

# The Effects of Capital Adequacy Ratio, Non-Performing Loan, Loan to Deposit Ratio, and Return on Assets on Stock Prices in Banking Sector over the Period 2015 – 2019

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## Abstract

*This study aims to determine the effects of Capital Adequacy Ratio (CAR), Non-Performing Loan (NPL), Loan to Deposit Ratio (LDR), and Return on Asset (ROA) on the stock prices of banking sector listed on the Indonesia Stock Exchange over the period 2015 – 2019. The sampling technique used was purposive sampling, which generated a sample of 24 companies. This study used secondary data in the form of financial reports which can be obtained from the Indonesia Stock Exchange. The analysis technique used in this research was Fixed Effects regression through the assistance of STATA 16.0 as a statistical software. The results showed that CAR, NPL, LDR and ROA simultaneously had a significant effect on stock prices. However, each partially had a positive and insignificant effect on stock prices.*

## Keywords

capital adequacy ratio; non-performing loan; loan to deposit ratio; return on asset; stock prices



## I. Introduction

The progress of the Indonesian economy cannot be separated from the role of the banking industry which helps the progress of the economy. At this time, the banking world in Indonesia is entering a very competitive period of competition. The rapid development of the banking world can affect the financial performance of a bank. In developing countries such as Indonesia, banking institutions still play a major role in controlling financial assets. However, the sustainability of this industry depends on the availability of funds, which can be obtained by selling shares to the public in the capital market.

The economic condition of the population is a condition that describes human life that has economic score (Shah et al, 2020). Economic growth is still an important goal in a country's economy, especially for developing countries like Indonesia (Magdalena and Suhatman, 2020).

The capital market is a market that is prepared to trade stocks, bonds and other types of securities using securities trading intermediary services (Sunariyah, 2011). The capital market has an important role for the country's economy. This is because the capital market can carry out two functions at once, namely the economic function and the financial function. The former can provide facilities that bring together those who have funds (i.e. investors) and those who issue funds. Meanwhile, the latter can provide opportunities for the owner of the funds, in accordance with the characteristics of the chosen investment.

One indicator of the success of the management of a banking company is the stock price. The stock price is the value of a company that reflects the wealth of a company (Sunariyah, 2011). Investors tend to like stable stock prices because they are considered to have low risk so that they can provide large profits. Therefore, investors must know the

development of the company's stock price. Prices that tend to increase will provide benefits in the form of capital gains when investors resell the shares to other parties.

Every company listed on the Indonesia Stock Exchange must issue shares that can be owned by every investor. But stock prices are very volatile and changeable. Investors must be clever in analyzing the stock price because if one analyzes the stock price, the investor will experience a loss that is not small. One of the sectors listed on the Indonesia Stock Exchange is the banking sector.

The banking sector has a role in helping economic progress. Based on the data, the development of stock prices fluctuated over the period 2015 – 2019. This affects the share price that will be received by investors. Based on the description above, a study from Indiani & Dewi (2016) showed that the indicator of risk profile had a negative and significant effect on stock prices of banking sector. However, good corporate governance (GCG) and return on asset (ROA) were positively and significantly correlated with stock prices in banking sector. Meanwhile, Salsabilla & Yunita (2020) proved that non-performing loan (NPL), ROA, and capital adequacy ratio (CAR) had no significant effect on stock prices. Yet, there was a positive and significant effect between GCG and stock prices.

Naftali et al. (2018) stated that GCG, ROA, and CAR had a significant effect on stock prices. Furthermore, risk profile has no significant effect on stock prices. While the simultaneous test showed that the soundness of the bank, namely RGEC, had a significant effect on stock prices. Another study conducted by Fahlevi et al. (2018) believed that CAR and ROA were positively and significantly associated with stock prices. In contrast, LDR had negative and significant effect on stock prices.

Based on the above background, the main problem is whether the Capital Adequacy Ratio (CAR), Non-Performing Loan (NPL), Loan to Deposit Ratio (LDR), and Return on Assets (ROA) affect the price of banking stocks listed on the Indonesia Stock Exchange over the period 2015 – 2019. Thus, the purpose of this study is to determine the effects of CAR, NPL, LDR, and ROA on stock prices of banking sector listed on the Indonesia Stock Exchange over the period 2015 – 2019.

## **II. Review of Literature**

### **2.1 Financial Management**

According to Fahmi (2016), financial management is a combination of science and art that discusses, examines and analyzes how a financial manager uses all company resources to seek funds, manage funds and distribute funds with the aim of providing profit or prosperity for shareholders and business sustainability for the company. From here, the objectives of financial management can be distinguished, as follows: a. profit maximization; and b. wealth maximization.

### **2.2 Stock Price**

The stock price is the closing price of the stock market during the observation period. For each type of stock and its movement is always observed by investors. The share price of a company is reflected by its closing price. The closing price is considered to be the market price because it is the price at the end of the exchange day requested by the seller or buyer (Tandelilin, 2017).

According to Brigham & Houston (2014), share price is the price that determines shareholder wealth. Maximizing shareholder wealth translates into maximizing the company's share price. The stock price at any given time will depend on the cash flows that

the “average” investor would expect to receive in the future if the investor bought the stock. Meanwhile, Jogiyanto (2015) defines stock price as the price of a share that occurs in the stock market at a certain time, determined by market participants and the demand and supply of the shares concerned in the capital market.

### **2.3 Capital Adequacy Ratio**

According to the Central Bank of Indonesia Regulation Number 15/12/PBI/2013, Capital Adequacy Ratio (CAR) is a ratio that accommodates risks that may be faced by banks. The increasing CAR indicates a better ability of banks to maintain their capital adequacy to keep the bank's quality. Banks that are considered healthy are ones that have a CAR above 8%. Thus, the greater the CAR, the greater the bank's profit.

In calculating capital, banks are required to refer to the Central Bank of Indonesia regulations governing the Minimum Capital Adequacy Requirement for Commercial Banks. In assessing capital adequacy, banks must also relate capital adequacy to the bank's risk profile. The higher the risk of the bank, the greater the capital that must be provided to anticipate this risk. Previous studies from Harahap & Hairunnisah (2017) as well as Ziliwu & Wibowo (2020) showed that the CAR had a positive and significant effect on stock prices.

### **2.4 Non-Performing Loan**

According to the Central Bank of Indonesia Regulation Number 15/12/PBI/2013, Non-Performing Loan (NPL) is defined as a loan that has difficulty in repayment. The higher the NPL of a bank, it will describe the bad performance in lending. If the distribution of credit is not good, the risk of non-performing loans will be quite high and it will affect the bank in earning profits. However, if the NPL is lower, it describes a good performance in lending and this will increase the bank's profit. Currently, the Indonesia's Central Bank standard in determining NPL is below 5%. Studies conducted by Harahap & Hairunnisah (2017) showed that NPL had a positive and significant effect on stock prices. Similarly, Medyawicesar et al. (2018) proved that NPL was positively and significantly correlated with stock prices.

### **2.5 Loan to Deposit Ratio**

According to the Central Bank of Indonesia Regulation Number 15/12/PBI/2013, Loan to Deposit Ratio (LDR) is the ratio between the total volume of loans disbursed by the bank to the amount of funds received from various sources. The higher the LDR will not only indicate that the bank has maximized funds in the form of credit but it will also show the lower level of bank liquidity. On the other hand, if the LDR is lower, it will indicate a liquid bank with excess fund capacity, but the bank is considered less efficient at carrying out its function as an intermediary institution. A study conducted by Medyawicesar et al. (2018) proved that LDR had no effect on stock prices. The opposite result can be found in Fahlevi's et al. (2018) study in which LDR had a negative and significant effect on stock prices.

### **2.6 Return on Asset**

According to the Central Bank of Indonesia Regulation Number 15/12/PBI/2013, Return on Assets (ROA) is a ratio the ratio of profit before tax to assets. ROA can be used as a means to measure bank performance (i.e. the bank's ability to earn profits). The higher the ROA, the higher the profit achieved by the bank. The minimum limit of ROA that has been determined by Bank Indonesia is about 1.5%. Therefore, if a bank has an ROA of

more than 1.5%, it can be said that the bank is productive in managing its assets. Indiani & Dewi (2016) stated that ROA had a positive and significant effect on stock prices in banking sector. Similarly, Fahlevi's et al. (2018) and Medyawicesar's et al. (2018) studies proved that ROA was positively and significantly correlated with stock prices.

### III. Research Method

In this study, the author used the secondary data which was collected in the form of financial statements and stock prices of banking companies listed on the Indonesia Stock Exchange for the period of 2015 – 2019. The population constituted 40 banking companies and the author used the purposive sampling technique with the following criteria: a). Banking companies listed on the Indonesia Stock Exchange in the period of 2015 – 2019; and b). Banking companies that has published financial reports for the period of 2015 – 2019. Based on such criteria, the samples were about 24 banking companies.

In this study, the stock price can be calculated by using the average closing stock per year of observation between 2015 and 2019. The formula for calculating it is as follows:

$$\text{Stock price} = \frac{\text{The month-end closing price added up in one year}}{\text{Number of months in one}}$$

CAR can be determined by comparing the amount of core capital and the amount of supplementary capital with Risk Weighted Assets (RWA). Capital consists of the balance of core capital and supplementary capital in the statement of financial position as of December 31, from 2015 to 2019. Meanwhile, RWA consists of the sum of balance sheet assets and administrative assets which have been weighted based on the level of risk contained in the statement of financial position as of December 31, from 2015 to 2019. The formula for calculating CAR is as follows:

$$\text{CAR} = \frac{\text{Capital}}{\text{Risk Weighted Assets (RWA)}} \times 100\%$$

Furthermore, the proxies used to assess the risk profile are non-performing loans and loan to deposit ratios. The former is obtained by comparing the total number of non-performing loans with the total amount of loans granted in the statement of financial position as of December 31, from 2015 to 2019. While the latter is generated by comparing the total amount of loans granted with the total number of the third-party funds in the statement of financial position as of December 31, from 2015 to 2019. Total number of the third-party funds are time deposits, current accounts and savings which are listed in the statement of financial position as of December 31, but do not include interbank deposits. The formula for calculating NPL and LDR is as follows:

$$\text{NPL} = \frac{\text{Total number of NPL}}{\text{Total amount of loans granted}} \times 100\%$$

$$\text{LDR} = \frac{\text{Total amount of loans granted}}{\text{Total number of the third-party funds}} \times 100\%$$

Meanwhile, ROA is obtained by comparing the net profit before tax obtained from the net profit of each bank per period based on the income statement as of December 31, from 2015 to 2019 with total assets obtained from the asset balance of each bank per period obtained based on the balance sheet as of December 31, from 2015 to 2019. The formula for calculating ROA is as follows:

$$\text{ROA} = \frac{\text{The net profit before tax}}{\text{Total assets}} \times 100\%$$

In this study, the author chose panel data regression which is a combination of time series regression and cross-section regression since the research object occurred in different periods and there were several different samples. According to Gujarati (2013: 237), the advantages of panel data analysis are as follows: 1). Panel data estimation technique can overcome heterogeneity; 2). By combining time series and cross-sectional observations, panel data provides more information, more variation, less collinearity between variables, more degrees of freedom, and more efficient; 3). Panel data is best suited for studying the dynamics of change; 4). Panel data is best for detecting and measuring impacts that simply cannot be seen in pure cross-section or pure time series data; 5). Panel data makes it easy to study complex behavioral models; and 6). Panel data can minimize the bias that can occur when aggregating individuals into large aggregations.

All in all, the basic equation can be summarized as follows:

$$Y_{it} = \beta_0 + \beta_1 \text{CAR}_{it} + \beta_2 \text{NPL}_{it} + \beta_3 \text{LDR}_{it} + \beta_4 \text{ROA}_{it} + \epsilon_{it}$$

Where:

- Y = Stock price
- CAR = Capital Adequacy Ratio
- NPL = Non Performing Loan
- LDR = Loan to Deposit Ratio
- ROA = Return on Asset
- $\epsilon$  = Error term
- i = Banking companies
- t = Period of observation
- $\beta_0$  = Constant
- $\beta_1, \beta_2, \beta_3, \beta_4$  = Coefficient of independent variable

#### IV. Results and Discussion

**Table 1.** Descriptive Statistics

Variabel	Obs	Mean	Std. Dev.	Min	Max
HARGASAHAM	120	2,622.67	4.532,027	50	29,950
CAR	120	21,636	6,408	12.58	52.24
NPL	120	2,653	1,527	0	8.8
LDR	120	89,187	15,756	48.77	163.1
ROA	120	1,443	1,702	-7.47	4

Source: Author's own calculation, 2021

Based on Table 1, it is known that from 120 observations, the dependent variable, namely stock prices, obtained an average value of 2,622.67 with a standard deviation of

4,532,027 and generated a minimum value of 50 and a maximum value of 29,950. Meanwhile, variable of CAR obtained an average value of 21,636 with a standard deviation of 6.408 and yielded a minimum value of 12.58 and a maximum value of 52.24. Furthermore, variable of NPL generated an average value of 2.653 with a standard deviation of 1.527 and obtained a minimum value of 0 and a maximum value of 8.8. By contrast, LDR yielded an average value of 89.187 and a standard deviation of 15.756 with a minimum value of 48.77 and a maximum value of 163.1. Besides, ROA generated an average value of 1.443 with a standard deviation of 1.702 and obtained a minimum value of -7.47 and a maximum value of 4.

**Table 2.** Fixed Effects Regression

Variable	Coefficient	P> t
CAR	68,151	0.299
NPL	52,795	0.554
LDR	1,250	0.859
ROA	12,990	0.825
Constant	877,664	0,587
Observation	120	
R-squared within	0.19	
R-squared overall	0.33	
Prob>F	0.00	

Source: Author's own calculation, 2021

Previous tests such as Chow test and Hausman test indicated that p-value was less than 0.05 ( $\alpha$ ), thus the author chose to apply Fixed Effects regression over Common Effects regression and Random Effects regression, respectively. In Table 5, it can be seen that the independent variable can explain 33 % variation of the dependent variable. The value of F was also statistically significant, indicated that all of the independent variables could simultaneously affect the dependent variable. From the table, there was a positive and insignificant effect between CAR and stock prices. This result was somewhat consistent with previous studies from Salsabilla & Yunita (2020) and Medyawicesar et al. (2018) in which CAR had no effect on stock prices. Similarly, NPL had a positive and insignificant effect on stock prices. This was in line with the results conducted by Friantin & Ratnasari (2019) in which NPL had no effect on stock prices.

Just like CAR and NPL, LDR had a positive and insignificant effect on stock process. Previous studies from Medyawicesar et al. (2018) and Harahap & Hairunnisah (2017) also confirmed that LDR had no significant effect on stock prices. My result also proved that there was no significant effect between ROA and stock prices. Such result is similar to Harahap & Hairunnisah's (2017) study where ROA had no significant effect on stock prices.



## V. Conclusion

This research was conducted on 24 banking companies listed on the Indonesia Stock Exchange over the period 2015 – 2019. Here, this study aimed to investigate whether capital adequacy ratio (CAR), non-performing loan (NPL), loan to deposit ratio (LDR), and return on assets (ROA) had a positive and significant effect on banking stock prices. However, the results indicated that there was a positive and insignificant effect between CAR, NPL, LDR, and ROA, and the price of banking shares. Thus, investors should pay attention to other risk profile variables so that they can predict the future of stock prices in banking sector.

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