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Financial Performance of Islamic Banks vs. Conventional Banks: The Case of the United Arab Emirates

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ABSTRACT

The aim of this study is to examine the financial performances of Islamic and conventional banking systems in the United Arab Emirates (UAE). Four Islamic banks and seven commercial banks in the UAE are analyzed for the period of 2005-2014. In terms of Islamic banks, the findings indicated that the variables asset quality (ASQ) and liquidity (LQR) have negatively impacted return on assets (ROA) and return on equity (ROE). In addition, capital adequacy (CAR) had a positive relationship with ROA and a negative relationship with ROE, while size (LOGSIZE) had a positive influence on ROA but was statistically insignificant on ROE. Management efficiency (EFF) was statistically insignificant on Profitability. On the other hand, regression results of conventional banks showed that CAR, ASQ and LOGSIZE have negatively affected profitability. EFF had a positive impact on profitability, while LQR was statistically insignificant for conventional banks. The results of this study can be used to generate several recommendations for managers of both conventional and Islamic banks.

JEL Classification: G21; G29.

Keywords: Banks; Financial Performance; Profitability.

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1. INTRODUCTION

Since the industrial revolution in the second half of the 19th century, the world has experienced considerable developments in multiple institutional sectors. Developments in the banking sector have been especially significant, as, specifically in the last 30 years, banks began to widely and forcefully compete with each other by offering several services and products to facilitate daily life, raise the standard of living and eventually generate profit from such assistance. It is also a very important part of monetary policy of the Central Banks (Roy, 2012). Today, the banking sector is considered the spine of every country's economy in addition to the overall financial system (Kaushal & Pathak, 2015; Katircioglu, 2012; Saqib & Waheed, 2011; Waheed & Younus, 2010; Karacaer & Kapusuzoglu, 2010; Katircioglu et al., 2007; Soukhakian, 2007; Soukhakian, 2007); thus, the good performance of the banking sectorin any country leads to financial success while bad performancecan cause a major financial recession and even a financial crisis. It is banking system that provides funds and financing (Khalim & Shahbaz, 2012; Nazlioglu et al., 2009) to the economic sectors like trade (Duasa, 2011; Fatima et al., 2011; Omotor, 2008), manufacturing, industry, agriculture, and tourism among the others in which turn promotes aggregate income.

There are two basic banking systems: the Islamic banking system and the conventional, or commercial, banking system. The work of the commercial banking system is essentially based on accepting deposits and lending money, activities through which the bank earns profit; therefore, the conventional bank acts as an intermediary (Suryanto, 2015). The system is based on interest, earning, and expense. The conventional bank's profit is the difference between the interest paid by the bank to depositors and the interest paid by borrowers to the bank.
While interest is a cornerstone of conventional banking, Islamic banks do not employ the financial practice. This is because Islamic banks abide by Islamic law, which governs all their transactions, and Islamic doctrine forbids the use of interest (riba). Thus, all services provided by Islamic banks are interest-free (Siraj and Pillai, 2012).

The prohibition of interest-based (riba) transactions constitutes one of the four main rules that govern investment behavior of Islamic banking. Other regulations include the avoidance of economic activities involving speculation (ghirar), the introduction of an Islamic tax (zakat) and the discouragement of the production of goods and services that contradict Islamic values (haram) (Suleiman, 2000).

Established in 1975, the first Islamic bank in the United Arab Emirates (UAE) was the Dubai Islamic Bank, which spurred the development of Islamic banking as a system. The UAE witnessed a vast acceleration of Islamic banking, as the number of Islamic banks in the country reached a total of eight. At the same time, some conventional banks started to provide Islamic products and services.

Given these changes, the aim of this study is to examine the profitability of both banking systems in the UAE. Four Islamic banks and seven commercial banks in the UAE are analyzed for the period of 2005-2014, and profitability ratios of ROE and ROA are used as dependent variables to test the asset quality, liquidity, capital adequacy, management efficiency and bank size measures, which act as the independent variables. The purpose of the study is to determine which type of banking system, conventional or Islamic, performs better in the UAE. This study proceeds as follows: section 2 presents a literature review of previous studies that compare the efficacy of the two banking systems. Section 3 explains the study's research methodology as well as the data and variables used in data analysis. The final section of the report includes an empirical analysis of results and a conclusion.

2. LITERATURE REVIEW

Many studies have concentrated on comparing the performance of conventional banks and Islamic banks. In studies conducted by Samadand Hassan (1999), Rosly and Abu Bakar (2003) and Safiullah (2010), Islamic banks were found to be more profitable than conventional banks. Parashar and Venkatesh (2010) also demonstrated that Islamic banks are more profitable than conventional banks in GCC countries. In their study, the authors used six ratios for gauging the banks' performance from 2006 to 2009.A study conducted by Ryu et al. (2012) indicated that the Islamic financial system faces less risk, exercises more caution and is more profitable than the conventional financial system. Using financial ratio analysis, Elsiefy's (2013) produced similar findings regarding Qatar in the period from 2006 to 2010.

Though several studies have suggested that Islamic banks generate more profit than conventional banks, there are studies with contradictory results (Rossyakar, 2003; Olson and Zoubi, 2008; Johnes et al., 2014). Ashraf and Rehman (2011) examined the banks in Pakistan and found that because the conventional banks have more assets and larger market size, these banks are more profitable than the Islamic ones. The authors suggested that Islamic banks yield less profit than conventional banks because of management inefficiency and high operation costs. In a study by Hanif, Tariq, Tahir and Wajeeh (2012), it is indicated that the liquidity and profitability of conventional banks in Pakistan were higher than those of Islamic banks. However, in terms of credit risk handling and maintaining solvency, the Islamic banks were significantly advanced compared to conventional banks. Hazzi and Kilani (2013) found that, in Malaysia, conventional banks' profitability was higher than that of Islamic banks, but the Islamic banks' liquidity was higher, and the Islamic banks faced lower risks. Generally, conventional banks are found to have higher profitability and to be more efficient than Islamic banks, while Islamic banks are found to be more efficient in terms of cost and low risk levels.

Despite such findings, Samad (2004) and Hamid and Azmi, (2011) found no considerable distinction between the two banking systems regarding financial performance. Similarly, Johnes et al. (2012) did not find considerable differences between conventional and Islamic banks with regards to efficiency. Using data envelopment analysis (DEA), the authors contrasted conventional and Islamic banks' performances in the periods preceding, during and after financial crises. Though the study did not reveal significant distinctions between the two banking systems using DEA, the Islamic banks were found to have lower efficiency than the conventional ones based on Meta-Frontier Analysis (MFA). In Malaysia, the efficiency of both bank types was comparable based on Stochastic Frontier Analysis in a study conducted by Rozzani and Rahman (2013).

Studies comparing the performance of conventional and Islamic banks yield inconsistent findingsbecause these studies are performed in various countries and cultures, use different methods to acquire and analyze data and focus on different periods of time. However, a general pattern that can be drawn from the literature is that

Islamic banks have higher liquidity and profitability and are more cost effective and less risky than conventional banks; however, Islamic banks demonstrate lower operational efficiency than conventional banks.

3. DATA AND METHODOLOGY

The study covers 11 banks in the UAE banking sector during the period from 2005to 2014. Four Islamic banks and seven conventional banks were selected according to their asset size, which is the biggest among local banks in the UAE with almost 87% of the UAE local market share. Data was acquired from the balance sheets and income statements of each bank, which were publicly available on each banks' website.

3.2 Methodology

To study the variable's integration characteristics, this study used the following unit root tests: Levin, Linand Chu (LLC) (2002); Im, Pesaran and Shin (2003) (IPS); and Maddala and Wu (M–W)(1999).Regression analysis was applied in order to estimate the conducted model. In addition, the Hausman test was adopted to decide on the effect specification for the regression model, which can be defined as the process employed in experimental panel data studies to differentiate the model of the random and fixed effects. The null hypothesis of the Hausman test is that the random effect model is appropriate while the alternative hypothesis is that the random effect is not appropriate for our estimations.

3.2.1 Empirical model

The following estimated linear regression model has been estimated to determine the relationship between bank determinants and bank performance:

$$Y_{rjt}=\delta_t+\alpha_{jt}\,X_{ijt}+\varepsilon_{jt,} \quad (1)$$

where j refers to an individual bank, t refers to year, yrjt refers to the return on asset and return on equity and is the observation of bank j in a particular year t, Xi represents the determinants of the bank and εjt is a normally distributed random variable disturbance term.

The functional relationship between Return on Assets (ROA) and Return on Equity (ROE), which represent the dependent variables, and Asset Quality (ASQ), Liquidity (LQR), Capital Adequacy (CAR), Management Efficiency (EFF) and Bank Size (LOGSIZE), which are the independent variables, can be presented as follows:

$$ROA=\beta0+\beta1(CARj,t)+\beta2(ASQj,t)+\beta3(EFFj,t)+\beta4(LQRj,t)+\beta5(LOGSIZEj,t)+\varepsilon t \quad (2)$$

$$ROE=\beta0+\beta1(CARj,t)+\beta2(ASQj,t)+\beta3(EFFj,t)+\beta4(LQRj,t)+\beta5(LOGSIZEj,t)+\varepsilon t, \quad (3)$$

where β0 is the intercept of the regression and β1, β2, β3,β4and β5 are the coefficients of the independent variables.

3.2.2 Unit root test

One of the variables' remarkable characteristics is stationarity since it can significantly influence the variables' conduct. The non-stationary variable's variance and mean are not fixed, and its covariance relies on the number of times the variables were surveyed. When the variable is stationary, any impact has either a lasting or temporary influence. The null hypothesis of the tests is that the series has a unit root. The series is integrated with a level of zero, I(0),when it is stationary at standard, and it is integrated with a configuration of one, I(1), when it is stationary at first difference. In order to determine whether there is a unit root, the variables were surveyed using the panel unit root tests. And to survey this unit root process, techniques employed by Levin, Lin and Chu (LLC) (2002); Im, Pesaran and Shin (IPS) (2003); and Maddala and Wu (1999) (M–W) were used.

Panel data were presumed to have a common unit root process according to the unit root tests of Levin at al. (2002) while the panel data were presumed to have individual unit root process according to IPS and MW tests. Moreover, the unit root is presumed to be inexistent according to each of the unit root tests. In Tongur (2005), potential characteristics of bounded specimen sizes were compared for unit root tests such as LLC (2002), IPS (2003) and M–W (1999), and it was found that the tests' sufficiency was practically the same for size when the time period is sufficiently long. Tongur (2005) adds that according to the outcomes of his study, he recommends the IPS (2003) test, for it generally has minimal size alterations.

4. EMPIRICAL FINDINGS

4.1 Unit root tests

The following tables (Tables 4.1 and 4.2) show integration orders of variables. Unit root test results suggest that all variables are stationary at their level forms which means they are all integrated of order zero, I(0). Thus, the study can proceed with estimations of regression models proposed in the earlier sections. In the next section, correlation analysis will be conducted.

The intercept is the worth of change in the explained variables when there is no change in the explanatory variables. Referring to Tables 4.9 and 4.10, the intercept in both the ROA and ROE models is statistically insignificant at the 1%, 5% and 10% level of significance.

Capital Adequacy was statistically significant in both the ROA and ROE models at 1% level of significance, and it demonstrated a positive impact on ROA while a negative impact on ROE. This means that if CAR increases by 1unit, ROA will increase by 0.043649 units while ROE will decrease by 0.425800 units. In the case of the ROE Model, we can say that if the management of Islamic banks relies more on Capital Adequacy, the banks may not be able to generate enough profit from their assets.

Asset Quality was statistically significant at the 1% significance level in both models, and Asset Quality had a negative effect on both models. In other words, if ASQ increases by 1 unit, ROA decreases by 0.482459, and ROE decreases by 4.767146 units. This result suggests that bank managers should be careful about giving loans in order to decrease the amount of PLL to the minimum and reduce the possibility of falling into losses.

Management efficiency was statistically insignificant for both the ROA and ROE models. Liquidity was statistically significant at the 5% and 10% significance levels in both the ROA and ROE models, respectively. LQR had a negative impact on the dependent variables in both the ROA and ROE models, where the coefficients were equal to -0.030863 and -0.313694, respectively. This means that when LQR increases by 1 unit, ROA decreases by 0.030863 units, and ROE decreases by approximately 0.31 units.In order to find the liquidity ratio, we divided cash by total assets. Since LQR demonstrated a negative impact on ROA and ROE, bank managers should not excessively use cash to liquidate their assets, which can lead to a solvency problem. In the model where ROA is the dependent variable, LOGSIZE was statistically significant at the 5% significance level, and the coefficient was equal to 0.002299. This means that if LOGSIZE increases by 1%, ROA increases by

0.002299 units. Conversely, LOGSIZE was not statically significant in the model where ROE is dependent variable.

Table 4.1: Unit root tests for Islamic banks

Variables	Levels		
	LLC	IPS	M-W
ROA			
τ_T	-0.44	0.74	6.46
τ_μ	-2.66*	-0.94	22.40*
τ	-2.71*	-	17.75*
ROE			
τ_T	-2.51*	0.10	6.13
τ_μ	-2.75*	-1.19	12.57
τ	-2.20**	-	12.15
CAR			
τ_T	-4.00*	-0.85	33.43*
τ_μ	-6.11*	-3.10*	30.36*
τ	-1.00	-	10.37
ASQ			
τ_T	-3.45*	-0.09	8.67
τ_μ	-3.16*	-1.18	10.86
τ	-1.83**	-	10.07
EFF			
τ_T	-2.45*	-0.20	27.20*
τ_μ	3.49	3.01	8.17
τ	5.56	-	3.98
LQR			
τ_T	-1.34***	0.04	14.26***
τ_μ	-1.38***	-0.07	11.04
τ	0.36	-	7.06
SIZE			
τ_T	-6.07*	-1.45**	36.95*
τ_μ	-4.85*	1.59***	37.66*
τ	3.05	-	0.08

*Note: ROA represents return on assets; ROE represents return on equity; CAR represents capital adequacy ratio; ASQ represents asset quality ratio; EFF represents management efficiency; LQR represents liquidity ratio; size represents bank size; τ_T represents the most general model with a drift and trend; τ_μ is the model with a drift and without trend; τ is the most restricted model without a drift and trend. The symbols *, **and *** represent rejection of H0 (non-stationary) at 1%, 5% and 10%, respectively. Tests for unit root were conducted in E-VIEWS 7.*

Table 4.2: Unit root tests for conventional banks

Variables	Levels		
	LLC	IPS	M-W
ROA			
τ_T	-5.37*	-0.10	32.51*
τ_μ	-8.53*	-4.21*	69.51*
τ	-2.50*	-	39.93*
ROE			
τ_T	-2.23**	0.54	12.50
τ_μ	-4.22*	-1.81**	41.00*
τ	-2.94*	-	36.73*
CAR			
τ_T	-9.40*	-2.12**	48.8**
τ_μ	-5.51*	-3.17*	40.57*
τ	0.40	-	11.94
ASQ			
τ_T	0.27	1.14	4.31
τ_μ	-2.50*	-0.59	10.33
τ	-1.53***	-	12.53
EFF			
τ_T	-1.98**	0.85	25.69**
τ_μ	6.47	6.76	0.04
τ	7.03	-	0.11
LQR			
τ_T	-8.73*	-1.86**	48.99*
τ_μ	-6.25*	-2.87*	39.38*
τ	-1.40***	-	15.24
SIZE			
τ_T	-15.25*	-5.03*	39.64*
τ_μ	-14.77*	-7.55*	110.59*
τ	5.24	-	0.32

*Note: ROA represents return on assets; ROE represents return on equity; CAR represents capital adequacy ratio; ASQ represents asset quality ratio; EFF represents management efficiency; LQR represents liquidity ratio; size represents bank size; τ_T represents the most general model with a drift and trend; τ_μ is the model with a drift and without trend; τ is the most restricted model without a drift and trend. The symbols *, **and *** represent rejection of H0 (non-stationary) at 1%, 5% and 10%, respectively. Tests for unit root were conducted in E-VIEWS 7.*

4.2 Correlation analysis

Correlation analysis is utilized to determine the strength of the relationships among variables. Table 4.3 presents the correlations among the variables in the Islamic banks while Table 4.4 provides the correlations among variables in the conventional banks.

Table 4.3: Correlations for Islamic banks' variables

	ROA	ROE	CAR	ASQ	EFF	LQR	LOGSIZE
ROA	1						
ROE	0.71	1					
CAR	0.44	-0.25	1				
ASQ	-0.76	-0.63	-0.31	1			
EFF	-0.06	-0.19	0.07	0.11	1		
LQR	-0.42	-0.45	-0.06	0.30	0.40	1	
LOGSIZE	-0.11	0.25	-0.60	0.19	0.25	0.02	1

According to Table 4.3, ROA has a positive relationship with ROE and CAR and negative correlations with ASQ, EFF, LQR, and LOGSIZE. Moreover, ROE and LOGSIZE are correlated positively while ROE is negatively related to CAR, ASQ, EFF and LQR.

Table 4.4: Correlations for conventional banks' variables

	ROA	ROE	CAR	ASQ	EFF	LQR	LOGSIZE
ROA	1.00						
ROE	0.53	1.00					
CAR	0.55	-0.29	1.00				
ASQ	-0.50	-0.48	0.06	1.00			
EFF	0.024	-0.11	0.22	0.09	1.00		
LQR	-0.18	-0.04	-0.16	0.17	-0.04	1.00	
LOGSIZE	-0.66	-0.21	-0.55	0.24	0.12	-0.04	1.00

According to Table 4.4, ROA is positively correlated with CAR and EFF and negatively correlated with ASQ, LQR and LOGSIZE. In addition, ROE is negatively correlated with CAR, ASQ, EFF, LQR and LOGSIZE.

4.3 Hausman test

After getting stationarity of variables, Hausman test was conducted. The Hausman test is the process employed in experimental panel data studies to differentiate the model of the random and fixed effects. The null hypothesis of the Hausman test is that the random effect model is appropriate; while the alternative hypothesis is that the random effect is not appropriate for our model.

4.4 Effect testing for Conventional Banks

Results from applying the Hausman test on both the ROA and ROE models, are shown in Table 4.5.The results indicate that the null hypothesis can be rejected and thus the random effect model is not appropriate for the study's models.

Table 4.5: Random effect testing results for ROA and ROE models

	Test Summary	Chi-sq. statistic	Prob.
ROA	Cross-section random	15.436655*	0.0087
ROE	Cross-section random	29.960810*	0.0000

*Note: ROA represents return on assets; ROE represents return on equity; * represents rejection of H0*

After determining that the random effect model is not appropriate for the ROA and ROE models, we checked whether the fixed effect model is appropriate. The null hypothesis of the fixed effect test is that the fixed effect model is not appropriate; thus, in order to adopt the fixed effect model, the null hypothesis should be rejected. Table 4.6 shows the fixed effect testing results, which indicate that the fixed effect model is appropriate for both the ROA and ROE models.

Table 4.6: Fixed effect testing results for ROA and ROE models

	Effects Test	Statistic	Prob.
ROA	Cross-section F	10.048258*	0.0000
	Cross-section Chi-square	49.888470*	0.0000
ROE	Cross-section F	7.286569*	0.0000
	Cross-section Chi-square	39.324263*	0.0000

*Note: ROA represents return on assets; ROE represents return on equity; * represents rejection of H0*

4.5 Effect testing for Islamic banks

Because random effect estimation requires more cross sections than coefficients, a Hausman test was not conducted. The next step was to determine whether the fixed effect model was appropriate. As mentioned before, the null hypothesis of the fixed effect test is that the fixed effect is not appropriate. Table 4.7 shows that the null hypothesis for both the ROA and ROE models cannot be rejected at 1%, 5% nor10% levels of significance. Thus, the adopted models were regression models without any effects.

Table 4.7: Fixed effect test results for ROA model

	Effects Test	Statistic	Prob.
ROA	Cross-section F	1.363542	0.2721
	Cross-section Chi-square	4.957874	0.1749
ROE	Cross-section F	0.783873	0.5120
	Cross-section Chi-square	2.924763	0.4034

4.6 Regression analysis

Considered one of the most prevalent and convenient techniques used in econometrics concerning this type of study, regression analysis is a method used to determine the effect of an independent variable on a dependent variable. The purpose of this study is to ascertain what effects certain variables have on a bank's profitability. To this end, the study sought to determine the effects of CAR, LQR, ASQ and EFF on the dependent variables of ROA and ROE.

Table 4.8 shows the expected effects of the independent variables on ROA and ROE as well as the actual effects yielded using E-views software.

Table 4.8: The variables' notations and their measurements

Variables	Description	Expected Relationship
ROA	Net Income/ Total Assets	
ROE	Net Income/ Total Equity	
Capital Adequacy	Total Equity/ Total Assets	(+)
Asset Quality	Provision to Loan Losses/ Total Loans	(-)
Efficiency	Interest Income/ Interest Expense	(+)
Liquidity	Cash/ Total Assets	(-)
Bank Size	The Logarithm of Total Assets	(+)

Capital Adequacy (CAR): The capital adequacy ratio is the relationship between the bank's capital and its risk level. It has been argued that having a good reserve is helpful in order to expand credit projects and decrease unexpected risks (Akhtar et al.,2011).Thus, we expect a positive relationship between the bank's profitability and the capital adequacy ratio (Athanasoglou et al., 2008).

Asset Quality (ASQ): Asset quality represents the capability of the bank in dealing with pending loans. Providing loans for debtors is of primary interest to banks and is a primary source of minting funds. Merchant (2012) confirms that banks must be worried about prospective losses if they keep providing bad loans. Thus, we predict an inverse relationship between the profitability of banks and the asset quality ratio (Garcia and Guerreiro, 2016).

Management Efficiency (EFF):Measuring management quality, or the way in which assets and liabilities are used, helps in evaluating a bank's performance. If the management quality ratio is high, this means that the bank managed to make a profit that is considerably higher thanits expenses.

Liquidity (LQR):Liquidity can be defined as the bank's capacity to transform its assets to money with ease. In other words, liquidity refers to whether the bank has enough cash to pay for its short-term commitments (Faizulayev, 2011). Therefore, the liquidity ratio is negatively related to profitability (Adusei, 2015)

Bank Size:Total assets are used to estimate the size of the bank. Hidayat and Abduh (2012) suggest that there is a positive relationship between the profit of bank and the size of its assets.

4.7 Regression analysis results for Islamic banks

Table 4.9 and 4.10 show regression results for Islamic banks by adopting ROA and ROE as dependent variables in the conducted models respectively. ROA and ROE are used as profitability indicators for Islamic banks in the host country.

The intercept is the worth of change in the explained variables when there is no change in the explanatory variables. Referring to Tables 4.9 and 4.10, the intercept in both the ROA and ROE models is statistically insignificant at the 1%, 5% and 10% level of significance.

Capital Adequacy was statistically significant in both the ROA and ROE models at 1% level of significance, and it demonstrated a positive impact on ROA while a negative impact on ROE. This means that if CAR increases by

1 unit, ROA will increase by 0.043649 units while ROE will decrease by 0.425800 units. In the case of the ROE Model, we can say that if the management of Islamic banks relies more on Capital Adequacy, the banks may not be able to generate enough profit from their assets.

Table 4.9: Simple regression results for ROA

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.008294	0.010000	-0.829470	0.4126
CAR	0.043649	0.013954	3.128061	0.0036
ASQ	-0.482459	0.067039	-7.196696	0.0000
EFF	9.66E-05	0.000876	0.110326	0.9128
LQR	-0.030863	0.016013	-1.927364	0.0623
LOGSIZE	0.002299	0.001069	2.151077	0.0387
R-squared	0.713507			
Adjusted R-squared	0.671376			
S.E of regression	0.005137			
F-statistic	16.93530			
Durbin-Watson stat.	1.207259			

Asset Quality was statistically significant at the 1% significance level in both models, and Asset Quality had a negative effect on both models. In other words, if ASQ increases by 1 unit, ROA decreases by 0.482459, and ROE decreases by 4.767146 units. This result suggests that bank managers should be careful about giving loans in order to decrease the amount of PLL to the minimum and reduce the possibility of falling into losses.

Management efficiency was statistically insignificant for both the ROA and ROE models. Liquidity was statistically significant at the 5% and 10% significance levels in both the ROA and ROE models, respectively. LQR had a negative impact on the dependent variables in both the ROA and ROE models, where the coefficients were equal to -0.030863 and -0.313694, respectively. This means that when LQR increases by 1 unit, ROA decreases by 0.030863 units, and ROE decreases by approximately 0.31units.In order to find the liquidity ratio, we divided cash by total assets. Since LQR demonstrated a negative impact on ROA and ROE, bank managers should not excessively use cash to liquidate their assets, which can lead to a solvency problem. In the model where ROA is the dependent variable, LOGSIZE was statistically significant at the 5% significance level, and the coefficient was equal to 0.002299. This means that if LOGSIZE increases by 1%, ROA increases by 0.002299 units. Conversely, LOGSIZE was not statically significant in the model where ROE is dependent variable.

Table 4.10: Simple regression results for ROE

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.102820	0.094048	1.093277	0.2820
CAR	-0.425800	0.081732	-5.209687	0.0000
ASQ	-4.767146	0.559324	-8.523054	0.0000
EFF	-0.000980	0.005949	-0.164732	0.8701
LQR	-0.313694	0.122493	-2.560918	0.0150
LOGSIZE	0.014540	0.009434	1.541205	0.1325
R-squared	0.729054			
Adjusted R-squared	0.689209			
S.E. of regression	0.043424			
F-statistic	18.29727			
Durbin-Watson stat	1.611016			

4.4.2 Regression analysis results for conventional banks

Table 4.11 and 4.12 show regression results for Islamic banks by adopting ROA and ROE as dependent variables in the conducted models respectively.

Table 4.11: Regression results with fixed effect for ROA

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.154730	0.030326	5.102244	0.0000
CAR	-0.002483	0.024931	-0.099607	0.9210
ASQ	-0.321546	0.049227	-6.531839	0.0000
EFF	0.002693	0.000580	4.646837	0.0000
LQR	-0.003913	0.004437	-0.881837	0.3815
LOGSIZE	-0.011946	0.002507	-4.764496	0.0000
R-squared	0.836817			
Adjusted R-squared	0.805868			
S.E. of regression	0.003613			
F-statistic	27.03898			
Durbin-Watson stat	1.247605			

According to Tables 4.11 and 4.12, the intercept is statically significant at the 1% significance level in both the ROA and ROE models. The coefficients were equal to approximately 0.15 and 1.92the in ROA and ROE models, respectively. This means that if the independent variables remain the same, then ROA will increase by 0.15 units, and ROE will increase by 1.92 units.

Table 4.12: Regression results with fixed effects on ROE

Variable	Coefficient	Std.Error	t-Statistic	Prob.
C	1.919062	0.440602	4.355546	0.0001
CAR	-2.096624	0.749330	-2.797998	0.0070
ASQ	-1.611241	0.895238	-1.799792	0.0771
EFF	0.034965	0.012658	2.762213	0.0077
LQR	-0.028832	0.065220	-0.442078	0.6601
LOGSIZE	-0.124974	0.033745	-3.999836	0.0002
R-squared	0.670583			
Adjusted R-squared	0.608108			
S.E. of regression	0.045060			
F-statistic	10.73353			
Durbin-Watson stat	1.437021			

Capital Adequacy was statistically insignificant in the model where ROA was the dependent variable and statistically significant at the 1% significance level in the ROE model. Capital Adequacy's coefficient was equal to -2.096624. This means that if CAR increases by 1 unit, ROE decreases by 2.096624 units.

In both models, Asset Quality was statistically significant at the 1% and 10% significance levels respectively, and it is negatively correlated with both models. This means that if ASQ increases by 1 unit, ROA will decrease by 0.32 units, and ROE will decrease by 1.61 units. In other words, these results indicate that bank managers should avoid increasing non-performing loans, as a high amount of non-performing loans increases PLL, and banks cannot generate more profit.
Management efficiency yielded probability equal to 0.00 and 0.0077 in the ROA and ROE models respectively, which means that EFF is statistically significant at the 1% significance level for both models. Its coefficients were equal to 0.002693 and 0.034965 for the ROA and ROE models, respectively. This means that when EFF increases, ROA will increase by 0.002 units, and ROE will increase by 0.03 units. Thus, bank managers have succeed to earn more profit comparing to their expenses.

Liquidity was statistically insignificant for both models. The size had probability equal to 0.0000 in the ROA model and 0.0002 in the ROE model, which means that Liquidity was statistically significant at the 1% significance level in both models. LOGSIZE affects ROA and ROE negatively. These results indicate that when size increases by 1%, ROA will decrease by 0.011946 units, and ROE will decrease by 0.134974 units.

5. CONCLUSION

In this study, bank crises and credits within 46 developed and emerging countries were analyzed. The results of the study's panel logit model were found to be different than those of the prior literature. First, contrary to prior findings, uncontrolled credit growth was found to be an important factor in causing bank crises. Second, credit gaps were found to be a leading cause of systematic banking crises, which is developed by BIS.

The dependent variable as the z-score and capital requirement ratio was found to be significant.The z-score was expected to provide a negative coeffient, however, opposite to capital adequacy, it provided positive coefficient values. The z score proves that, for banking systems to be protected from crises, it is important for banks to have safe and sound structures. When banks are sound, a banking system will be safe as well. More specifically, strict adequacy requirements are the most significant form of security against crises. In order to protect competition

power and profitability, strict capital adequacy requirements allow banks to enter into new and risky involvements. Some banks both in the EU and USA experienced it accordingly. The results indicate that the authorities should not apply strict rules but reasonable ones. Moreover, regarding the systemic ties of the banks, individual financial strength should not be ignored. Bank credits should be recorded and examined, as they represent the main elements of financial strength.

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