

## **Analysis of The Commercial Bank Performance in Indonesia and China**

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### *Abstract*

The purpose of this study is to compare the impact of capital structure on commercial banks' performance in Indonesia and China. The study chose 13 commercial banks from Indonesia and 12 banks from China for the period of 5 years, from 2015 to 2019. The study deployed a data panel regression analysis to analyze the secondary data that was obtained from the financial statements of these commercial banks. In this study, ROA and ROE are the measures used for Bank Performance. Four dependent variables: loan to deposit ratio, debt to asset ratio, capital adequacy and asset size are the independent variables. The results showed that LTD, AS and DTA have positive significant influences on ROA, while DTA and CAR have positive significant relationship on ROE in the study of Indonesian banks. Only AS have negative significant impact on both ROA and ROE, DTA and CAR have positive significant impact on ROA, while LTD has significant relationship on ROE in the study of commercial banks in China.

*Keywords: capital structure, commercial bank, bank performance*

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### **1. INTRODUCTION**

Financial system is important in every country, usually it includes the government, financial institutions, corporate, and individuals and so on. Moreover, no matter in Indonesia and in China, commercial banks occupy a vital position in financial system and play an important role in providing financial intermediary services. Commercial banks have four basic functions, which are determined by their nature: Credit intermediary function; Payment intermediary function; Credit creation function and financial service functions. Specifically, in China, ownership structure of commercial banks can be divided into state-owned commercial banks, joint-stock commercial banks, postal savings banks, urban commercial banks, and rural commercial banks. Performance of the enterprise refers to the operating efficiency

of the enterprise and the performance of the operator during a certain period of operation.

Capital structure refers to the value composition and proportion of all kinds of capital of an enterprise, which determines the solvency and refinancing ability of an enterprise to a large extent and determines the future profitability of an enterprise. Commercial banks have many commonalities with other enterprises. Thus, the capital structure also affects the commercial banks' performance. The purpose of the commercial banks is maximizing profit; thus, we should study the relationship between capital structure and commercial banks' performance in the context of maximizing the performances.

When Chinese researchers study the banks performance, the researchers mainly discuss the influence of the components of the capital structure, which mixes core capital with subsidiary capital, on commercial banks financial performance. Li (2014) had studied the impact of capital structure (core capital and subsidiary capital and capital adequacy ratio) on banking performance; Yao (2020) had studied the impact of capital structure (Shareholding ratio of top five shareholders, core capital and subsidiary capital and capital adequacy ratio) on commercial banking performance. When Indonesian researchers looked at bank performance. It mainly explores the impact of capital structure on the company's performance, or the determinants of capital structure. Nini and Patrisia (2020) had studied how will the capital structure influence the firms' performance. Fauziah and Iskandar (2015) had studied What will determine the capital structure in Indonesian Banking Sector.

The main goal of commercial banks is to maximize profits. Therefore, in this research, we will use the same dependent variables as the previous studies, which represented by ROA and ROE. In addition, in terms of independent variables, capital adequacy ratio will ensure that banks can use their own funds to reduce the losses of depositors and creditors in the event of losses. Debt to asset ratio and total assets are often used in previous studies. As well as the bank's loans to deposits ratio, which rarely appear in previous studies, it greatly affects the core business and profitability of banks.

Therefore, this paper is mainly to study the how will the banks' DTA, LTD, CAR and AS in China and Indonesia influence their performance, hoping that the conclusions can provide bank management with potential knowledge of performance, and maximize profits.

## **2. LITERATURE REVIEW**

Previous empirical studies about the impact of capital structure on commercial banks performance are summarized in the table 1 below:

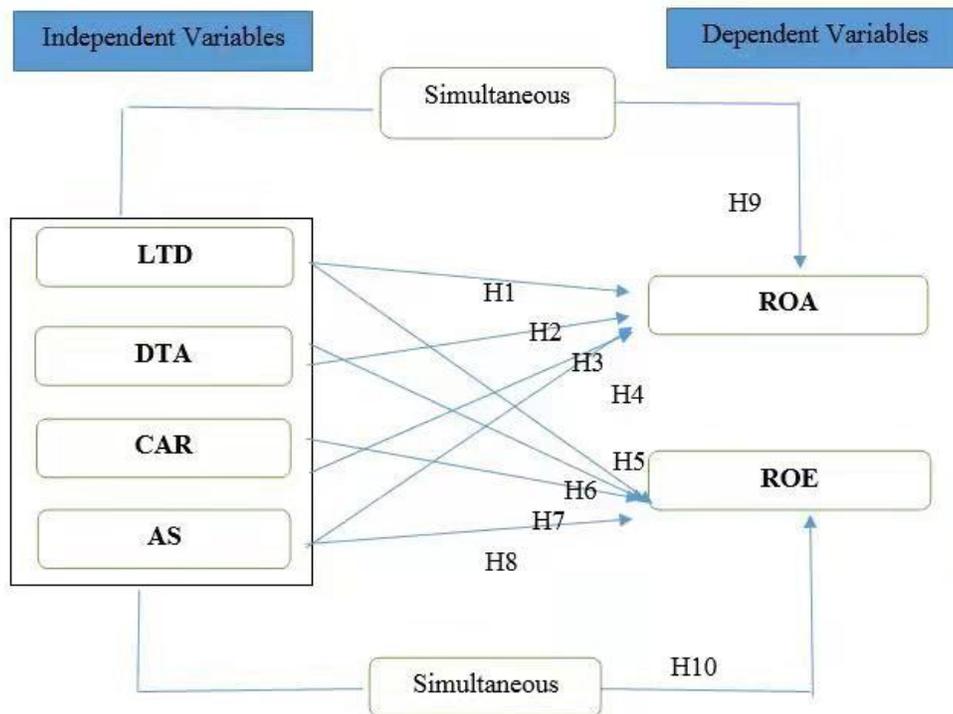
**Table 1 Previous Studies on Capital Structure of the Commercial Banks**

| <b>Study by</b>           | <b>Variables</b>   | <b>Sample</b> | <b>Time</b> | <b>Data Resource</b> | <b>Method</b>                                 | <b>Results</b>  |
|---------------------------|--|---------------|-------------|----------------------|---|---|
| Hassan, et al. (2014)     | --Dependent variables: ROE, ROA, earnings per share, Tobin's Q<br>--Independent variables: Total debt ratio, Short Term Debt, Long Term Debt | 36            | 2007-2012   | secondary data       | Regression                                    | -Short-term debt had a positive significant influence on ROA and EPS.<br>-Long-term debt had a negative significant influence on ROA and EPS.<br>-No evidence of the significant influence of ROE and Tobin's Q |
| Fauziah & Iskandar (2015) | --Dependent variables: ROE, NIM,<br>--Independent variables: Debt to Equity, asset size, Non-performing loan, Loan to deposit                | 10            | 2012-2014   | secondary data       | Regression                                    | -Loan to deposit and NPL had insignificant influence on ROE.<br>-Firm size showed negatively and significantly relationship with ROE.   |
| Meero (2015)              | --Dependent variables: ROE, ROA<br>--Independent variables: Debt to total assets, Equity to total assets, Debt to equity, Size               | 16            | 2005-2014   | secondary data       | regression                                    | -Debt to assets and Debt to equity showed negatively and significantly relationship with ROA.<br>- Debt to assets had a negative significant relationship with ROE.   |
| Riaz (2015)               | --Dependent variables: ROA<br>--Independent variables: Debt ratio, Times interest earned ratio, Short Term Debt to                           | 28            | 2009-2013   | secondary data       | Correlation and Panel least square regression | -DER and LTDA had negative insignificant influence on ROA.<br>-TIE had a positive significant on effect ROA.  |

| Study by              | Variables   | Sample | Time        | Data Resource  | Method  | Results  |
|-----------------------|---|--------|-------------|----------------|---|--|
|                       | Assets,<br>Long Term<br>Debt to<br>Assets   |        |             |                |   |  |
| Musah (2017)          | --Dependent variables: ROA, ROE, --<br>Independent variables: total debt ratio, short term debt ratio, long term debt ratio, size, Bank Growth, Ownership, Age of the Bank                            | 23     | 2010 - 2015 | secondary data | descriptive statistics, correlation analysis as well as panel regression analysis | -Short term debt ratio and long-term debt ratio had a negative significant effect on ROA.<br>-Short term debt ratio and long-term debt ratio had a negative insignificant effect on ROE.<br>-Total debt ratio had a positive effect on ROA.<br>-Total debt ratio had an insignificant effect on ROA.<br>-Firm size, foreign ownership showed a positive significant effect on ROA and ROE. |
| Siddik, et al. (2017) | --Dependent variables: ROA, ROE, earnings per share<br>--Independent variables: Debt ratio, Liquidity, Short Term Debt to Assets, Long Term Debt to Assets, Economic growth, Inflation, Growth & size | 22     | 2005 - 2014 | secondary data | Regression  | -TDTA, LTDTA and STDTA, had a negative significant effect on ROA and EPS.<br>-TDTA and STDTA had negative significant effect on ROE.<br>-Size had a positive significant effect on ROA, ROE and EPS.   |
| Hafeez, et al. (2018) | --Dependent variables: ROA, ROE,  | 16     | 2007-2016   | secondary data | Regression  | -CAR showed negatively and significantly   |

| <b>Study by</b>        | <b>Variables</b>   | <b>Sample</b> | <b>Time</b> | <b>Data Resource</b> | <b>Method</b>                          | <b>Results</b>  |
|------------------------|--|---------------|-------------|----------------------|--|---|
|                        | --Independent variables:<br>capital adequacy;<br>equity multiplier ratio,<br>debt to equity,<br>debt ratio   |               |             |                      |  | relationship with ROA.<br>-Both of EM and DR had positive significant effect on ROA.  |
| Sari & Sulisty (2018)  | --Dependent variables:<br>ROA<br>--Independent variables:<br>Capital adequacy,<br>Loan to deposit,<br>Efficiency ratio                             | 31            | 2015-2016   | secondary data       | descriptive statistics and regressions | -Capital adequacy, Loan to deposit, Efficiency ratio had positive significant effect on ROA   |
| Qayyum & Noreen (2019) | --Dependent variables:<br>ROA, ROE, Earnings per share<br>--Independent variables:<br>Debt to equity<br>Debt to assets<br>Capital adequacy<br>Size | 5             | 2006-2016   | secondary data       | Regression                             | -Both types of banks were similar except for bank size which differed significantly.<br>-Capital adequacy showed negatively and significantly relationship with on ROA of not also conventional banks but and Islamic banks, and showed a positively and significantly influence on ROE.<br>-DTA showed a significant influence with ROE while one significant and one insignificant impact on ROA. |

The purpose of this study is to discuss the impact of capital structure on commercial banks performance in Indonesia and China over five-year period from year 2015 to year 2019. According to the theoretical framework below, the dependent variables are including return on asset and return on equity, while independent variables are including debt to asset ratio, loan to deposit, capital adequacy ratio and asset size.



**Figure 1 Theoretical Framework, 2021**

Given this literature studies, the hypotheses in our studies for both Chinese Commercial banks and Indonesian Commercial banks are as follow:

- H1: There is an impact of capital adequacy ratio to the ROA of commercial banks.
- H2: There is an impact of loan to deposit ratio to the ROA of commercial banks.
- H3: There is an impact of debt to asset ratio to the ROA of commercial banks.
- H4: There is an impact of asset size to the ROA of commercial banks.
- H5: There is an impact of capital adequacy ratio to the ROE of commercial banks.

H6: There is an impact of loan to deposit ratio to the ROE of commercial banks.

H7: There is an impact of debt to asset ratio to ROE of commercial banks.

H8: There is an impact of asset size on ROE of commercial banks.

### 3. METHODOLOGY

In this study, we aim to investigate the relationship between capital structure, loan to deposit ratio, capital adequacy ratio, size of the assets and the asset structure and commercial banks performance in Indonesia and China. The regression models are as follow:

$$ROA_{it} = \alpha_0 + \beta_1 CAR_{it} + \beta_2 LTD_{it} + \beta_3 DTA_{it} + \lambda_1 AS_{it} + E \dots (1)$$

$$ROE_{it} = \alpha_0 + \beta_1 CAR_{it} + \beta_2 LTD_{it} + \beta_3 DTA_{it} + \lambda_1 AS_{it} + E \dots (2)$$

Where:

ROA=return on assets; ROE=return on equity; CAR=capital adequacy ratio; DAR=debt to asset ratio (referring as Asset Structure); LTD= loan to deposit ratio; AS = asset size (Ln of total assets).

$\beta_1$ ,  $\beta_2$ ,  $\beta_3$  and  $\lambda_1$ = the regression coefficient; E= random error  
To examine the correlation we use the Adjusted R squared and to determine the model fitting; Aside from the t-test, an F-Test for the model is also conducted. A Durbin Watson test is also performed for both models.

This model applies to both sets of data from 12 Chinese commercial banks and 13 Indonesian commercial banks. The data was taken from the banks' financial reports of each bank form the period of 2015 to 2019.

#### 3.1. Population and Sample

The population of the study was 53 Chinese commercial banks and 44 Indonesia commercial banks that are listed respectively in the Chinese and Indonesia bourses during the years of 2015-2019. We selected 12 stock-commercial banks from Chinese commercial banks, and 13 stock-commercial banks from Indonesia commercial banks, based on the following criteria:

1. The banks have released complete financial reports every year
2. The annual reports can be released from year 2015 to 2019.
3. Trading of these banks' shares in stock change was never suspended.

### 3.2. Research Variables

**Table 2 Operationalization of Research Variables**

| Acronym                      | Measure                  | Expected Sign | Evidence from prior studies   |
|------------------------------|--------------------------|---------------|---|
| <b>Dependent variables</b>   |                          |               |   |
| ROA                          | Net income/total assets  |               |   |
| ROE                          | Net income/total equity  |               |   |
| <b>Independent variables</b> |                          |               |   |
| CAR                          | equity/ total assets     | -/+           | Hafeez, et al. (2018); Qayyum&Noreen (2019);                        |
| DTA                          | total debt/total assets  | -/+           | Tangngisalu et al. (2015)   |
| LTD                          | Total loan/total deposit | -/+           | Meero (2015); Riaz (2015); Sukasa et al.(2017); Dinh and Pham(2020) |
| AS                           | Ln(asset)                | -/+           | Fauziah & Iskandar (2015); Sari and Sulisty (2018); Sari            |

### 3.3. Data Analysis Method

In this research, we use panel data regression in analyzing the impact of capital structure, asset size, the loan to deposit ratio and capital adequacy ratio on commercial banks performance. There are three models to reflect the estimation in the panel data analysis: common effect model, fix effect model and random effect model. In order confirm which model is the best model for estimation, we will use the following two tests:

1. Chow test to compare the results of common effect model and fix effect model. If the p-value >5%, the common effect model effect will be used (Baltagi, 2008).
2. Hausman test will compare the results of fix effect model and random effect model. If the p- value >5%, the random effect model will be used (Liu, 2010).

The model is also tested for the classical assumption tests, as follows:

1. Normality test, for determining whether the sample that we choose follow the normal distribution. Thus, when the results of p- value >5%, the data are normally distributed (Sun, 2020).

2. Heteroscedasticity test, to identify the variance of the regression error depending on the value of the independent variable or not. In the results with the p- value >5%, the model has no heteroscedasticity problem (Frost, 2019).
3. Multicollinearity test to test the correlation between independent variables. The results of the correlation value should be below 0.8 (Frost, 2019).
4. Durbin Watson statistic which tests the autocorrelation in residuals. The value of  $-2 < DW < 2$ , shows no autocorrelation problem, but when  $DW > 2$  or  $DW < -2$ , there will be positive autocorrelation or negative auto-correlation problems (Elyana,2016).

## 4. RESULT AND DISCUSSION

### 4.1. ROA results of Chinese commercial banks

First, in order to choose the best suitable model for our research, we perform both of the Chow test and Hausman test. From the table 1 below, due to the p-value of chow test <5%, we will use FEM as our regression.

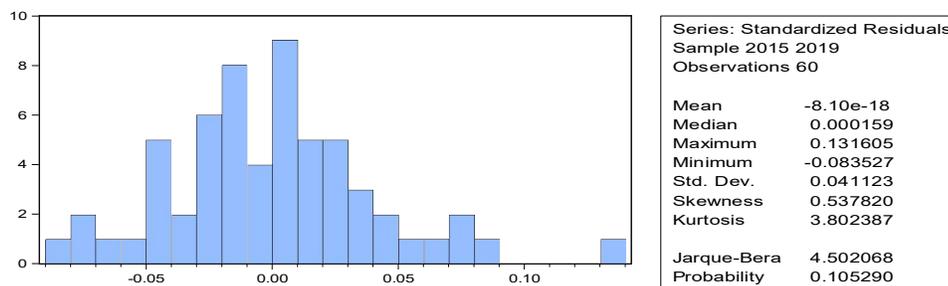
**Table 3 ROA- Chow test result of Chinese commercial banks from E-views**

Redundant Fixed Effects Tests  
Equation: Untitled  
Test cross-section fixed effects

| Effects Test             | Statistic  | d.f.    | Prob.  |
|--------------------------|------------|---------|--------|
| Cross-section F          | 44.998615  | (11,44) | 0.0000 |
| Cross-section Chi-square | 150.329860 | 11      | 0.0000 |

Second, the following table 4, 5 and 6 show the results of classical assumption test. We can find that both of the p-value in normality test and heteroscedasticity test were > 5%, which indicated the data was normal and there was no heteroscedasticity problem. And from table 5, all of the value are under 0.8, thus there is no multicollinearity problem.

**Table 4 ROA normality test result of Chinese commercial banks from E-views**



**Table 5 ROA-Multicollinearity Test result of Chinese commercial banks (Using E-views ver 10)**

|     | LTD           | DTA           | CAR          | AS            |
|-----|---------------|---------------|--------------|---------------|
| LTD | 1             | 0.6862813...  | 0.6988460... | -0.0739567... |
| DTA | 0.6862813...  | 1             | 0.2393366... | -0.4839145... |
| CAR | 0.6988460...  | 0.2393366...  | 1            | 0.4194351...  |
| AS  | -0.0739567... | -0.4839145... | 0.4194351... | 1             |

**Table 6 ROA-heteroscedasticity test result of Chinese commercial banks (using E-views)**

|                   |          |                      |           |
|-------------------|----------|----------------------|-----------|
| Log likelihood    | 133.9212 | Hannan-Quinn criter. | -4.229106 |
| F-statistic       | 0.754893 | Durbin-Watson stat   | 1.716871  |
| Prob(F-statistic) | 0.559110 |                      |           |

Third, table 7 shows the panel data regression of ROA for Chinese commercial banks, and equation (3) shows the result of fixed-effect regression model of the Chinese commercial banks.

**Table 7 ROA Regression of Chinese commercial banks-FEM (using Eviews ver 10)**

Dependent Variable: ROA  
Method: Panel Least Squares  
Date: 06/29/21 Time: 19:29  
Sample: 2015 2019  
Periods included: 5  
Cross-sections included: 12  
Total panel (balanced) observations: 60

| Variable | Coefficient | Std. Error | t-Statistic | Prob.  |
|----------|-------------|------------|-------------|--------|
| LTD      | -0.002088   | 0.002097   | -0.995620   | 0.3249 |
| DTA      | -0.009787   | 0.004163   | -2.351124   | 0.0233 |
| CAR      | 0.072068    | 0.023840   | 3.023018    | 0.0042 |
| AS       | -0.470479   | 0.117072   | -4.018711   | 0.0002 |
| C        | 7.326256    | 1.544878   | 4.742289    | 0.0000 |

Effects Specification

|                                       |          |                       |           |
|---------------------------------------|----------|-----------------------|-----------|
| Cross-section fixed (dummy variables) |          |                       |           |
| R-squared                             | 0.954548 | Mean dependent var    | 0.935867  |
| Adjusted R-squared                    | 0.939053 | S.D. dependent var    | 0.192891  |
| S.E. of regression                    | 0.047620 | Akaike info criterion | -3.027965 |
| Sum squared resid                     | 0.099776 | Schwarz criterion     | -2.469473 |
| Log likelihood                        | 106.8390 | Hannan-Quinn criter.  | -2.809508 |
| F-statistic                           | 61.60405 | Durbin-Watson stat    | 1.264371  |
| Prob(F-statistic)                     | 0.000000 |                       |           |

$$ROA=7.326256-0.002088LTD-0.009787DTA+0.072068CAR-0.470479AS \dots (3)$$

## 4.2. ROE results of Chinese commercial banks

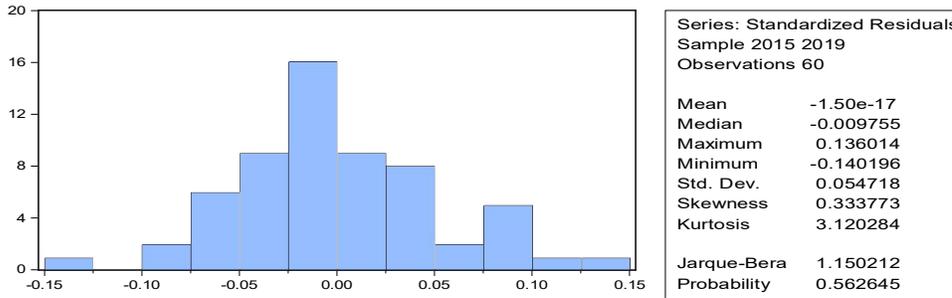
Table 8 below shows the p-value of chow test <5% , hence the regression model is Fixed-Effect Model.

**Table 8 ROE- Chow test result of Chinese commercial banks from E-views**

| Effects Test             | Statistic  | d.f.    | Prob.  |
|--------------------------|------------|---------|--------|
| Cross-section F          | 57.342414  | (11,44) | 0.0000 |
| Cross-section Chi-square | 163.810629 | 11      | 0.0000 |

From table 9 and 11, both of the p-values in normality test and heteroscedasticity Test were > 5%, which indicated the data was normal and there was no heteroscedasticity problem. And from table 10, all of the value are under 0.8, thus there is no multicollinearity problem.

**Table 9 ROE- normality test result of Chinese commercial banks (Using E-views ver. 10)**



**Table 10 ROE-Multicollinearity Test result for Chinese commercial banks data (using E-views)**

|     | LTD           | DTA           | CAR          | AS            |
|-----|---------------|---------------|--------------|---------------|
| LTD | 1             | 0.7081361...  | 0.7473257... | -0.0760883... |
| DTA | 0.7081361...  | 1             | 0.3985377... | -0.4359881... |
| CAR | 0.7473257...  | 0.3985377...  | 1            | 0.3566212...  |
| AS  | -0.0760883... | -0.4359881... | 0.3566212... | 1             |

**Table 11 ROE- heteroscedasticity Test result for Chinese commercial banks data (Using E-views)**

|                   |          |                      |           |
|-------------------|----------|----------------------|-----------|
| Log likelihood    | 49.25772 | Hannan-Quinn criter. | -1.406990 |
| F-statistic       | 0.872992 | Durbin-Watson stat   | 0.862051  |
| Prob(F-statistic) | 0.486093 |                      |           |

The following table 12 shows the panel data regression of ROE for Chinese commercial banks, and fixed-effect regression result in the equation (4). Table 12 shows the results of the t-tests and the F-test of the Equation (4).

**Table 12 ROE-Fixed Effect Regression of the Chinese commercial banks (using Eviews ver 10)**

Dependent Variable: ROE  
 Method: Panel Least Squares  
 Date: 08/02/21 Time: 21:30  
 Sample: 2015 2019  
 Periods included: 5  
 Cross-sections included: 12  
 Total panel (balanced) observations: 60

| Variable | Coefficient | Std. Error | t-Statistic | Prob.  |
|----------|-------------|------------|-------------|--------|
| LTD      | -0.300246   | 0.122826   | -2.444481   | 0.0186 |
| DTA      | -0.051850   | 0.036628   | -1.415584   | 0.1639 |
| CAR      | -0.121443   | 0.148348   | -0.818638   | 0.4174 |
| AS       | -9.287112   | 1.437206   | -6.461921   | 0.0000 |
| C        | 41.51589    | 5.213528   | 7.963108    | 0.0000 |

Effects Specification

| Cross-section fixed (dummy variables) |          |                       |           |
|---------------------------------------|----------|-----------------------|-----------|
| R-squared                             | 0.941351 | Mean dependent var    | 3.715731  |
| Adjusted R-squared                    | 0.921357 | S.D. dependent var    | 0.225942  |
| S.E. of regression                    | 0.063362 | Akaike info criterion | -2.456737 |
| Sum squared resid                     | 0.176647 | Schwarz criterion     | -1.898245 |
| Log likelihood                        | 89.70210 | Hannan-Quinn criter.  | -2.238280 |
| F-statistic                           | 47.08195 | Durbin-Watson stat    | 1.946269  |
| Prob(F-statistic)                     | 0.000000 |                       |           |

$$ROE=41.58519-0.300246LTD-0.051850DTA-0.121443CAR-9.287112AS \dots (4)$$

**4.3. ROA results of Indonesia commercial banks**

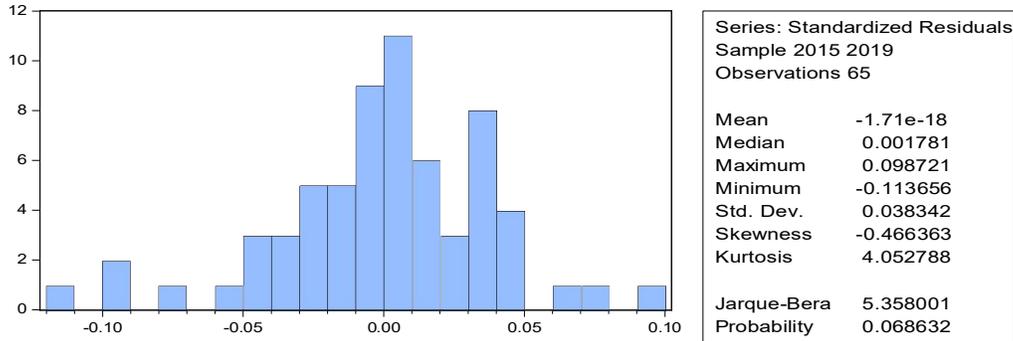
Table 13 below shows the p-value of chow test <5%, thus we will use FEM as our regression.

**Table 13 ROA-Chow test result of the Indonesian commercial banks (using E-views 10)**

| Effects Test             | Statistic  | d.f.    | Prob.  |
|--------------------------|------------|---------|--------|
| Cross-section F          | 21.617340  | (12,48) | 0.0000 |
| Cross-section Chi-square | 120.703382 | 12      | 0.0000 |

Table 14 and 16 show the p-values in normality and heteroscedasticity tests were > 5%, which indicated the data was normal and there was no heteroscedasticity problem. And from table 15, all of the correlation value are under 0.8, thus there is no multicollinearity problem.

**Table 14 ROA normality test result of Indonesia commercial banks from E-views**



**Table 15 ROA-Multicollinearity Test result of Indonesian commercial banks (using E-views ver. 10)**

|     | LTD           | DTA           | CAR          | AS           |
|-----|---------------|---------------|--------------|--------------|
| LTD | 1             | -0.2473482... | 0.0076764... | 0.2334981... |
| DTA | -0.2473482... | 1             | 0.1187736... | 0.3384609... |
| CAR | 0.0076764...  | 0.1187736...  | 1            | 0.2902885... |
| AS  | 0.2334981...  | 0.3384609...  | 0.2902885... | 1            |

**Table 16 ROA-Heteroscedasticity Test result of the Indonesian commercial banks (using E-views ver. 10)**

|                   |          |                      |           |
|-------------------|----------|----------------------|-----------|
| Log likelihood    | 93.69620 | Hannan-Quinn criter. | -4.405414 |
| F-statistic       | 2.475989 | Durbin-Watson stat   | 2.205034  |
| Prob(F-statistic) | 0.051985 |                      |           |

Third, table 17 shows the result of fixed effect regression of ROA for Indonesian commercial banks, following the equation (5). Table 17 shows the result of t-test and F test following the equation (5):

**Table 17 ROA-Fixed Effect Model Regression of the Indonesian commercial banks (using Eviews ver. 10)**

Dependent Variable: ROA  
Method: Panel Least Squares  
Date: 08/24/21 Time: 16:15  
Sample: 2015 2019  
Periods included: 5  
Cross-sections included: 13  
Total panel (balanced) observations: 65

| Variable | Coefficient | Std. Error | t-Statistic | Prob.  |
|----------|-------------|------------|-------------|--------|
| LTD      | -1.183453   | 0.243014   | -4.869901   | 0.0000 |
| DTA      | 0.419865    | 0.122395   | 3.430417    | 0.0012 |
| CAR      | 0.132725    | 0.153219   | 0.866241    | 0.3907 |
| AS       | -3.716981   | 1.025825   | -3.623407   | 0.0007 |
| C        | 8.912435    | 1.787815   | 4.985100    | 0.0000 |

**Effects Specification**

| Cross-section fixed (dummy variables) |          |                       |           |
|---------------------------------------|----------|-----------------------|-----------|
| R-squared                             | 0.910477 | Mean dependent var    | 1.090895  |
| Adjusted R-squared                    | 0.880636 | S.D. dependent var    | 0.178658  |
| S.E. of regression                    | 0.061725 | Akaike info criterion | -2.512374 |
| Sum squared resid                     | 0.182877 | Schwarz criterion     | -1.943688 |
| Log likelihood                        | 98.65216 | Hannan-Quinn criter.  | -2.287991 |
| F-statistic                           | 30.51096 | Durbin-Watson stat    | 2.111004  |
| Prob(F-statistic)                     | 0.000000 |                       |           |

$$ROA=7.326256-0.1.183453LTD+0.419865DTA+0.132725CAR-0.3.716981AS \dots (5)$$

#### 4.4. ROE results of Indonesia commercial banks

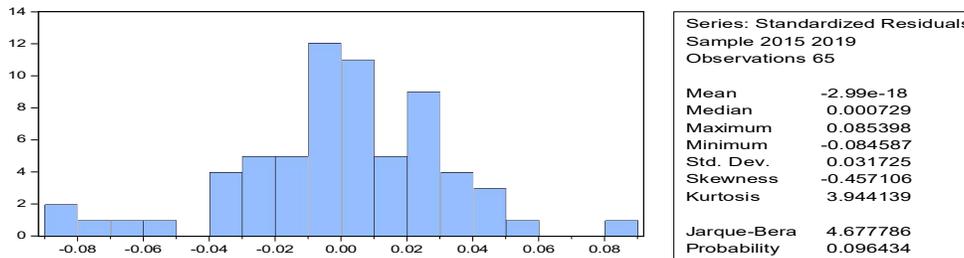
Table 18 below shows the p-value of chow test <5% , thus we will use FEM as our regression.

**Table 18 ROE- Chow test result of the Indonesian commercial banks (Using E-views ver 10)**

| Effects Test             | Statistic | d.f.    | Prob.  |
|--------------------------|-----------|---------|--------|
| Cross-section F          | 6.036607  | (12,48) | 0.0000 |
| Cross-section Chi-square | 59.796406 | 12      | 0.0000 |

From table 19 and 21, both of the P value in normality test and heteroscedasticity Test were > 5%, which indicated the data was normal and there was no heteroscedasticity problem. And from table 20, all of the value are under 0.8, thus there is no multicollinearity problem.

**Table 19 ROE- normality test result of the Indonesian commercial banks (using E-views ver 10)**



**Table 20 ROE-Multicollinearity Test result of the Indonesian commercial banks (using E-views ver 10)**

|     | LTD           | DTA           | CAR          | AS            |
|-----|---------------|---------------|--------------|---------------|
| LTD | 1             | -0.2458466... | 0.0074004... | -0.1012725... |
| DTA | -0.2458466... | 1             | 0.1172962... | 0.0278876...  |
| CAR | 0.0074004...  | 0.1172962...  | 1            | 0.2488210...  |
| AS  | -0.1012725... | 0.0278876...  | 0.2488210... | 1             |

**Table 21 ROE- Heteroscedasticity test result of the Indonesian commercial banks (using E-views ver. 10)**

|                   |          |                      |           |
|-------------------|----------|----------------------|-----------|
| Log likelihood    | 128.1887 | Hannan-Quinn criter. | -3.979081 |
| F-statistic       | 1.613645 | Durbin-Watson stat   | 2.527724  |
| Prob(F-statistic) | 0.115114 |                      |           |

Table 22 shows the result of the fixed effect model of panel data regression for ROE for Indonesia commercial banks, following the equation (6). Table 22 shows the t-test and F-test results as follows:

**Table 22 ROE Regression of Indonesia commercial banks-FEM from Eviews**

Dependent Variable: ROE  
 Method: Panel Least Squares  
 Date: 08/24/21 Time: 16:06  
 Sample: 2015 2019  
 Periods included: 5  
 Cross-sections included: 13  
 Total panel (balanced) observations: 65

| Variable | Coefficient | Std. Error | t-Statistic | Prob.  |
|----------|-------------|------------|-------------|--------|
| LTD      | -0.293944   | 0.407293   | -0.721701   | 0.4740 |
| DTA      | 0.473286    | 0.183838   | 2.574470    | 0.0132 |
| CAR      | 0.906676    | 0.370574   | 2.446682    | 0.0181 |
| AS       | -1.424287   | 2.375736   | -0.599514   | 0.5516 |
| C        | 1.504325    | 2.744551   | 0.548113    | 0.5862 |

Effects Specification

| Cross-section fixed (dummy variables) |          |                       |           |
|---------------------------------------|----------|-----------------------|-----------|
| R-squared                             | 0.786927 | Mean dependent var    | 1.069218  |
| Adjusted R-squared                    | 0.715903 | S.D. dependent var    | 0.068729  |
| S.E. of regression                    | 0.036633 | Akaike info criterion | -3.555848 |
| Sum squared resid                     | 0.064415 | Schwarz criterion     | -2.987162 |
| Log likelihood                        | 132.5651 | Hannan-Quinn criter.  | -3.331465 |
| F-statistic                           | 11.07968 | Durbin-Watson stat    | 1.360544  |
| Prob(F-statistic)                     | 0.000000 |                       |           |

$$ROE = 1.504325 - 0.293944LTD + 0.473286DTA + 0.906676CAR - 1.424287AS \dots (6)$$

#### 4.5. Interpretation of the Results

Table 7 shows the regression of ROA of the Chinese commercial banks. Using FEM, DTA and AS have negative significant impact on ROA with the p value < 5% and 1%, while CAR has a positive significant impact on ROA with p value < 1% and LTD has a negative insignificant impact on ROA. Table 12 shows the regression of ROA of the Indonesian commercial banks, based on FEM, in which LTD and AS have negative significant influence on ROA with p value < 1% , while DTA has a positive significant influence on ROA with p value < 1% and CAR has a positive insignificant influence on ROA. Table 17s shows the regression of ROE of the Chinese commercial banks. Using FEM, LTD and AS have negative significant relationship on ROE with the p value < 5% and 1%, while DTA and CAR have positive insignificant relationship with ROE. Table 22 shows the regression of ROE of the Indonesian commercial banks, where LTD and AS have negative insignificant relationship with ROE, while DTA and CAR have positive significant relationship on ROE with p value of < 5%. The results of adjusted R-squared are high, which indicates the independent variables can explain the dependent variables for the most part. The value of DW is in the range of -2 to 2, thus there is no auto-correlation problem in this regression. From the previous studies, Siddik, et al. (2017) showed

that DTA had a significant negative impact on ROA and ROE; while Riaz (2015) studied DTA had a negative but insignificant influence on ROA. Qayyum & Noreen (2019) studied DTA had a positive significant impact on ROE. M. Moshi, Hafeez, et al. (2018) studied CAR had a negative significant relationship with ROA while insignificant relationship with ROE, and Sari & Sulisty (2018) also stated that CAR had a negative significant impact on ROA and ROE. Sari & Sulisty (2018) showed that loan to deposit, asset size had a positive significant relationship with profitability; and Siddik, et al. (2017) also studied asset size had a positive significant relationship with ROA. While Fauziah & Iskandar (2015) studied that loan to deposit have insignificant with ROE and bank size has a negative significant effect to ROE.

## 5. CONCLUSION

The purpose of the research is comparing the impact of capital structure on commercial banks' performance in Indonesia and China. The study chose 13 commercial banks from Indonesia and 12 from China for the period of 5 years, from 2015 to 2019 to analyses. And according to the results, we can make the following conclusions. In the study of Chinese commercial Banks, only AS have negative significant impact on both ROA and ROE, DTA and CAR have positive significant impact on ROA, while LTD has significant relationship on ROE. In the study of Indonesian commercial Banks, LTD, AS and DTA have positive significant influences on ROA, while DTA and CAR have positive significant relationship on ROE.

Through this study, we suggest that the management in the banks should pay more attention to these significant variables when deciding the optimal capital structure, optimizing the profitability of banks and managing their asset structure. The study only used five-year (2015-2019) data, further studies can add more observations through longer period of time, and also adding other macroeconomic variables such as GDP, Inflation rate and Exchange Rate, aside from the bank's performance variables. In addition, this study takes two countries (Indonesia and China) as our research objects; further studies can consider including more countries in the region.

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