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The Impact Of Credit Risk, Distribution of Interest Rate And Liquidity on Bank Profitability

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Abstract

The development of Islamic finance in Indonesia is needed to strengthen a sustainable economic structure. This data was based on the promising potential of Islamic economic and financial growth. This study examines the impact of credit risk, the spread of interest rates, and bank profitability liquidity. 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 selection of 50 companies from several criteria. The data source is secondary data. This research uses multiple linear regression analysis with the help of SPSS version 21. The results of this research show that credit risk and liquidity affect bank profitability. At the same time, the spread of interest rates does not affect the profitability of banks.

Keywords: Credit Risk; Interest Rates; Liquidity and Profitability

1. Introduction

The development of Islamic finance in Indonesia is needed to strengthen a sustainable economic structure. All of this is based on the potential for the growth of sharia finance and the economy, which is quite profitable and promising in society. The development of financial and banking institutions in Indonesia is high-speed, with Bank Muamalat Indonesia (BMI) establishment in 1991. Over time the establishment of BMI was able to motivate the emergence of other Islamic banking institutions.

Profitability is the potential for a company to generate profits from a bank during a certain period, influenced by several factors: the interest rate factor. If the interest rate is high, then it is clear that the cost will be high too. This information could lead to inflation to lead to low productivity and unsafe investments to invest in, for which Islamic banks and the general public lost their intermediation function. Aboagye et al. (2008) examined the interest rate response spread to bank-specific characteristics and macroeconomic factors based on the Ho and Saunders model. The analysis results show that bank size, staff administrative costs, inflation, market forces, level of risk avoidance, and the spread of interest rates, occasional loan rates, excess reserves, and management efficiency are negatively associated with the space of interest.

Banks often experience credit risk because, in addition to collecting funds from the public and providing credit for them, it does not cover credit problems. According to Saputra and Budiasih (2016), the provision and payment of credit made by risky banks is a form of non-performing credit. Li and Zou (2014) examined the relationship between credit risk management and commercial banks' profitability in Europe. Non-performing credit ratios and capital adequacy ratios are used as independent variables and proxies for credit risk. Return on assets and return on equity are used as measures for profitability.

In ensuring an effective working capital policy, the company will face a problem: the exchange between profitability and liquidity factors. If a company has made a big enough working capital decision, liquidity will be safe, but if the opportunity for profit is very high, there will be a decline. Ultimately it can make profitability decrease as well. And on the contrary, if the company expects maximum profitability, it is likely to affect its liquidity level. From all the explanations above, it can be concluded that working capital's liquidity and effectiveness can affect profitability. According to Nugraheni and Alam (2014), liquidity risk also describes the degree to which a company or bank cannot fulfill its obligations to other customers.

From some of the above backgrounds, the researcher tries to review the impacts that affect bank profitability. The proxies used are credit risk, interest rate spread, and liquidity as independent variables. The benefits of this research are to provide guidelines and references on bank profitability.

2. Literature Review

2.1 Agency Theory

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

2.2 Profitability

Profitability is the company's potential to generate profits during a specified period. In the banking industry, profitability is defined as how the bank maximizes profits with its funds. Maximizing profit is the same as maximizing the financing provided. The greater the funds have thrown by the community, the more profit will be obtained. This study is measured using Return On Asset (ROA) with the following formula:

$$\text{Return On Asset} = \frac{Profit\ before\ tax}{Total\ assets} x\ 100\%$$

2.3 Credit Risk

Credit risk is a result of a customer's failure to repay a loan that has been received and its interest according to a certain period. Credit risk can occur if a bank provides a loan to a customer according to the agreed period of time, then the customer cannot return the loan and interest at maturity because the customer is bankrupt. This study is measured using Non-Performing Financing (NPF) with the following formula:

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

2.4 Interest rate

Interest rate is the price or profit given to investors from users of investment funds based on calculating economic value or benefit costs for borrowing. In essence, by requiring interest rates, the economy of the community can at least get better. 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 to start their business smoothly. This study is measured using Net Interest Margin (NIM) with the following formula:

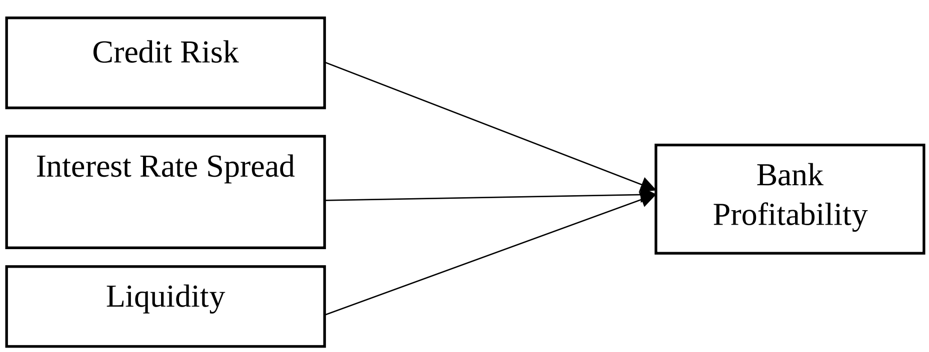
$$NIM = \frac{Net\ interest\ income}{Average\ total\ earning\ assets}\ x\ 100\%$$

2.5 Liquidity

Liquidity is the potential for a bank to meet the financial obligations of a company that will mature. In managing liquidity, banks usually cannot freely tend their policies because of various liquidity and profitability problems. The higher the liquidity, the more idle funds will be and the lower profitability and vice versa. This study is measured using FDR (Financing to Deposit Ratio) with the following formula:

$$\text{FDR} = \frac{Total\ Financing}{Third\ Party\ Fund\ +\ Capital}\ x\ 100\%$$

2.6 Theoretical Framework



Picture 1: Theoretical Framework

Hypothesis:

1. **The relationship of credit risk to bank profitability**
   Credit risk results from a customer's failure to repay a loan that has been received and its interest according to a specific period. Ernest Somuah Annor, F. S. (2018) examined the effect of credit risk on six selected banks' profitability on the Ghana stock exchange. The findings show that credit risk has a significant relationship with bank profitability. This study recommends that banks assess and manage credit risk indicators vigorously to reduce their exposure to this risk.
   H1: There is a significant relationship between credit risk and bank profitability.

2. **The relationship between the spread of interest rates and bank profitability**
   The meaning of interest rates for debtors and creditors is the cost and compensation for borrowing. Erasmus Dodzi Gakpetor, A. M., & Anokye, F. K. (2018) examined the effect of interest rate spreads on commercial banks' profitability in Ghana. The findings show a positive and significant relationship between the spread of interest rates and the profitability of banks in Ghana. These findings can be interpreted in the context of lending fund theory which suggests that the demand for loans exceeds the supply of banks equally, allows for higher interest costs on loans relative to deposits to increase profitability.
   H2: There is a positive and significant relationship between the spread of interest rates and bank profitability.

3. **The relationship between liquidity and bank profitability**
   The liquidity ratio is the ratio used to measure its ability to meet funding needs at a reasonable cost. According to Notoatmojo, M. I. (2018), there is an interplay between liquidity and bank profitability which generally occurs with a trade-off. The higher the level of liquidity, the lower the bank's profitability vice versa.
   H3: There is an interplay between liquidity and bank 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 variable is Credit Risk measured using NPF, Interest Rate is measured using NIM. And liquidity which is calculated using FDR. The data in this study are quantitative, and the data was used from a secondary database. This research uses the descriptive analysis method. Data was collected in the form of documentation from Islamic banks' financial statements in Indonesia for the 2014-2018 period. The population that I use in this study 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 observation data, which as this method determines the sample with specific criteria.

1. Sharia banking submits the company's financial statements every consecutive year in the 2014-2018 period.
2. Sharia banking has complete financial statement data for 2014-2018.
3. Islamic banking has financial report data that has been published in 2014-2018.

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

Regression Model : $Y = \alpha + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + e$

Notes:

Y : Dependent Variable (Profitability)

α : Constant Numbers

β : Regression Coefficient

e : Error

X_1 : The first independent variable (Credit Risk)

X_2 : The 2nd independent variable (Interest Rate Spread)

X_3 : The 3rd independent variable (Liquidity)

4. Result and Discussion

Table 1

Research Sampling Process Data

No	Purposive Sampling Criteria	Total
1	Sharia banking which submits the company's financial statements every consecutive year in the 2014-2018 period	10
2	Islamic banking, which has financial report data that has been published in 2014-2018	10
3	Islamic banking, which has financial report data completed in 2014-2018	10
4	Number of companies used for research	10
5	Research year	5
6	Number of observations	50

Table 2

Sample

No	Bank name
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

Table 3
Normality Test Results

Variable	Asymp. Sig.	Terms	Notes
Unstandardized Residual	0,292	>0,05	Normally Distributed

Source: Data processed, 2020

Based on the normality test results on the residual value, the Sig value was 0.292> 0.05. So that the regression model is said to be normal.

Table 4
Multicollinearity Test Results

Variable	Tolerance	Terms	VIF	Terms	Notes
CREDIT_RISK	0,830	>0,1	1,204	<10	Multicollinearity does not occur
INTEREST RATE	0,755	>0,1	1,325	<10	Multicollinearity does not occur
LIQUIDITY	0,880	>0,1	1,136	<10	Multicollinearity does not occur

Source: Data processed, 2020

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

Table 5
Autocorrelation Test Results

	Number of Runs	Asymp. Sig.	Terms	Notes
Unstandardized Residual	22	0,253	0,05	No Autocorrelation Occurs

Source: Data processed, 2020

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 explains that the residual data from the estimation results show that there is no autocorrelation.

Table 6
Heteroscedasticity Test Results

Variable	Sig.	Standard	Notes
(Constant)	0,466	>0,05	Heteroscedasticity does not occur
CREDIT_RISK	0,186	>0,05	Heteroscedasticity does not occur
INTEREST RATE	0,306	>0,05	Heteroscedasticity does not occur
LIQUIDITY	0,944	>0,05	Heteroscedasticity does not occur

Source: Data processed, 2020

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

Table 7
Results of Multiple Linear Regression Analysis

Variable	B
(Constant)	6,656
CREDIT_RISK	1,404
INTEREST RATE	0,144
LIQUIDITY	0,035

Source: Appendix 9

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

Y = 6.656 + 1.404 Credit Risk + 0.144 Interest Rate + 0.035 Liquidity + e

Table 8
F Test Results

Model	Fcount	Ftable	Sig	Std	Notes
Multiple Linear Regression	9,097	2,574	.000[b]	0,05	Model Layak

Source: Data processed, 2020

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

Table 9
Hypothesis Test Results (t test)

Hypothesis	Tcount	Ttable	Sig	Term	Conclusion
H_1	4,006	2,687	0,000	<0,05	Accepted
H_2	0,951	2,687	0,347	<0,05	Rejected
H_3	2,978	2,687	0,005	<0,05	Accepted

Source: Data processed, 2020

Table 10
Result of the coefficient of determination

R	R Square	Adjusted R Square	Std. Error of the Estimate	Notes
0,610[a]	0,372	0,331	3,91164	Has an impact of 33%

Source: Data processed, 2020

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

4.1 Impact of Credit Risk on Bank Profitability

The results of the credit risk regression analysis have an impact on bank profitability. The test results are proven by the 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 existence of many non-performing loans (NPLs), not only affecting the bank concerned but also extending to the national scope if not appropriately handled. The impact generated from the existence of a non-performing loan (NPL) that is not reasonable is the loss of the opportunity to earn income from the credit given, thereby reducing profitability and adversely affecting bank profitability. Korteweg and Polson (2010) emphasize that risks in financial institutions are inevitable. Banks must pay attention to the optimal level of risk to have a guaranteed level of continuity.

4.2 Impact of Interest Rate Spread on Bank Profitability

The results of the interest rate regression analysis have no impact on bank profitability. This result can happen because t table> t count, namely the t table of 2.687 and t count to 0.951. Besides, high-interest rates will result in high costs, which will trigger inflation, resulting in low productivity and high-risk investment, which has prevented banks from investing their funds in the real sector. For that, banks lose their intermediation function. This finding means that there is still a knowledge gap in this area that needs to be comprehensively explored to inform the real impact of the spread of interest rates on bank profitability.

This study's results 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.

4.3 Impact of Liquidity on Bank Profitability

The results of the liquidity regression analysis have an impact on bank profitability. The test results are proven by the significant level of 0.000, then t count 2.978 and t table 2.687 so that t count> t table. This data is reflected in Bank Indonesia's regulation, which stipulates 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) so that it reduces the bank's opportunity to get profit from the distribution of funds, and if it is too small, the bank is unable to meet short-term liabilities and will get a penalty from the Bank Indonesia. If the bank is unable to meet short-term obligations, interbank borrowing can occur. Niresh (2012) examined that profitability and liquidity are the most prominent issues that each organizational management must consider as their most important task. A weak liquidity position poses a threat to its solvency or profitability and makes the bank unsafe and unhealthy.

5. Conclusion, Limitation, and Suggestions

Conclusion

This study examines the impact of credit risk, the spread of interest rates, and liquidity on bank profitability in Islamic banks in Indonesia for the 2014-2018 period. The population used is Islamic banking companies in Indonesia in 2014-2018. Sampling using purposive sampling technique resulted in 10 Islamic banks that meet the criteria with 50 observation data. The analysis tool used is multiple linear regression. The results show that:

1. Credit risk impacts bank profitability because the impact that will be generated from the existence of an unnatural Non-Performing Loan (NPL) is the loss of opportunity to earn income from loans, thereby reducing profitability and adversely affecting bank profitability.
2. The spread of interest rates has no impact on bank profitability due to high-interest rates. The cost will be high as well, and this will trigger inflation so that it has an effect on low productivity, and high-risk investment has prevented banks from investing their funds in the real sector, and for that, the banks lost their intermediation function.
3. Liquidity impacts bank profitability because this is reflected in Bank Indonesia's regulation, which stipulates liquidity as one of the eight risks that a bank must manage. One of the dangers is that when it is too high, there will be idle money (idle funds), reducing banks' opportunity to earn profits from channeling funds.

Limitation of the Research

1. The coefficient of determination in this study is only 33% which has an impact, so other variables must be added.
2. There are few variables in this study, so it needs to be added.

Suggestions

1. For further research, it is expected to take a different model from the previous one so that the coefficient of determination is greater than the previous one.
2. For further research, it is hoped to add X (independent) research variables to be wider and more accurate.

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