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Impact of Credit Risk, Distribution of Interest Rate, and Liquidity on Bank Profitability

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ABSTRACT

Developing Islamic finance in Indonesia is needed to strengthen a sustainable economic structure. This issue is based on the promising potential of Islamic economic and financial development. This study examines the impact of credit risk, the spread of interest rates, and liquidity on bank profitability. The population in this study is Islamic banking companies in Indonesia during the 2014-2018 period. The sample was chosen from the purposive sampling method and obtained a sample of 50 companies from several criteria. This research uses multiple linear regression analysis with the help of SPSS version 21. This research shows that credit risk and liquidity affect bank profitability. At the same time, the spread of interest rates does not affect banks' profitability.

1. Introduction

Developing Islamic finance in Indonesia is needed to strengthen a sustainable economic structure. This issue is based on Islamic finance and economic development potential, which is profitable and promising in the community. The development of financial and banking institutions in Indonesia is speedy, starting with establishing Bank Muamalat Indonesia (BMI) in 1991. Over time the establishment of BMI motivated the emergence of other Islamic banking institutions.

Profitability is the company's potential to generate a bank's profit during a specific period, which will be influenced by several factors: the interest rate factor. If the interest rate

turns out to be high, it is clear that the cost will be high as well. This issue can lead to inflation to make productivity low and investments that are not safe to invest funds. Islamic and general banks lose their intermediation function. Aboagye et al. (2008) examined the response of interest rates spread to specific characteristics of the bank and macroeconomic factors based on the Ho and Saunders model. The analysis results show that bank size, staff administrative costs, inflation, market power, level of risk aversion are positively related to the spread of interest rates on occasional lending rates, excess reserves. Besides, management efficiency is negatively related to the spread of interest rates.

Banks often experience credit risk because, besides functioning to collect funds from the public and provide credit to them, it does not cover credit problems. According to Saputra and Budiasih (2016), giving and paying on credit by banks that contain risks is a form of non-performing loans. Li and Zou (2014) examined the relationship between credit risk management and the profitability of commercial banks in Europe. Non-performing credit ratios and capital adequacy ratios were used as independent variables and proxies for credit risk, and return on assets and equity were used as measures for profitability.

In ensuring an effective working capital policy, the company will face a trade-off between profitability and liquidity. Here, liquidity will be safe if a company has decided on working capital in a large enough amount. Still, if the opportunity to make a profit is very high, there will be a decrease and ultimately can decrease profitability. And vice versa, if the company hopes that profitability can be maximized, this is likely to affect the company's level of liquidity. From all the explanations above, it can be concluded that liquidity and the effectiveness of working capital can affect profitability. According to Nugraheni and Alam (2014), liquidity risk also describes the level at which a company or bank cannot achieve its obligations to other customers.

The researcher reviews impacts that affect bank profitability from some of the above backgrounds. The proxies used are credit risk, the spread of interest rates, and liquidity as independent variables. The benefits of this research are to provide guidelines and references about bank profitability.

2. Literature Review

Agency Theory

Agency theory explains the relationship between parties who give authority (principal) and receive authority (agent). In agency theory, agency relationships arise when people hire another person to provide a service and then delegate decision-making authority to the agent.

Profitability

Profitability is the company's potential to generate profits for a specified period. Profitability is defined as how banks maximize profits with their funds in the banking industry. Maximizing profit is the same as maximizing the financing provided. The greater the funds thrown into the community, the more profit obtained. This study was measured using Return On Assets (ROA) with the following formula:

$$\text{Return On Asset} = \frac{EBT}{Total\ Asset} x\ 100\%$$

Credit Risk

Credit risk results from the customer's failure to repay the loan that has been received along with interest according to a specific period. Credit risk can occur if the bank provides loans to customers according to the agreed period. The customer cannot return the loan and interest at maturity due to the customer experiencing bankruptcy. This study was measured using Non-Performing Financing (NPF) with the following formula:

$$\text{NPF} = \frac{Default\ Financing}{Total\ Financing}\ x\ 100\%$$

Interest Rate

Interest rate is the price or profit given to investors from users of investment funds based on calculating the economic value or cost of compensation for lending. In essence, the community's economy can at least be better by requiring interest rates. Now people can save their money in the bank and get compensation from the interest rate, and the bank will provide loans to people who need it to start their business smoothly. This study was measured using the Net Interest Margin (NIM) with the following formula:

$$NIM = \frac{Net\ Interest\ Income}{Average\ Productive\ Total\ Asset} x\ 100\%$$

Liquidity

Liquidity is the bank's potential to meet the financial obligations that will mature. In regulating liquidity, banks usually cannot freely regulate their policies because of various problems between liquidity and profitability. The higher the liquidity, the more funds will be unemployed, and profitability will be low and vice versa. This study was measured using FDR (Financing to Deposit Ratio) with the following formula:

$$\text{FDR} = \frac{Total\ Financing}{Total\ Deposit} x\ 100\%$$

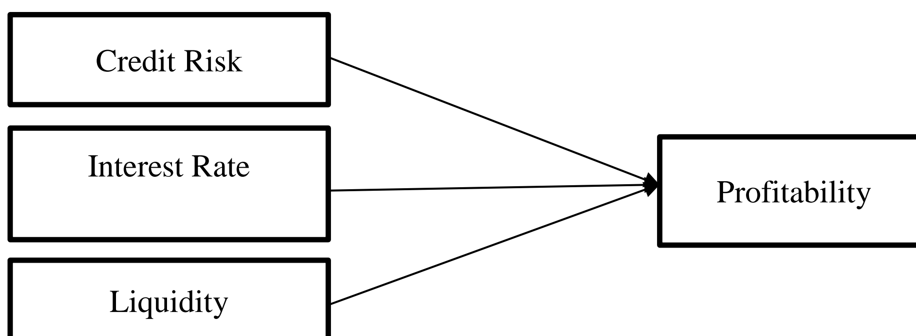

Figure 1. Framework

Hypothesis

The relationship of credit risk to bank profitability

Credit risk results from the customer's failure to repay the loan that has been received along with interest according to a specific period. Ernest Somuah Annor, F. S. (2018) examined the effect of credit risk on the profitability of 6 selected banks on the Ghana stock exchange. The findings show that credit risk has a significant relationship with bank profitability. This study recommends that banks vigorously assess and manage credit risk indicators to reduce their exposure to these risks. There is a significant relationship between credit risk and bank profitability.

The relationship between the spread of interest rates on bank profitability

The definition of interest rates for debtors and creditors is the costs and benefits of lending. Erasmus Dodzi Gakpetor, A. M., & Anokye, F. K. (2018) examined the effect of interest rate spreads on the profitability of commercial banks in Ghana. The findings show a positive and significant relationship between the spread of interest rates and bank profitability in Ghana. This finding can be interpreted in the context of borrowed funds theory

which suggests that the demand for loans exceeds banks' supply, allowing higher interest costs on loans relative to deposits to increase profitability. There is a positive and significant relationship between the spread of interest rates and bank profitability.

Relationship of liquidity to bank profitability

The liquidity ratio is used to measure the company's ability to meet funding needs at the appropriate cost. According to Notoatmojo, M. I. (2018), there is a mutually influencing relationship between liquidity and bank profitability, which generally occurs as a trade-off. The higher the level of liquidity, the lower the bank's profitability and vice versa. There is a mutually influencing relationship between bank liquidity and profitability.

3. Research Method

This type of **research** is quantitative research. The dependent variable in this study is profitability which is measured using ROA. While the independent variables are Credit Risk which is measured using NPF, Interest Rate is measured using NIM. Liquidity is measured using FDR. The data in this study are quantitative, and the data that I use is secondary data. This research uses the descriptive analysis method. Data retrieval in the form of documentation from the financial statements of Islamic banks in Indonesia for the period 2014-2018. The population used in this research is Islamic banks in Indonesia for the 2014-2018 period. The sampling technique that I use is the purposive sampling method. The sample used is 10 Islamic banks for the 2014-2018 period that meet the criteria with 50 observational data, which as this method sets the sample with specific criteria. Islamic banking submitted the company's financial statements every year in a row in 2014-2018. Islamic banking had complete financial report data in 2014-2018.

This research instrument is in the form of documentation of the financial statements of Islamic banks in Indonesia during the 2014-2018 period. In data processing, researchers used the SPSS 21 program. The data analysis method in this study used multiple linear regression. This analysis is used to determine the relationship of credit risk, the spread of interest rates, liquidity to bank profitability. There are classical assumption tests in the multiple linear regression, regression analysis, model accuracy, and coefficient of determination.

$Y = \alpha + \beta 1x1 + \beta 2x2 + \beta 3x3 + e$

Description :

Y : Dependent Variable (Profitability)

α: Constant Number

β1, β3, β3: Regression Coefficient

e : Error

X1 : The first independent variable (Credit Risk)

X2 : 2nd independent variable (Interest Rate Spread)

X3 : 3rd independent variable (Liquidity)

4. Result & Discussion

Table 1.

Research Sampling Process Data

No	Purposive Sampling Criteria	Amount
1	Islamic banking that submits the company's financial statements every year in a row in the period 2014-2018	10
2	Islamic banking that has published financial report data in 2014-2018	10
3	Islamic banking that has financial statement data complete in 2014-2018	10
4	Number of companies used for research	10
5	Series	5
6	Jumlah observasi	50

Table 2. Sampel

No	Nama Bank
1	Bank Muamalat Indonesia Tbk
2	Bank Syariah Mandiri Tbk
3	Bank BRI Syariah Tbk
4	Bank Bukopin Syariah Tbk
5	Bank BTPN Syariah Tbk
6	Bank BCA Syariah Tbk
7	Bank BNI Syariah Tbk
8	Bank Victoria Syariah Tbk
9	Bank Panin Dubai Syariah Tbk
10	Bank Maybank Syariah Tbk

Tabel 3. Normality Test

Variabel	Asymp. Sig.	Syarat	Description
Unstandardized Residual	0,292	>0,05	Normal Distributed

Based on the normality test for the residual value, the Sig value is 0.292 > 0.05. So the regression model is said to be expected.

Tabel 4.
Multicolienarity Test

Variabel	Tolerance	Syarat	VIF	Syarat	Description
RESIKO_KREDIT	0,830	>0,1	1,204	<10	Multicollinearity does not occur
SUKU_BUNGA	0,755	>0,1	1,325	<10	Multicollinearity does not occur
LIKUIDITAS	0,880	>0,1	1,136	<10	Multicollinearity does not occur

Based on the results of the multicollinearity test, it is known that the VIF results for each variable are below ten and have a tolerance value above 0.10. This data shows that all the variables used do not occur multicollinearity.

Tabel 5.
Autocorellation Test

	Number of Runs	Asymp. Sig.	Syarat	Description
Unstandardized Residual	22	0,253	0,05	There is no autocorrelation

Based on the results above, it can be seen that the autocorrelation test on the Sig value obtained a value of 0.253> 0.05. This data explains that the residual data from the estimation results show no autocorrelation.

Tabel 6
Heteroskedastisiy Test

Variabel	Sig.	Standar	Description
(Constant)	0,466	>0,05	Heteroscedasticity does not occur
RESIKO_KREDIT	0,186	>0,05	Heteroscedasticity does not occur
SUKU_BUNGA	0,306	>0,05	Heteroscedasticity does not occur
LIKUIDITAS	0,944	>0,05	Heteroscedasticity does not occur

From the data above, it can be seen that each of the significance values of all independent variables is > 0.05. This data shows that these variables do not occur heteroscedasticity.

Table 7.
Multiple Linear Regression Analysis Results

Variabel	B
(Constant)	6,656
RESIKO_KREDIT	1,404
SUKU_BUNGA	0,144
LIKUIDITAS	0,035

From the table above, the regression equation can be arranged as follows:

Y = 6,656 + 1,404 Credit Risk + 0.144 Interest Rate + 0.035 Liquidity + e

Table 8.
F-Test

Model	Fhitung	Ftabel	Sig	Std	Description
Multiple Linear Regression	9,097	2,574	.000[b]	0,05	Eligible Model

Sumber : Data diolah, 2020

If seen from table 8, it can be concluded that the value of F-count > Ftable and the significance value < 0.05 means that the model is feasible to test the effect of the independent variable on the dependent variable.

Tabel 9
Hasil Uji Hipotesis (Uji t)

Hipotesis	Thitung	Ttabel	Sig	Syarat	Conclusion
H_1	4,006	2,687	0,000	<0,05	Acepted
H_2	0,951	2,687	0,347	<0,05	Rejected
H_3	2,978	2,687	0,005	<0,05	Acepted

Tabel 10.
Coefficient of Determination Results

R	R Square	Adjusted R Square	Std. Error of the Estimate	Description
0,610[a]	0,372	0,331	3,91164	Impact of 33%

The results of the analysis show that the Adjusted-R value is 0.331. This result indicates that the Credit Risk, Interest Rate, and Liquidity variables can explain the Profitability variable at Islamic Banks in Indonesia for the 2014 - 2018 period of 33%, while other variables outside this research model explain the remaining 67%.

Impact of Credit Risk on Bank Profitability

Based on the test results, evidenced by a significant level of 0.000, then t count 4,006 and t table 2,687 so that t count > t table. Credit risk impacts profitability due to the presence of non-performing loans (NPL) in large numbers, not only affecting the bank concerned but extending to a national scope if not appropriately handled. The impact that will arise from the existence of an unreasonable Non-Performing Loan (NPL) is the loss of the opportunity to earn income (income) from the credit provided, thereby reducing profits and adversely affecting bank profitability. Korteweg and Polson (2010) emphasize that risks in financial institutions are inevitable. To have a guaranteed level of continuity, banks must pay attention to the optimal level of risk they manage.

Impact of Interest Rate Spread on Bank Profitability

The interest rate has no impact on bank profitability. This finding can happen because t table > t count. The t table is 2.687, and the t count is 0.951. Besides that, high-interest rates will lead to high costs. This data will trigger inflation so that it impacts low productivity and high-risk investment, which has prevented banks from investing their funds in the real sector. For that, the banks lost their intermediary function. This data means there is still a knowledge gap in this area that needs to be comprehensively explored to tell the real impact of the spread of interest rates on bank profitability.

The results of this study are in line with previous research, namely Erasmus Dodzi Gakpetor, A. M., & Anokye, F. K. (2018), showing that banks in Ghana charge higher interest on loans and pay less on deposits increase their profitability.

Impact of Liquidity on Bank Profitability

The results of the liquidity regression analysis have an impact on bank profitability. Based on the test results, evidenced by a significant level of 0.000, then t count 2,978 and t table 2,687 so that t count > t table. This result is reflected in the Indonesian bank regulations that stipulate liquidity as one of the eight risks banks must manage (Ichsan, 2013). Liquidity has two risks. The first is when it is too high, there will be idle money (idle funds), thereby reducing the bank's opportunity to earn profits from the distribution of funds, and if it is too small, the bank will not be able to meet its short-term obligations. It will receive a penalty from the bank. Indonesia. Interbank lending can occur if the bank cannot meet its short-term obligations. Niresh (2012) researched that profitability and liquidity are the most prominent issues that each organization's management must consider as their most important task. A weak liquidity position poses a threat to the solvency or profitability of the company and makes the bank unsafe and unhealthy.

5. Conclusion

This study examines the impact of credit risk, the spread of interest rates, and liquidity on bank profitability at Islamic banks in Indonesia for the 2014-2018 period. The population used is Islamic banking companies in Indonesia in 2014-2018. Sampling used the purposive sampling technique, which resulted in 10 Islamic banks that met the criteria with 50 observational data. The analytical tool used is multiple linear regression. The results show credit risk impacts bank profitability because the impact that will arise from the existence of an unreasonable Non-Performing Loan (NPL) is the loss of the opportunity to earn income (income) from the loans provided, reducing profits and adversely affecting bank profitability.

The spread of interest rates has no impact on bank profitability. This result is because high-interest rates will lead to high costs. This result will trigger inflation so that it impacts low productivity, and high-risk investments have prevented banks from investing their funds in the real sector. For that, banks lose their intermediary function. Liquidity impacts bank profitability because this is reflected in bank Indonesia regulations that stipulate liquidity as one of the eight risks that banks must manage. One of the risks is when it is too high, there will be idle money (idle funds), thereby reducing the bank's opportunity to earn profits from disbursing funds.

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