|  |  |  |  |
| --- | --- | --- | --- |
| Variables | Fixed Effects Model | Random Effects Model | Pooled OLS Model |
| TA : co-eff  s.e  t value  p value | 0.07503841\*\*\*  (0.02204647 )  3.4036  0.0007453 | 0.07503841\*\*\*  (0.02204647)  3.4036  0.0007409 | 0.07503841\*  (0.03344126)  2.2439  0.025456 |
| FFR | 0.01986308 \*\*\*  (0.00328144)  6.0532  3.796e-09 | 0.01986308\*\*  ( 0.00328144)  6.0532  3.613e-09 | 0.01986308\*\*  (0.00610849)  3.2517  0.001257 |
| CC | -0.48124773\*\*\*  (0.10398156 )  -4.6282  5.276e-06 | -0.48124773\*\*\*  ( 0.10398156)  -4.6282  5.179e-06 | -0.48124773 \*  ( 0.18986529)  -2.5347  0.011684 |
| LF | 0.00227542 \*\*\*  (0.00059037)  3.8542  0.0001391 | 0.00227542 \*\*\*  ( 0.00059037)  3.8542  0.0001378 | 0.00227542\*\*\*  (0.00055498)  4.1000  5.125e-05 |
| Constant Term |  | 0.09955862\*\*\*  (0.00927954)  10.7288  < 2.2e-16 | 0.09955862 \*\*\*  (0.01158802)  8.5915  2.759e-16 |
|  |  |  |  |
|  | N =380 | N = 380 | N = 380 |
|  | R-squared = 0.30474 | R-squared = 0.29384 | R-squared = 0.22603 |
|  | Prob > F = 2.22e-16 | Prob > F = 2.22e-16 | Prob > F = 2.22e-16 |

Results:

Poolability Test: The null Hypothesis is that: pooled OLS is stable

Hausman Test:

Null: Random is consistent

Alternative: Fixed is constant

|  |  |  |  |
| --- | --- | --- | --- |
| Model | Test Statistic | P value | Decision |
| roe~ta+ffr+cc+lf | 9.3851 | 2.2e-16 | Reject the null and stated that Pooled OLS is unstable here and Fixed effect model is consistent |

|  |  |  |
| --- | --- | --- |
| Test Statistic | P value | Decision |
| chisq = 1.6518e-14 | 1 | Random Effect Model is more consistent |

Time-series econometric pretesting and specification testing:

* ADF TEST:

The Null hypothesis: Variable is non-Stationary

alternative hypothesis: stationary

|  |  |  |  |
| --- | --- | --- | --- |
| Variables | Test Statistic | P value | Decision |
| ROE | -6.3018 | 0.01 | Stationary |
| TA | -10.472 | 0.01 | Stationary |
| CC | -10.713 | 0.01 | Stationary |
| FFR | -8.1069 | 0.01 | Stationary |
| LF | -11.271 | 0.01 | Stationary |

* Durbin Watson for Autocorrelation:

The null hypothesis is that there is no autocorrelation.

|  |  |  |  |
| --- | --- | --- | --- |
| Model | Test Statistic | P value | Decision |
| Random Effect Model | 0.91544 | 2.2e-16 | The error term generated from random effect has autocorrelation problem of serial correlation |

* Homoscedasticity Test: Breusch-Pagan test

The Null hypothesis is that there is homoskedasticity

|  |  |  |
| --- | --- | --- |
| Test Statistic | P value | Decision |
| 92.245 | 2.2e-16 | The dataset is heteroskedastic |

* Breusch-Godfrey/Wooldridge test for serial correlation in panel models

Null: There is no serial correlation

|  |  |  |  |
| --- | --- | --- | --- |
| Model | Test Statistic | P value | Decision |
| Fixed Effect Model | chisq = 125 | 2.2e-16 | Reject the null |

|  |  |  |  |
| --- | --- | --- | --- |
| Model | Test Statistic | P value | Decision |
| Random Effect Model | chisq = 130.18 | 2.2e-16 | Reject the null |

* Panel Unit Root Testing: Levin-Lin-Chu Unit-Root Test

The null hypothesis is that the variable is non-stationary.

|  |  |  |  |
| --- | --- | --- | --- |
| Variables | Test Statistic | P value | Decision |
| ROE | -5.635 | 8.754e-09 | Reject the null hypothesis |
| TA | -1.5469 | 0.06095 | Cannot Reject the null hypothesis |
| CC | 13.863 | 1 | Cannot Reject the null hypothesis |
| FFR | -8.8073 | 2.2e-16 | Reject the null hypothesis |
| LF | -0.58249 | 0.2801 | Cannot Reject the null hypothesis |