

Employee Education Background on Credit Risk Defining Factors of Islamic Banking in Indonesia and Malaysia

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Abstract—The main problem of this research is because the rapid development of the market share of Islamic banking in Indonesia and Malaysia in the past five years is interesting because the risks with varying complexity will always be close to the operations of Islamic banks. This study aims to determine the effect of the variable Return On Assets, Loan Loss Provision and Loan to Asset Ratio on credit risk proxied by the NPF and to know the differences in determinants of credit risk in Islamic banking in Indonesia and Malaysia. This study uses panel data regression analysis techniques and different tests. The sample in this study were 11 Islamic banks in Indonesia and 11 Islamic banks in Malaysia that had complete financial reports from 2011 to 2017. The results of the study showed that there were significant effects by the ROA and LLP variables on the proxied credit risk by NPF. In addition, there are differences in the determinants of credit risk for Islamic banks in Indonesia and Malaysia, where Islamic banks in Malaysia are better in terms of asset use than Islamic banks in Indonesia, Islamic banks in Indonesia are better prepared to face the risk of loss from investing in assets productive and Islamic banks in Malaysia have lower bank liquidity capabilities than Islamic banks in Indonesia. The implication for managerial is that management is expected to be able to anticipate through enlarged reserves so that Islamic banks are better prepared to face future credit risks. In addition to paying attention to the reserve side of losses, investors need to pay attention to the side of profitability because it also has a large influence on Credit Risk.

Keywords—*credit risk, islamic bank, loan loss provision, loan to asset ratio, non performing ratio financing, return on asset*

I. INTRODUCTION

In ASEAN, the development of the fastest Islamic banking industry is Malaysia with a percentage of the market share of Islamic banking of 26% compared to assets from the country's banking sector. Indonesia currently has a market share of 4.8% of the national banking sector. According to the Islamic Banking Statistics of 2017 from the website of the Financial Services Authority (Otoritas Jasa Keuangan/ OJK), in 2017 the total assets of Islamic banks as a whole reached Rp 4,531.18

Trillion [1] The size of the market is a positive thing for the Islamic banking industry in these two countries, but it must be accompanied by anticipation of the challenges that may be faced in the future. Risks with varying complexity will always be close to the operations of Islamic banks. By knowing how influential each variable is on credit risk, Islamic banks will be able to determine appropriate and efficient strategies and steps to reduce credit risk so that it will reduce the possibility of bankruptcy in the Islamic bank. This study analyzes a sample of 11 Islamic banks in Indonesia and 11 Islamic banks in Malaysia. The sample was collected using a purposive sampling technique with Islamic bank indicators that have complete financial statements in the period 2011 to 2017, then the collected samples were analyzed using panel data regression techniques with the help of program Eviews 9. The analysis in this study shows that credit risk influenced by profitability and reserve losses on the Islamic bank's financial statements. Furthermore, the results of the analysis of this study indicate that there are differences in the determinants of Islamic banking credit risk in Indonesia and Malaysia in the period 2011-2017 in terms of the ability of Islamic banks to use assets to generate profits, readiness of Islamic banks in facing the risk of losses arising from investment in productive assets and in terms of liquidity capabilities. This study aims to determine whether there is an influence between the ROA on the Risk of Islamic banking Credit in Indonesia and Malaysia for the period 2011-2017, to find out whether there is an influence between Loan Loss Provision on the Risk of Islamic banking Loans in Indonesia and Malaysia for the 2011-2017 period, to find out whether there is an influence between Risk Coverage Ratio on Credit Risk of Islamic banking in Indonesia and Malaysia for the period 2011-2017 and to find out whether there is a difference between the Risk of Islamic banking Credit in Indonesia and Malaysia for the Period of 2011-2017.

In practice, banking activities involve Human Resources in it, Islamic banking credit risk can be minimized by the performance of competent employees. That the education of an employee can increase company competitiveness and improve company performance [2]. In addition, other research also

states that there is an effect of educational background and work experience on employee performance [3]. Therefore, this study also discusses how the educational background and work experience of employees have an effect on minimizing credit risk.

II. LITERATURE REVIEW

A. Hypothesis One

In previous studies related to credit risk investigations in Eurozone Countries, the results of the evaluation showed that macroeconomic variables (public debt, economic activity and inflation) and accounting variables (quality of past loans, bank size, capital ratio and liquidity) greatly affected credit risk in the country European country [4]. Where in the study ROA as one of the accounting variables. Other research shows that profitability, capital and bank size are inversely proportional to bank credit risk while net interest margins and inefficiencies have a positive effect. In accordance with the researchers' expectations, there is a significant negative relationship between risk (proxy by NPLR) and profitability indicated by ROA and ROE [5].

Other analysis of the determinants of credit risk in Muslim Microfinance Institutions in the Middle East and Southeast Asia during the period 2000-2015 resulted in increased credit risk with higher lending provisions, greater risk coverage, higher inflation rates and increased yields. in gross portfolio. However, credit risk decreases with the number of active borrowers being more significant and increasing financial performance (ROA) [6]. Based on the theory, the hypothesis in this study are:

- H1: ROA has an influence on the Risk of Islamic banking Credit in Indonesia and Malaysia for the 2011-2017 period.

B. Hypothesis Two

In previous studies it was found that credit risk increased with higher loan provisions, greater risk coverage, higher inflation rates and increased yield on gross portfolio [6]. In contrast to the research, other studies referring to PSAK 50 and 55 of the provision of Allowance for Impairment Losses (CKPN) / Loan Loss Provision are aimed at overcoming losses from credit risk that occur due to failed transaction partners or not paying off due obligations or risks loss due to the borrower being unable to repay all or part of his debt. The study resulted that NPL had a significant positive effect on CKPN. Companies with high NPLs tend to form large reserves because banks can anticipate possible risks [7].

Other research proves that the formation of the burden of CKPN affects the murabahah income and financial performance (as measured by NIM / NCOM, NPF, ROE and ROA). This indicates that Sharia Commercial Banks are required to form a CKPN burden to minimize the risk of possible impairments [8]. Based on the theory, the hypothesis in this study are:

- H2: Loan Loss Provision has an influence on the Risk of Islamic banking Credit in Indonesia and Malaysia for the Period of 2011-2017

C. Hypothesis Three

According to Badarulia [9] Risk Coverage Ratio, the percentage of portfolios at risk for 30 days is covered by actual loan loss reserves. This shows how a financial institution is prepared for the worst case scenario. The risk coverage ratio, as an indicator of portfolio quality, is proposed by CGAP-MIX [10].

From Khan [11] study of Islamic microfinance institutions, it is known that the higher the Risk Coverage Ratio or the risk coverage ratio, the better credit risk mitigation from Muslim microfinance institutions. Furthermore, specifically for Islamic microfinance institutions, zakat funds are considered as a means of risk management or a means of coverage of risks to reduce bad credit [12].

This study uses the Loan to Asset Ratio proxy to reflect the Risk Coverage Ratio in this study, [13] explains that the LAR factor shows the capability of banks to fulfill loan demand by using the total assets owned by banks by measuring the level of bank liquidity. Loan-to-asset Ratio (LAR) is a comparison between the amount of credit provided by banks and the amount of assets owned by banks. According to Klein [13] in using the LAR ratio to show excessive lending behavior which results in a positive relationship between LAR and NPL.

Other research explains that LAR has a positive effect on NPL, with an analysis of the higher the credit channeled compared to public deposits in a bank that has an impact on the greater risk that must be borne by the bank concerned. So that it will have an impact on the greater possibility of the occurrence of NPL [14].

Based on the theory of previous research, the following hypotheses can be taken:

- H3: Risk Coverage Ratio has an influence on the Risk of Islamic banking Credit in Indonesia and Malaysia for the Period of 2011-2017.

III. RESEARCH METHODS

Purposive sampling is a sampling method in this study. In a purposive sampling technique, sample determination based on several considerations is applied based on research objectives that depend on the characteristics of the population that has been previously known. The criteria for applying the sample used are Sharia Banks that have access to the publication of complete financial statements on the official website of Indonesian and Malaysian Syariah Banks and Sharia Banks in this study have published financial statements for 7 periods, 2011-2017. By using the criteria previously stated, the total Sharia Banks used in this study are 11 Islamic Banks in

Indonesia and 11 Islamic Banks in Malaysia in accordance with the Table I:

TABLE I. SAMPLING OF ISLAMIC BANKS BY PURPOSIVE SAMPLING METHOD

Criteria Description	Bank Total	Data Total
Islamic banks in Indonesia that were established in the period 2011 to 2017	11	77
Islamic banks in Malaysia that were established in the period 2011 to 2017	12	84
Sharia banks in Indonesia and Malaysia do not have financial reports published from 2011 to 2017	(1)	(7)
Amount of Observation Data	22	154

IV. RESULTS AND DISCUSSION

The following is a table that shows an overview of the determinants of credit risk in Islamic banking as well as an overview of the variables that affect credit risk of Islamic banking in Indonesia and Malaysia over the period 2011-2017. Credit risk of sharia banks in Indonesia and Malaysia which are measured independent variables using Non-Performing Financing (NPF) and variables that affect credit risk using the variable Return On Assets (ROA), Loan Loss Provision (LLP) and Loan to Asset Ratio (LAR). How far is the possibility of deviation of values obtained with the expected value can be measured by standard deviation. If the value of the standard deviation is greater, the greater the possibility of real values deviating from the expected.

TABLE II. RESULTS OF DESCRIPTIVE STATISTICS OF INDONESIAN ISLAMIC BANKS

	NPF	ROA	LLP	LAR
Mean	0.0746	0.0015	0.0431	0.2352
Median	0.0302	0.0056	0.0203	0.2092
Maximum	1.0000	0.0320	0.6636	0.7256
Minimum	0.0000	-0.1689	0.0000	0.0000
Std. Dev.	0.1594	0.0286	0.0983	0.1671

TABLE III. RESULTS OF DESCRIPTIVE STATISTICS OF SYARIAH BANK MALAYSIA

	NPF	ROA	LLP	LAR
Mean	0.0207	0.0067	0.0188	0.6522
Median	0.0189	0.0067	0.0186	0.6745
Maximum	0.0610	0.0121	0.0511	0.7836
Minimum	0.0078	0.0005	0.0051	0.4096
Std. Dev.	0.0094	0.0029	0.0090	0.0906

The table above shows the number of samples, the minimum value, the maximum value, the mean value and the standard deviation value of each variable tested. The mean value shows the average data from these variables, while the standard deviation describes the magnitude of the deviation from the average of the data carried out by testing.

Based on table 2 and table 3 above, it can be seen that there are differences in determinants of credit risk for Islamic banking in Indonesia and Malaysia. This is indicated by the average of each independent variable tested. For the ROA variable, Indonesian Islamic banks have an average value of 0.0015 or 0.1% with a standard deviation value of 0.0286 or 2.86%. While Malaysian Islamic banks have an average value of 0.0067 or 0.67% with a standard deviation value of 0.0029 or 0.29%. As stated earlier, the Return on Assets (ROA) variable reflects the company's ability to use assets to generate profits.

Referring to Ikatan Bankir Indonesia [13], which states that the index or ROA ratio that is said to be safe according to Bank Indonesia is the range of 0.5% to 1.25%. If the ROA ratio is higher, it shows that the level of profit achieved by the bank will be greater and the better the bank's position will be seen from the side of asset use. Indonesian Islamic banks which have an average ROA value of 0.1% are certainly categorized as unsecured Islamic banks. Unlike the Malaysian Islamic banks which have an average value of 0.67%, which is said to be safe according to the scale of Bank Indonesia. It can be concluded that Islamic banks in Malaysia are better in terms of asset use than Islamic banks in Indonesia.

For LLP variables, Indonesian Islamic banks have an average value of 0.0431 or 4.31% with a standard deviation value of 0.0983 or 9.83%. While Malaysian Islamic banks have an average value of 0.0188 or 1.88% with a standard deviation value of 0.0090 or 0.9%. As previously stated, the Loan Loss Provision (LLP) variable reflects the bank's oversight function so that credit is more directed and the bank can immediately take action if impairments occur so as not to harm the bank.

Referring to the opinion of Fitriana, and Arifianto [5], which states that a Loan Loss Provision (LLP) or Reserve for Impairment Losses (CKPN) is a reserve provided by a bank that aims to deal with the risk of losses arising from investing funds in productive assets. Islamic banks in Indonesia are better prepared to face the risk of losses incurred from investing funds in productive assets because they have an average LLP value of 4.31%, higher than Malaysian Islamic banks which have an average LLP value of 1.88%.

For the LAR variable, Indonesian Islamic banks have an average value of 0.2352 or 23.52% with a standard deviation value of 0.1671 or 16.71%. While Malaysian Islamic banks have an average value of 0.6522 or 65.22% with a standard deviation value of 0.0906 or 9.06%. As previously stated, the Variable Loan to Asset Ratio (LAR) variable reflects portfolio quality or more specifically to measure the quality of the Bank in terms of liquidity capability.

Referring to the opinion of Kurniawan [15], the probability of a bank being in a condition that is problematic or cannot be measured by this ratio, if the LAR ratio gets higher then the lower the liquidity capability of the bank concerned. Islamic banks in Malaysia have an average LAR value of 65.22%, greater than Islamic banks in Indonesia which have an average LAR value of 23.52%. This shows that Islamic banks in

Malaysia have lower bank liquidity capabilities than Islamic banks in Indonesia.

TABLE IV. T SHARIA BANK INDONESIA TEST RESULTS

Variable	Coefficient	Prob.	Note
C	0.034543	0.3142	
ROA	1.054521	0.2491	H ₁ has no effect
LLP	1.447434	0.0000	H ₂ significantly effected
LAR	-0.101812	0.2940	H ₃ has no effect
Adjusted R-squared	0.535183		
Prob(F-statistic)	0.000000		

TABLE V. T SYARIAH BANK MALAYSIA TEST RESULTS

Variable	Coefficient	Prob.	Note
C	0.004844	0.5700	
ROA	0.702984	0.0592	H ₁ has no effect
LLP	0.516087	0.0000	H ₂ significantly effected
LAR	0.002277	0.8206	H ₃ has no effect
Adjusted R-squared	0.282695		
Prob(F-statistic)	0.000005		

TABLE VI. T TEST RESULTS FOR ISLAMIC BANKS IN INDONESIA AND MALAYSIA

Variable	Coefficient	Prob.	Note
C	0.023335	0.2170	
ROA	1.165876	0.0438	H ₁ significantly effected
LLP	1.460215	0.0000	H ₂ significantly effected
LAR	-0.057785	0.0596	H ₃ has no effect
Adjusted R-squared	0.554384		
Prob(F-statistic)	0.000000		

Based on the results of data processing in tables 4, 5 and 6 above it can be concluded that for Islamic banks in Indonesia the independent variables that significantly influence the dependent variable NPF (prob < 0.05) are LLP. Similarly, Islamic banks in Indonesia, for Islamic banks in Malaysia the independent variables that significantly influence the NPF dependent variable (prob < 0.05) are LLP. Collectively or jointly from Indonesian and Malaysian Islamic banks, the independent variables ROA and LLP significantly influence the NPF dependent variable (prob < 0.05), while the LAR variable does not affect the NPF dependent variable (prob ≥ 0.05).

A. Discussion of Hypothesis 1 Test Results

Based on the results of the t test in Table 5 above, the Islamic banks in Indonesia obtained results that the Return on Assets variable has a standard coefficient of 1.054521 probability level of 0.2491 where this value is ≥ 0.05 (H₀ fails to be rejected) which means there is no significant influence Return on Assets against NPF in Islamic Banking in Indonesia Period 2011-2017. That is, if there is an increase in Return on Assets, assuming the other variables are constant, then it will

not be followed by an increase in Credit Risk of 1.054521 with a significant 0.2491 ≥ 0.05.

For Islamic banks in Malaysia, based on the results of the t test in Table 6 the results show that the Return on Assets variable has a standard coefficient of 0.702984 probability level of 0.0592 where this value is ≥ 0.05 (H₀ failed to be rejected) which means there is no significant effect Return on Assets against NPF in Islamic banking in Malaysia Period 2011-2017. That is, if there is an increase in Return on Assets, assuming that the other variables are constant, it will not be followed by an increase in Credit Risk of 0.702984 with a significant 0.0592 ≥ 0.05.

From the results of the t test in Table 7 above, collectively the results obtained that the Return on Assets variable has a standard coefficient of 1.165876 with a probability level of 0.0438 where this value < 0.05 (H₀ is rejected) which means that there is a significant positive effect of Return on Assets on NPF in Islamic Banking in Indonesia and Malaysia for the period 2011-2017. That is, if there is an increase in Return on Assets, assuming the other variables are constant, it will be followed by an increase in Credit Risk of 1.165876 with a significant 0.0438 < 0.05.

These results are consistent with the research conducted by Makri [4], Rahman [5], and Noomen [6] with the results of the study showing that Return on Assets has a significant effect on NPF. Then it can be concluded that if profitability increases or decreases, then it will affect credit risk for Islamic banking in Indonesia and Malaysia for the period 2011-2017.

B. Discussion of Hypothesis 2 Test Results

From the results of the t test in Table 5 above, for Islamic banks in Indonesia the results show that the Loan Loss Provision variable has a standard coefficient of 1.447434 probability level of 0.0000 where this value is < 0.05 (H₀ rejected) which means there is a significant positive effect of Loan Loss Provision of NPF in Islamic banking in Indonesia Period 2011-2017. That is, if there is an increase in Loan Loss Provision, assuming the other variables are constant, it will be followed by an increase in Credit Risk of 1.447434 with a significant 0.0000 < 0.05.

For Islamic banks in Malaysia, based on the results of the t test in Table 6 above, the results show that the Loan Loss Provision variable has a standard coefficient of 0.516087 probability level of 0.0000 where this value is < 0.05 (H₀ rejected) which means there is a significant positive effect Loss Provision against NPF in Islamic banking in Malaysia Period 2011-2017. That is, if there is an increase in Loan Loss Provision, assuming the other variables are constant, it will be followed by an increase in Credit Risk of 0.516087 with a significant 0.0000 < 0.05.

From the results of the t test in Table 7 above, collectively the results show that the Loan Loss Provision variable has a standard coefficient of 1.460215 probability level of 0.0000 where this value is < 0.05 (H₀ rejected) which means there is a

significant positive effect of Loan Loss Provision on NPF Islamic banking in Indonesia and Malaysia Period 2011-2017. That is, if there is an increase in Loan Loss Provision, assuming that the other variables are constant, it will be followed by an increase in Credit Risk of 1.460215 with a significant $0.0000 < 0.05$.

This result is consistent with the research conducted by Fitriana and Arifianto [7], Suhartini and Anwar [8], and Shkodra and Ismajli [16] with the results of the study showing Loan Loss Provision has a significant effect on NPF. Then it can be concluded if the Loss Provision Loan has increased or decreased, then it will affect the credit risk for Islamic banking in Indonesia and Malaysia for the period 2011-2017.

C. Discussion of Hypothesis 3 Results

Based on the results of the t test in Table 5 above, the Islamic banks in Indonesia obtained the results that the Loan to Asset Ratio variable has a standard coefficient of -0.101812 with a probability level of 0.2940 where this value is ≥ 0.05 (H_0 fails to be rejected) which means there is no influence significant Loan to Asset Ratio to NPF in Islamic banking in Indonesia Period 2011-2017. That is, if there is an increase in Loan to Asset Ratio, assuming the other variables are constant, then it will not be followed by an increase in Credit Risk of -0.101812 with a significant $0.2940 \geq 0.05$.

For Islamic banks in Malaysia, based on the results of t-test results obtained that the variable Loan to Asset Ratio has a standard coefficient of 0.002277 probability level of 0.8206 where this value is ≥ 0.05 (H_0 failed), which means there is no significant effect of Loan to Asset Ratio NPF in Islamic banking in Malaysia Period 2011-2017. That is, if there is an increase in Loan to Asset Ratio, assuming the other variables are constant, then it will not be followed by an increase in Credit Risk of 0.002277 with a significant $0.8206 \geq 0.05$.

From the results of the t test in Table 7 above, collectively the results show that the Loan to Asset Ratio variable has a standard coefficient of -0.057785 probability level of 0.0596 where this value is ≥ 0.05 (H_0 failed to be rejected) which means there is no significant influence Loan to Asset Ratio to NPF in Islamic banking in Indonesia and Malaysia Period 2011-2017. That is, if there is an increase in Loan to Asset Ratio, assuming the other variables are constant, then it will not be followed by an increase in Credit Risk of -0.057785 with a significant $0.0596 \geq 0.05$.

The results of this study contradict the research conducted by research [11,13,14], which states that there is an influence of Loan to Asset Ratio to NPF. This means that the higher the credit channeled compared to public deposits in a bank does not affect the greater the risk that must be borne by the relevant Islamic bank. So that it will not affect the possibility of NPF. This is because the Loan to Asset Ratio focuses more on the liquidity of a Bank, in line with the opinion of Santosa [14] which states that the probability of a bank is in a condition that is problematic or cannot be measured by this ratio, if the LAR ratio is higher, the lower the liquidity capability of the bank

concerned. Based on the theory, it can be concluded that the liquidity capability of Islamic banks does not affect the high or low management of the financing of the Islamic bank. Where NPF is an indicator of good or bad Islamic banks in managing their financing as stated in the Indonesian Bankers Association [17] that if a bank is at a high level of NPF ratio, it is assessed that the bank's financing management has not been carried out optimally.

The difference in the determinants of credit risk in Islamic banking in Indonesia and Malaysia, this credit risk can be seen from the factors of employee education background or competence and work experience in carrying out their jobs. So that the quality of human resources greatly affects the determinants of credit risk. This is in line with the statement that the educational background and work experience of employees determine the quality and quantity of employee performance [18]. This means that the higher the educational background and work experience of the employees determines the quality and quantity of employee performance, as well as this banking credit risk.

V. CONCLUSION

The results of this study should be used as a reference for the management of Islamic banks in Indonesia in order to anticipate the higher profit or profitability of Islamic banks, the higher the credit risk they will face. This can be anticipated through a backup provided by a bank that aims to anticipate the risk of losses incurred from investing funds in earning assets can be enlarged so that Islamic banks are better prepared to face future credit risks. Sharia banks in Malaysia are expected to increase the Allowance for Impairment Losses (CKPN) to be able to anticipate a higher risk of loss.

In addition, this research should be used by Indonesian and Malaysian investors in their investment activities in Islamic banks in Indonesia. Particularly based on the variable parameters used in this study, investors can pay attention to the determinants of credit risk at the bank, because the results of this study show that the magnitude of the loss of an Islamic bank proxied through the LLP variable greatly influences the credit risk of the Islamic bank. Collectively for Investors who want to invest in both countries, investors can pay attention to the determinants of credit risk at the bank, because the results of this study show that the magnitude of profitability proxied through the ROA variable and the loss reserve of an Islamic bank proxied through the LLP variable is very influential against the credit risk of the Islamic bank. In addition, investors must also pay attention to other factors not included in this study to maximize their investment.

For regulators or the government, this research should be used as material or reference for the establishment of policies or regulations related to subsequent Islamic banking. Regulators in Indonesia and Malaysia need to focus on policies related to Reserve Losses on Islamic banks, because those variables that are proxied through LLP greatly influence Credit Risk.

For further research it is recommended to be able to make improvements regarding the Islamic banking credit risk factor variables that can be developed by adding a variable credit coverage ratio that is more relevant to the measurement of financing quality, because in this study the proxied Loan to Asset Ratio (LAR) focuses more on capability Bank liquidity is not the quality of Islamic bank financing [18]. With the rapid development of Islamic banking in Indonesia and Malaysia, further researchers also need to analyze the adoption of the zakat payment system or sharia contribution to be applied in paying taxes in each country.

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