Determinant of Banking Capital Structure in Indonesia

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ABSTRACT

This study aims to analyze the effect of profitability, liquidity, Non Performing Loans (NPL), and inflation on the banking capital structure during 2015-2020. There are 48 companies as population and the samples obtained 39 companies that fit the criteria by using purposive sampling method. Data analysis technique used panel regression. The best model chosen is the Random Effect Model (REM). The findings of the study indicate that internal banking factor and external factors such as macro variables that had an effect on the capital structure of banking. Banking internal factors consisting of profitability and NPL have a negative effect on capital structure, while liquidity has a positive effect on banking capital structure. Inflation as a macro variable has a negative effect on the banking capital structure as one of the criteria for assessing the soundness of a bank. These results contribute to the literature on the soundness of banks in terms of their capital structure and have implications for financial institutions, especially banks in determining policies to be able to maintain their capital structure.

Keywords: Capital Structure; Profitability; Liquidity; Non-Performing Loan; Inflation.

INTRODUCTION

Law no. 10 of 1998 about banking defined a bank is a business entity that collects funds from the public in the form of savings and distributes them to the public through credit or other forms in order to improve the people's standard of living. As a company working in the field of financial services, banks are required to maintain customer confidence in banking activities and carry out their functions properly and correctly. If a bank fails, it will affect the bank's performance. Therefore, banks are required to improve bank performance in order to obtain high profitability in increasing profits.

The establishment of the company is not far from its goal to gain profits and increase the value of the company (Novwedayaningayu & Hirawati, 2020). A company has an important tool in the company's survival, namely the capital structure. The capital structure is a permanent expenditure from the company that reflects the comparison between the company's long-term debt and its own capital in the form of retained earnings and the issuance of shares (Deviani & Sudjarni, 2018). A good capital structure will definitely have a good impact on high company value. The capital structure of the company needs to be identified by a company manager with optimal capital structure expected to minimize costs and must be able to maximize profits (Zulkarnain, 2020). If there is an error in managing the capital structure it can result in a large company debt and make the company unable to pay the company's debts (Wirda Lilia, 2020).

Capital structure can be affected by profitability and liquidity according to (Danang Adi Wicaksono, 2017). Management needs to oversee the interests of shareholders in running the company to achieve the main goals of a company. If management does it for personal gain, then such behavior will affect the company's financial performance. Capital structure is measured by the Capital Adequency Ratio (CAR) which is the ratio used to measure the adequacy of capital owned by a bank to hold risk-bearing assets. According to the Financial Services Authority (OJK) explained that the soundness of a bank can be seen from the aspect of capital as measured using the Capital Adequacy Ratio, there is a minimum CAR limit of 8%. So, if the CAR value is higher than the bank's condition is classified as healthy, and vice versa if the CAR value is less than 8% then the condition is classified as unhealthy. The level of capital in the bank will affect the efficiency of bank activities. If a bank can manage its activities efficiently, then the capital in the bank will increase, so that shareholders are expected to increase and vice versa. The following is a table of Capital Adequacy Ratio which is used as a measure of capital structure:





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Based on the graph above, it can be seen that the average Capital Adequacy Ratio (CAR) has fluctuated during the 2015-2020 period. It can be seen that the highest average value is in 2020, which is 27.18% and it can be seen that the lowest average value is in in 2015 that is equal to 18.57%. The performance of banking companies shows that fluctuating Capital Adequacy Ratio (CAR) values can affect financial performance in the following year, so it is necessary to look at what factors banking companies must pay attention to in maintaining the value of Capital Adequacy Ratio (CAR). good or at least not decreasing. A decreased CAR can result in a decrease in the bank's ability to channel financing and if it tends to continue to decline, it is feared that it will not have sufficient capital capacity to mitigate possible risks. (Fitriani, 2016; Putra et al., 2020) in his research the factors that affect the value of Capital Adequacy Ratio (CAR) are profitability ratios as measured by Return on Assets (ROA). The results of his research are that the ROA ratio has a significant positive effect on CAR which explains that bank management is able to manage its bank assets well so that banks generate large profits. This is in line with research (Fransiska, 2018) and (Rahmawati, 2021) states that the proximate profitability of ROA has a significant positive effect on CAR. This shows that if the value of ROA decreases, CAR will also decrease. Vice versa if ROA increases then CAR will also increase. Increasing ROA will increase bank readiness in facing future risks. However, there are differences in research (Latifah, 2019) which explains that if ROA increases then CAR decreases, these results can occur due to poor productive asset growth which causes the need to establish reserves to anticipate risks that occur are not in line with optimizing asset productivity so that the capital adequacy ratio at Bank Syariah Mandiri as measured by CAR decrease.

Another factor that influences the CAR value is the liquidity ratio as measured by the Loan to Deposit Ratio (LDR). Liquidity is a ratio that measures how capable a bank is in paying its debts and short-term obligations. High liquidity indicates that banks are able to pay their debts and obligations, while low liquidity indicates that banks are less effective in extending loans to the public. If a bank wants high profits, the bank will experience a decrease in liquidity. This is in line with (Riana & Yadnya Putu, 2017) which explains that the liquidity proxied by the Loan to Deposit Ratio (LDR) has a significant positive effect on CAR. Income from interest earned by customer credit payments will increase profits, so that the bank's capital will also increase.

Apart from the liquidity ratio, there are other influencing factors, namely the Non-Performing Loan (NPL) ratio. NPL is a ratio that looks at the health of a bank through non-performing loans or bad loans. The higher the NPL ratio means there is an error with the bank's performance. If the NPL in a bank is high, it will affect the decrease in bank capital. This is in line with (Rianto & Salim, 2020) which explains that interest income received from loan interest will decrease if the level of Non-Performing Loans (NPL) increases, this is due to the large number of problem loans so that the Capital Adequacy Ratio (CAR) will decrease because the profit which is a component of the capital structure addition will decrease.

In the previous study, to see the capital adequacy ratio, it was only seen from banking financial ratios or banking internal factors. However, in this study the researchers wanted to try to look at external factors such as macro variables, that is inflation to CAR as a novelty of this study. Bank Indonesia explained that a continuous increase in the price of goods and services within a certain period of time is the definition of inflation. The impact of inflation itself has a negative effect because price increases are so high that people's purchasing power decreases. That way, people will save more at the bank because high inflation is also followed by high interest rates, so that capital at the bank will increase.

The significant matter of this research is provided as follows. First, this study investigates the variables mentioned previously since there is a limitation study performed in Indonesian context. Second, the study in Indonesia is reasonable because the capital structure as one of criteria to know banking performance still not



stable year by year. Third, this study tries to see not only internal factor from banking sector but also external factor to determine the capital structure. The research of this paper is provided as follows. Section 1 deals with the background of the study and fundamental theories related to the variables involved. Section 2 concerns the methodology used to address the research purposes, followed by findings and discussion in Section 3. The last section provides the conclusion, implication and suggestions.

METHODS

Data Types and Sources

The research method used is a quantitative research approach, data sources come from financial report of bank that listed in Indonesia Stock Exchange in 2015 - 2020. The population used in this study were all banking companies listed on the Indonesia Stock Exchange, namely 48 banking companies. Samples taken from this research with purposive sampling method. The sample in this study is limited by criteria that are considered to provide the best information on the research process. The criteria for selecting the sample to be studied are as follows. First, banking companies that have been registered at the IDX's IPO. Second, conventional banking companies. Last, the banks have incomplete data will be excluded from the research sample. In this study, the dependent variable is capital structure (Y) and the independent variables consist of profitability (X1), liquidity (X2), non-performing loans (X3) and inflation (X4).

Research Variable

In this study, the dependent variable is capital structure (Y) and the independent variables consist of profitability (X1), liquidity (X2), non-performing loans (X3) and inflation (X4).

Data analysis technique

This test includes the chow test, hausman test, langrange multiplier test and panel data regression analysis.

Panel Data Regression Analysis

The data analysis technique used is panel data regression analysis to determine the effect of profitability, liquidity, non-performing loans, and inflation to capital structure of banking companies in Indonesia since 2015-2020. In general, the panel data regression analysis models included in this study are as follows:

Information:

Y : Capital Structure (CAR) : Constant Numbers $\beta_1 - \beta_4$: Regression Coefficient of each independent variable X_1 : Profitability (ROA) X_2 : Liquidty (LDR) : Non Performing Loan (NPL) X_3 : Inflation X_4 t : Time i : Company : Error e

There are three models that can be used with panel data, that are consist of Common Effect Model (CEM) or Pooled Least Square (PLS), Fixed Effect Model (FEM), and Random Effect Model (REM). The Least Squares Approach or Common Effect is the simplest technique in processing time series and cross section data. This method does not pay attention to the individual or time dimensions, which assumes that the data behavior

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between individuals is the same in various time periods. That way, the intercept and slope are but both between time and between individuals (Fransiska, 2018). Fixed Effects Approach (Fixed Effect Model) assumes that the intercept is different between individuals while the slope remains the same between individuals. To estimate the Fixed Effect model where the intercept differs between individuals, the dummy variable technique method can be used to explain the difference in the intercept. (Fransiska, 2018). Random Effects Approach (Random Effect Model) is a type of panel data that has a variable error (error term) that varies between individuals but remains the same over time. So the random effect model is useful if the individual companies taken as samples are chosen randomly and are representative of the population. For estimation, this type of panel data uses the Generalized Least Squares (GLS) method. This model assumes that the intercept of the individual effect is randomly distributed with a fixed average value (Fransiska, 2018)

The most appropriate model of three regression models can be found with three tests including the Chow test, Hausman test, and LM test. Chow test is used to choose between CEM or FEM. Hausman test used to know wheter FEM or REM and LM test used to choose between CEM or REM. Next, we also provide simultaneous and partial test to determine capital structure of banking in Indonesia.

RESULT AND DISCUSSION

The best model chosen of panel analysis used Chow test, Hausman tes, and LM test for 39 banking companies in Indonesia. The result of Chow test showed that prob value's Cross-section Chi-square is 0.0000. It is less than the 5% significance level. These results can be concluded that Fixed Effect Model (FEM) is the appropriate model rathet than Common Effect Model (CEM).

Chow Test

Table 1. Result of Chow Test						
Redundant Fixed Effect Test						
Effect Test Statistic D.f		D.f	Prob.			
Cross-section f	4.419394	(38,191)	0.0000			
Cross-section Chi-Square	147.624376	38	0.0000			

The next step is to find out the most appropriate model between Fixed Effect Model (FEM) and the Random Effect Model (REM) using the Hausman test. The random cross-section prob value is 1.0000 that is greater than the 5% significance level ($\alpha = 0.05$). It concluded that the most appropriate estimation method used in this study is Random Effect Model (REM).

Hausman Test

Table 2. Result of Hausman Test				
Correlated Random Effects – Hausman Test				
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.	
Cross-section random	0.000000	4	1.0000	

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Based on the results of Chow test and Hausman test found that the model choosen is different. So that, we go to the next step that is LM test. This test used to find out which model is most appropriate between Random Effect Model (REM) or the Common Effect Model (CEM). The value of Both at Breusch-Pagan is 0.0000 less than the 5% significance level ($\alpha = 0.05$). It concludes that Random Effect Model (REM) is the best estimation model in this study.

Langrange Multiplier Test

Tabel 3. Result of Langrange Multiplier Test					
Langrange Multiplier Tests for Random Effects					
	Cross-section	Test Hypothesis Time	Both		
Breusch-Pagan	71.86203	0.026774	71.88880		
	(0.0000)	(0.8700)	(0.0000)		

The profitability is the company's ability to earn profits in relation to sales, total assets and own capital (Aslah, 2020). In this study, profitability is proxied by Return on Asset (ROA) ratio. Profitability has a negative and significant effect on capital structure. The coefficient of -1.533865 means the level of profitability on capital structure. When there is an increase in profitability by one percent, it will drive on decreasing capital structure by 1.533865. Most of the previous studies indicate that increased profitability has a positive effect on capital structure (Fransiska, 2018; Rahmawati, 2021) and (Harum & Halidu, 2021) because some of the profits will be able to increase bank capital. However, this study is different because it was found that the profitability ratio as measured by ROA actually lowered the capital structure. The results of this test are in line with research (Latifah, 2019) which says that there is a negative effect between the profitability variable on the capital structure due to the poor growth of productive assets which causes the need for the formation of reserves to anticipate risks that occur are not in line with optimizing asset productivity, so that the capital structure as measured by CAR has decreased. It can also occur because the risk-weighted assets increase but are not matched by capital growth.

Panel Data Regression Analysis

Table 4. Random Effect Model of Panel Data Regression Analysis						
Variable	Coefficient	Std. Error	t-Statistic	Prob.		
Capital Structure (CAR)	25.96145	4.220061	6.151913	0.0000		
Profitability(ROA)	-1.533865	0.292410	-5.245606	0.0000		
Liquidity (LDR)	0.122606	0.025890	4.735596	0.0000		
Non Performing Loan (NPL)	-1.089792	0.330516	-3.297243	0.0011		
Inflation	-2.785469	1.065134	-2.615135	0.0095		
R-squared				0.210156		
Prob(F-statistic)				0.000000		

Liquidity is a ratio that measures how capable a bank is in paying its debts and short-term obligations. In this study, liquidity proxied by the Loan to Deposit Ratio (LDR) where has a positive and significant effect on Capital Structure (CAR). This can be seen from the regression coefficient of 0.122606. When there is an increase in liquidity by one percent, it will drive on increasing capital structure. The high liquidity ratio

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indicates that the total loans are greater than third party funds. It means banks will increase its income from lending. (Silaban, 2016) and (Riana & Yadnya Putu, 2017) states that the amount of credit extended is greater than the amount of funds raised, it will indicate that the lower the liquidity capacity of the bank. So that interest income increased more than the increase in interest costs, which resulted in increased bank profits, increased bank capital and Capital Adequacy Ratio (CAR) also increased. However, this is not in line with research (Hamidah et al., 2021; Kurniawan Andy & Agatya F, 2017; Pratama, 2018)(Pratama, 2018), and (Liyana & Indrayani, 2020) which states that Liquidity (LDR) has a significant negative effect on capital structure (CAR).

The non-performing ratio is important to pay attention because a bank that has a high NPL, can cause a loss for the bank, thereby disrupting the banking capital structure. Non Performing Loans (NPL) has a negative and significant effect on Capital Structure (CAR). This can be seen from the regression coefficient of -1.089792. This means that if the number of non-performing loans is high, it will cause substantial losses and affect a decrease in a bank's income. This is in line with research researchers (Rianto & Salim, 2020; Sinta et al., 2018) and (Riana & Yadnya Putu, 2017). However, research is done(Sinta et al., 2018), (Sari & Anggun, 2016) and (Pratama, 2018) which states that Non Performing Loans (NPL) have a significant positive effect on Capital Structure (CAR).

Inflation is one of macro variable that can affect banking performance because it will influence people's decisions to save or borrow from the bank. The result in this study found that inflation has a negative and significant effect on Capital Structure (CAR). This can be seen from the regression coefficient of -2.785469. In this case, inflation basically has the meaning that is an increase in the price of goods and services in general and continuously, causing national income to decrease, and making people reduce their spending. The income they get prefers to buy needs that they consider more important than saving their money to the bank, which will eventually experience a decrease in banking capital. This is in line with the research conducted (Sorongan, 2020) which states that inflation has a negative effect on capital structure (CAR). However, this is not in line with research (Rahmawati, 2021) states that inflation has no significant positive effect on (CAR).

CONCLUSION

Based on the results of the research and discussion above, it can be concluded regarding the analysis of internal factors and external factors that influence Capital Structure as measured by the Capital Adequacy Ratio (CAR) in banks listed on the IDX for the period 2015-2020 namely, simultaneously the variables Profitability, Liquidity, Non-Performing Loans (NPL) and Inflation have an influence on the Capital Structure of Conventional Commercial Banks listed on the Indonesia Stock Exchange (IDX). Profitability variable as measured by Return on Assets (ROA) has a negative and significant effect on Capital Structure (CAR) at Conventional Commercial Banks listed on the Indonesia Stock Exchange (IDX). The Liquidity variable as measured by the Loan to Deposit Ratio (LDR) has a positive and significant influence on the Capital Structure (CAR) of Conventional Commercial Banks listed on the Indonesia Stock Exchange (IDX). The inflation variable has a negative and significant effect on the Capital Structure (CAR) of Conventional Commercial Banks listed on the Indonesia Stock Exchange (IDX).Based on this research, there are several limitations that have been carried out by the author, namely the sample used in this study only uses conventional commercial banks listed on the IDX and the variables that are limited to this research are profitability, liquidity, non-performing loans and inflation.

Banking companies should continue to increase their profitability ratios. Increasing the ROA value can be done by improving the asset management of banking companies, continuing to maintain the NPL value so



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that it does not increase. By reducing the number of non-performing loans to third parties. Banking companies need to maintain their capital level, by looking at the CAR variable it is hoped that the company will be able to provide funds for business activities and accommodate possible risks of losses resulting from bank operations. For further researchers to add other variables in the form of financial ratios such as Operating Expenses to Operating Income (BOPO), Net Interest Margin (NIM), and external interest rate factors that are likely to influence the financial performance or health of the bank. For potential investors and investors who will invest their capital, it is better to pay attention to the level of profitability (ROA), liquidity (LDR), Non-Performing Loans (NPL), and Inflation which affect the Capital Structure (CAR).

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