

## THE EFFECT OF NPL, LDR, AND BOPO ON COMPANY VALUE (PBV) THROUGH ROA AND COMPANY VALUE (PBV) ON INVESTMENT DECISIONS (PER)

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**Abstract.** The success of bank companies in increasing profits can be seen from the effectiveness and efficiency of banks in using their assets optimally. The aim of this research is to determine and analyze the influence of Credit Risk, Liquidity and Efficiency Level on Company Value with Profitability as an Intervening Variable and the influence of Company Value on investment decisions in Banking Companies listed on the Indonesia Stock Exchange that have met the criteria for the 2016-2022 period. The sampling method used in this research is the purposive sampling method. The sample obtained was 12 banking companies from 41 populations. The research uses secondary data obtained from annual reports on each company's website. The data analysis technique used in this research is path analysis using AMOS 23 software. The results of this research show that credit risk and the level of efficiency have a negative effect on profitability. Liquidity has no effect on profitability. Credit risk, liquidity and efficiency levels have a negative and significant effect on company value. Profitability has no effect on company value. Profitability mediates the influence of credit risk, liquidity, and efficiency level on company value. Company value has a positive effect on investment decisions.

**Keywords:** Company Value, Credit Risk, Efficiency Level, Liquidity

**Abstrak.** Keberhasilan perusahaan perbankan dalam meningkatkan laba terlihat dari efektifitas dan efisiensi bank dalam menggunakan asetnya secara optimal. Tujuan dari penelitian ini adalah untuk mengetahui dan menganalisis pengaruh risiko kredit, likuiditas dan tingkat efisiensi terhadap nilai perusahaan dengan profitabilitas sebagai variabel intervening dan pengaruh nilai perusahaan terhadap keputusan investasi pada perusahaan perbankan yang terdaftar di Bursa Efek Indonesia yang telah terpenuhi. Metode pengambilan sampel yang digunakan dalam penelitian ini adalah metode purposive sampling. Sampel yang diperoleh sebanyak 12 perusahaan perbankan dari 41 populasi. Penelitian ini menggunakan data sekunder yang diperoleh dari laporan tahunan di website masing-masing perusahaan. Teknik analisis data yang digunakan dalam penelitian ini adalah analisis jalur dengan menggunakan software AMOS 23. Hasil penelitian menunjukkan bahwa risiko kredit dan tingkat efisiensi berpengaruh negatif terhadap profitabilitas. Likuiditas tidak berpengaruh terhadap profitabilitas. Risiko kredit, likuiditas dan tingkat efisiensi berpengaruh negatif dan signifikan terhadap nilai perusahaan. Profitabilitas tidak berpengaruh terhadap nilai perusahaan. Profitabilitas memediasi pengaruh risiko kredit, likuiditas dan tingkat efisiensi terhadap nilai perusahaan. Nilai perusahaan berpengaruh positif terhadap keputusan investasi

**Kata Kunci:** Nilai Perusahaan, Risiko Kredit, Tingkat Efisiensi, Likuiditas

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## PENDAHULUAN

Banking has a very large role in driving the national economy because banks play a role in all economic activities. Banks have permission to collect funds directly from the public in the form of deposits which are then allocated in the form of loans both in the form of credit and investment, as well as provide capital for economic activities that require additional funds (Douglas, 2008; Erturk & Solari, 2007; Prokopenko et al., 2019).

A bank is a business unit that aims to make a profit. As a collector of public funds, banks need to gain public trust to store public funds. Banks that have better financial health will gain higher trust from the public. A good company can be seen from the value of the company. Company value is the perception of investors towards the company (Rodgers et al., 2013). The higher the share price, the higher the value of the Company. The value of the company can be increased by increasing profits. One of the activities carried out by the bank is the distribution of credit which is expected to generate profits for a banking company. Profitability is the profit that a company earns from completed sales (Uremadu et al., 2012). If the company performs well, the profit generated by the company can increase, which can cause both positive and negative reactions from investment and can also affect the value of the company (Barauskaite & Streimikiene, 2021; Mukhtaruddin et al., 2019; Sukesti et al., 2021).

The success of bank companies in increasing profits can be seen from the effectiveness and efficiency of banks in using their assets optimally. Increasing Return on Assets at banks will have an impact on increasing company value. Credit risk is measured by Non-Performing Loan (NPL). NPL is a financial ratio that shows the credit risk faced by banks due to lending and investing bank funds in different portfolios. The smaller non-performing loans illustrate that the bank can channel its credit to customers optimally, so it is expected that the profits obtained by the bank will increase. Increased bank profitability has an impact on the value of the company (Ikhsan et al., 2022). Non-performing loans must be managed optimally so that loans provided to the public and in terms of credit repayment must be in accordance with the applicable terms and conditions so as not to cause non-performing loans. Liquidity is measured by the Loan to Deposit Ratio (LDR). LDR is a ratio that shows the level of a bank's ability to channel its funds (Juwita et al., 2018; Santoso et al., 2018). The higher the LDR indicates the amount of funds disbursed in the form of credit, the bank benefits from credit interest. The higher the LDR ratio, the higher the funds distributed to third parties, so that LDR will increase, and this will increase the profitability of a bank which has an impact on increasing company value (Anggari & Dana, 2020; Riadi, 2018; Saleh & Winarso, 2021).

The level of efficiency of banks in carrying out their operational activities is measured by Operating Costs to Operating Income (BOPO). Banks must pay attention to operational cost efficiency to achieve maximum profitability. If the BOPO value is high, it can be indicated that the bank is in a troubled state. This can affect credit disbursement activities, which in turn will affect company performance and company value (Ikhsan et al., 2022; Kwashie et al., 2022).

Investment decisions are one of the important factors to be able to achieve company goals by increasing shareholder comfort through company investment activities. The purpose of investment decisions is to be able to achieve a high profit stage by going through certain risk stages (Kwashie et al., 2022). Price to Earning ratio is a description of the number of rupiah that investors must pay to get one rupiah of company earnings (Lutfi & Arsitha, 2016; Rangkuti et al., 2022; Zakiyah & Istifadah, n.d.). The use of the price earning ratio is to see how the market values the performance of a company which is reflected by its earnings per share (Choiriyah et al., 2020).

## **METHOD**

The population in this study is banking companies, namely Commercial Banks listed on the Indonesia Stock Exchange (IDX) in 2016-2022. The sampling technique uses purposive sampling technique.

### **Data Types and Sources**

The type of data used in this study is the Company's annual report data. Meanwhile, the data source used in this study is secondary data. The secondary data used in this study is in the form of financial information in the annual report for the 2016-2022 period which can be traced through the web of each company.

### **Variability Research**

Independent Variables (X): NPL (Non Performing Loan), LDR (Loan to Deposit Ratio) and BOPO (Operating Expenses to Operating Income) for the 2016-2021 research year

Variabel Dependen (Z): PBV (Price to Book Value) dan PER (Price Earning Ratio) tahun penelitian 2017-2022

Intervening Variable (Y): ROA (Return on Assets) for the year 2016-2021

## Analysis Techniques

Path analysis is a development of a regression model used for the fit of the correlation matrix of two or more models compared by the researcher. Pathway analysis is a further development of multiple regression and bivariate analysis. Pathway analysis wants to test regression equations involving several exogenous and endogenous variables at once so as to allow testing of mediating/intervening variables or intermediate variables.

Ghozali, Imam (2008) proposes the stages of modeling and structural equation analysis into 7 (seven) steps, namely step 1 is Theory-Based Model Development. Steps 2 and 3 include Building Path Diagrams and Structural Equations. Step 4 is Selecting the Type of Input Matrix and Estimating the Proposed Model. Step 5 is Assessing Structural Model Identification. Step 6 is Evaluating Goodness-of-Fit Criteria. Step 7 is Model Interpretation and Modification.

## RESULTS AND DISCUSSIONS

### Normality Test

To test whether our data is normally distributed or not in the AMOS program can be done by looking at the output *assessment of normality*. The normality of the data can be seen from the critical *ratio* (CR) value in *skewness and multivariate kurtosis* is between -2.58 to 2.58 at a significant level of 5% (0.05), while if the value of c.r Multivariate exceeds 2.58 then it is said that the data is not normally distributed.

**Table 1.** Preliminary results of data normality

Variable	Min	Max	Skew	C.R	Kurtosis	C.R
BOPO	.540	.980	-.452	-1.565	-.291	-.505
LDR	.510	1.630	1.108	3.839	4.577	7.928
NPL	.010	0.50	.074	.256	-.674	-1.168
ROA	.000	.040	.066	.230	-.535	-.926
PBV	.510	5.500	1.463	5.069	1.768	3.062
PER	.670	2.030	0.835	2.891	1.608	2.785
Multivariate					12.920	5.594

Source: Output Amos v.23 (2024)

The normality test result was 5,594 which means that the research data did not meet the normality assumption.

### Outlier Assumptions

The first step is to look at *the d-squared Mahalanobis*. The criteria used are at p level < 0.001. Then the distance was evaluated using  $\chi^2$  at free degrees equal to the number of

measured variables used in the study. The second step is to look at the values of p1 and p2. The data is said to be an *outlier* if the p1 and p2 values <0.05.

**Table 2.** Outlier data results

Observation Number	Mahalanobis d-Squared	P1	P2
21	29.285	.000	.004
64	21.511	.001	.005
2	14.933	.021	.189
22	14.260	.027	.129
6	14.142	.028	.052
28	13.359	.038	.054
10	13.084	.042	.031
65	12.906	.045	.015
3	12.318	.055	.017

Source: Output Amos v.23 (2024)

From the test results, there are quite a lot of outliers in the research data, so all these data need to be deleted. Furthermore, after the *outlier data* is deleted, a normality test is carried out again to see whether the data has met the normality assumption or not, if the data has met the normality assumption, the analysis is continued with the model feasibility test, but if the research data has not met the normality assumption, outlier detection and elimination are carried out again until data that meets the normality assumption is obtained. The following are the results of the data normality test after outlier elimination.

**Table 3.** Data normality test results after outliers

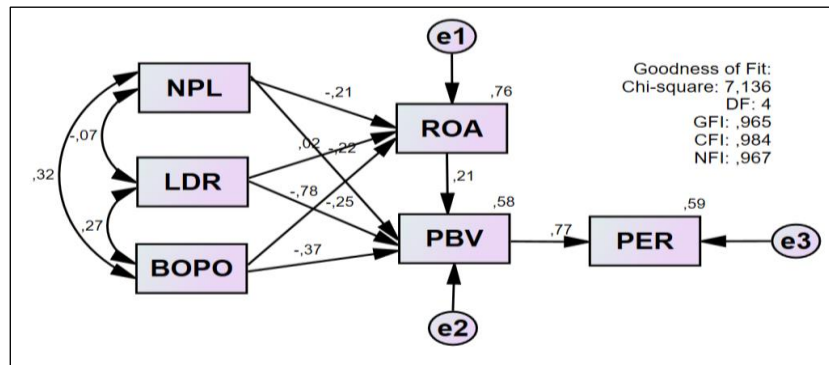
Variable	Min	Max	Skew	C.R	Kurtosis	C.R
BOPO	.560	.930	-.402	-1.305	-.478	-.774
LDR	.510	1.230	.500	-1.620	.654	1.060
NPL	.010	0.50	-.047	-.154	-.622	--1.008
ROA	.010	.040	.239	.776	-.665	-1.077
PBV	.510	4.440	1.041	3.373	.588	.952
PER	.670	1.460	0.052	.169	-.903	-1.463
Multivariate					.129	0.52

Source: Output Amos v.23 (2024)

From the results of the normality of 72 data, 9 outliers were found, so the data must be eliminated or deleted. Thus, the data in the study left 63 data. From the table above, it can also be seen that the multivariate c.r value obtained from the normality test results after elimination of outlier data is 0.052. This value is in the range between - 2.58 to 2.58 which means that the research data has met the normality assumption.

**Test Model Eligibility**

Model testing is intended to determine whether a model is feasible to test a hypothesis. Figure 1 is the *path diagram* generated after performing the feasibility testing stage of the model.



**Figure 1.** Path diagram (Source: Processing data AMOS 23, 2024)

**Table 4.** Model qualification test results

Fit Test	Cut-Off	Result	Description
X <sup>2</sup> -Chi-Square	9.4888	7.136	Fit
DF	4		
GFI	ε0.90	0.965	Fit
CFI	ε0.90	0.984	Fit
NFI	ε0.90	0.967	Fit
CMIN/DF	δ2.00	1.784	Fit
TLI	ε0.95	0.942	Marginal Fit

Source: Output AMOS Version 23 (2024)

From table 4 above it can be seen that the values of Chi-Square, GFI, CFI, NFI and CMIN/DF have fit values and TLI values that are close to standard values. Thus, it can be concluded that the model in this study is acceptable and can be continued for the next stage.

**Table 5.** Regression weights: (group number 1 – default model)

	Estimate	S.E	C.R	P	Label
ROA ∆ NPL	-.171	.056	-3.048	.002	par_4
ROA ∆ LDR	.001	.004	.273	.785	par_6
ROA ∆ BOPO	-.083	.007	-11.230	***	par_8
PBV ∆ NPL	-19.116	8.144	-2.347	.019	par_5
PBV ∆ LDR	-1.714	.606	-2.825	.005	par_7
PBV ∆ BOPO	-4.027	1.743	-2.311	.021	par_9
PBV ∆ ROA	21.687	17.213	1.260	.208	par_10
PER ∆ PBV	.159	.017	9.495	***	par_11

Source: Output AMOS Version 23 (2024)

**Table 6.** Standardized regression weights (group number 1 – default model)

	<b>Estimate</b>
ROA $\square$ NPL	-.205
ROA $\square$ LDR	.018
ROA $\square$ BOPO	-.785
PBV $\square$ NPL	-.223
PBV $\square$ LDR	-.246
PBV $\square$ BOPO	-.369
PBV $\square$ ROA	.210
PER $\square$ PBV	.770

Source: processing data AMOS 23 (2024)

**Table 7.** The Effect of credit risk, liquidity and efficiency level on company value and profitability and the effect of company value on investment decisions

	<b>Estimate</b>	<b>Probability</b>	<b>R-square</b>
ROA $\square$ NPL	-.205	0.002	
ROA $\square$ LDR	.018	0.785	0.755
ROA $\square$ BOPO	-.785	0.000	
PBV $\square$ NPL	-.223	0.019	
PBV $\square$ LDR	-.246	0.005	
PBV $\square$ BOPO	-.369	0.021	0.579
PBV $\square$ ROA	.210	0.208	
PER $\square$ PBV	.770	0.000	0.593

Source: processing data AMOS 23 (2024)

**The Effect of Credit Risk (NPL) on Profitability (ROA)**

The probability value is  $0.002 < 0.05$  with an estimated value of  $-0.205$ . Credit risk has a negative and significant effect on profitability so that H1 is accepted. A high NPL value can influence decreasing bank profitability, this shows that banks are less careful in lending so that it can reduce profits.

- **Effect of Liquidity (LDR) on Profitability (ROA)**

The probability value is  $0.785 > 0.05$ . From these results, it shows that liquidity has no effect on profitability so that H2 is rejected. This effect does not indicate that if the LDR value increases, it will not be followed by an increase in profitability. If the total credit disbursed is greater than the total third-party funds, then the bank cannot increase its profitability value. The higher the credit score disbursed, this indicates that the bank has a low level of liquidity

- **Effect of Efficiency Rate (BOPO) on Profitability (ROA)**

The probability value is  $0.000 < 0.05$  with an estimated value of  $-0.785$ . From these results, it shows that the level of efficiency has a negative and significant effect on

profitability so that H3 is accepted. Companies that are inefficient in managing operational costs incurred will cause the company's lower ability to create profits.

- Effect of Credit Risk (NPL) on Company Value (PBV)

The probability value is  $0.019 < 0.05$  with an estimated value of  $-0.223$ . From these results, it shows that credit risk has a negative and significant effect on the value of the company so that H4 is rejected. A high level of credit risk indicates that the bank has a lot of non-performing loans. Companies are less able to manage the level of credit risk well. This condition will make investors less interested in investing in the company.

- Effect of Liquidity (LDR) on Company Value (PBV)

The probability value is  $0.005 > 0.05$  with an estimated value of  $-0.246$ . From these results, it shows that liquidity has a negative and significant effect on the value of the company so that H5 is accepted. The high credit disbursed can have an impact on the risk of default. The risk of default results in the company being unable to pay the credit that will be withdrawn by depositors which means the company is illiquid. This can affect investor judgment in looking at the company's performance. A low PBV value indicates a decline in the quality and fundamental performance of the issuer concerned.

- The Effect of Efficiency Level (BOPO) on Company Value (PBV)

The probability value is  $0.021 < 0.05$  with an estimated value of  $-0.369$ . From these results, it shows that the level of efficiency has a negative and significant effect on the value of the company so that H6 is accepted. The bank is unable to control and maintain the efficiency of operating costs against operating income properly, so that it will significantly disrupt the bank's performance and affect investors' assessment of the company's value.

- The Effect of Profitability (ROA) on Company Value (PBV)

The probability value is  $0.208 > 0.05$ . From these results show that profitability has no effect on the value of the company so that H7 is rejected. A high profitability value will not reduce the value of the Company. If the company's profitability is high, then the company's performance is also considered more productive, and the company's value does not decrease.

**Table 8.** Direct and indirect effects of credit risk, liquidity and efficiency level on company value with profitability as an intervening variable

Description	Influence		Total
	directly	indirect	
ROA $\square$ NPL	-.205		-.205
ROA $\square$ LDR	.018		.018
ROA $\square$ BOPO	-.785		-.785
PBV $\square$ NPL	-.223	-0.043	-.266
PBV $\square$ LDR	-.246	0.004	-.242
PBV $\square$ BOPO	-.369	-0.165	-.534
PBV $\square$ ROA	.210		.210
PER $\square$ PBV	.770		.770

Source: processing data output AMOS 23 (2024)

- The Effect of Credit Risk (NPL) on Company Value (PBV) with Profitability (ROA) as an Intervening Variable

The influence is not tangung greater than the direct influence, this shows that profitability is able to mediate the effect of credit risk on the value of the company so that H8 is accepted. Banks can manage the level of risk well, so that there are no bad loans, banks can earn interest on the principal loan and increase the value of its profitability. A high profitability value will give a good signal to investors and will increase the value of the Company.

- The Effect of Liquidity (LDR) on Company Value (PBV) with Profitability (ROA) as an Intervening Variable

Indirect influence is greater than direct influence, this shows that profitability can mediate the effect of liquidity on the value of the company so that H9 is accepted. The company disburses credit well. Companies can benefit from credit interest payments, this will be considered a positive signal by investors so that it can increase the value of the company

- The Effect of Efficiency Level (BOPO) on Company Value (PBV) with Profitability (ROA) as an Intervening Variable

Indirect influence is greater than direct influence, this shows that profitability can mediate the influence of efficiency levels on company value so that H10 is accepted. The smaller the value of BOPO indicates the more efficient the bank is in carrying out its operational activities, because the operational costs that must be borne are smaller than its operating income. So that the bank's operational activities generate profits, which can increase the bank's capital and minimize the level of risk. High profitability can give positive signals to investors.

- The Effect of Corporate Value (PBV) on Investment Decisions (PER)

The probability value is  $0.000 < 0.05$  with an estimated value of 0.770. From these results, it shows that the Company Value has a positive and significant effect on investment decisions so that H11 is accepted. The high value of the company is able to foster peace, especially for investors, therefore causing investors no anxiety to invest their shares in the banking company.

## CONCLUSION

This study aims to analyze the effect of credit risk, liquidity, and efficiency level on firm value with profitability as an intervening variable and the effect of firm value on investment decisions in banking companies listed on the Indonesia Stock Exchange for the period 2016-2022. The results showed that credit risk and efficiency level negatively affect profitability, while liquidity has no effect. Credit risk, liquidity, and efficiency level have a negative and significant effect on firm value, but profitability has no effect on firm value. Profitability mediates the effect of credit risk, liquidity, and efficiency level on firm value. Firm value has a positive effect on investment decisions. In conclusion, banking companies need to manage credit risk, liquidity, and efficiency levels well in order to increase profitability and firm value, which in turn will attract investors to invest.

For future research, it is recommended to expand the scope of the research sample not only limited to banking companies listed on the Indonesia Stock Exchange, but also can include banking companies from other countries or even other industries outside banking. This will provide a broader perspective on the effect of credit risk, liquidity, and efficiency level on firm value and investment decisions. In addition, research can explore other variables that may be influential, such as macroeconomic factors, government policies, or aspects of good corporate governance. Different methodological approaches, such as case studies or mixed methods, can also be considered to gain a deeper understanding of this topic.

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