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Determinants of Islamic commercial banks financing risk in Indonesia

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Abstract

This research is aimed to show the empirical evidence of the influence of Financing Expansion, Financing Quality, Financing to Deposit Ratio, and Return on Assets on financing risk in Islamic Commercial Banks in Indonesia. This research uses purposive sampling so that three Islamic Commercial Banks are chosen: *Bank Syariah Mandiri*, *Bank Muamalat Indonesia*, and *Bank Mega Syariah Indonesia*. The analysis method of this research is panel data regression analysis. This research applies Panel Unit Roots (PRUTS), model specification test using Fixed Effect Model, classical assumption test (Homoscedastic, Autocorrelation, and Prais-Winsten Regression), hypothesis testing with a significance level of 5%. The result shows that Financing Expansion and Return on Assets have a negative and significant influence on financing risk. Meanwhile, Financing Quality and Financing to Deposit Ratio have a positive and significant influence on financing risk.

Keywords: financing risk, financing expansion, financing quality, financing to deposit ratio, return on assets, panel data.

Introduction

The sources of business financing in developing countries including Indonesia are still dominated by bank loans. Banks perform their function as intermediary institutions through the provision of credit as the main activity in generating profit while maintaining credit risk. Credit risk has been the main issue all over the world including Indonesia (Basel Committee on Banking Supervision, 2000). Therefore, credit provision must be controlled with strict risk management. According to *Bank Indonesia Regulation No.13/3/PBI/2011*, one of the criteria of bank supervision status with regards to financing/credit is the level of the non-performing loan or bad debts must be lower than 5%. The number indicates the percentage of credit which does not work well from total of the credit provision.

The previous study (Angbazo, 1997; Hassan, 1992, 1993; Hassan, Karels, & Peterson, 1994; Shrieves & Dahl, 1992; Suwarsi, 2009) found that the high amount of non-performing loans requires the bank to decrease the financing risk by allocating allowance for bad debts to cover the loss of the following financing. In Islamic commercial banks, non-performing loans are proxied by the ratio of non-performing financing (NPF) which shows the level of the collectability of the disbursed fund. The higher the level of non-performing financing, the worse the bank performance. It is also implied in the financing risk of the bank. In other words, the level of NPF influences the level of profitability. When the level of profitability is low, the bank financing expansion will also be decreased as well as the financing rate. Financing risk is one of the major risks of banking which is caused by unpaid loans or current investment made by the bank (Muhammad, 2005).

Non-performing financing in Islamic commercial banks is divided into three categories: substandard, doubtful, and loss/bad. Based on Sharia Banking Statistics 2005-2014 published by Financial Service Authority (OJK), non-performing financing is increasing from time to time. From the three categories of non-performing financing during 2005-2014, bad debt is in the first position with the average growth of 9,47%. Meanwhile, substandard and doubtful debts are following with the average growth of 6,45% and 3,64%. The condition shows the importance of minimizing bad debt since it gives significant influence to bank policies. In other words, the financing risk is the inability of the bank to recover the principal balance or interest on the loan or the investment (Mulyono, 1999).

To anticipate the increase in financing risk, the Islamic commercial bank management must



measure some microeconomic factors from operational performances. Some previous research (Ahmad & Ahmad, 2004; Angbazo, 1997; Berger & DeYoung, 1997; Cebenoyan & Strahan, 2004; Hamzah & Krishnan, 2016; Haryono, Mohd. Ariffin, & Hamat, 2016; Jiménez & Saurina, 2004; Misman, 2012) but not by interest rate risk, which is consistent with their greater concentration in short-term assets and off-balance sheet (OBS showed that bank-specific variable (BSV) or microeconomic variable has significant relation to bank financing risk. Therefore, this research focuses on the microeconomics measurement of Islamic commercial banks using financing expansion, financing quality, financing to deposit ratio and return on assets as the object of measurement.

Financing expansion is the ratio of banking performance which is measured by the amount of credit to the total assets of the bank. It is an important variable in company's operational activities. If the amount of credit is higher than the total assets, the credit risk will potentially increase. It shows that financing expansion has negative and significant relation to financing risk (Misman, 2012). On the other hand, Hassan (1993), in his research, found that credit related (special credit and credit expansion), interest rate, and business operations are the other variables that affect the financing risk. The research showed that credit expansion has positive and significant relation to financing risk. The result of his research was supported by other research (Das & Ghosh, 2007; Ekanayake & Azeez, 2015; Nor & Ahmad, 2015; Sinkey & Greenawalt, 1991) which showed the positive and significant relation between credit expansion and non-performing loan (NPL).

In addition to financing expansion as the determinant of financing risk, financing quality is another part of banking performance ratio which is measured by the loan loss provision to the total assets. Financing quality is used to measure how big the financing risk in terms of the quality of the assets. Some studies (Ahmed, Takeda, & Thomas, 1999; Eng & Nabar, 2007; Misman, 2012) Malaysia, and Singapore for the period 1993 through 2000. We find that unexpected loan loss provisions are positively related to bank stock returns and future cash flows. This indicates that Asian bank managers increase loan loss provisions to signal favorable cash flow prospects, and bank investors bid bank stock prices up when unexpected provisions are positive. These results are consistent with those obtained by Wahlen (1994) showed that financing quality has positive and significant relation to financing risk. The results of the studies were supported by the previous research conducted by Angbazo (1997). It showed that the quality of the assets had been identified as one of the factors which affected the commercial credit risk in the form of bank assets. This explains that banks a higher allowance for low-quality financing which leads to the increase of financing risk.

This research also adds another variable to measure the banking ratio from the liquidity and profitability that proxy the financing to deposit ratio (FDR) and return on assets (ROA). The liquidity of Islamic commercial banks can also decide the amount of financing risk by viewing the financing deposit ratio (FDR). Even though the level of non-performing loan is increasing, financing can still be done if the banks are said to be liquid. Liquidity in sharia banking is measured by financing to deposit ratio (FDR) while in conventional banking is by a loan-deposit ratio (LDR) (Firmansyah, 2014). The research conducted by Ahmad & Ariff (2007) and Adisaputra (2012) showed that loan-deposit ratio (LDR) has a positive and significant influence to non-performing loans which results in the increase of financing risk. Even though the research was conducted in conventional banks, it suggested that non-performing loan or bad debts happen even when bank liquidity is in a good condition. In line with the research, another study conducted by Astrini, Suwendra, & Suwarna (2014) in registered banking in Indonesia Stock Exchange (BEI) showed that loan to deposit ratio (LDR) has a positive and significant influence to financing risk.

Profitability proxies to return on assets (ROA) is a ratio in measuring the company's efficiency and effectiveness in generating profit using its assets. According to Bank Indonesia, banks' level of soundness can reflect the sustainability of banks' financial performance. It suggests that Bank Indonesia concerns the amount of profit based on return on assets (ROA) which is mainly generated from deposits (Dendawijaya, 2009). It shows that the bigger the return on assets (ROA) from operational activities, the bigger the level of profitability of the bank. The main operational activity is credit provision; therefore, it is expected to have a lower level of financing risk through return on assets (ROA). Generally, Return on assets (ROA) has a negative and significant influence to financing risk (Azeem & Amara, 2014; Ekanayake & Azeez, 2015; Godlewski, 2005; Messai & Jouini, 2013), even though other research showed positive and significant relation (Al-Smadi & Ahmad, 2009).

Research Method

This research is an explanatory research which is conducted in order to identify the extent and nature of the cause-and-effect relationship among the research variables (Sekaran & Bougie, 2010). The analysis units of this research are Islamic commercial banks in Indonesia during the period of 2006-2014 using mixed data between time series and cross-sectional data (pooling data). This research uses secondary data which are financing risk (FR), financing expansion (FE), financing quality (FQ), financing to deposit ratio (FDR), and return on assets (ROA) from three Islamic commercial banks: *Bank Syariah Mandiri (BSM)*, *Bank Muamalat Indonesia (BMI)*, and *Bank Mega Syariah Indonesia (BSMI)*.

The dependent variable is financing risk which is a risk where the portfolio value will change due to unexpected changes in the credit quality of issuers or trading partners (McNeil, Frey, & Embrechts, 2015). The independent variables are financing expansion, financing quality, financing to deposit ratio and return on assets.

Data panel regression analysis is used as the model in data analysis. Data panel regression is a regression that combines data time series and data cross section. There are two main reasons for using the pooling data or data panel. First, the mixed data are able to provide more data in order to create a bigger degree of freedom. Second, the combination can overcome issues when there are problems related to a variable omission in the future (Baltagi, 2013).

Findings

Specification test with Maddala-Wu test shows stationary variables FR, FE, FQ, FDR, and ROA are unit roots. Therefore, the result of panel unit root test's (PURT) accompanied with all the test specification show that there is not any unit root in all the research variables. Based on observational data, panel data are tested using static panel data. Breusch-Pagan LM test shows that the chi-square probability is significant with the p-value of 0,08886 ($p > 0,05$). It suggests that the model is homoscedastic. As for Woldridge test shows that Chi-square value is not significant (p-value 0,0254 less than 0,05), it indicates that the model has autocorrelation problem. To overcome this issue, Prais-Winsten Regression, correlated panels corrected standard errors (PCEs) is used.

Prais-Whinten Regression, correlated panels corrected standard errors (PCEs) shows that ρ value is significant (ρ value of 0,67078 more than 0,05). It indicates that the model is free from autocorrelation problem. The next step is Chow test which shows that the value of F-test is significant (p-value of 0,0007 less than 5%). It suggests that the estimated model follows fixed effect model. The result of Lagrange Multiple Test (LM Test) shows that the value of Chi-square is significant (p-value of 1,0000 more than 5%) which supports that the fixed effect model is more accurate than random effect model. The result of Hausman Test shows that the value of Chi-square is significant (p-value of 0,0043 less than 5%) which confirms that fixed effect model is more accurate than random effect model. The estimation result using fixed effect model shows the following regression equation:

$$FR = 0.4987 - 2.1086 FE + 16.0189 FQ + 0.0366 FDR - 8.3862 ROA + \mu$$

$$F = 48.19$$

$$R^2 \text{ within} = 0.3781, R^2 \text{ between} = 0.9704, R^2 \text{ overall} = 0.4563$$

The result shows that the model is significant (p-value 0,00007 less than 0,05) which means the H_0 is accepted and H_1 is rejected. It suggests that cross-section weight is more appropriate than cross-section seemingly unrelated regression (cross-section SUR) in fixed effect model.

F value shows 48,19 with significance level 0,0000 ($p < 0,05$), whereas F table for panel data regression model is 2,3999 (F count bigger than F value in the table) and the probability is smaller than 0,05. The result shows the independent variable: financing expansion, financing quality, financing to deposit ration and return on assets simultaneously influence the financing risk in a significant way.

The result of regression also shows R^2 of 0,4563 or 45,63% from the financing risk (FR) of each Islamic commercial bank in Indonesia which can be explained by the variation of financing expansion (FE), financing quality (FQ) financing to deposit ratio (FDR) and return on assets (ROA)

of each of the bank. The rest 54,37% is influenced by other variables which are not included in the model. The value of standard error regression shows a small value of 0,3269. It suggests that the smaller the standard error, the more appropriate the model to be used following the BLUE assumption (best, linear, unbiased, estimator).

Individual parameter significance testing is aimed to find out the influence of partial financing expansion (FE). It shows that the significance level reached t-value of -7,65 to financing risk (FR), 10,40 to financing quality (FQ), 1,98 to financing to deposit ratio (FDR) and 5,31 to return on assets. Meanwhile, the t table value for each variable is 1,9674. It concludes that, partially, each independent variable influences the dependent variable significantly.

Discussion

The first hypothesis testing shows that there is a negative and significant influence of financing expansion to financing risk with 5% level of significance. It rejects the hypothesis which states that financing expansion has a positive and significant influence on financing risk. It suggests that when financing expansion increases, financing risk decreases. In other words, every 1% increase of financing expansion is able to decrease financing risk up to 2,10%. This relates to the previous research (Misman, 2012; Nor & Ahmad, 2015) which found that there is a negative and significant influence of financing expansion to financing risk.

On the other hand, this finding is not in line with the theory that financing rapid growth allows a decline in credit quality which affects the increase of financing risk. Financing rapid growth takes place when there is economic and loan boom which have been identified as important factors in the increase of financing risk (Caprio & Klingebiel, 1996). It then suggests that financing expansion does not affect the credit risk.

That the increase of financing expansion allows the decrease of financing risk indicates the ability of Islamic banks' management in maintaining the possible substantial financing risk when providing loans. It is stated in Bank Indonesia Regulation No. 13/23/PBI/2011 on the application of risk management by Islamic banks and sharia business units, and Bank Indonesia' Acts article 8 about credit provision or financing based on sharia principles: Character, Capital Capacity, Collateral, and Condition of Economy (5C) and Personality, Party, Purpose, Prospect, Payment Profitability, and Protection (7P). Aside from those principles, constraint takes into considerations as one of the factors to be analyzed.

According to Bank Indonesia, before conducting financing expansion, risk mitigation process is needed to provide solutions in order to lower and to anticipate the risk. Therefore, banks are required to have and to apply credit and financing guidelines based on sharia principles in accordance with Bank Indonesia (BI) and Sharia Supervisory Board (DPS) regulations. Risk mitigation process includes 1) financing policies and guidelines which are applied correctly and orderly, 2) financing limit policies in line with authorisation system established by Financing Committee, 3) financing review proceeded by Risk Management Division, Financing and Investment Review Section, 4) in portfolios level, monitoring concentrated on financing risk including industrial sector, collateral type, financing scheme, and internal rating system implementation, 5) limit policy to the customers as well as to the transactions, currency, transaction volume, preferred position, loss, intraday, related parties, industry/company (one obligor concept), economy sector and region based on Legal Loan Limit (BPMK) (Ramadiyah, 2014).

The second hypothesis testing shows that variable financing quality influenced the financing risk (FR) positively and significantly with 5% level of significance. Therefore, the hypothesis is accepted. It suggests that when financing quality increases, financing risk increases as well. In other words, every 1% increase of financing quality is able to increase financing risk up to 16,02%. The result is in line with the previous research (Ahmed et al., 1999; Angbazo, 1997; Eng & Nabar, 2007; Misman, 2012) but not by interest rate risk, which is consistent with their greater concentration in short-term assets and off-balance sheet (OBS). The research found that there is a significant influence of financing quality to financing risk (FR).

An efficient credit risk management supports the fact that low non-performing financing is related to risk level and low profit-sharing deposit. Nevertheless, in long-term period, high profit-sharing deposit will relatively incline the amount of DPK in order to fund the high-risk loan which consequently increases the possible non-performing financing. The adequate amount

of non-performing financing is considered as the indicator of credit risk management. It also shows that low non-performing financing represents effective credit risk management (Brewer, Jackson, & Mondschean, 1996).

Furthermore, when deposit funding cost inclines, banks will automatically diminish the screening process because the marginal profit of screening is declining. As a result, the problems of assets quality decline. In addition, the increase of deposit funding cost may escalate banks' failure probabilities since the quality of the assets decreases. Deposit funding costs allow the quality improvement of bank assets since it influences the decision process by providing an incentive for the bank to prevent excessive risk-taking as well as to appreciate the asset quality objectively. By improving the quality of its assets, the bank explicitly shows its credit and declines the risk (Chan, Greenbaum, & Thakor, 1986).

Additionally, banks are able to improve the quality of their assets by off-balance-sheet activities with high-risk potential which leads to higher non-performing financing (NPF). High-risk debt indicates that banks with risk-financing portfolio require the increase of assessment of asset quality to compensate the potential loss (Thomson, 1989).

The third hypothesis testing shows that variable financing to deposit ratio influence the financing risk positively and significantly with 5% level of significance. Therefore, the hypothesis is accepted. It suggests that when financing to deposit ratio increases, financing risk increases as well. In other words, every 1% increase of financing to deposit ratio is able to increase financing risk up to 0,036%. It indicates that when financing to deposit ratio is higher, the ratio of the non-performing loan will be higher too which resulted in the increase of bank financing risk. On contrary, when the level of financing to deposit ratio is low, the level of financing risk will follow.

The result is in line with a previous research conducted by Dendawijaya (2009). He stated that financing to deposit ratio has a significant impact on financing risk. It suggests that the increase of financing to deposit ratio higher the chance of non-performing loan to increase. It can be said that a bank with high financing to deposit ratio has a higher risk of bad debts which can result in the increase of non-performing loan as well as financing risk. A financial loss might take place in this matter. As mentioned in other studies (Adisaputra, 2012; Ahmad & Ariiff, 2007; Astrini et al., 2014; Firmansyah, 2014; Setiawan & Putri, 2013), the findings indicated the same perspective that financing to deposit ratio relates positively and significantly to financing risk. However, another study conducted by Faiz (2010) and Poetry & Sanrego (2011) inflation, exchange rate, SWBI/SBIS (Sertifikat Wadiah Bank Indonesia/Sertifikat Bank Indonesia Syariah) showed the opposite result. They stated that financing to deposit ratio and financing risk have a negative and significant relation.

The fourth hypothesis testing shows that variable return on assets influences negatively and significantly on financing risk (FR) with 5% level of significance. Therefore, the hypothesis is accepted. It suggests that when return on assets increases, the financing risk decreases. In other words, every 1% increase of return on assets is able to decrease the financing risk up to 8,38%. Return on assets is measured from net income to total assets of the company.

The research findings support the previous research (Ekanayake & Azeez, 2015; Godlewski, 2005; Inoguchi, 2016; Messai & Jouini, 2013) which proved that there is a relation between return on assets and financing risk with negative direction. Nevertheless, another research showed a different result. It stated that there is a positive influence on variable return on assets to financing risk (Al-Smadi & Ahmad, 2009; Md Amin, Sanusi, Kusairi, & Mohamed Abdallah, 2014). Messai & Jouini (2013) stated that a high profitability bank has less incentive to generate profit; therefore, there is a limitation for the bank to involve in a high-risk loan. In contrary, inefficient banks are required to give credit considerations to reach high-risk financing.

The result shows that return on assets has a negative and significant influence on financing risk. The reason might be because return on assets is a ratio used to measure the efficiency and effectiveness of Islamic commercial banks where the main function of banking is to generate profit. To generate profit, companies use their assets by accumulating more capital to get more chances in providing broader financing (Oktaviani & Pangestuti, 2012). In line with the main function, banks must be able to minimise the amount of non-performing credit which can trigger the financing risk. Therefore, banks are suggested to apply appropriate credit management using Prudential's principles in providing the financing. It is beneficial when return on assets increases, financing risk will not follow.

Conclusion

The findings and discussion show that financing expansion, financing quality, financing to deposit ratio and return on assets have a significant influence on financing risk in Islamic commercial banks in Indonesia. This research also shows that Islamic banks must balance the funding structure when providing credit to the customers. Practically, the result shows that the influencing variables can be the basis to decide the operational strategies from the management.

Based on the result and analysis as well as the abovementioned conclusions, risk management is strongly suggested to minimise the financing risk caused by high non-performing financing (NPF) especially when doing financing expansion. Since Islamic banks are intermediary institutions, an accurate risk management has a significant influence on the operational performance. The management must be able to maintain with-profit financing quality by applying Prudential's principles.

There is some limitation that might affect the result of this research. The time period only covered the post-crisis global finance which results in the inability to analyse the financing risk level of difference prior to the crisis, post-crisis and during the crisis. This research also does not include the lag period. Therefore, the following research is suggested to include the lag period.

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