The Impact of Liquidity Risk and Credit Risk on the Profitability of General Sharia Banks in Indonesia

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Keywords: Liquidity Risk, Financing to Deposit Ratio (FDR), Credit Risk, Non Performing Financing (NPF), Profitability, Return on Equity (ROE).

Abstract: The purpose of this research is to analyze the influence of liquidity risk and credit risk on the profitability level of General Sharia Banks in Indonesia. Liquidity risk in this study is measured by Financing to Deposit Ratio (FDR), credit risk in is measured by Non Performing Financing (NPF) and profitability is measured by Return on Equity (ROE). The research method in this study is an explanatory research. The data were collected from the sharia banking statistics issued by the Financial Services Authority of Indonesia. We used time series data of 12 General Sharia Banks in Indonesia from the first quarter until the fourth quarter of 2014 until 2016. The data were then analyzed by using multiple linear regression analysis. The result of the study shows that the level of profitability of General Sharia Banks in Indonesia is 24% influenced by the level of liquidity risk (FDR) and credit risk (NPF). The remaining 76% is influenced by other variables not analyzed in this research. Liquidity risk (FDR) and credit risk (NPF) have a significant negative effect on the profitability level (ROE) of General Sharia Banks in Indonesia.

1   INTRODUCTION

Sharia banks in Indonesia have grown rapidly. Until 2016 (data taken from OJK), the number of Sharia Banks in Indonesia amounts to 199 Islamic Banks consisting of 12 General Sharia Banks, 22 Sharia Business Units, and 165 Rural Sharia Banks. This increase in the existence of Sharia Banks in Indonesia is driven by the high interest of the community to put their funds in Sharia Banks. Banks based on sharia principles do not conduct their business activities based on interest like conventional banks do, but based on the principles of profit sharing. With the increase of Sharia Bank in Indonesia, the competition between banks will be more stringent. It will certainly be crucial for every bank to always try to improve its performance, to strengthen the confidence of customers or the community in the bank.

Profitability is one indicator that can be used to measure the performance and effectiveness of a company or a bank and its management, based on returns generated from loans and investments. The higher the profitability level of a bank, the more likely a bank would survive. Ratios that can be used to measure profitability are Return on Asset (ROA) and Return on Equity (ROE) (Saputri and Oetomo 2016).

In this study, profitability is measured using Return on Equity (ROE). The higher the ROE the greater the ability of firms to use their own capital to generate a high profit rate for shareholders or investors. The amount of profit generated by the company is very influential on the rate of Return on Equity (ROE) in a company. The higher the ROE (Return on Equity), the higher the profits to be gained by the company and the lesser the risk (Saputri and Oetomo 2016).

Each bank must achieve an optimal level of profitability that will have a positive impact on customer / community trust. But reaching an optimal level of profitability for the bank is not an easy task. The bank must be ready to face the risks that may arise such as liquidity risk and credit risk that can affect its profitability.

Liquidity risk occurs when the bank is unable to provide cash to meet the customer's transaction needs and fulfill the obligations to be repaid within a short term. One factor that can cause banks to experience liquidity risk is that banks cannot maximize revenue due to the insistence of liquidity needs. The previous literature shows differences in the results of each study. The research conducted by (Gholami and Salimi 2014), which aims to study the relationship between credit risk, liquidity risk and profitability in

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the banking system, shows that liquidity risk has a significant relationship with profitability in the banking system, compared with other internal factors. A study done by (Petria, Capraru, and Ihnatov 2015) shows that liquidity risk (LDR) affects bank profitability (ROA and ROE), and the research done by (Bassey and Moses 2015) indicates that there is a statistically significant relationship between loan to deposit ratio (LDR) and return on equity (ROE).

Meanwhile the research done by (Tafri et al. 2009) shows that liquid assets / total liabilities are found to have an insignificant impact on the size of profitability (ROA and ROE). A study done by (Rasul 2013) shows that there is no significant relationship between liquidity and ROE. Research done by (Olarewaju and Adeyemi 2015) shows that there is no causal relationship between liquidity (total loan and advances / total deposit) and probability (ROE). A study done by (Mwizarubi, Singh, and Prusty 2015) shows that there is no statistically significant relationship between bank profitability (NIM, ROA, ROE) and liquidity (LDR and LADR). The research done by (Molefe and Muzindutsi 2014) shows that liquidity has no effect on bank profitability (ROA and ROE). And the research done by (Dabiri, Yusof, and Wahab 2017) shows that liquidity negatively and significantly affects profitability of the Islamic banks in the United Kingdom.

Liquidity risk in this study is measured by Financing to Deposit Ratio (FDR). FDR in the world of Islamic banking refers to financing without interest. FDR indicates the ability of banks to repay the withdrawal of funds by depositors by controlling the credit given as a source of liquidity. Greater credit leads to greater earned income, and because the income rises profit will also increase.

Credit risk received by a bank is one of the bank's business risks, resulting from uncertainty in return or resulting from non-repayment of loans granted by the bank to the debtor (Armereo 2015). Based on previous studies, there are differences in results from each research. The research of (Tafri et al. 2009) shows that loan loss provision (loan) has a significant impact on ROA and ROE for conventional and sharia banks. Research conducted by (Hymore et al. 2012) shows that credit risk (Net Charge Off and NPL) has a positive and significant relationship with bank profitability (ROE). Research done by (Abiola and Olausi 2014) shows that credit risk (NPL and CAR) has a significant impact on the profitability (ROA and ROE) of commercial banks in Nigeria. Research done by (Khan, Ijaz, and Aslam 2014) shows that the profitability of sharia banking (ROA, ROE, EPS) is significantly influenced by credit ratio (NPL). Research done by (Gholami and Salimi 2014) aims to study and investigate the relationship between credit risk, liquidity risk and profitability in the banking

system. Based on the results obtained, credit risk has a significant relationship with profitability in the banking system, compared with other internal factors. Research done by (Petria et al. 2015) shows that credit risk affects bank profitability (ROA and ROE). And the research done by (Getahun, Anwen, and Bari 2015) indicates that there is a strong relationship between credit risk (NPLR, LPTLR, LPNDLR, LPTAR, and NPLTLR) and commercial bank performance (ROA and ROE) in Ethiopia. On the other hand, a study by (Noman et al. 2015) shows that there is a significant negative influence of NPLGL, LLRGL on all profitability indicators (NIM, ROA, ROE). Furthermore, research done by (Kithinji 2010) shows that profitability is not affected by credit risk in Commercial Banks in Kenya.

Credit risk in this study was measured by Non Performing Financing (NPF). Non Performing Financing (NPF) called Non Performing Loan (NPL) in conventional banking is a financial ratio associated with credit risk. NPF shows the bank's capability in managing problematic financing provided by the bank. The higher this ratio, the worse the credit quality of the bank. Worsening credit quality leads to an increase in bad loans, which will lead to the bank having a higher risk of landing in troubled conditions. Loans in this case are credits granted to third parties excluding credit to other banks.

The results from previous studies indicate that there are differences in research results (research gap) on the effect of liquidity risk and credit risk on profitability. Based on this phenomenon, this study aims to re-examine the effect of liquidity risk and credit risk on profitability in General Sharia Banks in Indonesia.

2 METHODS

The type of research used in sthis study is quantitative research. The research method used in this study is an explanatory survey. The sampling technique used in this study is total sampling. The data source used is secondary data from the Sharia banking statistics issued by the Financial Services Authority of Indonesia. We used time series data gathered from 12 General Sharia Banks in Indonesia in the first quarter up to the fourth quarter of 2014 until 2016.

The independent variables in this research are liquidity risk and credit risk. Liquidity risk in this study is measured by Financing to Deposit Ratio (FDR) and credit risk in this study is measured by Non Performing Financing (NPF). The dependent variable in this study is profitability measured by the ratio of Return of Equity (ROE), following the research done by Petria, Capraru, and Ihnatov (2015).

The data are then analyzed by using multiple linear regression analysis. The equation model is as follows:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \varepsilon$$

Where :

Y	= ROE (Profitability)
β_0	= Value Constants
β_1, β_2	= Regression Coefficient
X_1	= FDR (Liquidity Risk)
X_2	= NPF (Credit Risk)
ε	= error

Based on the theoritical framework, hyphotesis in this study are as follows:

H_1: Liquidity risk (FDR) has a significant effect on profitability (ROE).

H_2: Credit risk (NPF) has a significant effect on profitability (ROE).

3 RESULTS AND DISCUSSION

To find out whether the research model is feasible or not, then done first classical assumption test (data analysis requirement test) consisting of normality test, linearity test, multicollinearity test, and heteroskedatisidas test.
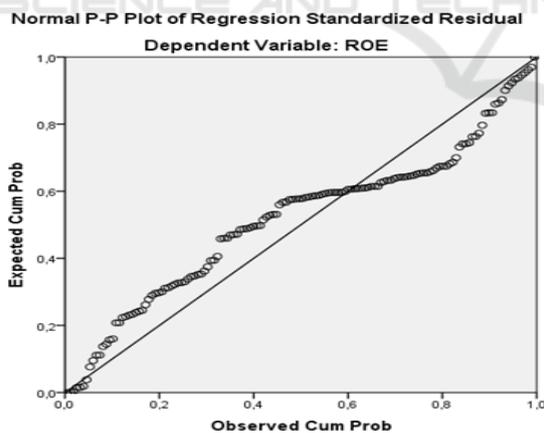

Figure 1: Normality test.

Figure 1 shows that P-Plot image the dots follow the diagonal line so it can be concluded that the regression model meets the assumption of normality.

Table 1: Linearity test.

		Sum of Squares	Df	Mean Square	F	Sig.
ROE * FDR						
	(Combined)	29065	142	204.7	99.3	0.08
Between Groups	Linearuty	3087	1	3087	1498	0.02
	Dexiation from Linearity	25978	141	184.2	89.4	0.08
Within Groups		2.06	1	2.06		
Total		29067	143			
ROE * NPF						
	(Combined)	25471.38	122	208.78	1.22	0.31
Between Groups	Linearuty	4047.81	1	4047.81	23.64	0.00
	Dexiation from Linearity	21423.57	121	177.05	1.03	0.49
Within Groups		3595.79	21	171.23		
Total		29067.17	143			

Table 1 shows that the value of significance on Linearity ROE and FDR is 0.02. Because the significance is less than 0.05 it can be concluded that between the ROE and FDR variables there is a linear relationship. Table 1 also shows that the value of significance in linearity ROE and NPF is 0.00. Because the significance is less than 0, 05 it can be concluded that between the ROE and NPF variables there is a linear relationship.

Table 2: Multicollinearity test.

Model	Collinearity Statistics	
	Tolerance	VIF
(Constant)		
FDR	0.999	1.001
NPF	0.999	1.001
a. Dependent Variable: ROE		

Table 2 shows that the value of variance inflation factor (VIF) for FDR and NPF is 1.001 less than 10 and the value of Tolerance is more than 0.100, so it can be concluded that between the independent variables multicollinearity problem does not occur in the regression model.
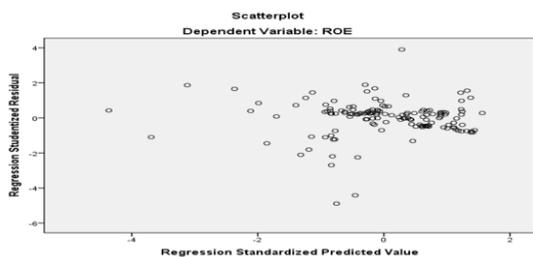
Figure 2: Heteroskedasticity test.

Figure 2 shows that the dots do not form a clear pattern, and the spots spread above and below the number 0 on the Y axis. So it can be concluded that there is no problem of heteroscedasticity in the regression model.

The results of the classical assumption test (data analysis requirement test) consisting of normality test, linearity test, multicollinearity test, and heteroskedaticity test show that the research model with multiple linear regression test is feasible to be used.

Table 3: F test.

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	6978.322	2	3489.161	22.272	0.000[b]
	Residual	22088.842	141	156.658		
	Total	29067.164	143			

F-test was then performed to determine the simultaneous influence of all independent variables to the dependent variable. F Test is conducted by comparing $F_{arithmetic}$ with F_{table}. Because the $F_{arithmetic}$ more than F_{table} value is 22.272 more than 3.060, we reject H_0 and accept H_1, which means that based on the results of the F-test, all independent variables (liquidity risk as measured by FDR and credit risk as measured by NPF) in this study simultaneously affect the dependent variable (profitability as measured by ROE ratio).

Table 4 : Coefficient of determinant test.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.490[a]	0.240	0.229	12.51633

A coefficient of determination test was done to determine the proportion of the variance in the dependent variable that is predictable from the independent variable. Based on table 4, a coefficient of determination (R Square) value of 0.240 or (24%).

This shows that the contribution of independent variables (NPF and FDR) to the dependent variable (ROE) is 24%. In other words variations of independent variables used in the model (NPF and FDR) are able to explain 24% of the variation in the dependent variable (ROE). The remaining 76% is influenced or explained by other independent variables not included in this research model, e.g. Capital Adequacy Ratio (CAR) as a proxy to measure company's capital adequacy, Operational Efficiency Ratio (OER) as a proxy to measure the efficiency and effectiveness of banks in carrying out their operations, size as a proxy of the size of the total assets of the company, or Net Interest Margin (NIM) as a proxy to measure a bank's management capability in managing its earning assets to generate net interest income.

Table 5: Multiple linear regression test.

Model	Unstandardized Coefficients		T	Sig.
	B	Std. Error		
(Constant)	31.482	4.956	6.352	0.000
1 FDR	-0.198	0.046	-4.325	0.000
NPF	-3.154	0.633	-4.984	0.000

Multiple linear regression test was then conducted to determine the influence of each independent variable to the dependent variable. The regression coefficients of the study showed varying signs, positive and negative. A positive coefficient indicates the unidirectional effect of the independent variable to the dependent variable, whereas a negative coefficient indicates the opposite effect of the independent variable to the dependent variable.

Based on the test results we obtained a significance level of 0.000 and a negative regression coefficient of 0.198 for Financial to Deposit Ratio (FDR). So it can be concluded that H_1 is accepted and H_0 is rejected, which means that liquidity risk (FDR) has a negative, significant effect on profitability (ROE). These results indicate that the greater the liquidity risk (FDR) the smaller the profitability (ROE) and the smaller the liquidity risk (FDR), the greater the profitability (ROE). The results of this study are in line with the results of previous studies conducted by (Dabiri et al. 2017) which also show that liquidity risk has a significant effect on profitability with negative influence. In the financial sector, liquidity and profitability plays a significant role, liquidity is the ability of the financial institution

to meet the obligation of its creditors (short term) (Dabiri et al., 2017). The size of banks' FDR ratio will affect banks'performance. FDR is the ratio used to measure banks' ability to meet financing demand by utilizing their total assets.

Then based on the test results we obtained a significance level of 0.000 and a negative regression coefficient of 3.154 for Non Performing Financing (NPF). So it can be concluded that H_1 is accepted and H_0 is rejected, which means that credit risk (NPF) has a negative, significant effect on profitability (ROE). These results indicate that the greater the credit risk (NPF) the smaller the profitability (ROE) and the smaller the credit risk (NPF) the greater the profitability (ROE). The results of this study are in line with the results of previous studies conducted by (Noman et al. 2015) which also show that there is a significant negative effect of credit risk on all profitability indicators including ROE. NPF is a financial ratio related to credit risk. NPF is the ratio between total problematic financing with total financing given to debtor. The smaller the NPF, the smaller the credit risk that will be experienced by the bank. Having a low level of credit risks can indicates that the bank has a good performance (profitability).

4 CONCLUSIONS

This research is conducted to analyze the effect of Financing to Deposit Ratio (FDR) as liquidity risk and Non Performing Financing (NPF) as credit risk on profitability level measured with Return on Equity (ROE) ratio. The result shows that liquidity risk and credit risk has a significant negative effect on the level of profitability General Sharia Banks in Indonesia in the period of 2014-2016. Bank is required to manage fund by optimizing the funding distribution to avoid liquidity risk. To keep stability of problematic financing, banks have to be proportional in implementing prudential principles. Because if problematic financing is out of control, it can reduce bank profit and hamper the bank to give the financing to other customers.

The limitation in this study is that only 12 General Sharia Banks were studied, excluding all other forms of Islamic banking (Sharia Business Unit and Rural Sharia Banks). So for further research it is recommended to involve all sharia financial institutions so that the results achieved reflect the actual situation. Further researchers can also add or examine the effect of other independent variables on profitability, such as market risk, operational risk, legal risk, strategic risk, compliance risk, or

reputation risk to provide better and varied results. The result of this study can serve as an input for banking institutions, especially sharia banking in Indonesia, as well as for policy makers in companies. This research could also be beneficial for fellow researchers, namely by providing material for further research.

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