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Nor Shahida Saad
nurul huda abdul majid, Universiti Utara Malaysia
Mohammad Badri Rozali

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ISLAMIC BANKS’ CHARACTERISTICS AND PERFORMANCE: A PANEL DATA ANALYSIS

Nor Shahida bt Saad¹ Nurul Huda Abdul Majid*, Mohammad Badri Rozali²

ABSTRACT

The objective of this study is to examine the determinants of the performance of Islamic banks. Eleven samples of full-fledged Islamic banks and Islamic window were chosen for a period of 14 years from 1998 to 2011. The study attempts to provide some insights on banks’ specific characteristics as determinant factors and the performance in the Malaysian dual banking industry. Our methodology incorporates a variety of cross-sections and time-series data; therefore, panel estimation technique is utilized to take into account the heterogeneity of these data. There are six bank specific factors tested in this study which consist of Financing to Total Asset (FTA), Base Lending Rate (BLR), Earnings before Interest and Tax (EBIT), Non-Performing Financing (NPF), Capital Adequacy Ratio (CAR) and Total Asset (TA). The findings indicate that four variables, namely BLR, EBIT, NPF and CAR, significantly affect the Islamic banks’ performance. BLR and EBIT positively affect the performance whereas NPF and CAR exert a negative impact on performance. The other two variables, FTA and TA, are found to be not significant. The results are envisaged to provide some knowledge on the Islamic banks’ characteristics as factors that determine the performance of Islamic banks in Malaysia.

Field of research: Performance, Islamic banks, panel regressions

*Nurul Huda Abdul Majid (Corresponding author)
Islamic Business School, College of Business
Universiti Utara Malaysia
Sintok 06010 Kedah, Malaysia
Tel: +604-9286356
Fax: +604-9286363
E-mail: nurul@uum.edu.my

¹ Graduate students of Othman Yeop Abdullah Graduate School of Business (OYA), UUM
² Senior lecturer of School of Economics, Finance & Banking, UUM COB
ISLAMIC BANKS’ CHARACTERISTICS AND PERFORMANCE: A PANEL DATA ANALYSIS

1. Introduction

This study investigates factors affecting the performance of Islamic banks operated under the dual banking concept. This new concept has evolved tremendously in Malaysian Islamic banking system since early 1990s. The total assets growth of the Islamic banking system has been increased tremendously with more than 18 percent per annum since year 2000. There were two full-fledged Islamic banks, and 17 commercial banks offering Islamic windows during that year and it swelled to 21 banks recently (16 full-fledged and 5 foreign banks including the Islamic window).

The performance of the Islamic banking adopting this concept owes mainly to the constructive government support, coordinated efforts and well planned behavior of the Malaysian government and industry players. The Islamic banks altogether plays an important role to generate the growth of the Malaysian economy. They are also viewed to be more progressive and productive compared to similar banking systems in other Muslim countries. The foundations set by the Malaysian government in the first place where conventional banks also provide customers with alternative banking concepts have proven to be effective. The concepts of banking products which are Shari‘ah compliant are offered through their subsidiary (full-fledged Islamic banks which were previously performed as Islamic windows) that are rapidly gaining acceptance from both Muslims and non-Muslims. With that, their performances are critical to achieve the aim of making Malaysia the global Islamic banking hub.

Hence, the aim of this paper is to explore this rapidly evolving industry by analyzing the characteristics of these banking institutions for a period of 14 years, from 1998 to 2011. For that, discussion in this paper is organized as follows: Section 2 reviews the banks performance Section 3 discusses the model. Section 4 discusses the results of this study. Finally, Section 5 concludes the findings of this study.

2. Banks performance

Performance of the firms is critical to ensure continuity of their operations in the future. The use of firms’ specific characteristics in term of ratios or other measures in the analysis of firms performance have been done in various studies. Several characteristics have been highlighted to be associated with firms performance. Specific to banks, there are also factors that are associated with the banks performance (Fotios & Kyriaki; 2007), in particular the Islamic banks due to its distinct characteristics compared to conventional banks. There are studies that highlighted banks performance to be associated with several banks characteristics (e.g in Samad (2004) liquidity risk and credit risks; Kader & Asarpota (2007) profitability, solvency, liquidity and financial ratios).

Besides the needs to maintain banks sustainability in the weak conditions of the economy,
performances of the banks are critically important. Banks are different on several aspects due to its characteristics as follows; 1) Highly leveraged type of organizations; 2) Highly reliance on customers’ confidence (e.g. to prevent fraud, mismanagement, over-lending, credit concentrations); 3) Greatly in uncertainties on the financing quality approved to customers; 4) Complexity of financial products due to borderless and globalization edge; 5) Safety and soundness of the banks are of great concern to the government as they affect the performance of the economy as a whole; and finally, greater and fully effective market disciplines are highly encouraged by Malaysia’s central bank and banking institutions worldwide (Ariffin, 2005; Saad, 2012).

3. The model

The use of panel data in the area of accounting researches is growing in interests since year 2000s (refer Henderson & Kaplan, 2000). Panel data approach is then gaining in attention as it brings the advantage of using all the information available that are not detectable in the separate cross-sectional and time series. Estimations in panel brings the same cross section over time which is better to provide the dynamic relationship of variables as it allows us to control unobserved cross-section heterogeneity (Wooldridge, 2002). Such procedures are not possible when data is pooled under ordinary least square (OLS) estimations. Additionally, the use of panel employing assumptions of fixed effects and random effects helps explain the nature of unobserved effects and the observed variables feature of the data.

Our approach considers the individual differences that are assumed for each sample banks. The generalized least square (GLS) is one of the most applied methods in dealing with data that is not normally distributed. It is a better estimation procedure suggested for such data (Gujarati, 2006). The GLS corrects the problems associated with data that violates the OLS assumptions. Continuing to use OLS estimator would lead to biased and inconsistent estimation. For example, in the case where variance is not constant which deviates from basic OLS original assumptions, OLS cannot be used (Hill et al., 1997).

Another advantage of GLS is for re-weighting of the data which makes it a more efficient, unbiased estimator (Wooldridge, 2003). In the case when autocorrelation problems exist, GLS is widely suggested as the estimation procedure to correct the autocorrelation problems (Hsio, 2002). Thus, continuing the use of OLS might lead to an inefficient and inconsistent estimation. Such problems are claimed to be typical in time-series and cross sectional data but are fixable through GLS (e.g. in studies covering a shorter period with fewer cross-sections (see Zakaria (2007) and Rahman (2009))

Further, the assumptions of fixed effect and random effects are used in this GLS estimation with selected test to provide the model comparison of fixed and random effects. As the model allow for the time and banks performance behavior thus utilizing the determinant model incorporates the temporal and cross sectional effects technique as follows:

\[ ROE_{it} = \alpha_0 + \beta_1FTA + \beta_2BLR(\cdot 1) + \beta_3EBIT + \beta_4NPF + \beta_5CAR + \beta_6TA + \varepsilon_i \]
Where ROE refers to banks performance; \( FTA \) is financing to total assets; \( BLR(-1) \) is Base Lending Rate which is lagged variable; \( EBIT \) is earnings before interest and tax; \( NPF \) is non-performing financing; \( CAR \) is capital adequacy ratio and \( TA \) is total assets; \( \alpha \) is the intercepts of all banks period; and \( \varepsilon \) is the error term of each bank. We allow for fixed and random effects and consider some specific constant factor affecting the data utilizing the fixed effect assumptions.

In judging the performance, profit may not be the sole criteria (Wartick & Cochran, 1985). Whereas, banks indicator for measuring performance are varied including efficiencies in using fund such as depositors fund or the usage of equity (Sanusi and Mohammed, 2007). Managerial efficiency and Data Envelopment Analysis (DEA) also broadly used in the area banks performance which indicates banks technical efficiency and other indicator of bank performance.

The dependent variable above, ROE is selected as proxy to measure banks’ equity usage assuming funds provided by shareholders could be captured effectively besides other funds from depositors. It is due to the facts that most bank utilize financial leverage heavily to increase ROE instead of ROA that is mostly lower among financial intermediaries( Hassan & Bashir 2002). Formula of the ROE is as follows:

\[
ROE = \frac{EBIT}{\text{Shareholder Fund}} \times 100
\]

Expecting that the equity variable of ROE for Islamic banks is more appropriate representing through their level of risks, capital structures, profitability, financing and sizes as banks characteristics, the estimation model includes 6 independent variables which were hypothesized to factors that determine performance:

**Capital adequacy ratio (\( CAR \))**

Capital adequacy and availability ratios indicate the financial institutions’ vigour in the face of shocks on their balance sheets. Usually actual capital adequacy ratios are lagged indicators (historic) of existing banking problems. Yet, an adverse trend in these ratios may signal an increased risk exposure and possible capital adequacy problems (Burhonov, 2006). Navapan (2003) asserted that there should be a negative relationship between a bank’s ratio of capital to assets and its return on equity. On the other hand, Berger (1995) found evidence for a positive relationship that the ratio of capital to assets and returns on equity are positively related. He argued that a higher capital ratio (with reduced risk of bankruptcy) should reduce a bank’s cost of funds, by reducing both the price of funds and the quantity of funds required, thus improving a bank’s net interest income and hence profitability. Some of the other researches state that performance and the capital adequacy ratio is most likely be positively related, because a bank is expected to have to increase asset risk in order to get higher returns in most cases. Moreover, Gropp (2007) found that more profitable banks tend to have more capital relative to assets. Thus, a positive relationship is expected between performance and capital adequacy ratio. The measurement for \( CAR \) is as follows:

\[
CAR = \frac{\text{Shareholder Fund}}{\text{Total Asset}} \times 100
\]

The hypothesis is: \( CAR \) positively determines the performance of Islamic banks in Malaysia.
Earnings before interest and tax (EBIT)

Every firm is most concerned with its performance. Performance can be measured using EBIT. EBIT refer to earnings before deducting zakat and interest. It also referred to as the income for the banks. Income reflects a firm's ability to translate sales dollars into profits at various stages of measurement. Ratios that show income based on EBIT represent the firm's ability and are a measure of the overall efficiency of the firm. Thus, it will produce high returns for its shareholders (Business Finance, 2011). A higher EBIT for the banks follows that the banks' ROE is also higher. Thus, a positive relationship between EBIT and ROE is expected. The hypothesis in relation to the discussion above is:

The hypothesis is EBIT positively determine the performance of Islamic banks in Malaysia

Financing to total asset (LTA)

Bank loans and financing are expected to be the main source of revenue, and are expected to impact performance. As stated by Demirguc-Kunt and Huizinga (1997), most of the Islamic banks’ loans and financing are in the form of profit and loss sharing (loans with equity features) with the loan-performance relationship depending significantly on the expected change of the economy. Using international database, they study ratio of banks loans, advances and financing to total assets (LTA) and found that LTA is higher with higher assets. Demirguc-Kunt and Huizinga (1997) reported a positive relationship between bank loans to total assets. Thus, this study hypothesised that the ratio of LTA replaced by FTA for Islamic banks might significantly determine banks’ performance. The measurement for FTA is as follows:

$$FTA = \frac{(Total\ Financing)}{(Total\ Asset)} \times 1$$

The hypothesis is FTA positively determines the performance of Islamic banks in Malaysia

Base lending rate (BLR)

BLR is fixed by Bank Negara Malaysia and it is derived from fund cost that is moved up and down depending on economic conditions. If the economic condition is good, then the BLR will be higher and vice versa. Some of the banks offer current accounts and joint accounts which offer interest income. The BLR is fixed by the banks and will change according to development of the country. Therefore, a saver would hope for a higher BLR while a borrower would for the opposite.

Bourke (1989) found a positive relationship between real interest rate (RI) and bank performance. This study uses BLR to replace real interest rate but is reliant at some degree on some evidences from Bourke (1989). Bourke (1989) also suggested that a high real interest rate generally leads to higher loan rates, and hence higher revenues in conventional banks. However, in the case of Islamic banks, real interest rate may impact performance positively if a larger
portion of Islamic banks’ profits accrues from direct investment, shareholding and/or other trading activities (Murabaha).

The hypothesis is \( BLR \) positively determines the performance of Islamic banks in Malaysia

**Non-performing financing (NPF)**

NPL is an indicator of credit quality; the lower the NPL, the better the asset quality. Non-performing loans are derived from the sum of non-accrual loans (loans with a revenue stream that is so uncertain that the bank does not recognise them as income until cash is received), and restructured loans (e.g.: loans whose income/profit rate has been lowered or the maturity increased because of problems with the borrower). The issue of NPL has received increasing attentions in the last few decades. The immediate consequence of large amount of NPL in the banking system is bank failure.

Non-performing loans can lead to efficiency problem for the banking sector. It was found by a number of economists that failing banks tend to be located far from the most-efficient frontier because banks do not optimise their portfolio decisions by lending less than demanded (Wheelock & Wilson, 1994). Net non-performing loans (non-performing loans after specific provision and income-in-suspense) over total loans, advances and financing is the measure of the amount of total loans which are doubtful. For the Islamic banks, several adjustments need to be made regarding the financing amount to derive for the formula of \( NPF \).

The hypothesis is \( NPF \) positively determines the performance of Islamic banks in Malaysia

**Total asset (TA)**

In market-oriented economies, where most of the world’s banks offer their services today, the market values of bank assets, liabilities, and net worth are constantly in a state of stability. Changes in market interest rates and currency prices, shifting public demands for bank services relative to the services offered by non-bank firms, sudden alterations in central bank monetary policies, and changing investor perceptions of the riskiness of banks cause the value of bank assets, liabilities, and equity to move up or down frequently, depending on the direction of financial changes. Especially sensitive to these market-value movements are bank bond portfolios and stockholders’ equity (net worth), which can dive suddenly as market prices move against the bank (Rose, 2002; Hassan and Bashir, 2002). Banks leverage also increases when its assets grow at a faster rate than capital, and is particularly useful as an indicator for the lending institutions (Burhanov, 2006).

Thus, the final hypothesis is Total Assets (\( TA \)) positively determines the performance of Islamic banks in Malaysia

Data for this study are gathered from the annual financial reports of the studied banks for the years 1998 until 2011 and 154 annual reports were expected to be collected. The breakdown of the annual reports of an eleven sample banks consisted of full-fledged and Islamic windows is presented in Table 1. However, due to the unavailability of some annual reports and to minimize
the outliers, the number of observations was finally reduced to 131 with the descriptive statistics of the banks characteristics reported in Table 2. The variables of banks characteristics as reported are the Total Financing to Asset (FTA), Base Lending Rate (BLR), Earning before Interest and Tax (EBIT), Non Performing Financing (NPF), Capital Adequacy Ratio (CAR) and Total Asset (TA).

Table 1: Sample of Islamic Banks

<table>
<thead>
<tr>
<th>Samples</th>
<th>Full-Fledged</th>
<th>Islamic window</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bank Islam Malaysia Berhad</td>
<td>14</td>
<td>0</td>
<td>14</td>
</tr>
<tr>
<td>Bank Muamalat</td>
<td>14</td>
<td>0</td>
<td>14</td>
</tr>
<tr>
<td>RHB Bank</td>
<td>7</td>
<td>7</td>
<td>14</td>
</tr>
<tr>
<td>Affin Bank</td>
<td>6</td>
<td>8</td>
<td>14</td>
</tr>
<tr>
<td>Eon Bank</td>
<td>6</td>
<td>8</td>
<td>14</td>
</tr>
<tr>
<td>Public Bank</td>
<td>4</td>
<td>10</td>
<td>14</td>
</tr>
<tr>
<td>Malayan Banking Berhad</td>
<td>4</td>
<td>10</td>
<td>14</td>
</tr>
<tr>
<td>AmBank</td>
<td>6</td>
<td>8</td>
<td>14</td>
</tr>
<tr>
<td>Hong Leong Bank</td>
<td>7</td>
<td>7</td>
<td>14</td>
</tr>
<tr>
<td>OCBC Bank</td>
<td>9</td>
<td>5</td>
<td>14</td>
</tr>
<tr>
<td>Standard Chartered Bank</td>
<td>4</td>
<td>10</td>
<td>14</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>81</strong></td>
<td><strong>73</strong></td>
<td><strong>154</strong></td>
</tr>
</tbody>
</table>

4. Discussions on Findings

Table 2 present the results of descriptive statistics involving the mean, median, standard deviation, skewness, kurtosis and Jarque-bera value. The result presented in table 2 not fully suits with the criteria of OLS estimations, thus supports the use of GLS as to be the remedial procedure to be used in the regressions analysis.

In order to test the best model between the fixed and the random effect, we utilized Haussmann test upon the random effect model. Table 3 provides the results, apart being not significant, where the hypothesis null for the fixed effect model is not rejected (P>0.1%), it shows that the GLS with random effects explain better relative to the fixed effects. Thus, the following discussion focuses on the random effects result as reported in Table 4.
Table 2: Descriptive Analysis for Independent Variables

<table>
<thead>
<tr>
<th></th>
<th>FTA</th>
<th>BLR</th>
<th>EBIT</th>
<th>NPF</th>
<th>CAR</th>
<th>TA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>0.9398</td>
<td>6.4797</td>
<td>11.0354</td>
<td>11.7469</td>
<td>0.0744</td>
<td>15.5191</td>
</tr>
<tr>
<td>Median</td>
<td>0.9523</td>
<td>6.3900</td>
<td>11.2269</td>
<td>12.1348</td>
<td>0.0602</td>
<td>15.6973</td>
</tr>
<tr>
<td>Std. Dev.</td>
<td>0.0601</td>
<td>0.8353</td>
<td>1.6307</td>
<td>1.8334</td>
<td>0.0933</td>
<td>1.3319</td>
</tr>
<tr>
<td>Skewness</td>
<td>-1.1692</td>
<td>3.6401</td>
<td>-0.7266</td>
<td>-0.5893</td>
<td>7.5145</td>
<td>-0.9863</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>8.8586</td>
<td>18.7409</td>
<td>2.9938</td>
<td>2.8006</td>
<td>73.2860</td>
<td>4.1798</td>
</tr>
<tr>
<td>Jarque-Bera</td>
<td>217.1965</td>
<td>1641.738</td>
<td>11.5254</td>
<td>7.7996</td>
<td>28197.81</td>
<td>28.8405</td>
</tr>
<tr>
<td>Probability</td>
<td>0.0000</td>
<td>0.0000</td>
<td>0.0031</td>
<td>0.0202</td>
<td>0.0000</td>
<td>0.0000</td>
</tr>
<tr>
<td>Observations</td>
<td>131</td>
<td>131</td>
<td>131</td>
<td>131</td>
<td>131</td>
<td>131</td>
</tr>
</tbody>
</table>

Table 3: Hausman Test of the Random Effects Model

<table>
<thead>
<tr>
<th>Tested model</th>
<th>Statistics</th>
<th>d.f</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Random effects model</td>
<td>1.8723</td>
<td>6</td>
<td>0.9311</td>
</tr>
</tbody>
</table>

The first significant variable is BLR. It is positively significant at 1% significance level. BLR is a critical component of our model since it permits us to interpret the other variables. The result for BLR reveals a positive and significant relationship with ROE. If the economic condition is good, BLR will be higher and vice versa. Some of the banks offer current account and joint account that comes with interest income. This interest is fixed by the banks and will change according to development of the country. Bourke (1989) revealed a positive relationship between real interest rate and bank performance.

Besides that, EBIT and NPF are also significant at 1% significance level. EBIT is positively significant while NPF is negatively significant. Performance measures are important to company managers and owners alike. If a small business has outside investors who have put their own money into the company, the primary owner certainly has to demonstrate the performance of the bank to those equity investors. Non-performing loans can lead to efficiency problem for banking sector. It was found by a number of economists that failing banks tend to be located far from the most-efficient frontier because banks do not optimise their portfolio decisions by lending less than demanded (Wheelock & Wilson, 1994).

Other than these 3 variables, CAR is also negatively significant at 10% of significance level. Although in this study CAR is negatively significant, there are some other studies which found positively significant results. A study conducted by Berger (1995) found a positive relationship between CAR and ROE. It is suggested that banks as profit making organisations are interested in high returns for shareholder and will optimise their capital adequacy in order to get higher ROE.

A positive relationship between the ratio of bank loans to total assets, LTA, and performance
was found by Demirguc-Kunt and Huizinga (1997). To justify the result, bank loans are expected to be the main source of revenue, and are expected to impact performance positively. However, since most of the Islamic banks’ loans are in the form of profit and loss sharing (loans with equity features), the financing-performance relationship depends significantly on the expected change of the economy. However, the results from this study show that the FTA variable is insignificant.

The other variable that is insignificant is the TA variable. Based on Demirguc-Kunt and Huizinga, (1997), Malaysia has relatively high ratios of total asset. Therefore, the size of banking system assets is expected to influence the banks return positively. A positive development of the banking sector would increase the banks performance.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Fixed Effects</th>
<th>Random Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>-15.6333</td>
<td>4.0918</td>
</tr>
<tr>
<td></td>
<td>(0.5360)</td>
<td>(0.0913)</td>
</tr>
<tr>
<td>FTA</td>
<td>3.8321</td>
<td>-8.3723</td>
</tr>
<tr>
<td></td>
<td>(0.4307)</td>
<td>(0.2766)</td>
</tr>
<tr>
<td>BLR(-1)</td>
<td>3.3486</td>
<td>4.6600</td>
</tr>
<tr>
<td></td>
<td>(2.4724)**</td>
<td>(3.2527)**</td>
</tr>
<tr>
<td>EBIT</td>
<td>6.2423</td>
<td>7.3900</td>
</tr>
<tr>
<td></td>
<td>(4.0119)***</td>
<td>(4.3226)***</td>
</tr>
<tr>
<td>NPF</td>
<td>-5.2754</td>
<td>-3.8696</td>
</tr>
<tr>
<td></td>
<td>(6.8129)***</td>
<td>(2.9176)***</td>
</tr>
<tr>
<td>CAR</td>
<td>-5.6084</td>
<td>-32.6418</td>
</tr>
<tr>
<td></td>
<td>(0.4628)</td>
<td>(1.7386)*</td>
</tr>
<tr>
<td>TA</td>
<td>0.4083</td>
<td>-2.4298</td>
</tr>
<tr>
<td></td>
<td>(0.2382)</td>
<td>(0.8873)</td>
</tr>
<tr>
<td>Adj-R²</td>
<td>0.6556</td>
<td>0.2342</td>
</tr>
<tr>
<td>F</td>
<td>15.3990</td>
<td>7.1669</td>
</tr>
<tr>
<td>P</td>
<td>0.0000</td>
<td>0.0000</td>
</tr>
<tr>
<td>DW</td>
<td>1.3662</td>
<td>1.0126</td>
</tr>
</tbody>
</table>

Number in parenthesis is the t-test. *, ** and *** indicate significant at 10%, 5% and 1% level respectively

5.0 Conclusion

Based on the analysis, the empirical result does support the hypothesis that independent variables of selected bank specific characteristics have significantly determined the performance of Islamic banks which are the EBIT, BLR, CAR and NPF. This analysis of performance of the 14-year panel data provides contribution towards a better understanding on the Islamic banks’ characteristics as factors that determine performance. Further contribute on effort needed in increasing performance as the stability and soundness of banks operated under the dual banking concept are of great concern, particularly to the Malaysian government and generally to the ummah in order for them to be performed at all times. These are of a great importance as they are rapidly gaining acceptance from both Muslims and non-Muslims world-wide.
References


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1 Most variables do not meet the normality assumptions criteria. One of the assumptions is based on the Jarquebera normality tests of residuals (Gujarati, 2006). This is based on three criteria to detect non-normality of data which are: first, the value of skewness should be equal to zero; second, the kurtosis value should be three; and another one, the Jarque–Bera should not be significant for the variables. Results shows, only 2 out of 6 variables meet the normality criteria as stated in Gujarati (2006).