|  |  |  |  |
| --- | --- | --- | --- |
| Variables | Fixed Effects Model | Random Effects Model | Pooled OLS Model |
| TA | -0.06359744\*\*\*  (0.01386035) | -0.06359744 \*\*\*  (0.01386035) | -0.06359744\*\*\*  (0.01790291) |
| FFR | -0.00393280\*\*  (0.00134578) | -0.00393280\*\*  (0.00134578) | -0.00393280  (0.00328559) |
| CC | 0.09454816\*\*\*  (0.02424029) | 0.09454816\*\*\*  (0.02424029) | 0.09454816\*\*  (0.03425906) |
| LF | 0.00161893\*\*\*  (0.00040175) | 0.00161893\*\*\*  (0.00040175) | 0.00161893\*\*\*  (0.00034738) |
| Constant Term |  | 0.37211476\*\*\* | 0.37211476\*\*\* |
|  |  |  |  |
|  | 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

|  |  |  |  |
| --- | --- | --- | --- |
| 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 |

Hausman Test:

Null: Random is consistent

Alternative: Fixed is constant

|  |  |  |
| --- | --- | --- |
| 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 |