

“A comparative study of Indonesian and Malaysian Islamic banks”

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A COMPARATIVE STUDY OF INDONESIAN AND MALAYSIAN ISLAMIC BANKS

Abstract

The aim of this study is to analyze the influence of the non-performing financing (NPF), financing to deposit ratio (FDR), operational efficiency ratio (OER), and firm size (SIZE) on return on assets (ROA). The object of the research is the Islamic bank in Indonesia and the Islamic bank in Malaysia for the period of 2010–2015. Another aim of this research is to determine if there are differences in the impact of FDR, NPF, OER and firm size on ROA between the Islamic bank in Indonesia and the Islamic bank in Malaysia. The findings show that not all studied independent variables affect the ROA of the Indonesian Islamic Bank and the Malaysian Islamic bank. OER has a negative and significant effect on the Indonesian Islamic Bank's ROA, while FDR and size have a positive and significant influence on the Indonesian Islamic Bank's ROA. In the Islamic bank of Malaysia, NPF affects ROA positively, while OER affects ROA negatively. In the Indonesian Islamic bank, independent variables that influence ROA are FDR, OER, and SIZE. In Malaysian Islamic bank, only OER influences ROA significantly. Based on the Chow test, one can conclude that there is a significant difference between the Indonesian Islamic bank and the Malaysian Islamic bank. Regarding operational costs, banks should pay more attention to validation of the costs to be incurred, so there is no need to spend unnecessary costs.

Keywords

financing to deposit ratio (FDR), non-performing financing (NPF), operational efficiency ratio (OER), return on assets (ROA), Islamic bank

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INTRODUCTION

In the context of the ASEAN Economic Community (AEC), the opportunities of Islamic banks in the face of industrial competition are a matter of concern (Robiyanto, Hersugondo, & Chotijah, 2016). The most important issue is the level of performance and the health of Islamic banking in each ASEAN country. This study compares the financial ratios of Islamic banking industry in Indonesia with Islamic banking in Malaysia, due to differences in state ideology between Indonesia and Malaysia, where Indonesia adopts the Pancasila ideology and Malaysia is an Islamic state. This ideological difference is expected to lead to different results in both countries (Sahabuddin, 2017).

Profitability is an indicator of bank performance (Jatmiko, 2017; Wahyudi, Nofendi, Robiyanto, & Hersugondo, 2018). One of several indicators used as a measure of profitability is the level of return on assets (ROA). ROA is used as a measure of the company's effectiveness level as to the ability to generate profits through the utilization of assets owned (Handriani & Robiyanto, 2019; Husnan, 2017). The central bank of the Republic of Indonesia, Bank Indonesia (BI), is more concerned about ROA compared to return on equity (ROE)

in determining the bank health. The BI's monitoring duty nowadays has become the Financial Services Authority's monitoring duty, sees more on bank profitability calculated through assets, where funds are obtained from public savings (Lukman, 2009).

The performance of banks proxied by ROA can be affected by various variables. This study uses four variables affecting ROA. These are: liquidity (proxied by financing to deposit ratio/FDR), financing risk (proxied by non-performing financing/NPF), operational efficiency ratio (OER), and firm size (Size). Muhammad (2002) stated that FDR is the ratio of financing disbursed divided by the amount of public funds collected by banks. Credit risk or financing risk (NPF) is the risk of a default occurrence by the customer paying off his/her liabilities, or the risk arising because the debtor is unable to pay his/her debts (Riyadi, 2004; Sistiyanini & Supriyono, 2017). Operational efficiency ratio (OER) is the ratio of the bank's efficiency rating in performing its operations (Lukman, 2009). Meanwhile, the size of the firm is a small scale of the small company classification seen from the value of total assets.

Based on the studies mentioned, this study examines the influence of liquidity (FDR), financing risk (NPF), efficiency (OER), and firm size (SIZE) on the profitability of Islamic banks in Indonesia and Malaysia during the 2010–2015 period. This research is expected to contribute to the field of financial management, especially in Islamic banking, to control FDR, NPF, OER, SIZE and to improve bank financial performance; to provide a practical reference to the world of Islamic banking to improve bank financial performance; and to provide an input for policymakers to foster and supervise Islamic banks.

1. LITERATURE REVIEW AND THEORETICAL BASIS

1.1. Islamic banking

The function of Islamic banks is almost the same as that of conventional banks, which are both intermediary institutions that collect public surplus funds and then distribute them to the community in need of funding (Ernayani, Robiyanto, & Sudjinan, 2017; Majid, Musnadi, & Putra, 2014). The most significant difference relates to the treatment of each transaction, as well as how banks receive income type (Abdul-Rahman & Yazid, 2015; Robiyanto, 2018; Wahyudi et al., 2018). Conventional banks earn profits based on interest income, while Islamic banks earn from fee-based income, markup, and profit-sharing (loss and profit sharing). Islamic banks are banks that operate without any *riba* (interest). According to Sukmana and Febriyati (2016), Islamic Bank is a financial institution whose main business is channeling financing as well as other services on payment transactions and money circulation services, where its operation is regulated by Islamic Law.

1.2. The characteristics of Indonesian Islamic banks and Malaysian Islamic banks

In a comparative analysis of Islamic Law application to Islamic banking in Malaysia and Indonesia, Malaysian Islamic banking uses products based on the Bai 'al-Inah and Bai' al-Dayn principles, which are not approved by the Islamic Fiqh Academy (IFA); while Indonesian Islamic banking is in line with IFA and does not apply the two principles. To compare Indonesian and Malaysian Islamic banks, the environmental conditions in both should be taken into account. For example, the Malaysian environment is more concerned about the symbolic implementation of Islamic practices, paying more attention to symbols than to the substance of the implementation of sharia-compliant banking on the principles of Islamic Law. It concerns the relatively non-dominant population of Muslim societies, so that implementing Islamic practices becomes a representation of maintaining the existence of Muslim societies; therefore, the attention to the adherence of Islamic Law principles is not yet a major focus. On the other hand, in Indonesia, with the dominant population and the demands of the Muslim community expecting the ideal form of banking

Table 1. The characteristics of Indonesian and Malaysian Islamic banking

Issues	Indonesia	Malaysia
Population	240 million, 88%, Moslem	24 million, 58%, Moslem
State religion	N/A	Islam
Economic system	Dual Financial/Banking System started in 1992	Dual Financial/Banking System started in 1983
Legal framework	IBA (1983) under Civil Court (unable to overrun Banking Laws)	Banking Act (1992, 1998), Islamic Banking Act (2006 est.)
Policy making involvement	Mainly, Bank Indonesia	National Agenda (Government & BNM)
Focus	Substance	Symbol/Form
Development paradigm	Market Driven, Fair Treatment, Gradual & Sustainable, and Sharia Compliance	Government Driven, Comprehensive, & Pragmatic
Development stage	Establish the fundamental basis (02 – 04) Strengthen the structure (04 – 08) International Standards (08 – 11)	Establish Infrastructures (83 – 93) Create Critical Mass (93 – 00) Global Harmonization (00 – 10)
Network Development Strategy	Islamic Bank (full-fledged), Islamic Branch (full-branch), Office Channeling	Islamic Bank (full-fledged), Islamic Banking Scheme (windows) Subsidiary bank Foreign Islamic Bank
Sharia Compliance	Middle East Oriented Complies to IFA	Not comply to IFA
Sharia Authority	DSN – MUI as an Independent Body to issue Fatwa	NSAC Under BNM & Merely issuing Resolution
Specific Contracts	N/A	Bai ‘al-Dayn, Bai’ al-Inah, BBA
Financing Portfolio	Varied with 33% PLS	Focused on BBA & Murabaha with only 0.05% PLS
NPF	Less than 5%	Reach 10%
Asset Share	1.34% (started from 1992)	+/-9% (started from 1983)

operations, Islamic banking operators should pay attention to the substance, especially operational compliance with Islamic Law principles. In detail, the characteristics of Islamic banking in Indonesia and Malaysia can be seen in Table 1.

1.3. Hypotheses development

1.3.1. The impact of financing-to-debt ratio (FDR) on ROA

According to Ascarya (2011), bank intermediation can be effective if banks are able to distribute all sources of funds in the form of credit or financing after calculating the mandatory reserves and daily liquidity. The intermediation function can be measured by comparing the amount of credit or financing distributed with the amount of third-party-fund that can be collected. Financial intermediation can be measured by a loan to deposit ratio, or, as Islamic banking calls it, a financing to debt ratio. An increase in the financing to deposit ratio indicates the source of funds owned by banks is more productive than the profit generated by banks.

According to the financial intermediation theory, its function is illustrated by high FDR that indicates high funding to increase returns. This is

supported by the results of research by Almazari (2014), Mokni and Rachdi (2014) that the FDR variable has a positive impact on profit. Thus, the following hypotheses can be developed:

H1a: The financing to deposit ratio (FDR) has a positive effect on the profitability of Indonesian Islamic banks.

H1b: The financing to deposit ratio (FDR) has a positive effect on the profitability of Malaysian Islamic banks.

1.3.2. The impact of non-performing financing (NPF) on ROA

Financing risk is the most risk faced by the bank that may cause it to fail. Credit risk (in a conventional bank) is measured by the ratio of non-performing loans to total loans. In Islamic banking, a non-performing loan is replaced by non-performing financing, since Islamic bank is not used for loans but for financing (Ernayani et al., 2017). Non-performing financing is financing that falls into the substandard, doubtful and congested category. Total financing is the amount of financing disbursed by banks that falls into the current, special interest category, substandard category, doubtful category and jam category. The larger the

ratio of non-performing financing, the more bank is exposed to credit risk. The higher the credit risk, the more opportunity it offers for the decrease of profit sharing from the financing channeled by the bank.

This is also supported by the research of Bilal, Saeed, Gull, and Akram (2013), Mawardi (2014), Mokni and Rachdi (2014), Petria, Capraru, and Ihnatov (2015), Putranto, Herwany and Sumirat (2012), which showed that NPF negatively affected profit. According to the credit risk management concept, high credit risk causes a decline in profit. The following hypotheses can be developed:

H2a: Non-performing financing (NPF) has a negative effect on the profitability of Indonesian Islamic banks.

H2b: Non-performing financing (NPF) has a negative effect on the profitability of Malaysian Islamic banks.

1.3.3. The effect of operational efficiency ratio (OER) on ROA

Operational efficiency ratio (OER) is an indicator of the efficiency level and bank competency to run its operations (Lukman, 2009). OER is usually called the efficiency ratio, a measurement of bank management competency; it sets operational costs and operational income. OER is the ratio of operational cost divided by operational income. If operational income is higher than operational cost, OER value will be lower. The low OER represents bank efficiency, where banks that operate efficiently can bring benefits. If OER increases, then ROA will decrease. Or it can be said that the lower the OER ratio to management, the more efficient the operational costs, so that the chances of the bank are in a less problematic state. Many studies have found that OER negatively affects ROA (Almazari, 2014; Karim, Sami, & Hichem, 2010; Mawardi, 2005; Petria et al., 2015).

A low-value OER indicates the high bank efficiency. According to the theory of fundamental signals, information related to high efficiency of business is a good signal for the performance of the bank. Based on the framework of the hypothesis, it can be developed as follows:

H3a: Operational efficiency ratio (OER) has a negative effect on the profitability of Indonesian Islamic banks.

H3b: Operational efficiency ratio (OER) has a negative effect on the profitability of Malaysian Islamic banks.

1.3.4. The effect of the firm size (Size) on ROA

Banks with high total assets, have a relatively high total funding allocation, which leads to higher interest income on loans (profit sharing). Banks with large credit distribution will contribute significantly to the community, and their existence is being felt by the community (Mawardi, 2014). Economy scale of theory refers to a situation where output growth is proportionately faster than input. Improved yield scale or decreased costs arise due to technological and financial reasons.

Many studies state that size has a positive effect on profit; these are Al-Jafari and Alchami (2014), Alsyaahrin, Atahau, and Robiyanto (2018), Aqil, Ahmed, Vveinhardt, and Streimikiene (2019), Bilal et al. (2013), Karim et al. (2010), Maneerattanarungrot and Donkwa (2018), Petria et al. (2015). The framework of thought becomes the basis for the development of the following hypotheses:

H4a: Firm size (Size) has a positive effect on the profitability of Indonesian Islamic banks.

H4b: Firm size (Size) has a positive effect on the profitability of Malaysian Islamic banks.

1.3.5. Differences in the effect of FDR, NPF, OER, and Size on ROA for Indonesian and Malaysian Islamic banks

Contingency theory was first proposed by Galbraith (1973) who argued that there was no one way to organize, any way of organizing was not equally effective. Thus, based on the contingency theory, the management control system varies in each organization according to organizational and situational factors. Indonesia and Malaysia are two countries with different ideologies. Malaysia adopts the Islamic state, while Indonesia is based on Pancasila. Other differences between the two countries are the

economic system adopted, the characteristics of the population, the role of the government, the position of the sharia bank in the legislation, the madzhab adopted by the majority of its Muslim population, and the chosen development strategy.

Contingency theory gives a warning that executives can manage organizations according to their will. In such an organization, there is a different value of FDR, NPF, OER, and Size, and the difference between FDR, NPF, OER, and Size so that it will affect ROA differently. Therefore, it is worth examining whether there is a difference between the variables. According to the gap in the data, Indonesian and Malaysian Islamic banks had different ROA in 2010–2015 with the situation fluctuating and generating different ROA. Therefore, the following hypothesis is proposed:

H5: There are differences in the effect of FDR, NPF, OER, and Size variables on ROA in Indonesian and Malaysian Islamic banks.

1.4. Difference between previous studies and the current research

Research on banking ratio affecting profitability shows different results. The results of previous research conclude that there are variables that are not consistent in influencing profitability. Studies that have conflicting results have been presented by Almazari (2014) that FDR has a positive influence on ROA, whereas according to Petria et al. (2015), FDR has a significant negative effect on ROA. Almazari (2014) also revealed that NPF positively affects ROA. This is in contrast to the research by Anggraeni and Suardhika (2014), Petria et al. (2015), Putranto, Herwany, and Sumirat (2012) who argued that NPF has a significant negative effect on ROA. The research on size against ROA also shows differences between studies conducted by Bilal et al. (2013), Karim et al. (2010), Petria et al. (2015) and those conducted by Almazari (2014), Mokni and Rachdi (2014). Based on the inconsistent results, this study uses FDR, NPF, OER and Size as independent variables and ROA as an independent variable. It also combines the Islamic commercial banks in Indonesia and Islamic commercial banks in Malaysia as samples. To the authors' knowledge, this type of study is extremely rare in Indonesia and Malaysia.

2. METHODS

2.1. Data

The data consists of return on assets (ROA) as a dependent variable, and the independent variables are the financing to deposit ratio (FDR), non-performing financing (NPF), operational efficiency ratio (OER) and firm size (SIZE). The data is obtained from the Quarterly Financial Report published by Islamic banks, as well as quarterly balance of earnings obtained through the official website of each bank and Bloomberg. The period of data used is a quarterly financial report, which is published in 2010 through 2015.

2.2. Population and sampling

The population of this study is all Islamic commercial banks located in Indonesia and Malaysia. There are 11 Islamic commercial banks in Indonesia and 16 Islamic commercial banks in Malaysia. The purposive sampling is used in this study. The characteristics of the banks as samples are as follows:

- 1) Islamic banks are registered with Bank Indonesia and Malaysia State Bank in researched period (2010 to 2015);
- 2) the Bank under study operates in the period of 2010 to 2015;
- 3) the studied bank publishes the quarterly financial report during the period of 2010 to 2015 and contains the required variables studied.

Based on these criteria, the sample that can be used is presented in Table 2.

Table 2. The sample of Indonesian and Malaysian Islamic banks

Malaysian Islamic banks	Indonesian Islamic banks
Affin Islamic Bank Berhad	PT Bank Syariah Muamalat Indonesia
Alliance Islamic Bank Berhad	PT Bank Syariah Mandiri
Am Islamic Bank Berhad	PT Bank Syariah Mega Indonesia
	PT Bank Syariah BRI

2.3. Multiple regression analysis

Multiple regression is used to analyze the data. In this study, the dependent variable is return on assets (ROA), while the independent variables are financing to debt ratio (FDR), nonperforming financing (NPF), operational efficiency ratio (OER), and firm size (Size). The ROA relationship model with these variables can be written in the equation below:

Model 1 (Islamic banks in Indonesia):

$$ROA = \alpha_0 + \beta_1 \cdot FDR + \beta_2 \cdot NPF + \beta_3 \cdot OER + \beta_4 \cdot Size + e. \quad (1)$$

Model 2 (Islamic banks in Malaysia):

$$ROA = \alpha_1 + \beta_5 \cdot FDR + \beta_6 \cdot NPF + \beta_7 \cdot OER + \beta_8 \cdot Size + e, \quad (2)$$

where α – constant, β_1 – regression coefficient of FDR, β_2 – regression coefficient of NPF, β_3 – regression coefficient of OER, β_4 – regression coefficient of Size, e – error term.

Table 3. Variable description

Variables	Definitions	Source	Scale
ROA	The ratio between profits before tax and the average total assets	Bloomberg	Ratio
FDR	The comparison of financing provided by banks with third-party funds which successfully deployed by banks	Bloomberg	Ratio
NPF	The ratio of financing problem and total financing channeled by sharia banks	Bloomberg	Ratio
OER	Measurement of bank's management capability in controlling operational costs against operational income	Bloomberg	Ratio
Size	A scale where small companies can be classified	Slize = Log Total assets (Data total asset taken from Bloomberg)	Ratio

2.4. Classical assumption tests

The classical assumption tests consist of residual normality, autocorrelation, multicollinearity and heteroscedasticity. Residual normality test is conducted using Kolmogorov-Smirnov statistics, autocorrelation test is conducted by using Durbin-Watson (DW) statistics, multicollinearity test is run using the Variance Inflation Factor (VIF), and heteroscedasticity test is conducted by employing the Glejser test. Unit root test is also conducted to check the data stationarity.

2.5. Chow test

Chow test is used as a test for equity of coefficient or coefficient equality test. Chow test is run by looking at observation research, namely observations that can be grouped into two or more groups of similar economic subjects (Ghozali, 2011). This research uses two groups, namely, Indonesian and Malaysian Islamic banks.

3. RESULTS AND DISCUSSION

3.1. Descriptive statistics

Data taken from the financial statements of each Islamic bank in the period 2010–2015 show that the development of the Islamic bank's financial ratios always changes. This study uses a sample of seven Islamic banks including four Indonesian Islamic banks and three Malaysian Islamic banks.

3.1.1. Descriptive statistics on Indonesian Islamic banks

The financial statements of each Indonesia Sharia Bank in the period of 2010–2015 describe the specific banks taken use financing to debt ratio (FDR), non-performing financing (NPF), operational efficiency ratio (OER), firm size (Size), and return on asset (ROA). The minimum, maximum, mean (mean) and standard deviation values of each variable are described in Table 4.

Table 4 shows that the number of observations is 96. The number of observations obtained from the multiplication period of research is as long as six years, with four financial reports each year with

Table 4. Descriptive statistics of Indonesian Islamic banks

Variables	N	Minimum	Maximum	Mean	Std. deviation
ROA (%)	96	-1.2100	4.1300	1.415000E0	.9929128
FDR (%)	96	78.17	108.38	93.1339	7.18275
NPF (%)	96	.6600	5.8300	2.545000E0	1.2041437
OER (%)	96	64.8100	110.5300	8.748406E1	9.5933236
TA (Rp)	96	3.9297E12	7.0370E13	2.835047E13	2.2037314E13
Valid N (listwise)	96	–	–	–	–

four banks. According to the data obtained, the average ROA has the lowest value of -1.21%, obtained by Bank Mega Syariah in March 2015. The highest ROA value of 4.13% was obtained by Bank Mega Syariah in June 2012. The average ROA is only 1.41%. This data shows that ROA at Indonesian Islamic banks has not reached the standard of Bank Indonesia that is above 1.5%.

The lowest value of FDR, 78.17%, is obtained by Bank Mega Syariah in December 2010. The highest FDR value of 108.38% is obtained by Bank BRI Syariah in March 2010. The FDR value of Indonesian Islamic banks during the study period showed that its highest value exceeded the maximum standard set by Bank Indonesia, that is between 78-92%. The average FDR is 93.13% with a smaller standard deviation value of 7.18%, then the data deviation on the FDR variable is said to be good.

The lowest NPF value of 0.66% is obtained by Bank Mandiri Syariah in March 2010. The highest NPF value is, obtained by Bank Muamalat 5.83% in March 2010. The value of NPF of Indonesian Islamic banks during the study period showed that the value was above the maximum standard set by Bank Indonesia that should be below 5%. The average NPF is 2.54% and has a smaller standard deviation of 1.20%, then the data deviation on the NPF variable is said to be good.

The lowest OER value of 64.81% is obtained by Bank Mega Syariah in December 2014. The highest OER value was obtained by Bank Mega Syariah amounted to 110.53% in March 2015. The OER value of Indonesian Islamic banks during the study period showed that the value exceeded the maximum standard set by Bank Indonesia, which should be less than 100%. The average OER is 87.48% with a smaller standard deviation value of 9.59%, then the data on the OER variable is said to be good.

The lowest value of total assets amounted to Rp 3,929,696,000,000 was obtained by Bank BRI Syariah in March 2010. The highest total assets obtained by Bank Mandiri Syariah were Rp 70,369,709,000,000 in December 2015. The average total assets were Rp 28,350,474,344,791 with a smaller standard deviation value of Rp 22,037,314,000,000, so the standard deviation on the total asset variable is said to be good.

3.1.2. Descriptive statistics on Malaysian Islamic banks

The financial statements of each Malaysian Islamic bank for the 2010–2015 period describe the banks' specific financing to debt ratio (FDR), non-performing financing (NPF), operational efficiency ratio (OER), firm size (Size), and return on assets (ROA). The minimum, maximum, average (mean) and standard deviation values of each research variable are described in Table 5.

Table 5 shows that the number of observations is 72. The number of observations from the results of the multiplication period is as long as six years, where there are four financial statements each year with three banks as a sample. According the data obtained, the average ROA has the lowest value of 0.55% received by Affin Islamic Bank Berhad in December 2015. The highest ROA value of 1.47% was obtained by Am Islamic Bank Berhad in June 2014. The Average ROA is 1.17%, this shows that the average ROA of Malaysian Islamic banks is lower than the average ROA of Indonesian Islamic banks.

The lowest FDR of 76.88% was obtained by Alliance Islamic Bank Berhad in December 2011. The highest FDR value was obtained by Am Islamic Bank Berhad 101.42% in September 2014. The average FDR is 87.67% with the standard deviation of 8.11%, so the standard deviation of the FDR variable is said to be good. The lowest NPF

Table 5. Descriptive statistics of Malaysian Islamic banks

Variables	N	Minimum	Maximum	Mean	Std. deviation
ROA (%)	72	.5509	1.4746	1.172000E0	.1774114
FDR (%)	72	76.8800	101.4228	8.767957E1	8.1192914
NPF (%)	72	0.6600	4.5996	2.334646E0	0.9929128
OER (%)	72	67.4034	191.9321	9.973444E1	26.0073505
TA RM	72	3.166E10	1.356E11	7.30218E10	3.483290E10
Valid N (listwise)	72	—	—	—	—

of 0.68% was obtained by Alliance Islamic Bank Berhad in December 2014. The highest NPF value, 4.59%, obtained by Affin Islamic Bank Berhad was in March 2010. The average NPF is 2.33% with smaller standard deviation of 0.84%, standard deviation on the NPF variable is said to be good.

The lowest OER of 67.40% was obtained by Am Islamic Bank Berhad in March 2015. The highest OER value obtained by Affin Islamic Bank Berhad was 191.93% in September 2015. The average OER is 99.73% with the standard deviation value of 26%, so the standard deviation of the OER variable is said to be good. The lowest total assets amounted to RM 31,663,615,000 were earned by Alliance Islamic Bank Berhad in March 2010. The highest total assets obtained by Am Islamic Bank Berhad amounted to RM 135,635,326,000 in December 2015. The average total asset is RM 73,021,818,875 with the smaller standard deviation of RM 34,832,900,000, so the standard deviation on the total asset variable is said to be good.

3.2. Results of the classical assumption tests

The results of the residual normality test of Indonesian Islamic banks' regression and Malaysian Islamic banks' regression are shown in Table 6. Based on Table 6, both equations produce normally distributed residual values, with Kolmogorov-Smirnov statistics' probability higher than 5%.

Table 6. Residual normality test results

Description	Kolmogorov-Smirnov Z statistics	Probability value
Residual values for Indonesian Islamic banks' regression	0.403	0.957
Residual values for Malaysian Islamic banks' regression	0.399	0.961

The results of DW tests show that both equations, do not contain any autocorrelations because DW statistics are between 1.5 to 2.5. The results of DW tests are shown in Table 7. The multicollinearity test results for each equation are shown in Table 8. The results show that no multicollinearity exists in each equation, since no VIF value exceeds 10.

Table 7. Durbin-Watson test results

Description	DW statistics	Conclusion
Residual values for Indonesian Islamic banks' regression	2.103	No autocorrelation
Residual values for Malaysian Islamic banks' regression	2.299	No autocorrelation

Table 8. Multicollinearity test results

Indonesian Islamic banks' regression		Malaysian Islamic banks' regression	
Variable	VIF	Variable	VIF
FDR	1.053	FDR	1.231
NPF	1.088	NPF	1.554
OER	2.143	OER	1.931
Size	2.566	Size	3.472

The Glejser test results are shown in Table 9. The results show that no heteroscedasticity exists in both equations, because none of the independent variables have a significant effect on the absolute residual.

To test the data stationarity (whether the data contains unit root), the Augmented Dickey-Fuller (ADF) test is conducted. The results of the ADF test are shown in Table 10. They demonstrate that no unit root found in all data used in this study, since all ADF statistics are significant at the 1% level of significance.

Table 9. Glejser test results

Indonesian Islamic banks' regression			Malaysian Islamic banks' regression		
Variable	t-statistics	Probability value	Variable	t-statistics	Probability value
<i>FDR</i>	0.555	0.581	<i>FDR</i>	0.088	0.930
<i>NPF</i>	1.024	0.309	<i>NPF</i>	0.119	0.906
<i>OER</i>	1.554	0.124	<i>OER</i>	0.419	0.676
<i>Size</i>	0.994	0.323	<i>Size</i>	0.101	0.919

Note: Dependent variable is an absolute residual.

Table 10. Test results of the augmented Dickey-Fuller test (first difference)

Indonesian Islamic banks' regression		Malaysian Islamic banks' regression	
Variable	Augmented Dickey-Fuller Statistics	Variable	Augmented Dickey-Fuller Statistics
<i>FDR</i>	10.257*	<i>FDR</i>	16.825*
<i>NPF</i>	16.224*	<i>NPF</i>	13.525*
<i>OER</i>	12.926*	<i>OER</i>	11.633*
<i>Size</i>	11.714*	<i>Size</i>	13.897*

Note: * Statistical significance at the 1% level.

3.3. Results of the regression analysis of the Indonesian Islamic banks

The results of the regression analysis of Indonesian Islamic banks are shown in Table 11. The regression coefficient of the *FDR* variable with positive direction is equal to 0.019, with significant value of 0.012, where this value is significant at the level of 0.05. It can be interpreted that *FDR* variable has a positive and significant effect on *ROA*. Hence, Hypothesis 1a, which states that *FDR* has a positive effect on the profitability of Indonesian Islamic banks, is accepted. The results of this study are supported by Almazari (2014), Mokni and Rachdi (2014).

From Table 11, the multiple linear regression equation is as follows:

$$ROA = -0.117 + 0.019 \cdot FDR - 0.009 \cdot NPF - (-0.027 \cdot OER + 1.341 \cdot Size + \varepsilon) \quad (4)$$

According to the theory of financial intermediation, the higher the *FDR*, the higher the funds distributed by a bank to its debtor. The standard used by Bank Indonesia as to *FDR* is 78% to 92%. The value of *FDR* in Indonesian Islamic banks in this study is 93.13% on average. The value is not too far above the standard set by Bank Indonesia; it can be said that Indonesia Islamic banks in this study have performed the intermediation function well, since it can distribute financing effectively.

The proposed Hypothesis 2a states that Non-performing financing (*NPF*) has a negative effect on the profitability of Indonesian Islamic banks. The result shows that regression coefficient variable *NPF* has a negative direction of -0.009 with a significance value of 0.876, where this value is not significant at the level of significance 0.05 or even 0.10. This finding may indicate that the variable of *NPF* has a negative but not significant impact on

Table 11. Results of the regression analysis of the Indonesian Islamic banks

Model		Unstandardized coefficients		Standardized coefficients	t	Sig.
		B	Std. error	Beta		
1	(Constant)	-0.117	0.045		-2.607	0.011
	<i>FDR</i>	0.019	0.007	0.260	2.583	0.012
	<i>NPF</i>	-0.009	0.059	-0.017	-0.156	0.876
	<i>OER</i>	-0.027	0.005	-0.561	-5.318	0.000
	<i>SIZE</i>	1.341	0.517	0.262	2.595	0.011

ROA. Thus, Hypothesis 2a is rejected. The results of this study are supported by Ahmed, Akhtar, and Usman (2011), Ali, Akhtar, and Ahmed (2011), Bilal et al. (2013), who showed that the financing risk proportioned with NPF had no significant negative effect on profitability proxied by ROA.

The proposed Hypothesis 3a states that Operational efficiency ratio (OER) has a negative effect on the profitability of Indonesian Islamic banks. According to the research, the regression coefficient variable OER has negative direction of -0.027 with a value of significance 0.000 , where this value is significant at the 0.05 significance level. Thus, Hypothesis 3a is accepted. The result of this study is supported by Almazari (2014), Karim et al. (2010), Petria et al. (2015), who showed that OER has a significant negative effect on ROA, which is a proxy of profitability. The result of this study is confirmed by the theory of fundamental signals where the higher the efficiency, the higher the effect on the profit obtained. The high efficiency is illustrated by the low OER value. The lower OER indicates the high efficiency of operational costs incurred by Islamic banks.

Hypothesis 4a states that Firm size (Size) has a positive effect on the profitability of Indonesian Islamic banks. The findings show that the regression coefficient for the size variable has a positive direction with value of 1.34 , and significant value of 0.011 , where this value is significant at the 0.05 significance level. Thus, Hypothesis 4a is accepted. The result of this study is supported by research conducted by Al-Jafari and Alchami (2014), Bilal et al. (2013), Karim et al. (2010), Petria et al. (2015), which also found that firm size has a significant positive effect on ROA.

The results of this study are in line with the theory of economies of scale, which states that the

cost advantages obtained by firms due to size, output, or scale of operations, with the cost per unit of output, generally decline with increasing scale (Moore, 1959). The improved yield scale or decreased costs arise due to technological and financial reasons. In the banking, only technological reasons can affect revenue because banks do not get discounts on raw material supply. Technology can also make work more efficiently to reduce costs. In addition to the technology existence, the positive effect between size and ROA is also due to banks that have large total assets, have a relatively large total financing so that income from interest on loans (profit sharing) is relatively large as well.

Adjusted R^2 is 0.291 or 29.1% , it means that 29.1% of ROA variation for Indonesian Islamic banks can be explained by four independent variables, namely *FDR*, *NPF*, *OER*, and *Size*, while the rest 70.9% is explained by other causes beyond the model of the Indonesian Islamic banks.

3.4. Results of the regression analysis of Malaysian Islamic banks

The results of the regression analysis of Malaysian Islamic banks are shown in Table 12.

From Table 12, the following multiple linear regression equation can be composed:

$$ROA = -0.002 + 0.003 \cdot FDR + 0.051 \cdot NPF - 0.028 \cdot OER - 0.085 \cdot Size + \varepsilon.$$

Hypothesis 1b states that Financing to deposit ratio (FDR) has a positive effect on the profitability of Malaysian Islamic banks. As a result, FDR regression coefficient has a positive direction of 0.003 and a significant value of 0.369 , where this value is not significant at the level of significance of 0.05 or 0.10 . So it can be interpreted that the

Table 12. Results of the regression analysis of Malaysian Islamic banks

Model	Unstandardized coefficients		Standardized coefficients	t	Sig.
	B	Std. error	Beta		
1	(Constant)	-0.002	0.010	-0.159	0.874
	<i>FDR</i>	0.003	0.003	0.905	0.369
	<i>NPF</i>	0.051	0.020	2.522	0.014
	<i>OER</i>	-0.028	0.009	-3.128	0.003
	<i>Size</i>	-0.085	0.305	-0.280	0.780

FDR variable has a positive but not significant effect on ROA. Hence, Hypothesis 1b, which states that Non-performing financing (NPF) has a negative effect on the profitability of Malaysian Islamic banks, is rejected. The results of this study are consistent with Almazari (2014), Mokni and Rachdi (2014).

The proposed Hypothesis 2b states that Non-performing financing (NPF) has a negative effect on the profitability of Malaysian Islamic banks. From the research, NPF coefficient regression has a positive direction of 0.051 and a significant value of 0.014, where this value is significant at the 0.05 significance level. It can be interpreted that the variable of NPF has a significant positive effect on ROA. Hence, Hypothesis 2b is rejected. The result of this study is consistent with Almazari (2014) who showed that the risk of financing proxied by NPF has a positive effect on ROA. Malaysian Islamic banks invest conscientiously and focus is on bank resilience, so that NPF does not have a negative impact on bank profits. Malaysian Islamic banks have an average NPF of 2.33% and has a maximum value of 4.59%. It can be said that the value is still at a safe limit. The maximum value of NPF of Malaysian Islamic banks is still below the maximum NPF reference value in Indonesia, that is 5%. When NPF is still below the tolerant level, the distribution of financing will not be reduced. Financing distributed by Malaysian Islamic banks is dominated by Ba'I Bithaman Ajil (BBA) and Murabaha (natural certainty contract) portfolios. This product has low risk compared to products that have natural uncertainty. The low value of NPF of Malaysian Islamic banks makes NPF to not negatively affect profitability. In addition, Malaysian Islamic banks also put their funds on derivative investments in the form of securities so that profits can cover losses due to default.

The proposed Hypothesis 3b states that Operational efficiency ratio (OER) has a negative effect on the profitability of Malaysian Islamic banks. According to the results, OER's regression coefficient has a negative direction of -0.028 and a significant value of 0.003, which is less than the 5% significance level. Thus, Hypothesis 3b is accepted. The results of this study are consisted with Almazari (2014), Karim et al. (2010), Petria et al. (2015) who show that OER has a significant nega-

tive effect on ROA. This finding indicates that the larger OER will lead to a decrease in bank profits proxied by ROA. A high efficiency is illustrated with low OER value. The lower OER indicates the high efficiency of operational costs incurred by Islamic banks. The high value of OER can be due to the high cost of fundraising (operational costs), as well as the low sharing profit of fund investments (operational income). The value of OER in this study has an average value of 99.73%.

The proposed Hypothesis 4b states that Firm size (Size) has a positive effect on the profitability of Malaysian Islamic banks. The finding shows that the regression coefficient of Size has a negative direction of -0.085 and a significant value of 0.780, where this value is not significant at the 0.05 significance level. Hence, Hypothesis 4b is rejected. The result of this study is consistent with Almazari (2014), Mokni and Rachdi (2014). The results also indicate that the size of the firm does not directly lead to an increase in the profit of the bank proxied by ROA.

Malaysian Islamic banks are larger than Indonesian ones because they are supported by the policy of their government. The Malaysian government puts SOE funds in Islamic banks and puts hajj (pilgrimage) savings deposits into the Islamic banks as well. This makes the Islamic bank assets soaring. The size of the company does encourage more banks in placing investment so that the profit can increase (Almazari, 2014). But the company size requires a lot of costs to run its operation; this can reduce the company's profit.

Adjusted R^2 is 0.176 or 17.6%; it means 17.6% of ROA variation for Malaysian Islamic banks can be explained by four independent variables: FDR, NPF, OER, and Size, while the rest 82.4% is explained by other causes beyond the model of the Malaysian Islamic banks.

3.5. Chow test results on Indonesian Islamic banks and Malaysian Islamic banks

The proposed Hypothesis 5 states there are any differences in FDR, NPF, OER, and Size variables in terms of ROA in Indonesian and Malaysian Islamic banks. According to the Chow test results,

F value = 14.58, whereas value F table with the 5% significance level is equal to 2.43. Therefore, F value is higher than F table. Hypothesis 5 is accepted. The results of this study are in line with contingency theory, which says that there is no best way to explain the organization, and every way to manage the organization's effectiveness is different (Galbraith, 1973). According to Scott and Davis (2016), the best way to run an organization depends on the characteristics of the environment where it operates. The most prominent difference

between Indonesian and Malaysian Islamic banks is the basis of the country, where Malaysia is an Islamic State and Indonesia is a State with the Pancasila (five principles) ideology. Malaysia has different characteristics, such as the economic system adopted, the characteristics of the population, the role of the government, the position of the Islamic bank in the legislation, the school adopted by the majority of its Muslim population, and the chosen development strategy, thus having different effects on financial ratios.

CONCLUSION, LIMITATION OF THE STUDY AND FUTURE RESEARCH DIRECTIONS

The finding shows that not all independent variables studied influence ROA of Indonesian Islamic banks and Malaysian Islamic banks. OER has a negative and significant effect on ROA of Indonesian Islamic banks, while FDR and SIZE have a positive and significant influence on ROA of Indonesian Islamic banks. In Malaysian Islamic banks, NPF has a positive and significant influence on ROA, while OER has a negative and significant effect.

An Indonesian Islamic bank is suggested to be able to maximize the efficiency proxied by the OER ratio. The emergence of operational costs through services charged to customers is expected to provide income that exceeds its operational costs. The income will be able to contribute to the bank. In increasing its operational income, Indonesian Islamic banks are expected to make more varied sharia products. Regarding operational costs, banks are expected to pay more attention to the validation of costs to be incurred. Furthermore, an Indonesian Islamic bank with large assets is expected to have a relatively large financing portfolio, resulting in a large share of profit sharing. In addition to large financing distribution, the bank is expected to support the technological advances obtained from high assets so as to optimize operational efficiency. The technology is also expected to be an additional means of engaging customers' transactions using Islamic banking. An Indonesian Islamic bank also needs to be supported by the government like the Malaysian government. The Malaysian government strongly supports the development of Islamic banks in the country by placing state-owned funds as well as the savings of Hajj (pilgrimage) funds in Islamic banks in Malaysia. A full government support can accelerate the development of Islamic banks because there is a synergy in all sectors. As for FDR, Indonesian Islamic banks need to increase the amount of financing disbursed to customers.

A Malaysian Islamic bank is advised to maximize the efficiency level proxied by OER. The emergence of operational costs through services charged to customers is expected to provide income that exceeds its operational costs. The revenue will be able to contribute to the bank. In improving operational income, a Malaysian Islamic bank is expected to make more varied sharia products. Regarding operational costs, the banks are expected to pay more attention to the validation of costs to be incurred, so there is no need to spend unnecessary costs. Operational costs can be reduced by increasing the portion of low-cost funds, optimizing the role of information technology, optimizing the network offices, optimizing e-banking, pruning the general cost and administrating and reducing human resources to reduce labor costs.

The limitations of this study are as follows: the sample of Malaysian Islamic banks is still limited to only three banks and does not include the largest Islamic banks in Malaysia due to lack of data. Some suggestions for future research are: the future research could add some Malaysian Islamic banks such

as Public Islamic Bank Berhad, Bank Muamalat Malaysia, Bank Islam Malaysia, CIMB Islamic Bank Berhad, Maybank Islamic Berhad, Hong Leong Islamic Bank Berhad, and RHB Islamic Bank Berhad. Thus, the results obtained are more general for Malaysia. Also, the future study could add several variables affecting ROA of Islamic banks, such as Capital Adequacy Ratio (CAR), Net Operating Margin (NOM), bank age, and bank ownership.

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