RISK, EFFICIENCY AND PERFORMANCE OF ISLAMIC BANKING: EMPIRICAL STUDY ON ISLAMIC BANK IN INDONESIA

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ABSTRACT

Banking is an institution that is highly regulated company, both in capital, funding, and liquidity. In this case, bank management must be able to control the risks and efficiency to improve its performance. This study is to examine the effect of risk and efficiency on the performance of Islamic banking. Risk consists of the financing risk that is measured by non-performing financing (NPF),capital risk measured by the capital adequacy ratio (CAR) and liquidity risk is measured by financing to deposit ratio (FDR) and the minimum reserve requirement (RR). The efficiency was measured by operating expenses to operating income ratio (OEOI). While Islamic banking performance was measured by Return On Assets (ROA) and Net Profit Margin (NPM). This study involved 8 Islamic banks in Indonesia as the samples with quarterly data and processed using multiple regression analysis. The results showed the significant effect of FDR, CAR, OEOI and size on the performance of Islamic banking in contrast to the RR and NPF that had no significant effect on the performance of Islamic banking.

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Keywords: Financing to deposit ratio, Non-performing financing, Return on asset, Net profit margin, Risk, Efficiency.

1. INTRODUCTION

Banking is one of the pillars that sustain the economy of a country. It plays a very important role for public to save their money and to seek the source of finance for people needing the funds. Banks act as a financial intermediary of a society that excess funds to communities in need of funds. The Islamic banking recently growing rapidly, similarly serves as a financial intermediary. What makes it different from the conventional banking is the instrument used. In Islamic banks, it is not permitted to use the instrument of interest as applied in the conventional banks. .

Bank is a business is highly regulated by the government in consideration to that the source of banking funds mostly comes from the public. The failure and the liquidation of a bank will bring a detrimental impact on the community. Even, when the failure has a systemic impact, it could affect the economic stability. The bank's operations are therefore highly regulated by the government through the role of Bank Indonesia. For example, banks are required to provide cash as a minimum giro requirement (RR) at least 5% of the total liabilities immediately payable; financing granted not exceeding 110% of public funds; Non-performing financing (NPF) notexceeding 5%, and the minimum capital adequacy ratio of 8%, and other rules.

The bank's management is required to be able to manage the risks well without breaking the established rules of the bank. Meanwhile, Islamic banking is potential to have a risksince many of its operations are related to products containing such risks of *mudaraba* and *musharaka* financing (Mohammad *et al.*, 2013). The products areprone for dishonesty or fraud risk clients in the transaction. Bank Indonesia updated circulars SE No. 5/21 / DPNP / 2003 to SE No. 13/23 / DNDP in 2011 to encourage the application of risk management to credit risk, capital risk, operating risk, and other non-financial risks. The risk is examined by three variables namely risk financing risk, liquidity risk and operational risk (Ahmed *et al.*, 2011). While Mohammad *et al.* (2013) divides risks into four categories namely credit risk, liquidity risk (liquidity ratio), capital risk , and operating risks.

The bank's business built is based on a trust to maintain the trust of banks and the bank should be able to maintain liquidity which provides funding at any time if customers withdraw their funds. The bank also should be able to provide funds to meet the agreed financing commitments. Since liquidity is a key element (Mohammad *et al.*, 2013) Bank Indonesia set a minimum threshold of liquidity referred to statutory reserve of 5%. The liquidity of the bank should be sufficient andshould not be too little or too big. If too large, it can impact on many funds of the banks which are idle resulting in the lesser opportunities to generate the profit.

Bank Indonesia also regulates bank capital in accordance with international regulations Bank International Settlement (BIS). Bank capital plays a very important role sincewhen the bank is bankrupt, it can cover the loose. In accordance with BIS, capital adequacy ratio serves to mitigate the risk of loss. The bank's capital will be used for capital (CAR) is a minimum of 8%. Some researcher found a significant relationship between capital adequacy ratio and the performance of Islamic banking (Haron, 1996) and Srairi (2009).

Meanwhile, in Islamic banks, the major incomes are derived from financing provided. The higher financing given the opportunity to make a profit is also higher. However, the provision of financing must be careful because it also can lead to many problems. Financing risk is measured by the amount of financing (Non-Performing Financing/NPF). The higher NPF causes lesser bank profits because banks should provide more reserves for receivables.

Bank profits earned from bank income will be reduced by banks' operating costs. To measure the efficiency can use the ratio of operating expenses and operating income (OEOI) of the bank (Qureshi and Madeeha, 2012). The higher OEOI shows the bank's operations getting more inefficient. Islamic banks in Indonesia, which is still comparatively short, have a sharp variation in

terms of total assets. It is also found a positive effect of the size of the bank and total assets of and proxy performance of Islamic banks (Ahmed *et al.*, 2011). The larger banks are increasingly trusted by the public, both for the purposes of saving money and for financing.

2. THEORITICAL REVIEW AND HYPOTHESIS

2.1. Liquidity Risk and Performance of Islamic Banks

The bank liquidity is akey element in managing the bank's assets (Mohammad *et al.*, 2013). Liquidity management is one of the highest priorities in the financial institution. Good Liquidity Management will be able to meet the funding requirements for both customers intending to take their funds at any time and provide funds to meet financial commitments. As regulated in Bank Indonesia Regulation No. 13/23/PBI/2011 on the application of risk management for Islamic banks and Islamic business units, bank liquidity is measured by the minimum reserve requirement (RR) and financing to deposit ratio (FDR). RR is intended to maintain daily liquidity, while FDR isgranted financing compared with public funds. The higher reserve requirement shows the higher security of public funds, but on the other hand the increasing amount of the reserve requirement will lead to the greater number of idle funds, thus reducing the opportunity for gain. Meanwhile, the higher FDR shows the greater amount lent, but greater liquidity risk due to the loaned funds cannot be withdrawn at any time.

There is a significant relationship between the loan and total assets and profitability (Ani *et al.*, 2012) while (Srairi, 2009) found no difference in liquidity between Islamic banks and conventional banks. The researcher studying in Islamic banking in Indonesia has found the influence of the LDR and profitability (Arianti and Harjum, 2012).

H_1:   Reserve Requirement (RR) negatively affects the performance of Islamic banks

H_2:   Financing to deposit ratio (FDR) has a positive influence on the performance of Islamic banks

2.2. Financing Risk and Performance of Islamic Banks

Banks including Islamic banks have established the ultimate goal for profit that can be used to pay for the results to clients and profits for their owners. The main sources of Islamic bankprofits are derived from the financing provided, thus, enabling the greater finance to provide a great opportunity to obtain greater profits. On the other hand, the increasing amount of financing risk also raises the potential losses due to financing risk problems. The management of Islamic banks is expected to provide financing risk to the principle of caution to control the financing risk. Financing problems (uncollected) in Islamic banking are often called non-performing financing (NPF). The higher NPF showed greater funding problems and the greater reserve should be provided for the elimination of receivables, which still could potentially reduce the level of profit.

The study on Islamic banking in Pakistan found a significant effect of NPF and banking performance (Akhtar *et al.*, 2011). Similarly, Syafri (2012) studying Islamic banking in the Gulf countries also found a significant effect. Ruslim (2012) found a significant and negative influence between the NPF and the performance of Islamic banks in Indonesia.

H$_3$:   Non Performing Finance (NPF) negatively affects the performance of Islamic banks

2.3. Capital Risk and the Performance of Islamic Banks

For every company, capital is very important to develop itsbusiness. Banking capital is also very important asthe function of capital only used reserves to cover losses; bank capital is also one measure of bank soundness. The higher capital owned by the bank indicatesits better health. Bank capital set by Bank Indonesia with reference to international regulations 'Bank of International Settlement' is a minimum of 8% measured by bank capital adequacy ratio of capital or capital adequacy ratio (CAR)as the ratio between equity capital held by banks with risk-weighted assets. The bank management should be able to manage that amount of sufficient capital (not too little or too large). If the CAR of banks is too high in terms of the bank's good health but with too magnitude CAR, it indicates much funds unemployed because many funds are stored in the capital. Therefore, the greater CAR will reduce opportunities for gains.

Capital adequacy ratio (CAR) has a significant and negative effect on the performance of Islamic banks (Akhtar *et al.*, 2011). Similarly, CAR also negatively affects the profitability of Islamic banks (Syafri, 2012). However, a researcherhas found insignificant effect of CAR and the performance of Islamic banks in Malaysia (Idris *et al.*, 2011) and other researcher found no significant effect of CAR and the performance of Islamic banks in Indonesia (Ruslim, 2012).

H$_4$:   Capital Adequacy Ratio (CAR) negatively affects the performance of Islamic banks

2.4. Efficiency and Performance of Islamic Banks

The size of the operational efficiency of Islamic banking can use the ratio of operating expenses to operating income (Mohammad *et al.*, 2013). Corporate profits arederived from revenue minus costs, so if the cost can be reduced it is expected to increase profits. OEOI with a large rate showsthe less efficiency of Islamic banking in operation; thereby decreasing the rate of profit. In Indonesia, it is found a negative and significant effect between OEOI and profitability (Ariyani, 2010).

H$_5$:   The ratio of operating expenses to operating income (OEOI) negatively affects the performance of Islamic banks

2.5. The Firm Size and the Performance of Islamic Banks

Firm size indicated by the number of assets also affects banks in profit. The greater ability of banks provide financings risk because they have more funds to provide financing risk (Akhtar *et al.*, 2011). Some researcher use the firm size as the control variables still affecting the profitability (Zeitun, 2012); (Idris *et al.*, 2011) and Srairi (2009). The next hypothesis is:

H$_6$:   Firm size (SIZE) has a positive influence on the performance of Islamic banks

3. RESEARCH MOTHOD

3.1. Population and Sample

The population in this research consist of 11 Islamic banks currently operating in Indonesia. Of those 11 Islamic banks, some are the new ones; thus, they were not included in the study. In other word, there were eight Islamic bankestablished earlier involved in this research as the sample. The data was taken in the form of data quarterly. The list of banks studied in this study is presented in Table 1.

Table-1. List of Samples

No	Banks Name
1	PT. Bank Muamalat Indonesia
2	PT. Bank SyariahMandiri
3	PT. Bank Mega Syariah
4	PT. Bank BRI Syariah
5	PT. Bank BukopinSyariah
6	PT. Bank PaninSyariah
7	PT. Bank BCA Syariah
8	PT. Bank BNI Syariah

Source: Sharia bank statistic, September 2013 (Bank Indonesia)

3.2. Research Variables

In accordance to the conceptual framework of research in the future, then in this study, there are two dependent variables, five independent variables and one control variable, and variable measurements as follows:

Table-2. Measurement of Variables

No	Variable	Notation	Measurement
1	Return on Assets	ROA	Net Income/Assets Average
2	Net Profit Margin	NPM	Net Income/Operational Income
3	Financing to Deposit Ratio	FDR	Total Financing/The third party fund
4	Reserve Requirement	RR	Cash + BI Balance/Obligation soon to be paid
5	Capital Adequacy Ratio	CAR	Total equity/Weighted average asset by risk
6	Non Performing Financing	NPF	Non perform financing /Total Financing
7	Operating Expenses to Operating Income	OEOI	Operating Expenses/Operating Income
8	Firm Size	SIZE	Ln Total Assets

3.3. Data Analysis

To explain the influence of the independent variables on the dependent variable, multiple regression statistical analysis was used. Multiple regressions is a regression technique describing the influence of the dependent variable with the independent variable. The multiple regression equation is presented as follows:

$$ROA = \beta_0 + \beta_1 FDR + \beta_2 NPF + \beta_3 CAR + \beta_4 OEOI + \beta_5 RR + \beta_6 SIZE \qquad (1)$$

$$NPM = \beta_0 + \beta_1 FDR + \beta_2 NPF + \beta_3 CAR + \beta_4 OEOI + \beta_5 RR + \beta_6 SIZE \qquad (2)$$

where:

ROA   = Return On Assets

NPM   =Net Profit Margin

FDR   =Financing to Deposit Ratio

NPF   =Non Performing Financing

CAR   =Capital Adequacy Ratio

OEOI   = Operating cost to operating income

RR   = Reserve requirement

SIZE   = Firm size

4. RESULT AND DISCUSSION

4.1. Descriptive Statistic

Table 3 presents the results of the data with the help of the program E-views obtained descriptive statistics.

Table-3. Descriptive Statistic

	Mean	Median	Maximum	Minimum	Std. Dev.
ROA	1.28	1.53	4.25	-12.02	1.7832
NPM	7.41	7.15	16.14	-8.72	4.0977
OEOI	88.17	86.57	183.34	50.79	20.5589
FDR	97.6	91.87	205.31	35.43	20.325
CAR	21.78	13.93	91.23	9.04	16.652
RR	6.33	5.25	26.55	5.02	16.652
NPF	3.32	2.96	8.46	0	6.4132
SIZE	15.61	15.67	17.88	11.99	1.3141

Source: Data processed

Islamic banking performance which is measured by return on assets (ROA) shows the relatively low average but positive by 1.28%. The highest ROA was achieved by Mega ShariaBank at 4.25% at the beginning of its establishment in 2010, while the lowest ROA was obtained by BNI Syariahat -12.02% at the beginning of the bank's operations in 2010. Judging from the net profit margin (NPM) it showed an average of 7.41% with a maximum of 16:14 NPM% acquired by Mega ShariaBank in the second quarter of 2011. On the other hand, the lowest NPM was experienced by PaninShariaBankby -8.72% in the beginning of the operation of the first quarter of 2010.

Judging from the net profit margin (NPM) it showed an average of 7.41% with a maximum of 16:14 NPM% acquired by Mega ShariaBankin the second quarter of 2011. In contrast, the lowest NPM by -8.72% was experienced by PaninShariaBankat the beginning of the operation of the first quarter of 2010.

The level of bank efficiency as measured by operating costs compared with operating income (OEOI) showed an average of 88.17%. The high OEOI of 183.34% was obtained by PaninShariaBank at the beginning of the operation of the 2nd half of 2010, while the lowest one was at 50.79% of OEOI experienced by PaninShariaBank in the end of 2012.

CAR capital ratio showed the average number of 21.79% higher than the CAR of 91.23% of ShariaBCA at the beginning of the operation. CAR for it demonstrated the ability of banks to disburse very low; thus, emerging so many unemployed equities. While low CAR of 9.04 was produced by the Bukop in Sharia Bank in 2009.

The ratio of a bank's ability to channel financing was compared with the third party funds as measured by financing to deposit ratio (FDR) with an average of 97.60%. FDR high of 205.31% was obtained by PaninSharia Bank in mid of 2011, while the lowest one at 35.43% of FDR was obtained by PaninSharia Bankin 2009 in the initial operation of the bank. Liquidity in the form of the provision of the minimum reserve requirement (RR) was at the average of 6.33% with a value of 26.55% and a centipede minimum of 5:02%

Financing risk as measured by the NPF showed the average number of relatively little, amounting to 3:32%, with a minimum of 0.00% and a maximum of 8:46% experienced by BNI Sharia in the 1st half of 2012. This showedthat the problematic financing (NPF) on Islamic banking is still controlled due to the maximum limit of 5%.

4.2. Hypothesis Test Results and Discussion

The results of hypothesis testing with the dependent variable consists of return on assets (ROA) and net profit margin (NPM) as follows:

Table-4. Hypothesis Test Results

Variables	ROA		NPM	
	t-statistic	Prob	t-statistic	Prob
FDR	1.180215	0.024	3.115036	0.0023
RR	0.595167	0.5527	-3.697186	0.0003
NPF	-0.451899	0.6521	-0.591225	0.5554
CAR	-1.063765	0.0294	-2.766312	0.0065
OEOI	-6.431144	0.0000	-7.777839	0.0000
SIZE	0.238665	0.0117	4.640731	0.0000

4.2.1. Liquidity Risk

Liquidity is the ability of banks to meet withdrawals at any time and meet the financing commitments (Siamat, 2005). It ismeasured by two variables financing to deposit ratio (FDR) and the minimum reserve requirement (RR). From the results of hypothesis testing with ROA as the dependent variable with FDR as independent variables, the t-statistic values were obtained significantly positive by 0.0240, showing that the FDR was significant and positive with ROA as the significance value was lessthan the significance level 0:05. Similarly, inthe NPM as the dependent variable, the t-statistic figures were obtained positive with the significance level of 0.0023 less than the level of significance as required. It can be concluded that the hypothesis is proven, meaning that the higher financing could provide the higher profit given. The heightened FDR showed that the higher financing provided an opportunity to obtain greater profits. While the results of hypothesis liquidity as measured by the reserve requirement on ROAturned out the

insignificant effect because of the greater significance level 0.5527 0:05. This suggests that the size of the reserve has no effect on ROA. On the other hand, with the influence of the NPM, RR had a negative and significant effect characterized by the probability value of 0.0003 smaller than the level of significance as required. It indicated the greater magnitude of reserve funds for liquidity reserves, emerging the greaterreserve funds resulting in increasingly smaller idle funds for financing, thereby reducing the performance of the bank (Bukhari and Rana, 2012). Relationship between the financing to profitabilityalso had a significant effect (Arianti and Harjum, 2012). A positive effect of LDR on ROA (Ruslim, 2012) was found as well.

4.2.2. Financing Risk

Financing risk is the amount of financing problems faced by Islamic banks measured by non-performing financing (NPF). The hypothesisof test results showed that the NPF had a value of t-statistic significant negative and not good with the dependent variable ROA and NPM. The significant value of 0.6521 to 0.5554 was against the NPM ROA higher than the required level of significance. Thus, the financing risk as measured by the NPF had no effect on the performance of Islamic banks. This was likely due to the NPF Islamic banks that were relatively little, as indicated by the average of the NPF at 3:32%, the highest and the lowest at 8.46% and 0.00%, respectively. It indicated that a high NPF financing risk management was quite good (Arianti and Harjum, 2012). However, Akhtar *et al.* (2011) and Idris *et al.* (2011) found a significant relationship between the NPF with the performance of Islamic banks.

4.2.3. Capital Risk

The results of hypothesis test bank capital were adequate as measured by CAR showing a negative influence and exhibited significantly better performance as measured by ROA and NPM, still indicated by a negative value of t-statistics with the significance value for ROA of 0.0294 and 0.0065 for the NPM smaller than the significance level of 0:05. These results were consistent with the hypothesis proposed indicating that the higher the CAR will further degrade the performance of Islamic banks. The high CAR high and much funds absorbed into the capital, reduced the chance to be played in the financing, resulting in decreased profitability.

These results were consistent with the findings of Akhtar *et al.* (2011); Srairi (2009) and Ani *et al.* (2012). Some studies also found a significant effect of CAR onthe performance of Islamic banks in Indonesia (Arianti and Harjum, 2012); (Ruslim, 2012).

4.2.4. Efficiency

Bank efficiency is measured by the ratio of operating expenses to operating income (OEOI). From the results of hypothesis testing, t-values were obtained on ROA and NPM Statistically significant negative, because the significance value was less than the one required by 0:05. It can be stated that the level of efficiency as measured by OEOI had a significant and negative effect, meaning that the higher the OEOI resulted in the decreased performance of Islamic banks. The high

OEOI indicated thatthe banks were increasingly inefficient in managing their assets so as to lower the rate of profit.

Some studies have found a significant relationship between OEOI with profitability (Akhtar *et al.*, 2011); (Srairi, 2009). Similarly, study on Islamic banks in Indonesia also found a significant effect (Ariyani, 2010); (Ruslim, 2012).

4.2.5. Firm Size

Banks with large assets are more likely to obtain the number of larger customersbecause the people are more confident both in store and toobtain Financing risk funds. The results showed the effect of firm size hypothesis (size) onthe performance of the bank (ROA and NPM) that had a value of t-statistic significant positive and marked with significance value of 0.0117 on ROA and 0000 to NPM. Thus, the size of the company had a significant and positive effect on the performance of Islamic banks.

These results were similar with the findings of Idris *et al.* (2011) conducting a research on that Islamic banking in Malaysia. It was found a positive effect between firm size and performance (Ahmed *et al.*, 2011); (Syafri, 2012). While Ani *et al.* (2012) and Akhtar *et al.* (2011) found no significant relationship between firm size and performance..

5. CLOSING

From the analysis and discussion, it can be concluded that the liquidity risk measured by the financing to deposit ratio (FDR) had a significant positive effect, so expectinga good management of FDR without ignoring the risk of financing (NPF). Whereas, when it was measured with the minimum reserve requirement (RR), it had a significant negative effect on the performance of Islamic banking. Therefore, the management of Islamic banks should be able to manage the reserve as well, meaning not too high so as not many idle funds.

Risk financing (NPF) has no significant impact on financial performance. On the other hand, risk capital (CAR) was significant and negatively affecting the performance of Islamic banks, so that management needs to manage the CAR that is not too high. OEOI also hada significant negative effect showing that higher ROA meant inefficient banks, thus reducing the bank's performance. In contract, firm size had apositive and significant effecton the performance of Islamic banks.

The result of this study is expected toprovide an additionalcontribution tothe existing literature. In addition,itis expected tobe usedby practitionersof Islamic bankinginIndonesiain managingthe risksof banksto improveits performance.

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