Cross-sectional dependence test

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variables | Breusch-Pagan LM | Pesaran scaled LM | Bias-corrected scaled LM | Pesaran CD |
| LE | 671.2942 (0.0000) | 66.01721 (0.0000) | 65.77911 (0.0000) | 25.56689 (0.0000) |
| IMR | 804.7342 (0.0000) | 80.03032 (0.0000) | 79.79222 (0.0000) | 18.34395 (0.0000) |
| GDPPC | 869.8547 (0.0000) | 86.94732 (0.0000) | 86.70923 (0.0000) | 29.31065 (0.0000) |
| GHE | 252.9200 (0.0000) | 21.91669 (0.0000) | 21.67860 (0.0000) | 11.99128 (0.0000) |
| OOP | 208.9085 (0.0000) | 17.27747 (0.0000) | 17.03937 (0.0000) | 3.748065 (0.0000) |
| PHE | 242.9665 (0.0000) | 20.86750 (0.0000) | 20.62940 (0.0000) | 10.97575 (0.0000) |
| SS | 775.3432 (0.0000) | 76.98493 (0.0000) | 76.74683 (0.0000) | 24.90332 (0.0000) |
| WS | 776.4884 (0.0000) | 77.10565 (0.0000) | 76.86756 (0.0000) | 24.92242 (0.0000) |
| UPGROWTH | 387.7494 (0.0000) | 36.12896 (0.0000) | 35.89087 (0.0000) | 5.077673 (0.0000) |

Panel unit root test

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Variables | Level | | 1st difference | | 2nd difference | | Order of  integration |
| t-stat | p-value | t-stat | p-value | t-stat | p-value |
| LE | -3.15316 | <0.01 | -3.16920 | <0.01 |  |  | I(0) |
| IMR | -2.14419 | ≥0.10 | -2.79460 | <0.01 |  |  | I(1) |
| GDPPC | -2.56786 | <0.05 |  |  |  |  | I(0) |
| GHE | -2.95754 | <0.01 |  |  |  |  | I(0) |
| OOP | -1.59400 | ≥0.10 | -3.82542 | <0.01 |  |  | I(1) |
| PHE | -2.29327 | <0.10 | -3.68069 | <0.01 |  |  | I(0) |
| SS | -8.90355 | <0.01 |  |  |  |  | I(0) |
| WS | NA | ≥0.10 | -1.72166 | ≥0.10 | -5.10408 | <0.01 | I(2) |
| UPGROWTH | -1.37286 | ≥0.10 | -3.84051 | <0.01 |  |  | I(1) |

*Cointegration tests*

Panel ARDL of ASEAN

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Model 1: Life Expectancy | | Model 2: Infant Mortality Rate | |
|  | Coefficient | Prob. | Coefficient | Prob. |
| Long Term | | | | |
| GDPPC | 0.020208\* | 0.0000 | 0.037893\* | 0.0000 |
| GHE | 0.123878\* | 0.0000 | 0.027959\* | 0.0007 |
| OOP | 0.051801\* | 0.0274 | -0.061736\* | 0.0000 |
| PHE | 0.223697\* | 0.0000 | -0.002088 | 0.8570 |
| SS | 0.310959\* | 0.0004 | -0.021522 | 0.2400 |
| UPGROWTH | -0.008625 | 0.6751 | -0.010517 | 0.6611 |
| Short Term | | | | |
| COINTEQ01 | -0.339071 | 0.0796 | -0.737009 | 0.0009 |
| D(GDPPC) | -7.56E-06 | 0.9993 | -0.020727 | 0.3444 |
| D(GHE) | 0.044342\* | 0.0615 | -0.017101 | 0.8459 |
| D(OOP) | -0.005358 | 0.6503 | -0.033366 | 0.4335 |
| D(PHE) | -0.010427 | 0.7214 | 0.097477 | 0.2008 |
| D(SS) | 3.691605\* | 0.0278 | 11.50692 | 0.1976 |
| D(UPGROWTH) | 0.058736\* | 0.0853 | -0.080625 | 0.2741 |
| Constant | 0.40707 | 0.0834 | -0.338313 | 0.0051 |

Subgroup panel ARDL

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Life expectancy | | |  |  | |  |  | |  |
|  | High Income | | | Upper-middle Income | | | Lower-middle Income | | |
|  | Coefficient | Prob. | | Coefficient | Prob. | | Coefficient | Prob. | |
| Long Term | | | | | | | | | |
| GDPPC | -0.759734 | 0.9840 | | 0.021649\* | 0.0000 | | 0.001111 | 0.9548 | |
| GHE | 14.6123 | 0.9834 | | 0.1358\* | 0.0000 | | 0.04138 | 0.2158 | |
| OOP | 4.632852 | 0.9839 | | 0.069636\* | 0.0115 | | -0.792666 | 0.1466 | |
| PHE | 16.93713 | 0.9835 | | 0.239656\* | 0.0000 | | 0.16318 | 0.1716 | |
| SS |  |  | | 0.268769\* | 0.0099 | | 0.173031\* | 0.0925 | |
| UPGROWTH | 0.219325 | 0.9836 | | -0.019773 | 0.3895 | | -0.114143 | 0.1820 | |
| Short Term | | | | | | | | | |
| COINTEQ01 | 0.002296 | 0.3497 | | -0.787864 | 0.0803 | | -0.059292 | 0.7612 | |
| D(GDPPC) | -0.007282 | 0.2751 | | 0.00198 | 0.9124 | | -0.008361 | 0.5529 | |
| D(GHE) | -0.005439 | 0.6739 | | 0.094936\* | 0.0361 | | 0.031543 | 0.1699 | |
| D(OOP) | 0.007327 | 0.3336 | | -0.009498 | 0.6050 | | -0.006368 | 0.8812 | |
| D(PHE) | 0.000706 | 0.7661 | | 0.00924 | 0.6590 | | 0.06981 | 0.5246 | |
| D(SS) |  |  | | 5.85919\* | 0.0953 | | -4.303689 | 0.3655 | |
| D(UPGROWTH) | -0.003507 | 0.3809 | | 0.018815 | 0.1131 | | 0.076383\* | 0.0968 | |
| Constant | 0.255788 | 0.3454 | | 1.025396 | 0.0708 | | 0.175233 | 0.7478 | |

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Infant mortality rate | | |  | |  |  | |  | |  | |
|  | High Income | | | Upper-middle Income | | | | | Lower-middle Income | | |
|  | Coefficient | Prob. | | Coefficient | | | Prob. | | Coefficient | | Prob. |
| Long Term | | | | | | | | | | | |
| GDPPC | 0.034487\* | 0.0000 | | 0.008309 | | | 0.4204 | | 0.037944\* | | 0.0000 |
| GHE | -0.274853\* | 0.0688 | | 0.016898 | | | 0.5640 | | 0.032547\* | | 0.0019 |
| OOP | 0.364793 | 0.5551 | | -0.007248 | | | 0.3291 | | -0.055321\* | | 0.0002 |
| PHE | -0.042779\* | 0.0108 | | 0.011862 | | | 0.5692 | | 0.005766 | | 0.6863 |
| SS |  |  | | -0.135187 | | | 0.4415 | | -0.024658 | | 0.2414 |
| UPGROWTH | -0.012463 | 0.5756 | | 0.017464\* | | | 0.0332 | | -0.005716 | | 0.8399 |
| Short Term | | | | | | | | | | | |
| COINTEQ01 | -0.853132 | 0.0237 | | -1.302965 | | | 0.0092 | | -0.621471 | | 0.0278 |
| D(GDPPC) | -0.054178 | 0.1431 | | -0.067668\* | | | 0.0507 | | 0.003056 | | 0.7088 |
| D(GHE) | -0.456888\* | 0.0351 | | -0.125638 | | | 0.2647 | | -0.020895\* | | 0.0960 |
| D(OOP) | 0.056170 | 0.2973 | | 0.000744 | | | 0.9229 | | -0.068751 | | 0.3796 |
| D(PHE) | -0.824875\* | 0.0361 | | -0.120132 | | | 0.3645 | | 0.120235 | | 0.3349 |
| D(SS) |  |  | | 0.670894 | | | 0.8863 | | 16.87545 | | 0.2947 |
| D(UPGROWTH) | -0.061303 | 0.3343 | | -0.010825 | | | 0.2850 | | -0.099666 | | 0.4640 |
| Constant | 0.797918 | 0.0510 | | 0.54920 | | | 0.0128 | | -0.331736 | | 0.0774 |