

## The Effect of Liquidity Risk, Credit Risk, and Operational Risk on Profitability in Banking Companies in Indonesia

### (Case Study on Banking in Indonesia)

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#### Abstract

*This study aims to examine the effect of liquidity risk, credit risk and operational risk on profitability (an empirical study of Indonesian banking companies). This research is classified as causal research. This research covers several banking institutions (companies) in Indonesia from 2018 to 2022. The type of research used in this research is a descriptive verification research method with a quantitative approach. Data analysis techniques in this study were T test, F test, multiple linear regression analysis, normality analysis, heteroscedasticity analysis and multicollinearity analysis. If it is based on the results of testing using the multiple regression method with a significance level of 5%, we can conclude the results in this study, namely: (1) Credit risk has no significant effect on the profitability of banking companies in Indonesia and its significance value is  $0.917 > 0.05$ . (2) Liquidity risk has no significant effect on the profitability of banking companies in Indonesia and its significant value is  $0.853 > 0.05$ . (3) Operational risk has a significant positive effect on the profitability of banking companies in Indonesia and its significance value is  $0.000 < 0.05$ . (3) Operational risk has a significant positive effect on the profitability of banking companies in Indonesia and its significance value is  $0.000 < 0.05$ .*

**Keywords:** LDR, BOPO, ROA

#### INTRODUCTION

In today's modern era, the position of the banking sector as a driver of the country's economic activity is very large. Almost all sectors related to different financial activities always need banking services. That is why we are also not going to part with the world of banking in the future, if we want both individual and institutional, and social and commercial.

In bank operations, the focus is on maximizing profits. The ability of banks to create profits effectively and efficiently is called profitability. This study uses return on investment (ROA) to measure profitability. Although banks use various profitability evaluation indicators, researchers use ROA figures because ROA takes into account the ability of a management to obtain overall profitability and management efficiency.

Sources of funding are the most important thing for banks to increase lending to the public. The banking sector requires the availability of funds to extend credit. If the bank's assets are getting bigger, of course this will provide an opportunity for the bank to fulfill its duties.

Third Party Funds (DPK) are funds originating from the wider community which are one of the essential sources of bank operations and are a measure of bank success if the bank can fulfill operational costs from these funding sources (Kasmir, 2012: 59). Banks always hope to have a leading position in society so that cash flows from those who have excess wealth can be adjusted and then channeled back to the community. The main advantage of the bank lies in the interest income that is obtained from a certain amount. DPK grows, so banks have better opportunities and opportunities to earn more income. It can be said that TPF has a positive correlation with profitability (profit) which is calculated using the ROA ratio.

The banking industry must operate at a safe level because it is very vulnerable to public trust in its use. For potential bank risks such as liquidity risk, credit risk and operational risk, a banking safety net is provided.

## LITERATURE REVIEW

### Profitability (Return on Assets)

This risk arises because the distribution of cash in the form of loans is wider than savings or public deposits, causing risks that need to be handled by banks. In this study, the possibility of liquidity is represented by the loan ratio (LDR).

According to Dendawijaya (2009), the loan to deposit ratio (LDR) compares the amount of loans submitted or provided by the bank to customers with the total value of money held by the bank in its own account. In accordance with Bank Indonesia Regulation No. 15/7/PBI/2013, Article 10, the minimum LDR is 78%, while the maximum LDR is 92%. If the LDR is below 78%, it can be assumed that the bank cannot manage loan funds regularly. If the bank's LDR ratio rises above 92%, the bank's loans exceed its loan funds. The greater the LDR of a bank, the smaller the scope of success of the management team in generating profits. This is because banks are still experiencing cash flow problems, or maybe because banks are not increasing their return on investment (ROA).

### Bank Financial Ratios

Kasmir (2010) defines financial ratios as the process of dividing one number by another to compare numbers in financial statements. Financial ratios according to Hanafi (2005) are the results of calculations performed between two bank financial data that are used to describe numerically the relationship between the two, using either percentages or multiplication.

### **Loan To Deposit Ratio**

Comparison between credit and Third Party Funds (DPK) is done by Loan to Deposit Ratio (LDR). LDR is the ratio between the volume of credit and the volume of deposits held by a bank. A low LDR indicates a low level of liquidity, while a high LDR indicates a high level of liquidity. Bank Indonesia regulations stipulate a healthy LDR range between 78% and 100%.

### **Operational Risk (BOPO)**

Operating Expenses Operating Income (BOPO) is commonly referred to as a Performance Ratio. According to Rivai et al (2013: 480) the BOPO ratio is a comparison of operating expenses and operating results used to measure a bank's ability and bank efficiency in operating its business operations. That is, if the ratio goes down, then the bank's operating costs become more efficient.

Operational risk is a risk of insufficiency or loss due to failure of internal stages, systems and human resources, or external events (Idroes, 2011: 23). if based on Bank Indonesia Circular No. 8/31/DPBPR dated 12-12-2006 BOPO has a research objective to understand the level of operational efficiency which is measured by comparing the company's operating income with operational costs for the last 12 months. (Riyadi 2006: 159), confirms that if the level of this indicator is above 90% and close to 100% then the bank's performance illustrates a low level of efficiency, but if the level of this indicator is low or close to 75%, it means that the bank's performance describes efficiency that has high level. Banks with high BOPO levels illustrate that the bank concerned does not carry out its operational activities effectively, so that the bank's operational risk becomes higher (Nurnaningsih, Amriani 2012). Irham Fahmi (2016), emphasized that operational risk refers to risks that are usually caused by internal problems within the company. This risk arises due to weaknesses in the control management system implemented by the company's internal parties.

## **METHOD**

### **Object of research**

What is meant by "object of research" are the characteristics, beliefs, or characteristics of people, objects, or activities that researchers choose to study and then draw conclusions (Sugiyono: 2010). Financial ratios in the annual financial reports of banks registered with Bank Indonesia are the subject of this study.

### **Type and Source**

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Data The time series data used in this study are quantitative in nature. Secondary data was obtained from the Bank's Annual Financial Report for 2007-2014 which can be viewed at [www.bi.go.id](http://www.bi.go.id).

**Collection Method**

Data Because this research uses secondary data, the data collection method is a documentation technique based on bank financial reports registered and published by Bank Indonesia between 2007 and 2014 through the official website ([www.bi.go.id](http://www.bi.go.id)) and literature review using information from journals, articles, previous research, and books that discuss bank ratio analysis.

**Table 1. Variable Operational Definitions**

No.	Variable	Symbol	Scale	Measurement
1	ROA	ROA	Percent (%)	$ROA = \frac{\text{Laba Sebelum Pajak}}{\text{Total Asset}} \times 100\%$
2	CAR	cra	Percent (%)	$CAR = \frac{\text{Modal Bank}}{\text{Total ATMR}} \times 100\%$
3	CR	CR	Percent (%)	$CR = \frac{\text{Alat Liquid}}{\text{TKewajiban yang Segera Dibayar}} \times 100\%$
4	LDR	LDR	Percent (%)	$LDR = \frac{\text{Total Kredit}}{\text{Total Dana Pihak Ketiga}} \times 100\%$
5	NPLs	NPLs	Percent (%)	$NPL = \frac{\text{Tptal Kredit Bermasalah}}{\text{Total Kredit}} \times 100\%$
6	NIM	NIM	Percent (%)	$NIM = \frac{\text{Pendapatan Bunga}}{\text{Rata - rata Aktiva Produktif}} \times 100\%$
7	BOPO	BOPO	Percent (%)	$BOPO = \frac{\text{Total Beban Operasional}}{\text{Total Pendapatan Operasional}} \times 100\%$

Source: Processed data, 2023

**DISCUSSION RESULT**

**Results**

Based on the output of multiple linear regression analysis, it shows that the variable liquidity risk and credit risk and liquidity simultaneously have no effect on profitability at banks in Indonesia for the 2018-2022 period. To understand how credit risk affects profitability, it is done using a measurement using SPSS20 software, so we can know the regression output shows a significant value of 0.000 <0.05. In this case we can draw the conclusion that partially credit risk and liquidity risk do not simultaneously affect the profitability of banks in Indonesia.

BANK NAME	YEAR	NPL (X1)	LDR (X2)	BOPO (X3)	BOPO (Y)
	2018	0.67	96.74	66.48	3.17
	2019	0.84	96.37	67.44	3.03



<b>MANDIRI BANK</b>	2020	0.43	82.95	80.03	1.64
	2021	0.41	80.04	67.26	2.53
	2022	0.26	77.61	57.35	3.3
<b>BANK BNI</b>	2018	0.85	88.76	70.15	2.78
	2019	1.25	91.54	73.16	2.42
	2020	0.95	87.28	93.31	0.54
	2021	0.73	79.71	81.18	1.43
	2022	0.57	91.18	68.05	2.48
<b>BANKBRI</b>	2018	0.29	88.96	68.4	3.68
	2019	1.04	88.64	70.1	3.5
	2020	0.8	83.66	81.22	1.98
	2021	0.7	83.67	74.3	2.72
	2022	0.73	79.17	64.2	3.76
<b>BANKBTN</b>	2018	1.83	103.49	85.58	1.34
	2019	2.96	113.5	98.12	0.13
	2020	2.06	93.19	91.61	0.69
	2021	1.2	92.86	89.28	0.81
	2022	1.32	92.65	86	1.02
<b>BANK BCA</b>	2018	0.4	81.6	58.2	3.2
	2019	0.5	80.5	59.1	3.2
	2020	0.7	65.8	63.5	2.7
	2021	0.8	62	54.2	2.8
	2022	0.6	65.2	46.5	3.2
	2018	1.27	67.23	77.78	2.47

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<b>MEGA BANK</b>	2019	2.25	69.67	74.1	2.9
	2020	1.07	60.04	65.94	3.64
	2021	0.81	60.96	56.06	4.22
	2022	0.91	68.04	56.76	4

Source: Processed data, 2023

**HYPOTHESIS TESTING H1 H2 H3 BY T TEST**

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	7.998	.714		11.196	.000
	NPL	.023	.215	.013	.105	.917
	LDR	-.002	.010	-.023	-.187	.853
	BOPO	-.075	.012	-.874	-6.021	.000

a. Dependent Variable: ROA

Source: Processed data, 2023

From Table 2 above it can be seen that credit risk as measured by Non Performing Loans (NPL) has no significant effect on profitability because the significance value is 0.917 > 0.05 and T-count 0.105 < 2.04, so it can be concluded that H1 is rejected which means NPL (X1) has no effect on ROA (Y).

Based on Table 2 above, it can be concluded that liquidity as measured by LDR (Loan-to-Deposit-Ratio) has no effect on the profitability of Indonesian banking corporations because its significance value is 0.853 > 0.05. Therefore, it can be concluded that H2 is rejected. This means that LDR (X2) has no effect on ROA (Y).

From Table 2 above it can be seen that operational risk as measured by Operational Income Operating Costs (BOPO) has an effect on the profitability of Indonesian banking companies with a significant value of 0.000 < 0.05, it can be concluded that H3 is accepted, which means BOPO (X3) has a significant effect on ROA (Y).

If the research process has been completed and get the information needed. Then test the proposed hypothesis. Liquidity risk, credit risk and operational risk are assumed to simultaneously affect the profitability of state-owned banks and private-owned banks. A series of statistical test steps were performed to test the hypothesis, including multiple regression tests, etc.

From the multiple regression test table (attached), the following multiple regressions are obtained.

$$Y = 7.998 + 0.023 \text{ NPL} - 0.002 \text{ LDR} - 0.075 \text{ BOPO}$$

## TESTING THE H4 HYPOTHESIS WITH THE F TEST

### ANOVA<sup>a</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	27.202	3	9.067	30.107	.000 <sup>b</sup>
	Residual	7.830	26	.301		
	Total	35.032	29			

a. Dependent Variable: ROA

b. Predictors: (Constant), BOPO, NPL, LDR

Source: Processed data, 2023

Based on the output of table 3 above, it is known that the significance value for the simultaneous effects of X1, X2, and X3 on Y is 0.000 < 0.005 so it can be concluded that H4 is accepted, which means that there are influences of X1, X2 and X3 simultaneously on Y.

### Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.881 <sup>a</sup>	.776	.751	.54879

a. Predictors: (Constant), BOPO, NPL, LDR

Source: Processed data, 2023

Based on the management results of table 4 of the coefficient of determination (attached), the value of the coefficient of determination (R Square) shows the magnitude of credit risk, liquidity risk and operational risk on the profitability obtained, which is equal to 0.776 or 77.6%. This means that 77.6% of the profitability obtained is influenced by credit risk, liquidity risk and operational risk.

## CONCLUSION

Based on the results of data analysis and discussion of the effect of liquidity risk, credit risk and operational risk on the profitability of Indonesian banking companies for the 2018-2022 period described in Chapter IV, we can draw the following conclusions:

1. Based on the results of the study it was concluded that credit risk partially did not have a significant effect on profitability. Therefore, the first hypothesis (H1) is rejected. The higher the NPL as an indicator of credit risk, the worse the quality of the bank which leads to a decrease in profitability in terms of ROA.
2. Based on the results of the t test, this study concludes that liquidity risk has no significant effect on profitability. Therefore, the second hypothesis (H2) is rejected. The higher the liquidity risk reflected in the LDR, the

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better the profitability. An increase in LDR indicates high lending, but not with high yields or poor credit quality, causing banks to suffer losses or reduce profitability.

3. Based on the results of data analysis, this study concluded that operational risk has a significant effect on profitability. Thus, the third hypothesis (H3) is accepted. This provides an illustration related to when operational risks arise, banks whose regulators are responsible for creating protection against failures in the banking system and the economy.
4. Based on the results of this research data analysis it was concluded that liquidity risk, credit risk, operational risk and risk have a simultaneous or combined effect on profitability. Thus the last hypothesis (H4) is accepted.

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