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Determinant of Islamic Banking Institutions' Profitability in Malaysia

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Abstract: Starting with the establishment of the Malaysia's first Islamic bank namely Bank Islam Malaysia Berhad (BIMB) in 1983, the Islamic banking system has shown better development and is now widely accepted by Muslims as well as non-Muslim in this country. Islamic Banking System which follows the rule of Shariah plays a vital role in Malaysia as its profitability contributes to the growth of the economy. Therefore, this study was conducted in order to examine the determinants of profitability for Islamic Banking Institutions in Malaysia which are listed on the Bursa Malaysia. The bank-specific determinants (internal factors) include capital adequacy, credit risk, liquidity, bank size and management of expenses. The methodology employed is the Generalized Least Square (GLS) panel data analysis, using quarterly data from nine Islamic banks, which consist of foreign and local Islamic banks incorporated in Malaysia for the period 2007-2009. The result revealed that only the bank size is significant in determining the profitability with positive relationship. It is to be concluded then that, even though there is a lot of determining factors, only the bank's size may put confidence in the eyes of the consumers. For the future studies, it is recommended to have a wider scope where other Malaysian Islamic financial institutions and more determinant factors can be taken into account.

Key words: Islamic Banking · Bank Profitability · Malaysia · Return on Asset · Bank Size · Panel Data Analysis

INTRODUCTION

Malaysia's Islamic financial industry has been in existence for over thirty years. The enactment of the Islamic Banking Act 1983 enabled the country's first Islamic Bank to be established and subsequently, there were more Islamic financial institutions established with the liberalization of the Islamic financial system[1]. Acceptance of Islamic banking system in Malaysia is technically reflected by the increasing amount of total deposits and total financing based on Islamic principles that are placed by Muslim and non-Muslim customers, as well as the usage of Islamic banking products offered by the conventional financial institutions which started in 1994, the first year in which selected commercial banks were legally allowed to introduce Islamic deposit facilities. At the moment, a total of RM1, 463 million deposits have been collected [1]. By the end of 2008, there were thirty nine commercial banks in Malaysia including seventeen Islamic banks in existence. Some of these include twenty domestic banks and nineteen locally-incorporated foreign banks which operate in Malaysia [2].

Today, the international and domestic environments in which Islamic Banks operate are going to become even more challenging. Due to this situation, it is important for Islamic banking institutions to strengthen their business performance in order to face with the strong competition from domestic and foreign banks (Islamic or conventional banking). Healthy and sustainable profitability is vital in maintaining the stability of the banking system. The first group of studies focuses on profitability analysis of either cross-country or individual countries' banking systems [3-6]. The performance of these banks can be measured through profitability which is influenced by various factors. Bank efficiency levels are found to vary widely across European banks and banking sectors as found by previous studies [7-9]. The internal determinants that resulted from bank management decision and policy may

[1]Bank Negara Malaysia, (2010). Overview of Islamic Finance in Malaysia. Retrieved November 1, 2010 from http://www.bnm.gov.my/microsites/financial/0204_ib_takaful.htm#ib

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definitely affect the bank's operating activities as well as its profitability. In addition, a sound and profitable banking sector is able to face negative shocks and contribute to the stability of the financial system itself [10]. Hence, it is vital for Islamic banking institutions to know the factors which may influence the profitability of the firms in order to perform better and be competitive in the global environment.

Therefore, this research is conducted to study the factors which determine profitability of Islamic banking institutions in Malaysia, where special focus is given on bank-specific characteristics. Accordingly to the [11], bank specific-characteristics are the internal determinants or internal factor that are mainly influenced by bank's management decisions and policy objectives Such profitability determinants include capital adequacy, credit risk, liquidity, bank size and expenses management. Bank-specific characteristics have been a focus to study bank's profitability where previous studies have shown that the firm-level effects are the most important class of effect in explaining the variation in performance [12]. The study will assist Islamic Banks in Malaysia to improve their profitability and in turn, the competitiveness and efficiency of the Islamic banking system to enable it to be developed in line or even better compared to conventional banks.

Literature Review:

Bank Profitability: Healthy and sustainable profitability is vital in maintaining the stability of the banking system. A study [13] suggests that the group of the bank-specific determinants of profitability involves operating efficiency, financial risk and size. Other factors that affect the firm's profitability include firm attributes such as financial structure, size, market share and business strategy [14]. Another study [15] discovered that a firm's profitability is positively affected by the firm's size and managerial efficiency and negatively by leverage, while sales growth induces more profits for small firms but is insignificant for large ones. In addition, researchers [16] have done a study on the effects of size, business risk and market concentration on the profitability of eleven commercial banks in Saudi Arabia for the period 1992-1997. They employed a regression model using three measures of profitability consisting of Return on Assets (ROA), Return on Equity (ROE) and Earnings per Share (EPS). Results show that the business risk and size generally explained bank profitability in Saudi Arabia.

Capital Adequacy: The term Capital refers to the amount of owned funds available to support bank's business activities and, therefore, the bank capital acts as a safety net in the case of adverse developments [13]. Physical capital investment is expected to affect profitability positively since it expands production, aims at improving sales, cash flow and profit-generating ability, [17, 18] provide empirical evidence of the positive relationship between bank capitalization and profitability for the US and the European banking systems respectively.

Credit Risk: Risk management is an important element in the banking sector to determine profitability level of banking business. A theory suggests that increased exposure to credit risk is normally associated with decreased firm profitability, hence, a negative relationship is expected between ROA and CR. Banks would, therefore, improve profitability by improving screening and monitoring of credit risks and such policies involve forecasting of future levels of risks. Thus, credit risks should be modelled as a predetermined variable [13].

Liquidity: Researchers [5] among others, find a negative but a significant relationship between the levels of liquidity and profitability. Concerning the liquidity results, another study [19] has found that the relationship of Return on Assets Average is negative but significant too when only bank characteristics is considered. Meanwhile it becomes positive but insignificant when the macroeconomic and financial structure variables enter the equation. It could be the case that the lesser the funds tied up in liquid investments, the higher the profitability level to be expected [20].

Bank Size: A positive and significant relationship between size and bank profitability was found by a study [21]. [6] It suggests that the extent to which various financial, legal and other factors like corruption affecting bank profitability is closely linked to the firm's size. In addition, a researcher [3] argues that the size of the bank is closely related to the capital adequacy of a bank since relatively large banks tend to raise less expensive capital, hence, appearing to be more profitable. Moreover, many other researches suggest that little cost saving can be achieved by increasing the size of a banking firm [10, 22-24].

Expenses Management: According to another study, the poor management of expenses is one of the main contributors to poor profitability performance [19]. According to yet another study [11], the decrease in expenses will improve the efficiency and hence, raise the profits. This implies the negative relationship between

operating expenses ratio and profitability. However, a study [5] that observed a positive relationship, suggested that high profit earned by firms may be appropriate in the form of higher payroll expenditures paid to trigger more productive human capital. In addition, prior studies conducted [4] and [5] found positive relationship between better-quality management and profitability.

MATERIALS AND METHODS

The study covers nine selected domestic and foreign Islamic banking institutions that operate in Malaysia such as Affin Islamic Bank Berhad, Al Rajhi Banking & Investment Corporation (Malaysia) Berhad, Asian Finance Bank Berhad, Bank Islam Malaysia Berhad, Bank Muamalat Malaysia Berhad, CIMB Islamic Bank Berhad, Hong Leong Islamic Bank Berhad, Kuwait Finance House (Malaysia) Berhad and RHB Islamic Bank Berhad. The data for this purpose is technically collected from annual reports and financial statements of the selected bank. The data collected is on a quarterly basis which covers the 2007-2009 periods, consisting of one dependent variable and five independent variables. The data is then converted into natural logarithm values, with the intention that the estimated coefficients can be interpreted as elasticities. The log-log equation is as follows:

$$ln(ROA_{i,t}) = \alpha + \beta_1 ln(CA_{i,t}) + \beta_2 ln(CR_{i,t}) + \beta_3 ln(LQ_{i,t}) + \beta_4 ln(BS_{i,t}) + \beta_5 ln(EM_{i,t}) + \varepsilon_{i,t} \quad (1)$$

Where:

ROA = Return on Asset
CA = Capital Adequacy
CR = Credit Risk
LQ = Liquidity
BS = Bank Size
EM = Expenses Management
α = Constant Value
β = Coefficient Value
ε = Random Error Term

Pooled Ordinary Least Square Model: Pooled Ordinary Least Square Model (POLS) is employed in this research to examine the simultaneous effects of several independent variables on a dependent variable charted on an interval scale. It is the basic approach employed in estimating the panel data.

Random Effect Model: Random Effect Model (REM) known as variance components model is also employed in this study. In REM, it is assumed that the dataset being analyzed consists of a hierarchy of different populations whose differences related to that hierarchy.

Fixed Effect Model: Contradicting to the REM, Fixed Effect Model (FEM) represents the observed quantities in terms of explanatory variables that are all treated as non-random. FEM will be employed as an alternative if the REM method is not suitable for the analysis.

Breusch and Pagan Multiplier Test: The test statistics of Breusch and Pagan Multiplier is conducted in order to choose between the POLS and REM. Based on the p-value of chi^2, the data will be analyzed by using POLS if the null hypothesis cannot be rejected, but REM will be used if the null hypothesis is rejected.

Hausman Fixed Test: Another stage is to compare REM and FEM by using the Hausman Fixed Test. REM is selected with the extension of the GLS–Two Way Estimation if the null hypothesis fails to be rejected. If the null hypothesis is well rejected, FEM will be selected to analyze the data with the extension of FEM-Two-Way Estimation, with extension of variable year.

RESULTS AND DISCUSSION

Table 1 presents the descriptive statistics related to the Return on Assets (ROA) with the determinants of profitability; Capital Adequacy (CA), Credit Risk (CR), Liquidity (LQ), Bank Size (BS) and Expenses Management (EM). These statistics include mean, variance, standard deviation (SD) and coefficient of variation (CV). CV describes the dispersion of the variable in a way that does not depend on the variable's measurement unit. The higher the CV, the greater is the dispersion in the variable and vice versa. The result shows that Return on Assets and the Bank Size have the small value of CV that is 0.7869855% and 0.8717658% respectively. It means that both variables have less variability, thus, generate higher consistency and stability. Meanwhile, Capital Adequacy has the highest value of CV that is 5.288521%. It indicates that the variable has higher variation than other variables, thus, generate lower consistency and stability.

The analysis starts with the Pooled Ordinary Least Squares (POLS) Regression. This analysis is carried out in order to determine the coefficient of determination for each variable involved.

Table 1: Descriptive Statistics

stats	roa	ca	cr	lq	bs	em
mean	.9352148	134.6223	.7491343	165.3393	2.401634	.7448241
variance	.5416967	506877	.9057104	198241.8	4.383423	.5677573
sd	.7360005	711.953	.9516882	445.2436	2.093663	.7534967
cv	.7869855	5.288521	1.270384	2.692908	.8717658	1.011644

Table 2: Pooled Ordinary Least Squares (POLS) Regression

Source	SS	df	MS	
Model	36.5734104	5	7.31468207	
Residual	38.7963495	102	.380356367	
Total	75.3697598	107	.704390279	

Number of obs	= 108
F(5, 102)	= 19.23
Prob > F	= 0.0000
R-squared	= 0.4853
Adj R-squared	= 0.4600
Root MSE	= .61673

lroa	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
lca	.0781357	.0887338	0.88	0.381	-.0978674	.2541389
lcr	-.100894	.0461278	-2.19	0.031	-.1923883	-.0093997
llq	-.0085697	.1465088	-0.06	0.953	-.2991693	.2820298
lbs	.9790393	.1184675	8.26	0.000	.7440595	1.214019
lem	-.0732043	.0936954	-0.78	0.436	-.2590487	.1126402
_cons	-1.346154	.6426529	-2.09	0.039	-2.620853	-.0714553

From Table 2, the value of adjusted R-squared is equal to 0.4600. This value indicates that 46% of the total variation in the level of ROA in the company occurs because of the variation in determinants of profitability. The remaining 54% is due to the randomness and other variables that are not included in the model.

Out of five independent variables, two are significant. The results show that Credit Risk is significant at 5% significance level and has negative relationship with the dependent variable. On the other hand, Bank Size is significant at 1% significance level and determines the Return on Assets positively.

Figure 1 shows the relationship between the Return on Assets and Credit Risk. There is a negative relationship between these two variables. It means that 1% increase in Credit Risk will cause the level of profit to decrease about 0.100894%. This negative effect conforms to the theory that the increased exposure to Credit Risk is normally associated with decreased firm profitability [13].

Figure 2 shows the relationship between the Return on Assets and the Bank Size. There is a positive relationship between these two variables. It means that 1% increase in the Bank Size will cause the level of profit to increase to about 0.9790393%.

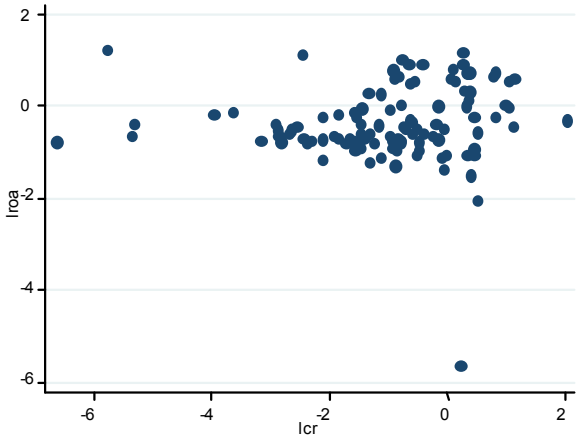

Fig. 1: Relationship between the Return on Assets and Credit Risk

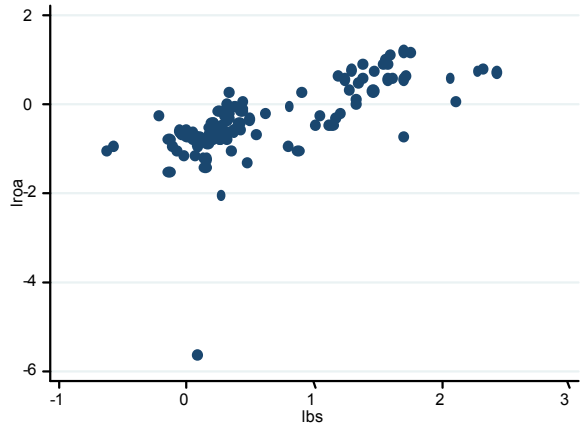

Fig. 2: Relationship between the Return on Assets and the Bank Size

This positive effect indicates that larger banks take advantage of their position in negotiating the price for their input and, therefore, reduce their average cost improving profitability, as well as they have better adaption to the new macroeconomic environment [26].

The test is conducted to examine either the POLS or Panel Data Analysis (PDA) can be used for further analysis. Based on Table 3, the p-value of chi^2 is less than 0.05. It means that the model is significant at 5% and thus, supports the rejection of the null hypothesis. Consequently, the panel data (random effect) estimation will be used in this study.

The next step of the study is conducting a Hausman Fixed Test. This test is theoretically performed to examine either Random Effect Model (REM) or Fixed Effect Model (FEM) using panel data analysis. Table 4 shows the p-value of chi^2 is 0.3231; higher than 0.05. It means that the model is not significant and, thus, failed to support the rejection of the null hypothesis.

Table 3: Breusch and Pagan Lagrangian Multiplier Test for Random Effects

Breusch and Pagan Lagrangian multiplier test for random effects

lroa[code,t] = Xb + u[code] + e[code,t]

Estimated results:

	Var	sd = sqrt(Var)
lroa	.7043903	.8392796
e	.2976028	.5455299
u	.1056566	.3250486

Test: Var(u) = 0

chi2(1) = 17.38

Prob > chi2 = 0.0000

Table 4: Hausman Fixed Test

	Coefficients (b) fixed	Coefficients (B) .	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
lca	.1460527	.1148855	.0311672	.0665114
lcr	-.0393256	-.0551567	.0158311	.0137046
llq	.1233285	.0923166	.0310119	.0318425
lbs	1.151261	1.090785	.0604757	.0542776
lem	-.2195767	-.166144	-.0534327	.0661027

b = consistent under Ho and Ha; obtained from xtreg

B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

chi2(5) = (b-B)'[(V_b-V_B)^(-1)](b-B)

= 5.83

Prob>chi2 = 0.3231

As a result, REM will be used in this study. In addition, the Two-Way Random-Effect GLS estimation has been performed by taking the quarter (collectively) as one of the independent variables. The quarter has become the sixth independent variable and has been taken into the model. Table 5 shows the result including time variable.

The value of adjusted R-squared is equal to 0.4758, meaning that 47.58% of the total variation in the level of ROA for Islamic banking institutions in Malaysia occurs because of the variation in Capital Adequacy, Credit Risk, Liquidity, Bank Size and Expenses Management. The remaining 52.42% might be due to randomness and other variables which are not included in the model. The test of hypothesis is performed to find any significant relationship between independent variables and the dependent variable.

Table 5: Random-Effect GLS Regression

Random-effects GLS regression — Number of obs = 108

Group variable: code — Number of groups = 9

R-sq: within = 0.5378 — Obs per group: min = 12

between = 0.3254 — avg = 12.0

overall = 0.4758 — max = 12

Random effects u_i ~ Gaussian — Wald chi2(6) = 110.53

corr(u_i, X) = 0 (assumed) — Prob > chi2 = 0.0000

lroa	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
lca	.1397416	.1112099	1.26	0.209	-.0782258	.3577091
lcr	-.0618492	.046948	-1.32	0.188	-.1538655	.0301671
llq	.1003489	.1360022	0.74	0.461	-.1662105	.3669084
lbs	1.10626	.1287623	8.59	0.000	.8538909	1.35863
lem	-.1659368	.1165455	-1.42	0.155	-.3943617	.062488
quarter	.0085391	.0065346	1.31	0.191	-.0042684	.0213467
_cons	-173.6791	131.3426	-1.32	0.186	-431.1058	83.74761
sigma_u	.32541922					
sigma_e	.54287174					
rho	.26434277	(fraction of variance due to u_i)				

Table 6: Random Effect GLS Regression (Includes Individual Quarterly Time Series)

note: qtr3 dropped because of collinearity

Random-effects GLS regression — Number of obs = 108

Group variable: code — Number of groups = 9

R-sq: within = 0.6206 — Obs per group: min = 12

between = 0.3385 — avg = 12.0

overall = 0.5403 — max = 12

Random effects u_i ~ Gaussian — Wald chi2(16) = 137.91

corr(u_i, X) = 0 (assumed) — Prob > chi2 = 0.0000

lroa	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
lca	.1777535	.1094437	1.62	0.104	-.0367522	.3922592
lcr	-.054772	.0461361	-1.19	0.235	-.1451971	.0356532
llq	-.0569425	.1441886	-0.39	0.693	-.3395469	.2256619
lbs	1.190683	.1496308	7.96	0.000	.8974116	1.483953
lem	-.192835	.1182052	-1.63	0.103	-.4245129	.0388429
qtr1	.8761615	.2840171	3.08	0.002	.3194983	1.432825
qtr2	.8207381	.2572759	3.19	0.001	.3164866	1.32499
qtr4	.7416567	.2611517	2.84	0.005	.2298087	1.253505
qtr5	.6480865	.2611559	2.48	0.013	.1362304	1.159943
qtr6	.5156387	.2579159	2.00	0.046	.0101328	1.021145
qtr7	.4893174	.2534572	1.93	0.054	-.0074496	.9860844
qtr8	.5414526	.266777	2.03	0.042	.0185792	1.064326
qtr9	.6389107	.2604204	2.45	0.014	.1284962	1.149325
qtr10	.8557345	.2627796	3.26	0.001	.3406959	1.370773
qtr11	.8764499	.2624348	3.34	0.001	.3620872	1.390813
qtr12	.7622209	.2611529	2.92	0.004	.2503706	1.274071
_cons	-2.291774	.690333	-3.32	0.001	-3.644802	-.9387463
sigma_u	.32848331					
sigma_e	.52025603					
rho	.28502513	(fraction of variance due to u_i)				

Based upon the result obtained in this study, by judging the p-value of the z-test, the null hypothesis involving Capital Adequacy, Credit Risk, Liquidity and Expenses Management are failed to be rejected. Only one independent variable concerning the Bank Size shows significant relationship with the level of profit as its null hypothesis is well-rejected. Therefore, Bank Size shows a strong explanatory power towards profitability of the company.

From the study conducted, it is surprisingly revealed that only one independent variable shows very strong explanatory power towards the dependent variable.

Table 7: Test of Overall Significance of the GLS Regression (Includes Individual Quarterly Time Series)

```
( 1)  qtr1 = 0
( 2)  qtr2 = 0
( 3)  qtr4 = 0
( 4)  qtr5 = 0
( 5)  qtr6 = 0
( 6)  qtr7 = 0
( 7)  qtr8 = 0
( 8)  qtr9 = 0
( 9)  qtr10 = 0
(10)  qtr11 = 0
(11)  qtr12 = 0

           chi2( 11) =   19.90
         Prob > chi2 =    0.0468
```

The Bank Size is found to be highly significant with the p-value of the z-test equal to 0.000. It shows that the Bank Size is significant at a 100% confidence interval which implies that it is the absolute determinant of profitability for Islamic banking institutions. Its relationship also shows the positive effect it has towards the profitability of the company. From the regression result in Table 5, the time series are found to be insignificant in explaining the level of profitability. It means that the relationship might change and be unstable through time. For a more specific time-effect, the study has tested the significance of individual quarterly time series.

The result shown in Table 6 is similar to the result in Table 5 whereby only the Bank Size exhibits the very strong explanatory power towards the level of profitability. Its direction of the relationship is also found to be similar with that of previous studies [21] [23], [6] and [10]. However, capital adequacy, credit risk, liquidity and expenses management have failed to meet the requirements of significance, hence, suggesting that the variables cannot be regarded as absolute determinants of profitability of Islamic banking institutions in Malaysia.

However, as compared to Table 5, the result in Table 6 suggests that the level of profitability is positively related to the individual quarterly time series since the p-value of the z-test is significant from the first quarter (first quarter of year 2007) until the twelfth quarter (fourth quarter of year 2009) with the exception to the seventh quarter (third quarter of year 2008). It is noted that the third quarter has been dropped due to the collinearity problem. The result also suggests that the Bank Size and level of profitability is unchanged and stable when the timing factor is put into account.

Table 7 exhibits the result for the joint significance of the time series. As indicated by the chi^2 and p-value of overall significance of a GLS regression test, shows that individual time factors do explain most of variation in the level of profit of the company.

CONCLUSION

This study suggests that the Bank Size is the most important factor in explaining the variation of profitability for Islamic banking institutions in Malaysia as larger bank size will fundamentally have better access to capital markets, lower cost of borrowing and be able to generate higher income. The time series factors are also found to be statistically significant in influencing the level of profit individually and are stable over time. However, it is not statistically significant collectively. For future studies, it is recommended to have a wider scope where other Malaysian Islamic financial institutions such as Islamic insurance *(takaful)* companies and determinant factors; years of operation for example, can be taken into account.

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