | -2.618579 |  |
|  | 5% level |  | -1.948495 |  |
|  | 10% level |  | -1.612135 |  |
|  |  |  |  |  |
|  |  |  |  |  |

**INTERNET**

|  |
| --- |
| Null Hypothesis: D(INTERNET,2) has a unit root |
| Exogenous: None |  |  |
| Lag Length: 7 (Automatic - based on SIC, maxlag=9) |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  | t-Statistic |   Prob.\* |
|  |  |  |  |  |
|  |  |  |  |  |
| Augmented Dickey-Fuller test statistic | -10.44628 |  0.0000 |
| Test critical values: | 1% level |  | -2.632688 |  |
|  | 5% level |  | -1.950687 |  |
|  | 10% level |  | -1.611059 |  |
|  |  |  |  |  |
|  |  |  |  |  |

|  |  |
| --- | --- |
| Null Hypothesis: D(INTERNET) has a unit root |  |
| Exogenous: Constant |  |  |
| Bandwidth: 1 (Newey-West automatic) using Bartlett kernel |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  | Adj. t-Stat |   Prob.\* |
|  |  |  |  |  |
|  |  |  |  |  |
| Phillips-Perron test statistic | -3.111853 |  0.0331 |
| Test critical values: | 1% level |  | -3.592462 |  |
|  | 5% level |  | -2.931404 |  |
|  | 10% level |  | -2.603944 |  |
|  |  |  |  |  |
|  |  |  |  |  |

**LOANSME**

|  |  |
| --- | --- |
| Null Hypothesis: D(LOANSME) has a unit root |  |
| Exogenous: None |  |  |
| Lag Length: 4 (Automatic - based on SIC, maxlag=9) |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  | t-Statistic |   Prob.\* |
|  |  |  |  |  |
|  |  |  |  |  |
| Augmented Dickey-Fuller test statistic | -2.560551 |  0.0118 |
| Test critical values: | 1% level |  | -2.625606 |  |
|  | 5% level |  | -1.949609 |  |
|  | 10% level |  | -1.611593 |  |
|  |  |  |  |  |
|  |  |  |  |  |

|  |  |
| --- | --- |
| Null Hypothesis: LOANSME has a unit root |  |
| Exogenous: Constant |  |  |
| Bandwidth: 4 (Newey-West automatic) using Bartlett kernel |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  | Adj. t-Stat |   Prob.\* |
|  |  |  |  |  |
|  |  |  |  |  |
| Phillips-Perron test statistic | -4.521468 |  0.0007 |
| Test critical values: | 1% level |  | -3.588509 |  |
|  | 5% level |  | -2.929734 |  |
|  | 10% level |  | -2.603064 |  |
|  |  |  |  |  |
|  |  |  |  |  |

**PCY**

|  |  |
| --- | --- |
| Null Hypothesis: D(PCY,2) has a unit root |  |
| Exogenous: None |  |  |
| Lag Length: 7 (Automatic - based on SIC, maxlag=9) |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  | t-Statistic |   Prob.\* |
|  |  |  |  |  |
|  |  |  |  |  |
| Augmented Dickey-Fuller test statistic | -6.330857 |  0.0000 |
| Test critical values: | 1% level |  | -2.632688 |  |
|  | 5% level |  | -1.950687 |  |
|  | 10% level |  | -1.611059 |  |
|  |  |  |  |  |
|  |  |  |  |  |

|  |  |
| --- | --- |
| Null Hypothesis: D(PCY) has a unit root |  |
| Exogenous: None |  |  |
| Bandwidth: 2 (Newey-West automatic) using Bartlett kernel |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  | Adj. t-Stat |   Prob.\* |
|  |  |  |  |  |
|  |  |  |  |  |
| Phillips-Perron test statistic | -2.320640 |  0.0212 |
| Test critical values: | 1% level |  | -2.619851 |  |
|  | 5% level |  | -1.948686 |  |
|  | 10% level |  | -1.612036 |  |
|  |  |  |  |  |
|  |  |  |  |  |

**POV**

|  |  |
| --- | --- |
| Null Hypothesis: POV has a unit root |  |
| Exogenous: Constant, Linear Trend |  |
| Lag Length: 8 (Automatic - based on SIC, maxlag=9) |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  | t-Statistic |   Prob.\* |
|  |  |  |  |  |
|  |  |  |  |  |
| Augmented Dickey-Fuller test statistic | -10.67852 |  0.0000 |
| Test critical values: | 1% level |  | -4.234972 |  |
|  | 5% level |  | -3.540328 |  |
|  | 10% level |  | -3.202445 |  |
|  |  |  |  |  |
|  |  |  |  |  |

|  |  |
| --- | --- |
| Null Hypothesis: D(POV) has a unit root |  |
| Exogenous: None |  |  |
| Bandwidth: 2 (Newey-West automatic) using Bartlett kernel |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  | Adj. t-Stat |   Prob.\* |
|  |  |  |  |  |
|  |  |  |  |  |
| Phillips-Perron test statistic | -2.395156 |  0.0177 |
| Test critical values: | 1% level |  | -2.619851 |  |
|  | 5% level |  | -1.948686 |  |
|  | 10% level |  | -1.612036 |  |
|  |  |  |  |  |
|  |  |  |  |  |

**UEM**

|  |  |
| --- | --- |
| Null Hypothesis: D(UEM) has a unit root |  |
| Exogenous: None |  |  |
| Lag Length: 0 (Automatic - based on SIC, maxlag=9) |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  | t-Statistic |   Prob.\* |
|  |  |  |  |  |
|  |  |  |  |  |
| Augmented Dickey-Fuller test statistic | -1.607027 |  0.1010 |
| Test critical values: | 1% level |  | -2.619851 |  |
|  | 5% level |  | -1.948686 |  |
|  | 10% level |  | -1.612036 |  |
|  |  |  |  |  |
|  |  |  |  |  |

|  |  |
| --- | --- |
| Null Hypothesis: D(UEM) has a unit root |  |
| Exogenous: None |  |  |
| Bandwidth: 2 (Newey-West automatic) using Bartlett kernel |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  | Adj. t-Stat |   Prob.\* |
|  |  |  |  |  |
|  |  |  |  |  |
| Phillips-Perron test statistic | -1.681062 |  0.0874 |
| Test critical values: | 1% level |  | -2.619851 |  |
|  | 5% level |  | -1.948686 |  |
|  | 10% level |  | -1.612036 |  |
|  |  |  |  |  |
|  |  |  |  |  |

**Model 1: Poverty**

**Bound Test**

|  |  |
| --- | --- |
| F-Bounds Test | Null Hypothesis: No levels relationship |
|  |  |  |  |  |
|  |  |  |  |  |
| Test Statistic | Value | Signif. | I(0) | I(1) |
|  |  |  |  |  |
|  |  |  |  |  |
| F-statistic |  29.08596 | 10%   | 1.99 | 2.94 |
| k | 6 | 5%   | 2.27 | 3.28 |
|  |  | 2.5%   | 2.55 | 3.61 |
|  |  | 1%   | 2.88 | 3.99 |
|  |  |  |  |  |
|  |  |  |  |  |

**Short run**

|  |  |
| --- | --- |
| ARDL Error Correction Regression |  |
| Dependent Variable: D(POV) |  |  |
| Selected Model: ARDL(1, 3, 1, 1, 3, 1, 3) |  |
| Case 2: Restricted Constant and No Trend |  |
| Date: 03/30/20 Time: 15:08 |  |  |
| Sample: 2007Q1 2018Q4 |  |  |
| Included observations: 42 |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
| ECM Regression |
| Case 2: Restricted Constant and No Trend |
|  |  |  |  |  |
|  |  |  |  |  |
| Variable | Coefficient | Std. Error | t-Statistic | Prob.    |
|  |  |  |  |  |
|  |  |  |  |  |
| DLOG(DEPOSITORS) | -0.348012 | 3.753112 | -0.092726 | 0.9270 |
| DLOG(DEPOSITORS(-1)) | -5.381592 | 4.237660 | -1.269944 | 0.2174 |
| DLOG(DEPOSITORS(-2)) | -6.644671 | 3.530195 | -1.882239 | 0.0731 |
| D(ATM) | -1.745496 | 0.234422 | -7.445965 | 0.0000 |
| D(BANK) | 37.82164 | 2.316517 | 16.32695 | 0.0000 |
| D(CPS) | -3.089606 | 0.270503 | -11.42170 | 0.0000 |
| D(CPS(-1)) | 0.733239 | 0.289111 | 2.536182 | 0.0188 |
| D(CPS(-2)) | 0.869038 | 0.256502 | 3.388031 | 0.0026 |
| D(LOANSME) | -17.45066 | 2.027034 | -8.608965 | 0.0000 |
| D(INTERNET) | -0.262909 | 0.054236 | -4.847501 | 0.0001 |
| D(INTERNET(-1)) | 0.127234 | 0.066079 | 1.925483 | 0.0672 |
| D(INTERNET(-2)) | 0.187658 | 0.057319 | 3.273900 | 0.0035 |
| CointEq(-1)\* | -0.141822 | 0.008098 | -17.51356 | 0.0000 |
|  |  |  |  |  |
|  |  |  |  |  |
| R-squared | 0.965497 |     Mean dependent var | -0.013335 |
| Adjusted R-squared | 0.951220 |     S.D. dependent var | 2.010395 |
| S.E. of regression | 0.444021 |     Akaike info criterion | 1.462786 |
| Sum squared resid | 5.717493 |     Schwarz criterion | 2.000636 |
| Log likelihood | -17.71850 |     Hannan-Quinn criter. | 1.659929 |
| Durbin-Watson stat | 2.145469 |  |  |  |

**Long run**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |
|  |  |  |  |  |
| Levels Equation |
| Case 2: Restricted Constant and No Trend |
|  |  |  |  |  |
|  |  |  |  |  |
| Variable | Coefficient | Std. Error | t-Statistic | Prob.    |
|  |  |  |  |  |
|  |  |  |  |  |
| LOG(DEPOSITORS) | 75.32583 | 19.68031 | 3.827473 | 0.0009 |
| ATM | 4.028625 | 2.263956 | 1.779463 | 0.0890 |
| BANK | 84.33116 | 34.12739 | 2.471070 | 0.0217 |
| CPS | -10.45425 | 3.966913 | -2.635362 | 0.0151 |
| LOANSME | -48.17368 | 15.77791 | -3.053235 | 0.0058 |
| INTERNET | -1.182295 | 0.478277 | -2.471987 | 0.0216 |
| C | -507.6911 | 173.9503 | -2.918598 | 0.0080 |
|  |  |  |  |  |
|  |  |  |  |  |
| EC = POV - (75.3258\*LOG(DEPOSITORS) + 4.0286\*ATM + 84.3312\*BANK   |
|         -10.4543\*CPS -48.1737\*LOANSME -1.1823\*INTERNET -507.6911 ) |
|  |  |  |  |  |
|  |  |  |  |  |

**Autocorrelation**

|  |  |
| --- | --- |
| Breusch-Godfrey Serial Correlation LM Test: |  |
|  |  |  |  |  |
|  |  |  |  |  |
| F-statistic | 1.425837 |     Prob. F(3,19) | 0.2663 |
| Obs\*R-squared | 7.717984 |     Prob. Chi-Square(3) | 0.0522 |
|  |  |  |  |  |
|  |  |  |  |  |

**Homoscedasticity**

|  |
| --- |
| Heteroskedasticity Test: Breusch-Pagan-Godfrey |
|  |  |  |  |  |
|  |  |  |  |  |
| F-statistic | 2.010478 |     Prob. F(19,22) | 0.0587 |
| Obs\*R-squared | 26.65093 |     Prob. Chi-Square(19) | 0.1131 |
| Scaled explained SS | 5.513784 |     Prob. Chi-Square(19) | 0.9989 |
|  |  |  |  |  |
|  |  |  |  |  |

**Normality test**

****

**CUSUM Test**

****

****

**Ramsey RESET**

|  |  |  |
| --- | --- | --- |
| Ramsey RESET Test |  |  |
| Equation: POVERTY |  |  |
| Specification: POV POV(-1) LOG(DEPOSITORS) LOG(DEPOSITORS(-1)) |
|         LOG(DEPOSITORS(-2)) LOG(DEPOSITORS(-3)) ATM ATM(-1) BANK |
|         BANK(-1) CPS CPS(-1) CPS(-2) CPS(-3) LOANSME LOANSME(-1) |
|         INTERNET INTERNET(-1) INTERNET(-2) INTERNET(-3) C  |
| Omitted Variables: Powers of fitted values from 2 to 4 |
|  |  |  |  |  |
|  |  |  |  |  |
|  | Value | df | Probability |  |
| F-statistic |  11.10656 | (3, 19) |  0.0002 |  |
|  |  |  |  |  |
|  |  |  |  |  |

**Model 2: Household Consumption Expenditure**

**Bound Test**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |
| F-Bounds Test | Null Hypothesis: No levels relationship |
|  |  |  |  |  |
|  |  |  |  |  |
| Test Statistic | Value | Signif. | I(0) | I(1) |
|  |  |  |  |  |
|  |  |  |  |  |
| F-statistic |  5.643990 | 10%   | 1.99 | 2.94 |
| K | 6 | 5%   | 2.27 | 3.28 |
|  |  | 2.5%   | 2.55 | 3.61 |
|  |  | 1%   | 2.88 | 3.99 |
|  |  |  |  |  |
|  |  |  |  |  |

**Short run**

|  |  |
| --- | --- |
| ARDL Error Correction Regression |  |
| Dependent Variable: D(HCE) |  |  |
| Selected Model: ARDL(2, 2, 1, 0, 1, 1, 1) |  |
| Case 2: Restricted Constant and No Trend |  |
| Date: 03/30/20 Time: 15:14 |  |  |
| Sample: 2007Q1 2018Q4 |  |  |
| Included observations: 43 |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
| ECM Regression |
| Case 2: Restricted Constant and No Trend |
|  |  |  |  |  |
|  |  |  |  |  |
| Variable | Coefficient | Std. Error | t-Statistic | Prob.    |
|  |  |  |  |  |
|  |  |  |  |  |
| D(HCE(-1)) | 0.512106 | 0.078592 | 6.515970 | 0.0000 |
| DLOG(DEPOSITORS) | 153.2576 | 15.84862 | 9.670091 | 0.0000 |
| DLOG(DEPOSITORS(-1)) | -64.39433 | 15.72202 | -4.095806 | 0.0003 |
| D(ATM) | 1.932040 | 0.954510 | 2.024116 | 0.0526 |
| D(CPS) | -3.673977 | 0.838271 | -4.382802 | 0.0001 |
| D(LOANSME) | -28.66735 | 9.773522 | -2.933165 | 0.0066 |
| D(INTERNET) | 0.896571 | 0.190760 | 4.699991 | 0.0001 |
| CointEq(-1)\* | -0.162312 | 0.021605 | -7.512649 | 0.0000 |
|  |  |  |  |  |
|  |  |  |  |  |
| R-squared | 0.886544 |     Mean dependent var | -0.377613 |
| Adjusted R-squared | 0.863853 |     S.D. dependent var | 5.169755 |
| S.E. of regression | 1.907540 |     Akaike info criterion | 4.295747 |
| Sum squared resid | 127.3548 |     Schwarz criterion | 4.623412 |
| Log likelihood | -84.35856 |     Hannan-Quinn criter. | 4.416580 |
| Durbin-Watson stat | 2.177715 |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

**Long run**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |
|  |  |  |  |  |
| Levels Equation |
| Case 2: Restricted Constant and No Trend |
|  |  |  |  |  |
|  |  |  |  |  |
| Variable | Coefficient | Std. Error | t-Statistic | Prob.    |
|  |  |  |  |  |
|  |  |  |  |  |
| LOG(DEPOSITORS) | 51.09968 | 36.19469 | 1.411800 | 0.1690 |
| ATM | -7.161061 | 5.127318 | -1.396648 | 0.1735 |
| BANK | -44.29858 | 43.51466 | -1.018015 | 0.3174 |
| CPS | 7.268130 | 4.366898 | 1.664369 | 0.1072 |
| LOANSME | -44.26104 | 56.63910 | -0.781457 | 0.4411 |
| INTERNET | -1.078512 | 1.026528 | -1.050641 | 0.3024 |
| C | -218.4858 | 234.9047 | -0.930104 | 0.3603 |
|  |  |  |  |  |
|  |  |  |  |  |
| EC = HCE - (51.0997\*LOG(DEPOSITORS) -7.1611\*ATM -44.2986\*BANK + |
|         7.2681\*CPS -44.2610\*LOANSME -1.0785\*INTERNET -218.4858 ) |
|  |  |  |  |  |
|  |  |  |  |  |

**Autocorrelation**

|  |  |
| --- | --- |
| Breusch-Godfrey Serial Correlation LM Test: |  |
|  |  |  |  |  |
|  |  |  |  |  |
| F-statistic | 1.398661 |     Prob. F(2,26) | 0.2649 |
| Obs\*R-squared | 4.176945 |     Prob. Chi-Square(2) | 0.1239 |
|  |  |  |  |  |
|  |  |  |  |  |

**Homoscedasticity**

|  |
| --- |
| Heteroskedasticity Test: Breusch-Pagan-Godfrey |
|  |  |  |  |  |
|  |  |  |  |  |
| F-statistic | 0.996628 |     Prob. F(14,28) | 0.4822 |
| Obs\*R-squared | 14.30108 |     Prob. Chi-Square(14) | 0.4275 |
| Scaled explained SS | 10.31568 |     Prob. Chi-Square(14) | 0.7388 |
|  |  |  |  |  |
|  |  |  |  |  |

**Normality test**

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**CUSUM Test**

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**Ramsey RESET**

|  |  |  |
| --- | --- | --- |
| Ramsey RESET Test |  |  |
| Equation: EXPENDITURE |  |  |
| Specification: HCE HCE(-1) HCE(-2) LOG(DEPOSITORS) |
|         LOG(DEPOSITORS(-1)) LOG(DEPOSITORS(-2)) ATM ATM(-1) BANK |
|         CPS CPS(-1) LOANSME LOANSME(-1) INTERNET INTERNET(-1) C  |
| Omitted Variables: Powers of fitted values from 2 to 3 |
|  |  |  |  |  |
|  |  |  |  |  |
|  | Value | df | Probability |  |
| F-statistic |  1.721824 | (2, 26) |  0.1985 |  |
|  |  |  |  |  |
|  |  |  |  |  |

**Model 3: Employment**

**Bound Test**

|  |  |
| --- | --- |
| F-Bounds Test | Null Hypothesis: No levels relationship |
|  |  |  |  |  |
|  |  |  |  |  |
| Test Statistic | Value | Signif. | I(0) | I(1) |
|  |  |  |  |  |
|  |  |  |  |  |
| F-statistic |  42.14439 | 10%   | 1.99 | 2.94 |
| k | 6 | 5%   | 2.27 | 3.28 |
|  |  | 2.5%   | 2.55 | 3.61 |
|  |  | 1%   | 2.88 | 3.99 |
|  |  |  |  |  |
|  |  |  |  |  |

**Short run**

|  |  |
| --- | --- |
| ARDL Error Correction Regression |  |
| Dependent Variable: D(EMPL) |  |  |
| Selected Model: ARDL(1, 1, 3, 0, 0, 1, 3) |  |
| Case 2: Restricted Constant and No Trend |  |
| Date: 03/31/20 Time: 00:16 |  |  |
| Sample: 2007Q1 2018Q4 |  |  |
| Included observations: 42 |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
| ECM Regression |
| Case 2: Restricted Constant and No Trend |
|  |  |  |  |  |
|  |  |  |  |  |
| Variable | Coefficient | Std. Error | t-Statistic | Prob.    |
|  |  |  |  |  |
|  |  |  |  |  |
| DLOG(DEPOSITORS) | 0.080096 | 0.074708 | 1.072124 | 0.2935 |
| D(ATM) | -0.053084 | 0.013594 | -3.904952 | 0.0006 |
| D(ATM(-1)) | 0.031402 | 0.017594 | 1.784821 | 0.0860 |
| D(ATM(-2)) | 0.028851 | 0.013807 | 2.089621 | 0.0466 |
| D(LOANSME) | 0.025807 | 0.061240 | 0.421404 | 0.6769 |
| D(INTERNET) | 0.003080 | 0.001973 | 1.561212 | 0.1306 |
| D(INTERNET(-1)) | 0.006079 | 0.002443 | 2.488021 | 0.0196 |
| D(INTERNET(-2)) | 0.007663 | 0.002184 | 3.509570 | 0.0017 |
| CointEq(-1)\* | -0.176248 | 0.008520 | -20.68641 | 0.0000 |
|  |  |  |  |  |
|  |  |  |  |  |
| R-squared | 0.937271 |     Mean dependent var | -0.025655 |
| Adjusted R-squared | 0.922063 |     S.D. dependent var | 0.056055 |
| S.E. of regression | 0.015649 |     Akaike info criterion | -5.289405 |
| Sum squared resid | 0.008081 |     Schwarz criterion | -4.917047 |
| Log likelihood | 120.0775 |     Hannan-Quinn criter. | -5.152921 |
| Durbin-Watson stat | 2.478264 |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

**Long run**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |
|  |  |  |  |  |
| Levels Equation |
| Case 2: Restricted Constant and No Trend |
|  |  |  |  |  |
|  |  |  |  |  |
| Variable | Coefficient | Std. Error | t-Statistic | Prob.    |
|  |  |  |  |  |
|  |  |  |  |  |
| LOG(DEPOSITORS) | 2.641718 | 0.256916 | 10.28241 | 0.0000 |
| ATM | -0.308291 | 0.055252 | -5.579692 | 0.0000 |
| BANK | 0.445368 | 0.235068 | 1.894634 | 0.0693 |
| CPS | -0.136675 | 0.023327 | -5.859010 | 0.0000 |
| LOANSME | -1.170110 | 0.388536 | -3.011587 | 0.0057 |
| INTERNET | -0.028308 | 0.009521 | -2.973206 | 0.0063 |
| C | 41.57927 | 1.543757 | 26.93382 | 0.0000 |
|  |  |  |  |  |
|  |  |  |  |  |
| EC = EMPL - (2.6417\*LOG(DEPOSITORS) -0.3083\*ATM + 0.4454\*BANK   |
|         -0.1367\*CPS -1.1701\*LOANSME -0.0283\*INTERNET + 41.5793 ) |
|  |  |  |  |  |
|  |  |  |  |  |

**Autocorrelation**

|  |  |
| --- | --- |
| Breusch-Godfrey Serial Correlation LM Test: |  |
|  |  |  |  |  |
|  |  |  |  |  |
| F-statistic | 8.705454 |     Prob. F(3,23) | 0.0005 |
| Obs\*R-squared | 22.33242 |     Prob. Chi-Square(3) | 0.0001 |
|  |  |  |  |  |
|  |  |  |  |  |

**Homoscedasticity**

|  |
| --- |
| Heteroskedasticity Test: Breusch-Pagan-Godfrey |
|  |  |  |  |  |
|  |  |  |  |  |
| F-statistic | 1.076449 |     Prob. F(15,26) | 0.4206 |
| Obs\*R-squared | 16.09052 |     Prob. Chi-Square(15) | 0.3761 |
| Scaled explained SS | 9.143938 |     Prob. Chi-Square(15) | 0.8699 |
|  |  |  |  |  |
|  |  |  |  |  |

**Normality test**

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**CUSUM Test**

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**Ramsey RESET**

|  |  |  |
| --- | --- | --- |
| Ramsey RESET Test |  |  |
| Equation: EMPLOYMENT |  |  |
| Specification: EMPL EMPL(-1) LOG(DEPOSITORS) LOG(DEPOSITORS( |
|         -1)) ATM ATM(-1) ATM(-2) ATM(-3) BANK CPS LOANSME LOANSME( |
|         -1) INTERNET INTERNET(-1) INTERNET(-2) INTERNET(-3) C  |
| Omitted Variables: Squares of fitted values |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  | Value | df | Probability |  |
| t-statistic |  0.389500 |  25 |  0.7002 |  |
| F-statistic |  0.151710 | (1, 25) |  0.7002 |  |
|  |  |  |  |  |
|  |  |  |  |  |

**Model 4: Per capita income**

**Bound Test**

|  |  |
| --- | --- |
| F-Bounds Test | Null Hypothesis: No levels relationship |
|  |  |  |  |  |
|  |  |  |  |  |
| Test Statistic | Value | Signif. | I(0) | I(1) |
|  |  |  |  |  |
|  |  |  |  |  |
| F-statistic |  38.88939 | 10%   | 1.99 | 2.94 |
| K | 6 | 5%   | 2.27 | 3.28 |
|  |  | 2.5%   | 2.55 | 3.61 |
|  |  | 1%   | 2.88 | 3.99 |
|  |  |  |  |  |
|  |  |  |  |  |

**Short run**

|  |  |
| --- | --- |
| ARDL Error Correction Regression |  |
| Dependent Variable: D(PCY) |  |  |
| Selected Model: ARDL(1, 1, 3, 1, 1, 0, 3) |  |
| Case 2: Restricted Constant and No Trend |  |
| Date: 03/31/20 Time: 08:54 |  |  |
| Sample: 2007Q1 2018Q4 |  |  |
| Included observations: 42 |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
| ECM Regression |
| Case 2: Restricted Constant and No Trend |
|  |  |  |  |  |
|  |  |  |  |  |
| Variable | Coefficient | Std. Error | t-Statistic | Prob.    |
|  |  |  |  |  |
|  |  |  |  |  |
| DLOG(DEPOSITORS) | 7.916585 | 0.685028 | 11.55658 | 0.0000 |
| D(ATM) | 0.771778 | 0.104962 | 7.352944 | 0.0000 |
| D(ATM(-1)) | 0.289902 | 0.137088 | 2.114713 | 0.0446 |
| D(ATM(-2)) | 0.371337 | 0.120429 | 3.083451 | 0.0049 |
| D(BANK) | 11.15184 | 0.557868 | 19.99009 | 0.0000 |
| D(CPS) | -0.680367 | 0.049186 | -13.83243 | 0.0000 |
| D(INTERNET) | 0.146444 | 0.014818 | 9.883027 | 0.0000 |
| D(INTERNET(-1)) | 0.033670 | 0.018937 | 1.777972 | 0.0876 |
| D(INTERNET(-2)) | 0.047342 | 0.015887 | 2.979839 | 0.0063 |
| CointEq(-1)\* | -0.110754 | 0.005550 | -19.95563 | 0.0000 |
|  |  |  |  |  |
|  |  |  |  |  |
| R-squared | 0.962065 |     Mean dependent var | -0.108640 |
| Adjusted R-squared | 0.951395 |     S.D. dependent var | 0.551983 |
| S.E. of regression | 0.121693 |     Akaike info criterion | -1.170380 |
| Sum squared resid | 0.473891 |     Schwarz criterion | -0.756649 |
| Log likelihood | 34.57797 |     Hannan-Quinn criter. | -1.018731 |
| Durbin-Watson stat | 2.293034 |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

**Long run**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |
|  |  |  |  |  |
| Levels Equation |
| Case 2: Restricted Constant and No Trend |
|  |  |  |  |  |
|  |  |  |  |  |
| Variable | Coefficient | Std. Error | t-Statistic | Prob.    |
|  |  |  |  |  |
|  |  |  |  |  |
| LOG(DEPOSITORS) | 39.67989 | 16.03211 | 2.475026 | 0.0205 |
| ATM | -2.360702 | 1.006111 | -2.346364 | 0.0272 |
| BANK | 18.33339 | 4.559340 | 4.021062 | 0.0005 |
| CPS | -1.920233 | 0.751847 | -2.554021 | 0.0171 |
| LOANSME | -14.67887 | 5.065763 | -2.897662 | 0.0077 |
| INTERNET | -0.056828 | 0.134749 | -0.421734 | 0.6768 |
| C | -245.8835 | 82.63595 | -2.975502 | 0.0064 |
|  |  |  |  |  |
|  |  |  |  |  |
| EC = PCY - (39.6799\*LOG(DEPOSITORS) -2.3607\*ATM + 18.3334\*BANK   |
|         -1.9202\*CPS -14.6789\*LOANSME -0.0568\*INTERNET -245.8835 ) |
|  |  |  |  |  |
|  |  |  |  |  |

**Autocorrelation**

|  |  |
| --- | --- |
| Breusch-Godfrey Serial Correlation LM Test: |  |
|  |  |  |  |  |
|  |  |  |  |  |
| F-statistic | 6.408966 |     Prob. F(3,22) | 0.0028 |
| Obs\*R-squared | 19.58745 |     Prob. Chi-Square(3) | 0.0002 |
|  |  |  |  |  |
|  |  |  |  |  |

**Homoscedasticity**

|  |
| --- |
| Heteroskedasticity Test: Breusch-Pagan-Godfrey |
|  |  |  |  |  |
|  |  |  |  |  |
| F-statistic | 1.334372 |     Prob. F(16,25) | 0.2520 |
| Obs\*R-squared | 19.34625 |     Prob. Chi-Square(16) | 0.2511 |
| Scaled explained SS | 8.993996 |     Prob. Chi-Square(16) | 0.9137 |
|  |  |  |  |  |
|  |  |  |  |  |

**Normality test**

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**CUSUM Test**

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**Ramsey RESET**

|  |  |  |
| --- | --- | --- |
| Ramsey RESET Test |  |  |
| Equation: PCI |  |  |  |
| Specification: PCY PCY(-1) LOG(DEPOSITORS) LOG(DEPOSITORS(-1)) |
|         ATM ATM(-1) ATM(-2) ATM(-3) BANK BANK(-1) CPS CPS(-1) |
|         LOANSME INTERNET INTERNET(-1) INTERNET(-2) INTERNET(-3) C  |
| Omitted Variables: Powers of fitted values from 2 to 4 |
|  |  |  |  |  |
|  |  |  |  |  |