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FINANCIAL PERFORMANCE OF CONVENTIONAL AND ISLAMIC BANKS IN BAHRAIN: A COMPARATIVE STUDY

Abstract

The main purpose of this study is to identify the variables that influence the financial performance of both types of banks, Islamic and conventional, and compare their financial performance over the period of 2003–2016. Banks listed on the Bahrain Bourse as of December 31, 2016 were used in the study, with a total of seven banks, of which three are Islamic and four are conventional. To make an appropriate comparative study, financial ratio analysis is used. Multiple regression and paired sample t-test are used to analyze the data. Return on assets (ROA) and return on equity (ROE) are considered as the basis for measuring financial performance and are set as dependent variables. The analysis of the results shows that conventional banks perform better than Islamic banks in terms of profitability. The results also show that ROA is significantly related to risk, cost of intermediation and efficiency ratios, while ROE is highly influenced by risk ratios only. Moreover, it was found out that the relationship between asset size and the performance of banks is insignificant, while the relationship between the number of branches and both ROA and ROE is significant.

Keywords

financial performance, conventional banks, Islamic
banks, ratios, cost of intermediation

JEL Classification

E44, G21, M41

INTRODUCTION

Until the fourth quarter of the twentieth century, the entire financial sector throughout the world was operating on the interest basis, which is in conflict with the injunctions of Islam. This led to the development of interest free (Shari'a compliant) banking (Hanif, Tariq, Tahir, & Momeneen, 2012). The objective of Islamic banks is the same as that of conventional banks, i.e. to make business but only in the light of Shari'ah rules. Islamic banks usually do not assure any return on deposits; they only claim that deposits will be reinvested and profits or losses will be shared between the depositor and the bank. The rationale behind prohibition of interests and the importance of the distribution of profits and losses in Islamic banking creates the relationship of financial trust and partnership between borrower, a lender and an intermediary (Yudistira, 2004; Dar & Presley, 2000).

Islamic banks have income from financing that can be treated as net interest income for the sake of comparison. In addition, Islamic banks enter into different contracts with their customers, such as Murabaha, where the bank buys the commodity for its cash price and sells it to its customers allowing them paying by installments. The cash price will definitely be lower than the amount collectible from customers. The difference represents the bank's profit from such transactions.

Murabaha is not classified as a loan, nevertheless, it is a financial asset in most Islamic banks and quite similar to Accounts Receivable in an ordinary business balance sheet.

Researchers started to make comparisons between the financial performances of both types of banks using financial ratio analysis (Saleh & Zeitun, 2007). Previous research on the financial performance shows conflicting and sometimes similar results. For example, some studies show that Islamic banks outperform conventional banks in their financial performance (Samad, 2004; Rosly & Abu Baker, 2003; Awan, 2009; Safiullah, 2010; Hanif, Tariq, Tahir, & Momeneen, 2012; Siraj & Pillai, 2012; Moin, 2013; Wasiuzzaman & Gunasegavan, 2013; Fayed, 2013; and Aziz, Husin, & Hashmi, 2016). However, other researchers found that conventional banks perform better than Islamic banks in terms of profitability, liquidity, credit risk management and solvency (Ayub, Sohail, & Mumtaz, 2012; Fayed, 2013; Moin, 2013; Milhem & Istaiteyeh, 2015; and Srairi, 2010).

This study seeks to provide answers to the following questions:

1. What are the variables that influence the financial performance of Islamic and conventional banks?
2. Are there significant differences in the financial performance of both types of banks?

The main purpose of the study is to conduct a comparative financial performance evaluation of conventional and Islamic banks using ratio analysis. Each type of banks will be analyzed independently so that the financial performance can be compared.

The study is important to many stakeholders interested in the financial performance of banks. Shareholders need to know the performance of the bank to assess their investment potential and future investment strategies (Aziz, Husin, & Hashmi, 2016). Furthermore, financial performance indicators help regulators track the financial industry outlook and its future growth and challenges. The study also investigates the relationship between Return on Assets (ROA) and Return on Equity (ROE) and other financial performance indicators to provide resource allocation guidelines to the banks' managers based on statistical results, rather than relying only on assumptions and theories.

The next section reviews the relevant literature on commercial banks followed by the methodology section. Results and analysis are presented in section three and the last section presents conclusions, limitations and areas for future research.

1. LITERATURE REVIEW

1.1. Comparative studies of the performance of Islamic and conventional banks

Iqbal (2001) found that there were significant differences between Islamic and conventional banks in terms of performance. There were no significant differences in profitability ratios, but there was a significant difference in liquidity and risk and solvency ratios. Awan (2009) analyzed the vertical growth of Islamic banking and compared it with conventional banking in Pakistan during the period 2006–2008. He found that Islamic banks outperformed conventional banks in assets, deposits, financing, invest-

ment, and efficiency. Jaffar and Manarvi (2011) evaluated the performance of Islamic and conventional banks in Pakistan, using CAMEL test, during the period 2005–2009. They found that Islamic banks performed better in processing adequate capital and had better liquidity position (see also Usman & Khan, 2012).

Hanif, Tariq, Tahir, and Momeneen (2012), and Milhem and Istaiteyeh (2015) found that conventional banks outperformed Islamic banks in profitability and liquidity management but Islamic banks dominated conventional banks in terms of credit risk and solvency maintenance. This result was confirmed by Latif, Akram, Manzoor, and Ahmad (2016) who found that Islamic banks were less risky, more sol-

vent and efficient than conventional banks, but there was not much difference in terms of profitability. Aziz, Husin, and Hashmi (2016) found that Islamic banks' performance was better in terms of efficiency and return on asset quality, but Islamic banks were struggling for advances, investment, liquidity, deposits and capital as conventional banks performed better in these areas.

Yudistira (2004), Rosley and Abu Baker (2003), Samad (2004), and Kamaruddin, Safa, and Mohd (2008) found that Islamic banks showed better credit performance than conventional banks. Siraj and Pillai (2012) found that conventional banks registered growth in revenue but could not achieve improved profitability because of higher provisions for credit losses. Javaid, Anwar, Zaman, and Gafoor (2011) examined the impact of assets, loans, equity and deposits on major profitability measures (ROA) and showed that these variables had a strong impact on banks' profitability.

1.2. Profitability, risk, cost of intermediation and efficiency

Risk is a more controversial area of study because dependence on leverage increases risk but potentially increases profitability because of the low cost of deposits. However, an increase in risk may be reflected by rising losses on loan provision, which will ultimately reduce profits. It is expected that competition is high in the financial market (Malhotra, Poteau, & Singh, 2011). Thus, empirical data analysis would show growing competition in the banking industry, which is measured by the perceived increase in cost of intermediation due to the accelerated number of banks entering the Bahraini market over the last two decades.

1.3. Asset size and number of branches

The size of the bank has a great impact on its financial performance. Large banks with large assets would show higher profits because the main assets of a bank are its loans and advances to customers. Since it is expected that the competition is high in the financial market, the most profitable banks are those with larger assets rather than those who impose higher interest rates. This is consistent with the results of Kadir, Jaffar, Abdullah, and Harun (2003) and Malhotra,

Poteau, and Singh (2011). However, some studies found that the relationship between profitability and bank's size was insignificant (Rashid & Jabeen, 2016; Zeitun, 2012). Moreover, Akhtar, Ali, and Sadaqat (2011) found that asset size had a negative effect on both conventional and Islamic banks, although this impact was considered to be insignificant in Islamic banks but was significant in conventional banks. In addition, large banks tend to have higher interest income and have more control over non-operating expenses, yet less favorable liquidity position when compared to smaller banks (Malhotra, Poteau, & Singh, 2011). Finally, Williams (2003) and Zeitun (2012) found that the number of bank branches was positively related to ROA.

In summary, it is clear that there are contradictions in the findings of previous research, in particular in the financial performance of banks, their liquidity and risk management. This justifies the need to continue research in the area and to choose this specific topic for Bahrain.

1.4. Research hypotheses

Based on the review of previous studies, the following research hypotheses have been put forward.

- H1: *Islamic banks operating in Bahrain are more profitable than conventional banks.*
- H2: *There is a significant relationship between profitability and risk, efficiency and the cost of intermediation.*
- H3: *Competition among banks, as measured by the increase in the cost of intermediation, is increasing in Bahrain*
- H4: *There is a significant relationship between ROA and both asset size and the number of bank branches.*

2. METHODOLOGY

2.1. Population and sample

Only commercial banks listed on the Bahrain Bourse are included in the study. This is because listed banks are a matter of interest for current

and potential investors. Moreover, the majority of unlisted banks are enormous banks that activate globally and there are vast differences in resources and the performance of these banks' branches outside Bahrain. Among all listed companies, there are seven commercial banks of which three are Islamic and four are conventional.

2.2. Procedure and instrument used

Data for the study are collected from the banks' consolidated financial statements over a 14-year period (2003–2016). To measure the financial performance, profitability ratios are used and the combined means of profitability ratios for both types of banks are compared. The use of financial ratio analysis compensates for bank disparities in assets, capital, deposits and loans.

The consolidated financial statements were collected from the official websites of respective banks and of the Central Bank of Bahrain. Thomson Reuters Eikon and Zawya Islamic database offered by the University of Bahrain Central Library was also used in the data collection process.

2.3. Variables of the study

2.3.1. *The dependent variables of bank financial performance*

Return on assets (ROA). Investing activities, in the commercial banking industry, are in fact considered the second most significant commercial bank activity. The time value of money forces banks to invest their customers' deposits because, in the absence of a creditworthy borrower, a bank cannot keep the deposits idle: if they do so they will end up paying the depositors' interest without benefiting from their funds. Thus, eliminating all investing activities from banks' income is irrational. Instead, considering the entire net profit is more reasonable. However, comparing banks' income without adjustments is inappropriate if there is a huge variance in asset size, as various researchers found bank size as positively correlated to bank profitability because the banks' assets may reduce operational cost (Kosmidou, 2008). To solve this dilemma, ROA is set as the dependent variable and considered as the finest indicator to evaluate bank performance.

Return on equity (ROE) is of great concern to investors and shareholders. ROE measures the income generated by the bank through shareholders' equity finances. If ROA is high and ROE is low for a given firm, this would indicate a heavy reliance on leverage in generating profits. It is expected to have low ROE for credit institutions, yet it is important to construct a relationship between ROA and ROE to identify whether banks with higher ROA should have lower ROE. The use of ROA and ROE as dependent variables is consistent with previous studies (Samad, 2004; Kosmidou, 2008; Siddiqui, 2008; Sufian & Habibullah, 2009; Javaid et al., 2011 and Zeitun, 2012).

2.3.2. *The independent variables*

Independent variables are divided into four types of ratios, profitability, risk and liquidity, cost of intermediation, and efficiency (Malhotra, Poteau, & Singh, 2011).

Profitability ratios other than ROA are Operating Assets Turnover (OAT) and earning assets to total assets (EATA). The operating assets turnover ratio makes it clear the ability of loans to generate revenues regardless of their cost. High operating assets turnover shows that the bank generates a reasonable amount of revenues through its assets. Hence, if high OAT corresponds with low ROA, it is suggested that the bank could not control its operational expenses or its intermediation costs. Moreover, OAT can measure if the bank generates its revenues from lending large volume of loans or by imposing high interest rates.

Earning assets to total assets (EATA) is calculated by dividing loans plus investment over total assets. The aim of calculating this ratio is to see what percentage of assets is income producing. Usually, banks will maintain high percentage of earning assets unlike other sectors such as manufacturing where higher investment will be in plant assets. Earning assets are those assets that an entity could generate through holding or possessing them. The key feature that distinguishes earning assets from non-earning assets is the fact that an earning asset produces funds greater than its book value. Investment shares are considered one of the most common examples of earning assets, as these shares usually earn dividends. In the banking in-

dustry, loans and advances represent the vast majority of earning assets, as banks receive interest as a return to hold such assets. A higher EATA ratio indicates higher profitability, thus better performance. However, banks operating in the growing phase of operations tend to have lower EATA ratio. As they establish new branches, their property, plant, and equipment value, which are non-earning assets, will increase.

Ratios that assess risk and liquidity. Ratios that assess risk are equity to assets (ETA), loans to deposits (LTD) and net loans to gross loans (NLTGL).

Loans to deposits (LTD) is one of the most controversial ratios; a lower LTD indicates a better liquidity position. Yet a very low LTD suggests that the bank is underutilizing its resources as it has a lot of funds from deposits and a low amount of loans. Regulators' attention to this ratio is steadily increasing. Therefore, it is interesting to measure the relationship between LTD and the bank's performance measured through ROA. NLTGL measures the credit risk control for a bank. A ratio closer to 1 means that the bank minimizes its uncollectable loans; therefore, the bank manages to finance creditworthy borrowers.

Cost of intermediation ratios. Malhotra, Poteau, and Singh (2011) use three ratios: interest spread (INTS), cost of funding earning assets (COF) and net interest margin (NIM). Interest spread is the gap between the interest rate a bank charges on loans and rate paid on deposits. This ratio is useful for banks to show to what extent net interest forms part of a bank's income. Higher interest spread indicates lower cost of intermediation activities. It is important to note that this amount was computed in million of Bahraini Dinars, meaning that it is not a ratio. COF is computed by interest expense over total funds (cash). It is greatly influenced by the interest rate in the market as interest rates on both loans and deposits are usually regulated.

NIM equals net interest income over earning assets. Net interest income is calculated by subtracting interest expense. Earning assets are those assets that the bank is expected to generate income from. These assets are usually loans and financial assets held for trading.

Efficiency ratio of non-interest income to operating income (NITOI) considers the level of diversification in income that a bank has; a higher ratio indicates more diversified revenues. Noninterest income includes fees on services provided to customers. Operating revenues include interest and non-interest income but not extraordinary income.

Efficiency ratio (EFFCT) of non-interest expenses to operating revenue. Non-interest expenses are all operational and administrative expenses. This ratio measures expenses necessary to generate each Dinar of revenues. Lower efficiency ratio shows that the bank is efficient in generating income with minimal costs.

Ratios not included in the four categories introduced by Malhotra, Poteau, and Singh (2011), but used in other studies and proved useful are the asset size and the number of bank branches. These two variables are used to measure the size of the bank.

2.4. Regression model

To analyze the relationships among performance variables, the Ordinary Least Squares (OLS) method was used. The OLS regression model can be written as:

$$Y_i = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 \dots \beta_n x_n + \mu,$$

where Y is the dependent variable, i is an index of cross-sections, that is data of different subjects taken for a specified period of time, while t refers to time. On the other side of the equation, β_0 or sometimes referred to as α is a 'constant term' meaning that if all independent variables equal zero, Y equals β_0 . While x_s represents the independent variables, β is the coefficient of each independent variable, and, finally, μ symbolizes error.

Dependent variable ROA; i represents the seven banks chosen for the study, t is the period of time from 2003 till 2016, and the x_s are the independent variables. Thus the model takes the following form:

$$\begin{aligned} ROA_{it} = & \beta_0 + \beta_1_{OAT} + \beta_2_{EATA} + \beta_3_{ETA} + \\ & + \beta_4_{LTD} + \beta_5_{NLTGL} + \beta_6_{COF} + \beta_7_{INTS} + \\ & + \beta_8_{NIM} + \beta_9_{NITOI} + \beta_{10_{EFFCT}} + \beta_{11_{SIZE}} + \\ & + \beta_{12_{BRNCH}} + \mu, \end{aligned}$$

$$\text{and } ROE_{it} = \beta_0 + \beta_1_{OAT} + \beta_2_{EATA} + \beta_3_{ETA} + \beta_4_{LTD} + \beta_5_{NLTGL} + \beta_6_{COF} + \beta_7_{INTS} + \beta_8_{NIM} + \beta_9_{NITOI} + \beta_{10}_{EFFECT} + \beta_{11}_{SIZE} + \beta_{12}_{BRNCH} + \mu.$$

A dummy variable is also included to control the effect of the bank type (Islamic = 1, conventional = 0). It should be noted that this panel is unbalanced. A balanced panel is when t is identical for all i ; meaning that banks are examined in the exact period of time. In this study, this is not quite the case, as two banks, Khaleji Commercial Bank and Al Salam Bank, both started operating after 2003, so years (t) will be different for these two banks.

3. RESULTS AND DISCUSSION

3.1. Hypotheses test

H1: Islamic banks operating in Bahrain are more profitable than conventional banks.

Table 1 shows the statistical summary of each category of financial performance indicators during the period of study. Four ratios are used to assess the profitability of banks: ROA, ROE, Operating

assets turnover (OAT), and earning assets to total assets (EATA). The descriptive statistics show that conventional banks had a higher mean in all of these ratios except operating assets turnover. It is evident that the operating assets turnover ratio overlooks the cost associated with assets, instead it measures the ability of assets to generate income regardless of expenses. Since Islamic banks had higher operating assets turnover ratio compared to conventional banks and all other profitability indicators were lower in Islamic banks, it can be assumed that Islamic banks had the ability of generating more income through their assets. Given the standard deviation, it is observed that the trend of conventional banks' income is more stable. Some Islamic banks had incurred losses in certain years, while all conventional banks under study showed profits in the income statements for all 14 years; this justifies the narrower range of profitability ratios in conventional banks. Besides, there is a significant difference in the ratio of earning assets to total assets in the two types of banks. Earning assets as a share of total assets in conventional banks are higher than it Islamic banks. This gap is also reflected in ROA. The results show that Islamic banks are less profitable than conventional banks. Therefore, the null hypothesis that Islamic banks are not more profitable than conventional banks cannot be rejected. A possible explanation

Table 1. Summary statistics of independent variables and their impact on bank performance (2003–2016)

	Islamic banks				Conventional banks			
	Mean	Standard deviation	Minimum	Maximum	Mean	Standard deviation	Minimum	Maximum
ROA	0.011	0.032	−0.043	0.083	0.016	0.004	0.009	0.022
ROE	0.006	0.166	−0.519	0.228	0.142	0.022	0.091	0.184
Operating assets turnover	0.079	0.050	0.028	0.286	0.043	0.027	0.009	0.1
Earning assets to total assets	0.791	0.175	0.307	0.979	0.903	0.041	0.765	0.951
Equity to assets	0.201	0.129	0.051	0.559	0.112	0.018	0.074	0.149
Loans to deposits	3.067	4.781	0.444	24.571	2.10	2.2845	0.3103	6.833
Net loans to gross loans	0.947	0.048	0.792	1.000	0.96	0.021	0.893	0.988
Cost of funding	0.348	0.209	0	0.853	0.515	0.435	0.057	1.703
Interest spread	35.865	33.014	4.830	131.166	95.101	82.806	23.28	313.06
Net interest margin	0.062	0.069	0.015	0.322	0.026	0.012	0.009	0.052
Non-interest income to operating income	0.137	0.154	0	0.413	0.421	0.179	0.164	0.84
Efficiency ratio	0.402	0.178	0.134	0.996	0.304	0.194	0.057	1.067
Size	1,100.60	939.20	71.10	3153.01	4,576.75	3,781.85	1,237.50	12,838.77
Branch	12.24	3.50	9	17	24.33	2.90	21	28

Note: Interest spread and asset size are presented in millions of Bahraini Dinars.

for this result is that conventional banks have superior experience due to their longer existence in the financial market. This result is consistent with some previous studies (Kadir et al., 2013; and Rashid & Jabeen, 2016).

H2: There is a significant relationship between profitability and risk, efficiency and cost of intermediation.

A positive relationship exists between profitability and both efficiency and cost of intermediation. Table 1 shows that conventional banks report higher reliance on leverage compared to Islamic banks. On average, equity represents 20% of total assets of Islamic banks for the 14-year period, while in conventional banks, equity is only 11%. The capital structure of conventional banks is more risky, yet the pattern is similar for all observations. Conversely, although Islamic banks showed dissimilar forms of capital, some Islamic banks showed an extremely safe capital structure with 55% equity, although in some years Islamic banks showed a much higher risk with 5% equity.

Both types of banks showed a decent risk management returned in minimizing Loss on Loans' provision. The ratio of net loans to gross loans showed that Islamic banks write-off 5.5% of their loans as uncollectable, and conventional banks write-off 4% of their loans on average. The minimum amount of NLGL in Islamic banks is 79%, which is below average. However, it was a typical figure that cannot be generalized as the mean remained reasonably high.

As to the loans to deposits ratio, it is obvious that Islamic banks had a better liquidity position than conventional banks throughout the period of study. Nevertheless, it seems that Islamic banks underutilize their assets; as liquidity is available through the large amount of deposits, loan volume is relatively low. Assembling performance variables emphasizes the proposition of underutilizing assets in Islamic banks. As previously discussed, Islamic banks show low earning assets to total assets ratio; however, associating this with the high loans to deposits ratio implies that Islamic banks raise large amounts of funds from deposits but they do not invest them in loans, and as cash is not considered as an earning asset, Islamic banks

had lower EATA ratios. The reason for this investment shortage is probably the restriction imposed on Islamic banks' activities to maintain adherence to Islamic Shariah.

When considering the influential determinants of bank performance, the results show a significant correlation between profitability and risk; as risk increases, profitability decreases. While the efficiency and cost of funding ratios significantly affected ROA, its impact on ROE is insignificant. However, there is no significant relationship between asset size and both ROA and ROE. Therefore, the null hypothesis cannot be rejected. This result agrees with Rashid and Jabeen (2016), but it contradicts the results of Kadir et al. (2013) and Malhotra, Poteau, and Singh (2011).

H3: Competition among banks, as measured by the increase in the cost of intermediation, is increasing in Bahrain.

Table 1 shows that Islamic banks have the advantage of lower financing costs when compared to conventional banks. However, when both interest expenses and interest income are considered, conventional banks generate more income than Islamic banks. Moreover, net interest margin, which is the net interest income divided by operating assets, also supports the assumption of asset underutilization in Islamic bank, as NIT is much higher in conventional banks. Net interest income (interest spread) of conventional banks is almost three times more than the interest spread of Islamic banks. Based on this result, the null hypothesis that competition among banks as measured by the increase in the cost of intermediation is decreasing in Bahrain cannot be rejected.

H4: Asset size and the number of branches have a significant relationship with ROA and ROE.

Conventional banks were found more efficient than Islamic banks; that is, running their business more smoothly by minimizing non-interest expense. Table 1 shows that Islamic banks incur BD 0.4 as non-interest expenses against every dinar earned as revenues, while conventional banks incur only BD 0.3. This result supports the theory that banks' asset size has a positive relationship with non-interest expenses. The ratio of

non-interest income to operating income shows that Islamic banks depend on interest income in generating their revenues more than conventional banks, whereas conventional banks depend more on interest income. It is important to emphasize that income from Islamic financing activities is considered as interest income, and Islamic financing assets are treated as loans for the sake of comparison. A typical form of non-interest income is dividends from investees. The reason for Islamic banks' inefficient operations is probably the lack of experience and smaller asset size compared to conventional banks. Therefore, the null hypothesis is rejected.

3.2. Factors influencing the performance of banks in Bahrain

3.2.1. Regression model and multicollinearity test

Multicollinearity test was undertaken to ensure that there was no correlation between the independent variables in the regression model. Table 2 shows the correlation coefficients.

Table 2 shows that high correlations exist among three variables (above 0.7). This points to the necessity to adjust the model as some of its independent variables are significantly correlated. There is a significant positive relationship between Operating Assets Turnover (OAT) and Net Interest Margin (NIM) with a correlation coefficient of 0.94. This result suggests that banks gener-

ating greater revenues from their operating assets (mainly loans) tend to have higher interest margins; suggesting that NIM is greatly influenced by interest income rather than interest expense. Both ratios focus mainly on the ability of assets to generate income, and the statistics show an extremely positive relationship between interest income and net interest income. One of these variables is redundant, thus it should be eliminated from the model to avoid collinearity. Accordingly, OAT is excluded.

Also, there is a 0.95 correlation coefficient between asset size and interest spread, which means that larger banks tend to generate higher income than smaller banks, as they have more resources. In rare cases, bank size does not influence the interest spread, as banks hold large amount of funds financed through interest-bearing deposits to maintain liquidity. Those funds increase the size of the bank, yet it reduces interest spread as banks are obligated to pay interest expense to the depositors. However, this is not the case in Bahraini banks. Therefore, interest spread (INTS) is left out of the model as the size of the bank represents similar criteria.

Finally, a negative correlation between the type of a bank and the number of branches is also observed (−0.89). Islamic banks have lower number of branches compared to conventional banks. Bank type and the number of branches are two different criteria, and they both have an adequate value to add to the research, thus eliminating one of them will be inappropriate. Therefore, the panel

Table 2. Correlation coefficients between independent variables

	OAT	EATA	ETA	LTD	NLTGL	COF	INTS	NIM	NITOI	EFFCT	SIZE	BRANCH
EATA	−0.65											
ETA	0.50	−0.21										
LTD	0.22	−0.41	0.34									
NLTGL	0.19	−0.10	0.34	0.33								
COF	−0.22	0.21	−0.19	0.16	0.08							
INTS	−0.24	0.06	−0.36	0.06	0.06	0.14						
NIM	0.94	−0.65	0.58	0.36	0.20	−0.19	−0.18					
NITOI	−0.19	0.17	0.34	0.16	0.10	−0.01	0.02	−0.10				
EFFCT	0.06	−0.11	−0.01	0.02	−0.25	−0.02	−0.31	0.06	−0.13			
SIZE	−0.38	0.17	−0.40	0.12	0.09	0.27	0.95	−0.29	0.06	−0.30		
BRANCH	0.02	0.12	−0.43	−0.23	0.11	0.13	0.37	−0.04	0.08	−0.21	0.39	
Dummy	0.29	−0.39	0.46	0.19	−0.07	−0.28	−0.47	0.27	−0.20	0.24	−0.56	−0.89

is analyzed twice, first with excluding the number of branches from the model and the second model excludes the type of the bank.

3.3. Models after adjustment

Model (1)

$$ROA_{it} = \beta_0 + \beta_1_{ETA} + \beta_2_{ETA} + \beta_3_{LTD} + \beta_4_{NLTGL} + \beta_5_{COF} + \beta_6_{NIM} + \beta_7_{NITOI} + \beta_8_{EFFCT} + \beta_9_{SIZE} + \beta_{10}_{BRNCH} + \mu.$$

Model (2)

$$ROE_{it} = \beta_0 + \beta_1_{ETA} + \beta_2_{ETA} + \beta_3_{LTD} + \beta_4_{NLTGL} + \beta_5_{COF} + \beta_6_{NIM} + \beta_7_{NITOI} + \beta_8_{EFFCT} + \beta_9_{SIZE} + \beta_{10}_{BRNCH} + \mu.$$

3.3.1. Model (1): Regression analysis of financial performance indicators, excluding the effect of bank type, with ROA as a dependent variable

Table 3 clearly shows the strength of the model used, as standard error is relatively low and the number of observations (93) is quite sufficient (generally, observations above 30 are considered statistically sufficient). Moreover, the adjusted R-squared indicates that 69% of the ROA variation is explained by the variation of the independent variables. Moreover, from the regression statistics, the validity of the model can be found because it

proves the absence of collinearity, since the tolerance factor ($1 - R^2$) is more than 20%; that is about 28%. In addition, the F-test for this model is also statistically significant (Table 4).

Table 3. Regression statistics

	Model (1)	Model (2)	Model (3)	Model (4)
Multiple R	0.850	0.683	0.859	0.725
R-squared	0.723	0.467	0.738	0.526
Adjusted R-squared	0.689	0.402	0.706	0.468
Standard error	0.013	0.100	0.012	0.094
Observations	93	93	93	93

The figures in Table 4 also ensure the validity of the model used, as F-value indicates that at least one independent variable has influenced the dependent variable.

Table 5 shows that only four out of ten chosen variables were insignificant in determining bank performance and six variables have significantly influenced ROA. R-squared of the 0.467 (see Table 3) variation in profit is due to the independent variables and the remaining 0.54 variation in profit is due to other variables not included in the study.

The ratio of earning assets to total assets is positively related to ROA as banks increase their earning assets and are expected to earn more on their assets. The equity to assets ratio has a similar impact on ROA. The regression analysis suggests that a capital structure, relying on equity rather

Table 4. Analysis of variance statistics

ANOVA	DF	SS	MS	F	P-value
Model (1)					
Regression	10	0.037	0.004	21.462	0.00
Residual	82	0.014	0.000		
Total	92	0.051			
Model (2)					
Regression	10	0.729	0.073	7.193	0.00
Residual	82	0.831	0.010		
Total	92	1.560			
Model (3)					
Regression	10	0.037	0.004	23.156	0.00
Residual	82	0.013	0.000		
Total	92	0.051			
Model (4)					
Regression	10	0.821	0.082	9.102	0.00
Residual	82	0.739	0.009		
Total	92	1.556			

than leverage, will increase ROA. This is inconsistent with the pre-hypothesized result; leverage has always been the cheapest source of finance in the literature. The ratio of net loans to gross loans has a healthy impact on the dependent variable, meaning that banks seeking for higher profits must minimize their provision for loan losses by financing credit-worthy customers. Higher net interest margins are expected to reflect ROA in a favorable form. Income generated from financing activities surpasses income from non-interest activities in Bahraini banks, as NIM has a statistically significant influence on ROA, while non-interest income to operat-

ing income ratio has no significant impact on bank performance. The number of branches has a significant positive impact on bank overall performance assessed by ROA. Banks with more branches tend to be more profitable, which is justifiable because of their larger customer base, since customers seem to interact with banks, which have more outlets, to ease their daily basis transactions. Conversely, an inverse relationship between ROA and efficiency ratio was found, indicating that banks manage to have low cost of funding by maintaining large amounts of funds, which means underutilization in assets that eventually decrease ROA.

Table 5. Test statistics of regression coefficients – Models (1), (2), (3) and (4)

Variables	Coefficients	Standard error	t-statistics	P-value
Model (1)				
Intercept	-0.16	0.04	-3.55*	0.000
EATA	0.04	0.02	2.29**	0.020
ETA	0.10	0.03	3.65*	0.000
LTD	0.00	0.00	1.04	0.300
NLTGL	0.12	0.05	2.58*	0.010
COF	0.00	0.00	-0.13	0.900
NIM	0.14	0.06	2.45**	0.020
NITOI	0.01	0.00	1.64	0.110
EFFCT	-0.02	0.01	-2.91*	0.000
SIZE	0.00	0.00	-0.46	0.650
BRANCH	0.00	0.00	2.12**	0.040
Model (2)				
Intercept	-1.30	0.35	-3.75*	0.000
EATA	0.35	0.12	2.845*	0.005
ETA	0.08	0.21	0.365	0.715
LTD	0.007	0.003	1.863***	0.065
NLTGL	0.978	0.36	2.737*	0.007
COF	-0.01	0.03	-0.387	0.699
NIM	0.48	0.45	1.066	0.289
NITOI	0.02	0.03	0.556	0.579
EFFCT	-0.09	0.06	-1.735***	0.086
SIZE	-2.7E-06	4.37E-06	-0.607	0.545
BRANCH	0.007	0.002	3.106*	0.002
Model (3)				
Intercept	-0.12	0.047	-2.589*	0.011
EATA	0.02	0.017	1.202	0.232
ETA	0.11	0.025	4.314	4.43E-05
LTD	0.005	0.0005	0.990	0.324
NLTGL	0.12	0.044	2.676*	0.009
COF	-0.002	0.0044	-0.443	0.659
NIM	0.130	0.054	2.392*	0.019
NITOI	0.004	0.004	1.097	0.275
EFFCT	-0.021	0.007	-3.033*	0.003
SIZE	-7.3E-07	5.87E-07	-1.239	0.218
Dummy	-0.015	0.0047	-3.073*	0.002
Model (4)				
Intercept	-0.88	0.351	-2.507*	0.014
EATA	0.17	0.126	1.352	0.179
ETA	0.17	0.184	0.943	0.348
LTD	0.006	0.004	1.857***	0.066
NLTGL	0.95	0.325	2.914*	0.004
COF	-0.028	0.033	-0.873	0.385
NIM	0.33	0.405	0.811	0.419
NITOI	-0.007	0.031	-0.233	0.816
EFFCT	-0.101	0.053	-1.902***	0.060
SIZE	-7.8E-06	4.39E-06	-1.78438***	0.078
Dummy	-0.16	0.035	-4.584	1.62E-05

Note: * Significant at the .01 level; ** significant at the .05 level; *** significant at the .10 level.

3.3.2. Model (2): Regression analysis of financial performance indicators, excluding the effect of bank type, with ROE as a dependent variable

Similar to model (1), the statistics in Table 3 demonstrate the validity of the model used, since the tolerance is 0.54, which provides no collinearity. Independent variables explain about 0.40 of the variation in ROE and F-value shows that at least one independent variable has a relationship with ROE (Table 4).

Table 5 shows that ROE has a positive relationship with the earning assets to total assets ratio, the net loans to gross loans ratio, and the number of branches. All these variables have influenced ROA; however, net interest margin, equity to assets, and efficiency ratios had a statistically significant influence on ROA, though their influence on ROE was immaterial and insignificant.

3.3.3. Model (3): Regression analysis of financial performance indicators, excluding the effect of the number of branches, with ROA as a dependent variable

Similar to the previous two models, Table 3 proves the model (3) validity, which has a high tolerance level of 1-0.74. The F-value also indicates the mod-

el legitimacy. R-squared shows that about 70% of the ROA variance is explained by the model. Compared to model (1), where bank type was excluded, model (3) has a slightly higher R^2 .

Model (3) is almost identical to model (1), the only difference is that model (3) measures the effect of the bank's type instead of the number of branches. The dummy variable shows that conventional banks are more profitable. The reason for this is that Islamic banks underutilize their assets.

3.3.4. Model (4): Regression analysis of financial performance indicators, excluding the effect of the number of branches, with ROE as a dependent variable

Based on the statistics provided in Tables 3, 4 and 5, the model is effective in analyzing regressions among dependent and independent variables, since the tolerance is high enough, and F-value is significant. Moreover, Table 5 shows that the only variables that affect ROE are net loans to gross loans ratio and the bank type. Net loans to gross loans being positively related is the only common result in all four implied models, which emphasizes the importance of adequate risk management to retain high profitability levels. Conversely, the dummy variable negative relationship with ROE indicates poor performance of Islamic banks.

CONCLUSION

The study shows that Islamic banks are less profitable than conventional banks. A possible explanation is the superior experience of conventional banks due to their longer existence on the market. The results also show that Islamic banks have higher liquidity than conventional banks. This is an expected result as Islamic banks face a lack of investment products and limited investment opportunities and an advance position resulted from the interest prohibition. Moreover, Islamic banks cannot rely on borrowing money from the Central Bank due to interest prohibition in Islam. This is in addition to the larger amount of restrictions and limitations imposed on Islamic banks in terms of financing activities. Finally, Islamic banks are in a growing stage and they try to benefit more from the fund commitment. Given these results, it can be concluded that Islamic banks have liquidity excess. On the other hand, this may indicate that Islamic banks are in a growing stage and try to get more benefits from the commitment of the funds (Usman & Khan, 2012).

The results also show a significant relationship between profitability and risk. Although efficiency and cost of funding ratios significantly affected ROA, their impact on ROE is insignificant. Thus, sound risk management and solvency indicate the strength of this type of banks to pay their debts. As to the asset size, there is no significant relationship between both ROA and ROE. This result is consistent with Rashid and Jabeen (2016). However, it contradicts the findings of Kadir et al. (2013) and Malhotra,

Poteau, and Singh (2011). The number of branches is proved to have a significant influence on bank performance.

The comparison also shows that profit share given to Islamic banks' depositors is less than that of conventional banks. Perhaps this is contrary to the essence of the Islamic moral economy, where the distribution of profits must be based on justice and fairness. Instead, owners make the bulk of the profits (Aziz, Husin, & Hashmi, 2016). Thus, Islamic banks need to address this issue to increase their credibility as being fair and just.

Finally, since the financial crisis falls within the period covered by the study, it is worth noting that Islamic banks have been less affected by the financial crisis than conventional banks. Despite the decline in revenues, the impact was minimal compared to changes faced by conventional banks. Thus, it can be argued that the financial crisis has affected the performance of bank groups at different levels.

Despite the results above, the effect of bank size in both types of banks must be considered when interpreting results and making decisions based on them. The study lacks any primary data due to time constraints and difficulty in obtaining such data. In addition, the study sample includes more conventional banks than Islamic banks, and this may impose limitations on generating more accurate estimates of performance comparisons.

As Islamic and conventional banks are different in nature, the factors affecting their performance can also differ. Accordingly, a further study that examines Islamic banks and conventional banks using two different models is highly recommended. In addition, the financial performance of banks was influenced by the global financial crisis. Further research can examine the effect of the crisis on the performance of commercial banks in Bahrain.

Due to the excess liquidity of Islamic banks, they should increase their ability to use surplus cash to generate additional returns. As such, the Central Bank of Bahrain should help Islamic banks invest excess liquidity.

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REFERENCES

1. Akhtar, M. F., Ali, K., & Sadaqat, S. (2011). Liquidity Risk Management: A Conventional and Islamic Banks of Pakistan. *Interdisciplinary Journal of Research in Business*, 1(1), 35-44. Retrieved from http://joc.hcc.edu.pk/faculty_publications/liquidity-riskmanagement.pdf
2. Awan, A. (2009). Comparison of Islamic and Conventional Banking in Pakistan. *Proceedings 2nd CBRC*. Lahore, Pakistan. Retrieved from https://www.academia.edu/26429485/COMPARISON_OF_ISLAMIC_AND_CONVENTIONAL_Abdul_Ghafoor_Awan_
3. Ayub, S., Sohail, N., & Mumtaz, R. (2012). Performance evaluation of Islamic and Conventional Banks in Pakistan. *World Applied Science Journal*, 20(2), 213-220. Retrieved from <https://pdfs.semanticscholar.org/3816/41ff1032b7caaf4b5bb1f475cf0dc6a50b8b.pdf>
4. Aziz, S., Husin M., & Hashmi, S. (2016). Performance of Islamic and Conventional Banks in Pakistan: A Comparative Study. *International Journal of Economics and Financial Issues*, 6(4), 1383-1391. Retrieved from <http://econjournals.com/index.php/ijefi/article/view/2603/pdf>
5. Dar, H. A., & Presley, J. R. (2000). Lack of profit loss sharing in Islamic banking: Management and Control Imbalances. *International Journal of Islamic Financial Services*, 2(2), 3-18. Retrieved from https://www.academia.edu/6345958/Lack_of_Profit_

- [Loss_Sharing_in_Islamic_Banking_Management_and_Control_Imbalances](#)
6. Fayed, M. E. (2013). Comparative performance study of conventional and Islamic banking in Egypt. *Journal of Applied Finance and Banking*, 3(2), 1-14. Retrieved from http://www.scienpress.com/Upload/JAFB%2fVol%203_2_1.pdf
 7. Hanif, M., Tariq, M., Tahir, A., & Momeneen, W. (2012). Comparative Performance Study of Conventional and Islamic Banking in Pakistan. *International Research Journal of Finance and Economics*, 83, 62-72. Retrieved from <https://pdfs.semanticscholar.org/a3df/b49dcbf03af-65c5402549871ed30d3bfd754.pdf>
 8. Iqbal, M. (2001). Islamic and Conventional Banking in the Nineties: A Comparative Study. *Islamic Economic Studies*, 8(2), 1-27. Retrieved from <https://ideas.repec.org/a/ris/isecst/0143.html>
 9. Jaffar, M., & Manarvi, I. (2011). Performance comparison of Islamic and conventional banks in Pakistan. *Global Journal of Management and Business Research*, 11(1), 59-66. Retrieved from https://globaljournals.org/GJMBR_Volume11/7_Performance_comparison_of_Islamic_and_Conventional_banks_in_Pakistan.pdf
 10. Javaid, S., Anwar, J., Zaman, K., & Gafoor, A. (2011). Determinants of Bank Profitability in Pakistan: Internal Factor Analysis. *Mediterranean Journal of Social Sciences*, 2(1), 59-78. Retrieved from https://www.academia.edu/8706158/Determinants_of_Bank_Profitability_in_Pakistan_internal_factor_Analysis
 11. Kadir, N. A., Jaffar, A., Abdullah, N. L., & Harun, N. (2013). Comparison of the financial performance of Islamic and conventional bank in Malaysia during and after economic crisis. *AIP Conference proceedings*, 1557(1), 247-251. <https://doi.org/10.1063/1.4823913>
 12. Kamaruddin, B. H., Safa, M. S., & Mohd, R. (2008). Assessing production efficiency of Islamic banks and conventional bank Islamic windows in Malaysia. *International Journal of Business and Management Research*, 1(1), 31-48. Retrieved from <https://mp.ra.ub.uni-muenchen.de/10670/>
 13. Kosmidou, K. (2008). The determinants of banks' profits in Greece during the period of EU financial integration. *Managerial Finance*, 34(3), 146-159. <https://doi.org/10.1108/03074350810848036>
 14. Latif, Y., Akram, M. N., Manzoor, S., & Ahmad, S. (2016). Study of Performance Comparison between Islamic and Conventional Banking in Pakistan. *European Journal of Educational and Development psychology*, 4(1), 17-33.
 15. Malhotra, D. K., Poteau, R., & Singh, R. (2011). Evaluating the Performance of Commercial Banks in India. *Asia Pacific Journal of Finance and Banking Research*, 5(5), 15-37. Retrieved from <http://globip.com/contents/articles/asiapacific-vol5-article2.pdf>
 16. Milhem, M., & Istaiteyh, R. (2015). Financial Performance of Islamic and Conventional Banks: Evidence from Jordan. *Global Journal of Business Research*, 9(3), 27-41. Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2664298
 17. Moin, M. S. (2013). Financial Performance of Islamic Banking and Conventional Banking in Pakistan: A Comparative study. *International Journal of Innovative and Applied Finance*, 3, 2-22. Retrieved from <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.834.545&rep=rep1&type=pdf>
 18. Rashid, A., & Jabeen, S. (2016). Analyzing performance determinants: Conventional versus Islamic Banks in Pakistan. *Borsa Istanbul Review*, 16(2), 92-107. <https://doi.org/10.1016/j.bir.2016.03.002>
 19. Rosly, S. A., & Abu Bakar, M. A. (2003). Performance of Islamic and Mainstream Banks in Malaysia. *International Journal of Social Economics*, 30(12), 1249-1265. <https://doi.org/10.1108/03068290310500652>
 20. Safiullah, M. (2010). Superiority of Conventional Banks & Islamic Banks Bangladesh: A comparative study. *International Journal of Economics and Finance*, 2(3), 199-207. <https://doi.org/10.5539/ijef.v2n3p199>
 21. Saleh, A. S., & Zeitun R. (2007). Islamic Banks in Jordan: Performance and Efficiency Analysis. *Review of Islamic Economics*, 11(1), 41-62. Retrieved from <http://hdl.handle.net/1959.3/150513>
 22. Samad, A. (2004). Performance of interest-free Islamic banks vis-à-vis interest-based conventional banks of Bahrain. *IIUM Journal of Economic and Management*, 12(2), 1-15. Retrieved from <https://ideas.repec.org/a/ije/journal/v12y-2004i2p.html>
 23. Siddiqui, A. (2008). Financial contracts, risk and performance of Islamic banking. *Managerial Finance*, 34(10), 680-694. <https://doi.org/10.1108/03074350810891001>
 24. Siraj, K., & Pillai, P. (2012). Comparative Study on Performance of Islamic Banks and Conventional Banks in GCC Region. *Journal of Applied Finance and Banking*, 2(3), 123-161. Retrieved from http://www.scienpress.com/Upload/JAFB/Vol%202_3_6.pdf
 25. Srairi, S. A. (2010). Cost and Profit Efficiency of Conventional and Islamic Banks in GCC Countries. *Journal of Productivity Analysis*, 34(1), 45-62. <https://doi.org/10.1007/s11123-009-0161-7>
 26. Sufian, F., & Habibullah, M. S. (2009). Bank Specific and Macroeconomic Determinants of Bank Profitability: Empirical Evidence from China banking sector. *Frontiers of Economics in China*, 4(2), 274-291. <https://doi.org/10.1007/s11459-009-0016-1>
 27. Usman, A., & Khan, M. (2012). Evaluating the Financial Performance of Islamic and

- Conventional Banks of Pakistan: A Comparative Analysis. *International Journal of Business and Social Science*, 3(7), 253-257. Retrieved from http://www.ijbss-net.com/journals/Vol_3_No_7_April_2012/27.pdf
28. Wasiuzzaman, S., & Gunasegavan, U. N. (2013). Comparative study of the performance of Islamic and conventional banks: The case of Malaysia. *Humanomics*, 29(1), 43-60. <https://doi.org/10.1108/08288661311299312>
 29. Williams, B. (2003). Domestic and international determinants of bank profits: Foreign banks in Australia. *Journal of Banking and Finance*, 27(6), 1185-1210. [https://doi.org/10.1016/S0378-4266\(02\)00251-0](https://doi.org/10.1016/S0378-4266(02)00251-0)
 30. Yudistira, D. (2004). Efficiency of Islamic Banks: An Empirical Analysis of 18 Banks. *Islamic Economic Studies*, 12(1), 2-19. Retrieved from <https://econpapers.repec.org/article/risisecest/0065.htm>
 31. Zeitun, R. (2012). Determinants of Islamic and conventional banks performance in GCC countries using panel data analysis. *Global Economy and Finance Journal*, 5(1), 53-72. Retrieved from <https://www.semanticscholar.org/paper/Determinants-of-Islamic-and-Conventional-Banks-in-Zeitun/b669cd9ddd8da17fa10e219253ed-c5a8ad84437e>