

The Influence of NPL, BOPO, LDR, and ROA on Firm Value: Study of Banking Sub-Sector Companies on the Indonesia Stock Exchange 2019-2021

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ABSTRACT

Company tends to achieve higher company's value by improving prosperity of shareholder. Company's values are influenced by external factors and internal factors. Internal factors that influence firm value are the company's financial ratios, including NPL, operating cost, operating income (BOPO), LDR, and ROA. This study aims to empirically examine the effect of NPL, BOPO, LDR, and ROA on firm value of the banking sub-sector companies listed on The Indonesia Stock Exchange Period of 2019-2021. The sample determination method used in this study is a non-probability sampling method, namely saturated sampling. The number of observations with 43 companies towards study period of 3 years was 129. Data was analyzed using multiple linear regression. Results indicate that NPL with LDR has significant negative effects; meanwhile, operating cost on operating income and return on asset has no significant impact on company value.

Keywords: BOPO, firm value, LDR, NPL, ROA.

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I. INTRODUCTION

A country's economic system mostly involves the role of financial institutions in the banking sector. Banks play an essential role in increasing economic growth and social welfare. The banking sector is the intermediation sector among parties with extra funds and parties with a shortage of funds. The bank also has a function as an intermediary institution, namely as a supporter of the smooth payment system and a tool for achieving financial stability so that a healthy banking performance is needed (Sugianto *et al.*, 2020).

In Indonesia Banking Law No. 10 of 1998, it is stated that based on the type of bank, it could be separated as Commercial Banks and Rural Credit Banks (BPR). Commercial bank providing services in payment traffic. Unlike Commercial Banks, BPRs could not provide payment traffics, but their activity is the same as commercial banks, namely carrying out conventional business activities and Sharia principles. The more developed people's lives and economic transactions in countries, the bigger impact of banking sector through the development of service products (Ningsih & Sari, 2019). Changes in the country's economic conditions can become an obstacle for the banking sector in carrying out its intermediary function.

The main purposes of establishing a banking business are to collect funds, distribute those funds to parties in need of funds, and provide other banking services. Banking sectors play roles as Agent of Trusts, Agents of Developments, and Agents of Service more specifically. Banks should put weight on main objectives towards the establishment of a firm and may not leave these functions. Firms aim to grow the firm values by pumping the prosperity of shareholders. The increasing growth of companies has an impact on increasing

competition for companies in Indonesia to survive and succession to invite investment. Efforts to achieve these goals do not rule out the company experiencing obstacles. Companies that have problems in achieving these goals in the longer scope as impacting firm value. A bank's failure to maintain its corporate value will lead to reduced trust from customers and institutions that save funds or invest their capital in the bank (Melda *et al.*, 2022).

The company publishes financial reports as a form of accountability to internal and external parties for firm performances at specific periods. Financing statements published by the company can provide an overview of the firm financing status. Firms with healthy financing status are able to reach a good quality assessment of the firm. Financial performance analysis is used as a planning framework, and financial control as a basis for forming decisions and policies within the company. The publication of financial reports is also used by potential investors as information to find out the prospects and performance of the company in determining investment decision considerations. Investors carry out a fundamental analysis firm with calculating the firm's intrinsic value. Investors will be given an overview of the company's prospects and value through the results of the company's fundamental analysis.

The publication of financial statements by the company as an internal party shows the role of signaling theory. Signaling theory explains that managements behavior in guiding investor towards management's strategy and view of firm prospect. The signal theory explains the relationship between company performances and the values through the publication of information by companies that can be earned by investors in the forms of signals used as considerations on the determination of decision making at investing. The more investors who invest, the company has the opportunity to increase the firm's values which can be seen in shares prices

(Purbawangsa & Suana, 2019). Investors tend to choose companies with high corporate values to gain profits because companies are considered to have the ability to earn large profits (Firdaus, 2020).

There are several ratios could be used at measurement of firm value but Price to Book Value (PBV) being frequently and often used in research because PBV is able to describe the magnitude of market value through stock prices to the book values of firms stocks. Books value is the quotient of shareholder equities by the sum of outstanding shares. Based on signal theory, the Price to Book Value ratio can describe a company having prospects for future progress, which can underlie market confidence in the company (Harahap *et al.*, 2020). High PBV values expressed higher price per share, which shows that the higher investor assessment of the performance of firms is, the more successful firms in creating value for shareholders are, which also impacts market confidence in the company. Price to Book Value (PBV) is an indicator of company value which is very important from the point of view of shareholders. When an investor buys company shares that have been issued, the investor has bought the company's prospects. The higher the shares purchased by investors, it reflects that the more confident investors are in the company's prospects.

Company performances are able to affect the firm's values as seen from the price-to-book values fluctuations in a banking sector. This study is held towards banking sub-sector firms listed at Indonesia Stock Exchange (IDX) where company value is something that needs attention and improvement. The average PBV at 2019 was 1.61, then it increased to 2.92 in 2020 and again decreased in 2021 to 2.82. Changes in PBV values indicate average values at bankings sub-sector firm has fluctuated from 2019 to 2021. Fluctuating PBV values can be caused by various factors, both internal to the company and external. Some of these factors include the demand for and supply of shares on the IDX, economic conditions in a country, as well as internal and external factors that affect company value. Banking sub-sector companies have an important role in economic growth so the value of the company is very important. Fluctuating Price Book Value (PBV) values can reduce investor interest and confidence to invest or invest in the company (Indonesia Stock Exchange, 2023).

Firm value can be influenced by several external also internal factors. Company internal factors can be in the form of important financial ratios to determine the strengths and weaknesses of a company. Information about internal factors is used by companies to measure and evaluate company performance and used as material for consideration for company plans. Financial ratios are internal company factors that can be identified through financial statement, which shows ability of banks to manage company finances as reflected in financial ratios. Investors could put more weight on internal factors in analyzing the company before investing to make a profit.

Non-Performing Loan (NPL) could be indicators of financial ratios at the assessment of banking capability of overcoming problem loans. A higher NPL value results in a loss for the bank because the funds distributed by the bank have not returned according to the agreed deadline, and it potentially could decrease income interests then lead to low

profits (Dewi & Badjra, 2020). The higher the NPL, the greater the total non-performing loans, so the bank's credit quality is not efficient, conversely, if the NPL is lower, it will result in increased profits or profitability at the bank.

Credit risk in banking shows the effect of a decrease in interest earned and bank income caused by debtors who experience bad credit or fail to pay. Research conducted by Bila and Sugandha (2022) shows Non-Performing has a negative relationship with values. Melda *et al.* (2022) show that NPL does not impact values: If there is a change in the value of a non-performing loan, it will not affect the price to book value.

Another factor that could influence firm value is Operating income operating expenses (BOPO), which is a financial ratio used as a measurement of operating risk. This risk occurs due to the company's internal parties not being optimal in carrying out the management control system. BOPO is a financial ratio obtained from company expenses used for operational activities to income from the bank's operational activities. The decreasing BOPO value means that management performance at the bank is effective. The higher BOPO ratio indicates that the use of existing resources has not been able to manage bank operations effectively; as a result, it will reduce profits. If the low BOPO ratio indicates that the financial institution is effective in carrying out its business activities, then it will get high profits. The bank performs operational efficiency to know the accuracy and success of the bank in using all of its production factors. The higher the BOPO value, the worse the performance of a bank, as seen from the profit generated, which is lower due to the inefficiency of bank operations.

Bank efficiency in operational management will help banks gain profits. The BOPO ratio is used by banks to measure a company's efficiency in one period. This BOPO should be taken into account to see the bank's efficiency in carrying out activities during one period. A low BOPO value indicates good bank efficiency (Windriya, 2019).

Bila and Sugandha (2022) show that the ratio of operational cost efficiency (BOPO) positively impacts firm values. Melda *et al.* (2022) show BOPO had no effects on company values. Other studies find different results, namely Haznun and Akbar (2022) show that the BOPO variable has a significant negative effect on company value.

Loan Deposit Ratio (LDR) can also contribute to firm values by showing liquidity risk. Liquidity risk is a ratio of assessing bank performance by measuring the firm's capability to fulfilling obligations promptly. One of the main activities of banking is channeling funds in the form of credit to the public. In carrying out lending activities, companies need to manage their liquidity risk properly so that banking credibility is maintained. The higher LDR ratio at a bank can illustrate that the bank's low liquidity capacity is due to the greater funds used by the bank to finance credit, which will cause uncollectible receivables to increase and have a negative impact on company value.

The company always tries to maintain a healthy liquidity condition and be able to meet short-term obligations. The high LDR, the lower the company's ability to maintain liquidity. Research conducted by Bila and Sugandha (2022) states that liquidity or the LDR has negative effects on firm values. Other studies have found different results regarding

the effect of LDR on firm values. Haq *et al.* (2022) found LDR had no significant effects on firm values. Melda *et al.* (2022) also found different results, namely liquidity positively affecting firm values.

The profitability ratio in this study is measured by Return on Assets (ROA) which is used to measure a company's ability to generate profits. Return on Assets is important for shareholders to determine the company's effectiveness and efficiency in managing assets carried out for the company's operations. Analysis of financial ratios of profitability or Return on Assets (ROA) measures how much own capital and funds are invested in the company, or the total assets used to obtain company profits. The greater the ROA value indicates that the bank's performance is getting better due to the greater return on investment. Ability to generate positive profits will also provide positive information for shareholders or external parties that can increase the value of the company.

Some recent studies found that profitability (ROA) has a positive and significant effect on company value (Antoro *et al.*, 2020; Ikhsan *et al.*, 2022; Sudiyatno *et al.*, 2020). Research with different results was found by Harahap *et al.* (2020), who found that profitability has a negative and significant effect on company value. The results of other studies from Fitria Ningsih *et al.* (2021), Haq *et al.* (2022), Hirdinis (2019), and Nuswandari *et al.* (2019) stated that ROA has an insignificant effect on company value.

Based on the phenomena and differences in results (research gaps) from previous studies regarding the effect of NPL, BOPO, LDR, and ROA on firm value, it is necessary to carry out further research on the causes of the phenomenon of growth at firm values.

II. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

A. Firm Value (Y)

Firm value at this paper is the proxy by Price to Book Value (PBV). The PBV value measurement uses a comparison of the prices per share with the book values per share which is expressed in ratio units (Fahmi, 2018).

B. Non-Performing Loans (NPL)

NPL reflects the credit risk experienced by companies during the 2019-2021 observation period from a comparison of non-performing loans to total loans expressed as a percentage (Fahmi, 2018).

C. Operating Expenses Operating Income (BOPO)

BOPO shows the efficiency of operational activities during the 2019-2021 period expressed as a percentage measured with the comparison of operational costs with operating income in the calculations (Fahmi, 2018).

D. Loan to Deposit Ratio (LDR)

The Loan to Deposit Ratio (LDR) ratio in this study is a comparison of the amount of loans extended to the amount of third party funds expressed as a percentage (Fahmi, 2018)

E. Return on Assets (ROA)

ROA measured with comparison of profits before taxes towards the average total asset which is expressed as a percentage (Fahmi, 2018)

F. Research Hypotheses

Management's decision to use debt is an illustration or information provided to investors to assess the company's prospects. The higher the Non-Performing Loan (NPL) ratio, the worse the bank's performance. If the value of the ratio of Non-Performing Loans (NPL) is lower, the bank's performance will be better. Research conducted by Bila and Sugandha (2022) shows NPL has a negative relationship with company value.

H1: NPL has a negative and significant effect on firm value.

Low BOPO ratio could indicate more organized management reflected in the company's efficacy. A sufficient efficiency score impacts a bank's operating profit level, which is higher and more efficient in its operations so that operating costs are relatively lower. The greater the BOPO ratio means that the bank's operations are less efficient so the final profit will be even smaller.

The lower the stock price of the company, the value of the company owned will also decrease. So, the decline in the BOPO value of banks and better financial performance will have a positive impact on investors or customers to entrust their funds to the bank and can increase company value which is a positive signal for investors. Haznun and Akbar (2022) found a significant negative effect between operating income operating costs (BOPO) on company value.

H2: BOPO has a negative and significant effect on firm value.

High liquidities affect the declines in investor interest in investing in the company so that the demand for the company's shares will decrease and have an impact on falling stock prices. If a company's LDR ratio is high, then its stock price will decrease. The increase in LDR means that the interest income earned by the bank also increases, but it has an impact on the higher risks that will be experienced by the bank. Giving credit that is too high will have an impact on the condition of banks that are unable to fulfill their obligations so that it can result in the vulnerability of a bank to suffer losses. The lower the bank's ability to return depositors' funds can trigger doubts and loss of investor confidence in the company's prospects so that it will have a negative effect on the value of the company owned. Bila and Sugandha (2022) shows that there is a significant negative effect between the Loan to Deposit Ratio (LDR) on firm value.

H3: LDR has a negative and significant effect on firm value.

Increased profitability of the company will show that the company's performance and prospects are getting better. Companies with good prospects will be favored by investors because they give hope that the company will provide high returns for shareholders. So that investors will perceive an increase in ROA value as positive information that can increase investor demand for investment and increase company value which has an impact on increasing stock prices and has a positive effect on company value (Ikhsan *et*

al., 2022; Sudiyatno et al., 2020).

H4: ROA has a positive and significant effect on firm value.

III. METHOD

The design used in this study is research with an associative quantitative approach. The research was conducted on banking sub-sector companies that have been registered and published company financial reports on the Indonesia Stock Exchange (IDX). The research location was chosen at the Indonesian Stock Exchange (IDX) because it is a capital market in Indonesia that provides systems and facilities to bring together bidders to buy and sell securities or shares that have been traded on the stock exchange. The population in this study are all banking sub-sector companies listed on the Indonesia Stock Exchange in 2019-2021. The sample was determined using the non-probability sampling method, totaling 43 companies, so the number of observations is 129. Data being drawn using non-participant observations then getting analyzed using multiple linear regression.

IV. RESEARCH RESULTS AND DISCUSSION

A. Results of Multiple Linear Regression Analysis

The constant value of X_1 is -0.221, which indicates that non-performing loans have a negative effect on company value. Non-performing loans have a negative effect on company value, explaining that if non-performing loans experience an increase, the company value will decrease by 0.221.

The constant value of X_2 is -0.763, which indicates that operational income operating costs have a negative effect on company value. Operating costs operating income has a negative effect on company value, explaining that if operational income operating costs increase, the company value will decrease by 0.763.

The constant value of X_3 is -1.562, which indicates that the loan to deposit ratio has a negative effect on company value. The loan to deposit ratio has a negative effect on firm value, explaining that if the loan to deposit ratio increases, the firm value will decrease by 1.562.

The X_4 constant value is 0.043, which indicates that return on assets has a positive effect on company value. Return on assets has a positive effect on firm value, explaining that if the return on assets increases, the firm value will increase by 0.043.

The R^2 value is 0.130; this means that 13% of the variation in the company value variable can be explained by variations in the independent variables, while the remainder is (100% - 13% = 87%) influenced by other variables outside of this study.

B. The Effect of Non-Performing Loans on Firm Value

The variable coefficient for non-performing loans is -0.221 with a significance level of 0.039 so that non-performing loans have a negative significant effect on firm company values. Therefore, the first hypothesis (H1) in this study can be accepted. The significant negative effect of non-performing loans on firm value indicates that if non-performing loans increase, it will cause a decrease in firm value, conversely if non-performing loans decrease or are low, firm value will increase.

Non-performing loans are a component of banking assets that must be managed as well as possible so that companies do not experience difficulties in providing credit to customers because they do not have sufficient capital which results in a decrease in bank income. The higher the non-performing loan can illustrate that the poorer the quality of bank credit will cause the number of non-performing loans to increase and can hamper the company's operational activities.

A high non-performing loan ratio will also result in lower interest income received by the bank due to the debtor's failure to fulfill obligations to the bank. The low NPL ratio for banking sub-sector companies on the Indonesia Stock Exchange for the 2019-2021 period is positive information that investors receive when making investment decisions. Companies that are able to manage the number of non-performing loans well and the increasing value of companies owned by banks will increase customer confidence and attract potential investors to invest.

The results of this study support research conducted by Bila and Sugandha (2022), which shows that there is a significant negative effect between Non Performing Loans (NPL) on company value. The higher number of non-performing loans can cause losses for banks which will reduce the level of customer and investor confidence in investing, resulting in a decrease in stock prices and a decrease in company value. Non-performing loans are one of the elements in a company's financial performance that describe the condition of the company, so the company should pay attention to company management in managing the quality of credit owned to prevent disruption to the company's operational activities.

C. Effect of Operational Income Operating Costs on Company Value

The variable coefficient of operating income operating costs is -0.763 with a significance level of 0.137 so operating income operating costs have no significant effect on company value in banking sub-sector companies on the Indonesia Stock Exchange for the 2019-2021 period. Based on this result, the second hypothesis (H2) in this study was rejected. The insignificant effect of operating income operating costs on company value indicates that if there is an increase in the ratio of operating income to operating income in banking sub-

TABLE I: RESULTS OF MULTIPLE LINEAR REGRESSION ANALYSIS

Model	B	Std. Error	t	Sig.
Non-Performing Loans (X_1)	-0.221	0.106	-2.092	0.039
Operating Expenses Operating Income (X_2)	-0.763	0.509	-1.500	0.137
Loan to Deposit Ratio (X_3)	-1.562	0.355	-4.396	0.000
Return on Assets (X_4)	0.043	0.044	0.975	0.332
F stat = 6.946	Sig F = 0.000	$R^2 = 0.130$		

sector companies on the Indonesia Stock Exchange for the 2019-2021 period, it is not related to the high or low value of the company.

Operating income operating costs do not significantly affect firm value because the bank has been able to control the efficiency of operating costs on operating income properly so that banking performance will not be significantly disturbed and. The BOPO of banking sub-sector companies on the Indonesia Stock Exchange for the 2019-2021 period is in an unhealthy condition but has good conditions in terms of capital adequacy so that the amount of operating costs does not affect company value. Operational costs to operating income that have been properly managed cannot significantly affect investors' assessment of company value. The company value proxied by the PBV ratio has an average (mean) of 2.4471 which indicates that the condition of the company's stock price is classified as overvalued. The high or low value of BOPO is not a factor that can affect investors' interest in investing in banking sub-sector companies on the Indonesia Stock Exchange. The operational cost value of operating income is not fully information for investors in assessing the company's performance and prospects as well as factors that can influence investor interest in investing. The results of this study are in line with Melda *et al.* (2022) which shows that there is an insignificant negative effect between Operating Costs Operating Income on company value.

D. Effect of Loan to Deposit Ratio on Firm Value

The coefficient of the variable loan to deposit ratio is -1,562 with a significance level of 0,000 so that loan to deposit has a negative significant effect on company value in banking sub-sector companies on the Indonesia Stock Exchange for the 2019-2021 period. Based on this result, the third hypothesis (H3) in this study can be accepted. The significant negative effect of the loan to deposit ratio on firm value indicates that if the loan to deposit ratio increases, it will cause a decrease in firm value, conversely if the loan to deposit ratio decreases or is low, the firm value will increase.

The low LDR ratio for banking sub-sector companies on the Indonesia Stock Exchange for the 2019-2021 period is positive information that investors receive when making investment decisions. A high loan to deposit ratio can illustrate that banks are in the illiquid category and vice versa if a bank has a low loan to deposit ratio then banks are in the liquid category. Banks that are unable to fulfill short-term obligations will have an impact on disruption of operational activities if there is a withdrawal of funds from a third party.

The lower the bank's ability to return depositors' funds can trigger doubts and loss of investor confidence in the company's prospects so that it will have a negative effect on the value of the company owned. The condition of a high loan to deposit ratio will reduce bank revenue so that it will have a negative impact on company value. Investor confidence in banks will decrease because banks are considered to have poor corporate financial performance and are unable to manage their funds.

The results of this study are in line with research conducted by Bila and Sugandha (2022) which shows that there is a significant negative effect between the Loan to Deposit Ratio (LDR) on company value. The higher the value of the loan to deposit ratio owned by a bank can indicate that the lower the

bank's liquidity capacity due to the large amount of funds used to finance loans. High credit funding will increase interest income, but there is a risk of increasing default conditions or bad debts that will be borne by the bank.

E. Effect of Return on Assets on Firm Value

The variable coefficient of return on assets is 0.043 with a significance level of 0.332, so that return on assets has no significant effect on firm value in banking sub-sector companies on the Indonesia Stock Exchange for the 2019-2021 period. Based on this result, the fourth hypothesis (H4) in this study was rejected. The positive and insignificant effect of return on assets on firm value indicates that if there is an increase in the ratio of return on assets in banking sub-sector companies on the Indonesia Stock Exchange for the 2019-2021 period, it is not related to the high or low value of the company.

The insignificant effect of the variable return on assets on firm value in this study is because ROA only measures profitability through the rate of return on assets. Investors or potential investors assessing a company's profitability tend not only to look at its assets. Companies in the banking sub-sector on the Indonesia Stock Exchange for the 2019-2021 period have low ROA values which are bad information for investors, resulting in low returns. The ROA value for banking sub-sector companies on the Indonesia Stock Exchange for the 2019-2021 period shows that the value of asset growth does not always cause the value of the company's net profit to increase so that it does not affect the high and low stock prices and company value.

The insignificant effect on return on assets indicates that the high or low value of return on assets does not determine that the firm's value is in good condition. Increase or decrease in return on assets has no effect on the increase or decrease in stock prices. Return on assets is not fully information for investors because there are several other factors that are taken into account in determining investment decisions. The results of this study are in line with research conducted by Haq *et al.* (2022) which shows that there is an insignificant positive effect between Return on Assets (ROA) on company value.

F. Research Limitation

The research limitations contained in this study are the scope of research which is limited only to the banking sub-sector companies, the use of company financial ratios as an independent variable which is limited to only 4 (four) variables. The variables studied were NPL, BOPO, LDR, and ROA. The observation period used in this study is limited to 3 (three) years, namely 2019 to 2021.

V. CONCLUSION

Non-Performing Loan (NPL) and Loans to Deposits Ratios (LDR) negatively impacted value of banking firm, whereas bad bank credits increased NPL and reduced interests of incomes that would hampering firm activity. Operating Costs Operating Income (BOPO) with Return on Assets were found not related with values of firms. BOPO ratio is in an unhealthy condition but has a good condition in terms of capital adequacy so that the amount of operational costs does not affect the company's value. The ROA value indicates that

the value of asset growth does not always cause the value of the company's net profit to increase so that it does not affect the highs and lows of stock prices and company value. The increase or decrease in return on assets does not fully affect prices because there are several other factors that are taken into account in determining investment decisions.

It is hoped that the study being use as a consideration by company management to be able to determine policies in lending by analyzing credit to be disbursed by establishing a prudent strategy. Analyzing customers before extending credit can reduce the risk of bad credit which will harm the bank. Banks are expected to control operational costs so as not to harm and reduce bank profits and disrupt the level of effectiveness and efficiency of banks. The level of liquidity by looking at the loan to deposit ratio (LDR) must be considered for stability so as not to make it difficult for banks to carry out their operational activities. A stable and high LDR ratio is expected to be able to increase the bank's profit so that it can increase market players' assessment of the bank. Increasing the value of bank profitability can provide a positive response or information for investors and cause an increase in stock prices resulting in an increase in firm value.

The study is hoped to give scope of knowledge for future investor for decision making at investing on banking companies on the IDX. Investors should also pay attention to the company's external factors because the condition of a company cannot be separated from the influence of external and internal factors.

This research is expected to be useful for further researchers as a reference in research with relevant variables. Future researchers are expected to be able to add other variables that can affect company value and be able to expand the scope of research so as to be able to provide a more comprehensive view and diverse research results.

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