

Comparative Performance Analysis between Conventional and Islamic Banks in Bangladesh- An Application of Binary Logistic Regression

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Abstract

The study aims to answer the research question of what type of banks between Islamic and Conventional banks are doing well on bank level performance in Bangladesh? In order to answer the research question the study uses binary logistic regression. Using 223 observations of 23 convention banks and 7 Islamic banks of Bangladesh during 2003 to 2013, the study shows an existence of a significant difference between conventional and Islamic bank in Bangladesh on profitability, credit risk, capitalization and bank size. The investigation further finds that profitability, efficiency, liquidity and size of Islamic banks are lower than conventional banks in Bangladesh. However, the results confirm that Islamic banks have higher capitalization and better credit risk management than conventional banks in Bangladesh. The study incorporates some significant policy implications for Islamic banks.

Keywords: bank performance, Bangladesh, binary logistic regression, conventional banks, Islamic Banks

1. Introduction

Recent global financial crisis, hence forth, GFC put conventional banks (Note 1) in serious difficulties around the world (Choon et al., 2012; Wasiuzzaman & Gunasegavan, 2013). Conversely, Islamic banks (Note 2) successfully survived during the crisis (Willison, 2009; Khediri et al., 2015). This is due to the fact that Islamic banks are highly regulated by Shariah (Note 3) principles which restrict them to invest in the projects which brought conventional banks in distress and stimulated crisis (Hasan & Dridi, 2011). As a result, Islamic finance brings the attention of the investors who were disappointed with conventional banks experiencing GFC in recent years (Johnes et al., 2014). Thus, Islamic banking is not confined only in Muslim countries rather extends its practices to non-muslim countries as well.

Now, more than 300 financial institutions including banks, insurance and non-bank financials' institutions are operating under Shariah based financial system in 70 countries (Khediri et al., 2015). Particularly, 5 Islamic banks in United Kingdom and 19 Islamic financial institutions in United States represent the globalization of Islamic banks in recent years. Moreover, many international banks among others Standard Chartered Bank, Citi Bank NA, HSBC have started Islamic wings in different muslim countries in order to meet the extended demand of Shariah compliant products.

Islamic banking is based on Shariah which does not allow to involve in interest (riba), speculative and dishonest transactions rather it suggests to perform transaction based on risk sharing or profit and loss sharing, henceforth, PLS sharing assuming real economic transaction backed by real property (Beck et al., 2013). This fundamentals make Islamic banks different from conventional banks theoretically. Say for example, interest based contract of conventional banks is replaced with return in Islamic banks where both risk and profit or loss are shared between banks and clients. In addition, they use investment deposit and demand deposit in order to collect fund from depositors which are free from interest and based on risk and PLS and mark up principles (Ho et al., 2014).

Moreover, Islamic banks produce shariah compliance financial products based on markup and PLS principles. However, as both conventional and Islamic banks are regulated in same way and operated in same competitive environment, it is possible for Islamic banks to adopt similar strategies as conventional banks adopt. Moreover, in reality, the findings of different literatures show that Islamic banks are not truly Islamic and different from theory. Such as, Siddiqi (2006) find more reliance of Islamic banks on markup financing and less on PLS financing. Moreover, initially Chong and Liu (2009) and later Khan (2010) find that deposit mobilization of Islamic banks is not interest free and only a small part of investment financing is based on PLS paradigm. More particularly, Bourkhis and Nabi (2013) find that only less than 20% of Islamic banks assets are mobilized to long term and risk sharing financing.

Islamic finance has gain interest of researchers in recent years due to its different banking fundamentals. Most of the research of Islamic finance are theoretical in nature focusing on Islamic fundamentals and the vehicles of Islamic banking (Bashir, 1983; Karim, 2001; Siddiqi, 2006; Chong & Liu, 2009; Khan, 2010; Faye et al., 2013; Said et al., 2013; Magd & McCoy, 2014). Empirical studies on Islamic banking can be grouped on regulatory, management and supervisory challenge (Murjan & Ruza, 2002; Jobst, 2007); efficiency (Abdul-Majid et al., 2010; Belanes & Hassiki, 2012; Rosman et al., 2014); Profitability (Hassoune, 2002; Ben Khediri & Ben-Khedhiri, 2009; Farook et al., 2012); Stability and concentration (Bourkhis & Nabi, 2013; Mohammed et al., 2015); Risk exposure (Abdul Karim et al., 2014; Farook et al., 2014; Ghosh, 2014; Saiti et al., 2014; Shaban et al., 2014; Daher et al., 2015); and Comparative performance of Islamic banks with conventional banks (Beck et al., 2013; Bourkhis & Nabi, 2013; Srairi, 2013; Ho et al., 2014; Johnes et al., 2014; Khediri et al., 2015). However, increased attention of Islamic banking across the world require to know the comparative strength and bank level performance between Islamic banks and conventional banks. Yet, the earlier studies focusing on the comparison between Islamic banks and conventional banks in term of bank level performance remain inconclusive in their findings which need further investigation for significant policy implications. In order to fulfill the research gap the study warrants to answer the research question what types of banks are doing better in bank level performance?

In investigating the distinction between Islamic banks and conventional banks in bank level performance we have selected Bangladesh for some valid reasons. Firstly, Bangladesh is the first country in Southeast Asia where Islamic banking has been introduced with the establishment of Islami Bank Bangladesh Limited in March 30, 1983 (Kabir et al., 2012). Now the number of full-fledged Islamic banks becomes 8. Moreover, 16 conventional banks including 3 international banks also dealing with Islamic banking products in order meet increased demand of Islamic banking in the country. Secondly, the country has been experienced a rapid growth in Islamic banking since its inception which is attributed to increased market share and assets growth. Financial stability report (2014) published by Bangladesh Bank (Note 4) reports that Islamic banking industry gains market share of 18.8 percent in total deposit and 21.6 percent in total credit in 2013. Thirdly, Bangladesh is one of several least affected countries in recent GFC. One of the reasons could be the development of Islamic banking system in Bangladesh (Wasiuzzaman & Gunasegavan, 2013; Khediri et al., 2015). Moreover, banking industry of Bangladesh may be an excellent case for investigating comparative performance between Islamic banks and conventional banks where out of 56 banks 8 full-fledged Islamic banks and 16 conventional banks with Islamic branches and windows are operating under Shariah principle.

The article is decomposed in to five sections. Where, the next section discusses literature review and hypothesis development. Sector 3 explains methodology, variable selection and data used. Sector 4 covers results and discussion of the study. The conclusion and policy recommendation is explained in the last section.

2. Literature Review and Hypothesis Development

We focus on investigating the difference between Islamic banks and conventional banks in bank level performance in Bangladesh. So far, a few studies have investigated the comparative analysis between the two types of banks on bank level performance especially profitability and efficiency using different sample and different methodologies. Such as, Metwally (1997) investigates 15 Islamic banks and 15 conventional banks during 1992-1994 using Logit model, Discriminant analysis and Probit model and find that similar profitability and efficiency, but different liquidity, credit risk and leverage between the two types of banks. In another study Iqbal (2001) considering 12 Islamic and 12 conventional banks using mean test finds better profitable and capitalized Islamic banks than conventional counter parts during 1990 to 1998. In addition, Olson and Zoubi (2008) focusing 28 conventional banks and 16 Islamic banks of GCC countries during 2000 to 2005 applying mean test, Neural network and Logit model find high profitability and less efficiency of Islamic banks in compare to conventional banks. They further argue that accounting ratios are good indicators for differentiating between the two types of banks. Later on, Srairi (2013) finds more efficient conventional banks than Islamic

banks on 48 conventional and 23 Islamic banks of GCC region during 1999 to 2007. They use equality of mean test and probabilistic stochastic frontier analysis in the investigation process. In a subsequent study Belanes and Hassiki (2012) focusing 19 conventional and 13 Islamic banks of MENA region during 2006 to 2009 find no significant difference between conventional and Islamic banks on the efficiency score. Furthermore, Beck *et al.* (2013) investigated business model, efficiency and stability of 510 conventional and Islamic banks of 22 countries during 1995 to 2009. They find a significant difference in business model between conventional and Islamic banks. They further find better profitability, assets quality and capitalization but less efficiency of Islamic banks than conventional banks. In another study, Abedifar *et al.* (2013) investigate 553 conventional and Islamic banks of 24 countries during 1999 to 2009 using mean test and OLS random effect model they find high profitability, better capitalization and low credit risk of Islamic banks than conventional banks. More recently Khediri *et al.* (2015) also examine conventional banks and Islamic banks of GCC countries over 2003 to 2010. Using Logit model, discriminant analysis, tree of classification and neural network model they find that Islamic banks are better capitalized, highly profitable and liquid; and have low credit risk than conventional banks.

2.1 Hypothesis Development

We firstly give attention to banking profitability. Among the others Iqbal (2001); Hassoune (2002); Olson and Zoubi (2008); (Abedifar *et al.* (2013) find that Islamic banks are more profitable than conventional banks. Regarding the high profitability of Islamic banks Hassoune (2002) explains that Islamic banks accumulate funds through non-remunerative current accounts which makes their lower funding cost and higher net interest margin in a high interest rate market which makes Islamic banks to be more profitable than conventional banks. In addition, Abedifar *et al.* (2013) argue that PLS arrangement of Islamic banks provides them safeguard in worse conditions. They further argue that profit of Islamic banks are less volatile than conventional banks due to high religiosity of the depositors. High religiosity makes them more loyal to the Islamic banks which led them to take low or even no profit and even refusing to withdraw funds from the Islamic banks in the worse performance of the banks. They further point out that religious client also interested to pay high rent for banking services to the Islamic banks based on religious belief. Based on that we design our first hypothesis in the following way

H1: Profitability of Islamic banks is higher than conventional banks.

Now we are turning to efficiency. The studies focusing comparative efficiency between Islamic banks and conventional banks Olson and Zoubi (2008); Srairi (2013); (Beck *et al.* (2013); Johnes *et al.* (2014)) find that Islamic banks are less efficient than conventional banks. The low efficiency of Islamic banks can be attribute to some reasons. Firstly, most of the products of Islamic banks are customized from conventional banks based on Shariah law which increase their operational cost (Khediri *et al.*, 2015). Secondly, the size of Islamic banks is comparatively lower which restrain them to reach at economic of scale and make them less efficient than conventional banks (Olson & Zoubi, 2008; Abdul-Majid *et al.*, 2010). Thirdly, foreign banks are more efficient than local banks but Islamic banks are normally domestically owned which also make them less efficient than conventional banks (Belanes & Hassiki, 2012). Moreover, Johnes *et al.* (2014) argues less product standardization of Islamic banks may be another reason of their less efficiency. Therefore, we can develop our second and third hypotheses in the following way:

H2: Islamic banks are less efficient than conventional banks.

H3: Islamic banks are smaller in size comparing conventional banks.

We are focusing on default risk or credit risk of banks. Credit risk is the likelihood of borrowers' inability to fulfill their contractual obligations. The borrowers' failure to pay causes loss which gives rise to credit risk. A bank also becomes the default if its assets fall short of liabilities. Olson and Zoubi (2008); Beck *et al.* (2013) and Khediri *et al.* (2015) find that Islamic banks have low credit risk than conventional banks. The low credit risk of Islamic banks can be attributed to different reasons. Islamic banks mobilize funds to the entrepreneurs based on profit and loss sharing agreement (*Mudaraba and Musharaka*) which allows them to move credit risk from assets part of the liability part of the balance sheet. As a result any decrease in assets side does decrease in liability side (Olson & Zoubi, 2008). Abedifar *et al.* (2013) argues that profit and loss sharing agreement enables Islamic banks to remove the insolvency risk of non-payment to depositors in case of worse economic condition which increase their loss absolving capacity in compare to conventional banks. The other channel of fund mobilization of Islamic banks is markup (*Murabaha, Islisna and Ijara*) which requires the financial transaction to be backed by real economic properties. This characteristics of Islamic bank reduces the chance to involve in speculative behavior (Gharar) which is strictly restricted in Islamic finance. Moreover, Islamic finance bans gambling (mysir) which requires to ensure symmetry of information between banks and entrepreneur which ultimately reduces moral hazard and adverse selection of Islamic banks (Abedifar *et al.*, 2013; Beck *et al.*, 2013).

Further point out that religiosity of entrepreneurs of Islamic bank reduces their default risk. The explanation reinforces us to develop our fourth hypothesis in the following way:

H4: Credit risk of Islamic banks is lower than conventional banks.

Now we are turning to bank liquidity. Excessive withdrawal from savings and current account put banks in liquidity crisis. Banks require to maintain high liquidity ratio in order to keep liquidity risk low. Past studies such as Bourkhis and Nabi (2013); Beck et al. (2013) and Khediri et al. (2015) find that Islamic banks maintain high liquidity ratio than conventional banks. This is due to fact that Islamic banks an only invest in shariah approved halal project. They also can not invest in interest driven government securities and conventional inter bank fund market which make their liquidity management difficult. As a result, Islamic banks need to maintain high capitalization ratio to support liquidity. Moreover, Iqbal (2001); Abedifar et al. (2013) and Khediri *et al.* (2015) finds better capitalization of Islamic bank than conventional banks. Regarding high capitalization Hasan and Dridi (2011) argues that Islamic banks need to keep high capital buffer in order to face the challenge of liquidity management given limited scope of risk sharing or profit and loss sharing investment with uncertain return. Therefore we can develop hypothesis regarding liquidity and capitalization in the following way:

H5: Liquidity of Islamic banks is higher than conventional banks

H6: Capitalization of Islamic banks is higher than conventional banks.

3. Methodology, Variables Selection and Data

We run Binary Logistic Regression (BLR) in order to discern conventional banking and Islamic banking on certain attributes. It divides the cases in to two groups on the basis of probabilities yielding from maximum-likelihood method. Where, Maximum-likelihood method estimates the value of parameters so as to maximize the probability or likelihood of obtaining the actual observations. For a particular case, if the model returns is $P > 0.5$, the case is assigned in to the group 1, otherwise, in to group 0. The BLR model can be written in the following way:

$$\ln\left(\frac{P}{1-P}\right) = \alpha + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_n X_n \quad (1)$$

Where, P indicates the probability of occurring an event and 1-P indicates the probability of non-occurrence of the event. Moreover, $\left(\frac{P}{1-P}\right)$ is the odds ratio which is the ratio indicating the probability of occurrence to non-occurrence of the event. Conversion to log form, log odds ratio becomes an instrument in order to determine the membership belonging to a particular group. Two possible group are 0 and 1; if odds ratio are less than 1, that is P less than 1-P, otherwise 1. X is the independent regressors and α and β are the parameters of the logit functions to be estimated. Probability of occurrence of an event (P) is calculate in BLR in the following way:

$$P = \frac{e^{\alpha + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_n X_n}}{1 + e^{\alpha + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_n X_n}} \quad (2)$$

Hosmer and Lameshow test is used in BLR model as a test of overall significance of the model. Cox & Snell R square and Nagelkerke R square are used as pseudo R square in BLR model as a measures of goodness of the model fit where model fit is assessed by determining the proportion of correct prediction. In addition, classification matrix exhibits predictive efficiency of the model.

3.1 Variable Selection

We apply BLR model on our dichotomous dependent variable such as Banking system having the value 0 for conventional banks and 1 for Islamic banks. We discriminate both banking system on six attributes of banking performance such as profitability, efficiency, size, credit risk, capital adequacy, and liquidity. We consider ROAA, LLRGL, ETA, lnTA, LTA and CI ratio as the proxy of profitability, credit risk, capital adequacy, size, liquidity and efficiency respectively.

We measure profitability using the ratio of net profit to average assets (ROAA) following (Heffernan and Fu (2008); Athanasoglou et al. (2008); Francis (2013); Perera et al. (2013)). It is a good indicator of a bank's financial performance and managerial efficiency. This ratio displays how efficient a company is in utilizing its assets and is also useful to aid comparison among peers in the same industry. Higher ratio is the indication of better profitable firm.

We measure credit risk as a ratio of loan loss reserve to gross loan (LLRGL) following Athanasoglou et al. (2008) and Masood and Ashraf (2012). Credit risk arises from lending operations of the bank. Some loan turns to impaired or bad due to worse economic condition of the borrowers which brings banks in to financial loss. In order to take percussion against impaired loan banks require to keep loan loss reserve as buffer against the loss from yearly profit. The central bank determines the policy for the banking industry regarding the level of loan loss reserve. Considering the policy bank management determines the reserve level for loan loss at the beginning of the period. Higher LLRGL ratio indicates higher credit risk and lower performance of the bank.

In addition we consider the ratio of equity to total assets (ETA) as capitalization ratio following Athanasoglou et al. (2008); Masood and Ashraf (2012); Wasiuzzaman and Gunasegavan (2013) and Perera et al. (2013). It measures the bank's ability to absorb loss. The ratio does not only represent banks higher capital adequacy of the bank but also reduce risk and regulatory cost. Higher the ratio is the indication of the bank is running with profitable investment opportunity and lower the ratio indicates that bank is suffering from capital adequacy problem.

Moreover, we consider the ratio of net loan to total assets as a proxy of bank's liquidity following Wasiuzzaman and Gunasegavan (2013). Loan constitutes the largest interest earning assets of the bank and expects to effects performance positively. If major segment of the deposit is used for loan creation, it is expected that the ratio increases interest income and effects profitability positively. However, high ratio may reduce liquidity level of the banks which may increase funding cost and also increase the credit risk of the bank. In that case, high LTA ratio may indicate low liquidity of the banks.

Cost to income (CI) ratio indicates the operational efficiency of the bank indicating the cost of running the bank in compare to it's income (Heffernan & Fu, 2008). Higher the ratio means that bank is operating at low efficiency and at high competition which negatively affects the profitability of the bank.

Bank size also may be a proxy of bank performance. Big banks may hold more market share and perform better than small banks if they are efficient and free from bureaucracy. We consider bank size as the natural logarithm of total assets following Athanasoglou et al. (2008); Masood and Ashraf (2012); Perera et al. (2013).

3.2 Data

In order to discern conventional banks and Islamic banks of Bangladesh in term of performance we rely on the bank level performance indicators. We collect the bank level data from Bankscope database from the year 2003 to 2013. There are 56 banks in Bangladesh which can be decomposed in to 4 major types such as 4 public commercial banks, 4 development banks, 39 local private commercial banks and 9 foreign private commercial banks. Our study covers only local private commercial banks in Bangladesh as they are operated under either conventional or Islamic system or dual system and all public banks and development bank are operated under conventional system. Moreover, we exclude 9 newly established local private commercial banks from our analysis which have started operations during 2013. We also have omitted foreign commercial banks due to unavailability of required data in the Bankscope database. Therefore, we use an unbalanced panel of 30 banks with 223 observations representing 68 percent of total banking assets of the country composing 23 conventional banks and 7 Islamic banks. We use statistical software package SPSS for processing our results. We use BLR model to achieve our intended objectives of the study. Hair et al. (2009) recommends at least 10 observations per parameter estimated as minimum sample requirement for logistic regression. Our sample adequately meets this condition.

4. Results and Discussion

Table 1. Descriptive statistics of the performance indicators

Variable	Overall		Islamic Banks		Conventional banks	
	Obser.	Mean	Mean	SD	Mean	SD
ROAA	223	1.46	1.42	1.13	1.47	.920
LLRGL	196	3.14	2.74	1.91	3.25	1.93
CI	214	43.13	41.97	18.69	43.54	10.35
ETA	213	8.29	9.84	10.90	7.72	2.22
LTA	214	65.16	65.71	15.00	64.97	12.08
lnTA	215	6.02	5.99	.420	6.03	.30

We use two step analysis for discriminating conventional and Islamic banks based on bank level performance indicators in Bangladesh. Firstly, the study uses descriptive statistics and finally uses binary logistic regression analysis for achieving the intended objective. Table 1 reports the descriptive statistics showing mean, standard deviation of the explanatory variables for all banks, Islamic banks and conventional banks.

The mean ROAA of all banks is 1.46 and mean ROAA of Islamic banks and conventional banks are 1.42 and 1.47 respectively. Higher mean and lower standard deviation of ROAA of conventional banks indicates high profitability of conventional banks in Bangladesh. Moreover, the mean of LLRGL of all banks is 3.14 and high mean and low standard deviation of conventional banks of implies their better credit risk management quality. The overall mean of CI ratio is 43.14 and it is 41.97 for only Islamic banks and 43.54 for only conventional banks. Low mean and high standard deviation of CI ratio of Islamic banks suggest that they are more cost efficient than their conventional counter parts however, cost efficiency among all Islamic banks are not same. The overall mean of ETA ratio is 8.29 and it is 9.84 for Islamic banks and 7.72 for conventional banks. Higher ETA of Islamic banks indicates their better capitalization. Moreover, the mean LTA of all banks is 65.16 and it is 65.71 for Islamic banks and 64.97 for conventional banks. High LTA ratio of Islamic banks shows their higher liquidity risk. Finally lnTA of all banks is 6.02 and it is 5.99 for Islamic banks and 6.03 for conventional banks. Higher lnTA and lower standard deviation of convention banks implies comparative larger size of conventional banks in compare to Islamic bank in Bangladesh.

In the second step of our analysis we run BLR to discriminate between Conventional banks and Islamic banks regarding banking performance on different bank level attributes in Bangladesh. We use dichotomous variable as dependent variable where we consider 1 for Islamic banks and 0 for conventional banks. We regress six bank characteristics representing banking performance to the model in order to differentiate between both types of banks. Our regressors include Return on Average Assets (ROAA), ratio of Loan Loss Reserve to Gross Loan (LLRGL), Cost to Income ratio (CI), ratio of Equity to Total Assets (ETA), ratio of Loan to Total Assets (LTA) and natural logarithm of total assets (lnTA) representing profitability, credit risk, cost efficiency, capitalization, liquidity and bank size respectively. The regression output is sensitive to correlation between the independent variables. In order to identify potential multicollinearity among the variables we run Pearson correlation which is reported in Table 2. Pearson correlation table reports that our independent variables are free from multicollinearity problem and we conform that our result is free from biasness.

Table 2. Pearson correlation Metrix

Explanatory variables	ROAA	LLRGL	CI	ETA	LTA	lnTA
ROAA	1.000					
LLRGL	.383	1.000				
CI	.431	.015	1.000			
ETA	-.264	-.467	.269	1.000		
LTA	-.016	.135	.382	.234	1.000	
Lgsize	.098	.152	-.055	-.196	.029	1.000

Based on equation (1), we have tested the following BLR model.

$$\ln\left(\frac{P}{1-P}\right) = -.516 - .516ROAA - .576LLRGL - .001CI + .166ETA + 0.035LTA - 3.29lnTA \tag{3}$$

The results from BLR are summarized in Table 3. The Hosmer and Lemeshow test is not statistically significant ($\lambda = 4.70, p = .79$) indicating that our BLR model is a good fitted model. For robustness check, we ran the omnibus tests of model coefficients, which test the null hypothesis of no improvement on the predictive ability of the predictors. The tests are highly significant suggesting the efficacy of our model. Finally, our model’s hit ratio is well over 79.6 percent. Particularly, our model correctly predicted 145 out of 148 cases (i.e. 98%) for conventional banks, and 7 of 43 cases (i.e. 16%) of Islamic banks. The Cox and Snell and Nagelkerke statistics show that our model accounts for the range of 15 percent to 25 percent of the total variation between conventional and Islamic banks. In addition, the low standard error (less than 5) of our independent regressors conform that our model is free from multicollinearity problem (Chan, 2004) and the model is unbiased. We report values of Wald test to show the significance of individual predictor variables included in the model. Higher value of Wald test implies greater contribution of the variable in the model.

The estimates of the BLR model show that there is a significant difference between Islamic banks and conventional banks in terms of profitability (ROAA), credit risk (LLRGL), capitalization (ETA) and size (lnTA). However, both types of banks are not significantly different on the basis of efficiency (CI) and liquidity (LTA). The negative coefficient of ROAA indicating that the profitability of Islamic banks in Bangladesh is not better than conventional banks which reject our first hypothesis. This may be attributed due to lack of suitable investment opportunity for Islamic bank in the country. Here, Islamic banks cannot invest in interest based government securities. Another reason may be the inclusion of ICB Islamic bank (Note 5) in Islamic banks panel.

Table 3. Binary logistic regression results

	Expected sign	Estimates		Wald test
		β	S.E.	
Constant		-.516	.322	2.565**
ROAA	+	-.516	.322	2.565*
LLRGL	-	-.576	.196	8.611***
CI	-	-.001	.021	.001
ETA	+	.166	.052	10.121**
LTA	-	.035	.024	2.101
lnTA	-	-3.290	1.387	5.626**
<i>Hosmer and Lemeshow Test</i>		4.701		
-2 Log likelihood		174.613		
<i>Pseudo R²: Cox & Snell R Square</i>		15 %		
<i>Pseudo R²: Nagelkerke R Square</i>		25%		
<i>Observations</i>		223		
<i>Hit ratio with model</i>		79.9%		
Dependent variable BANKSYS (1 = Islamic banks, 0 = Conventional Bank)				
* value is significant at 10% significant level, ** value is significant at 5% level and *** value is 1% significant level. ROAA stands for Return on Average Assets, LLRGL stands for ratio of Loan Loss Reserve to Gross Loan, CI stands for Cost to Income ratio, ETA stands for Equity to Total Assets, LTA stands for Loan to Total Assets and lnTA stands for log of Total Assets.				

Cost to Income ratio has a negative coefficient but not statistically significant. This means that Islamic banks are not efficient than conventional banks in Bangladesh. Log of total assets (lnTA) has also negative coefficient and the value is statistically significant. This means that the size of Islamic banks are smaller than conventional banks in Bangladesh which supports our third hypothesis. This is due to fact that most of the Islamic banks are newer in Bangladesh of which first Shariah based bank established in 1983. Moreover, local ownership of all Islamic banks may also be another reason of their smaller size in compare to conventional banks in Bangladesh. The credit risk indicator the ratio of loan loss reserve to gross loan also has a negative coefficient. This means that credit risk of Islamic banks is lower than conventional banks in Bangladesh which supports our fourth hypothesis. This further implies that Islamic banks are less vulnerable to credit risk than conventional banks in Bangladesh. Less vulnerability of Islamic banks can be attribute to their ability to move the negative shocks on assets side to the investment deposit (that is, musharak account to mudaraba account). The PLS on deposit side also provides them secondary protection in addition their book capital. Moreover, Bangladesh is a country with more than 90 percent Muslim population, their high religiosity may also influence on the low credit risk of Islamic banks.

Loan to total assets ratio shows a positive coefficient indicating loan disbursement of Islamic banks is higher than conventional banks. This results implies low liquidity of Islamic banks in Bangladesh. Bangladesh banks allows Islamic banks a concessional level of statutory liquidity reserve comparing to conventional banks due to the availability to low volume of Shariah based statutory liquidity reserve eligible instruments in the money market. As Shariah approve money market instruments are limited in Bangladesh, Islamic banks can borrow newly introduced Islamic Inter-banks Money Market (IIMM (Note 6)) and/or Islamic investment bond fund issued by government of Bangladesh.

The coefficient of equity to total asset ratio is positive and significant. This result implies that the capitalization of Islamic banks is higher than conventional banks which support our sixth hypothesis. A strong capitalization of

Islamic banks explain their high financial strength and better resilience to the various shocks if arise. High capitalization of Islamic banks is attributed to the compliance of minimum capital adequacy ratio of 10 percent under Basel II accord (Financial stability report, 2013)

5. Conclusion and Policy Implication

Interest free banking has gained interest of policy makers, investors and researchers in recent years due to its less vulnerability to financial crisis especially the recent GFC. Most of the studies focusing Islamic banking are theoretical in nature. Moreover, a few empirical studies already focus on the comparative studies between Islamic banks and conventional banks in terms of profitability, efficiency, risks and other aspects of banking characteristics and reach conflicting findings. Furthermore, most of the studies are focusing cross countries and limited single country studies do not cover Bangladesh, where, more than 90 percent of total population is Muslim and the growth of Islamic banking is very high in recent years.

The study aims at investigating the distinction between Islamic banks and conventional banks on bank level performance of Bangladesh. In the investigation process the study uses binary logit regression and an unbalanced panel of 223 observations of 23 conventional banks and 7 Islamic banks during 2003-2013. It contributes to the existing literature of Islamic banking by examining six hypotheses such as profitability, credit risk, liquidity, efficiency, capitalization and bank size of Islamic banks and conventional banks. The study finds significant distinction between conventional banks and Islamic banks in Bangladesh on profitability, credit risk, capitalization and bank size. However, they are not significantly different on efficiency and leverage. The study further finds that Islamic banks have low profitability, credit risk, efficiency, liquidity and small size than conventional banks. However, capitalization of Islamic bank is higher than conventional banks. The findings of the study imply that Islamic banks are not capable of using their high capitalization for increasing profitability due to low efficiency, small bank size and lack of specific regulatory framework in Bangladesh. This situation is created due to lack of shariah compliance investment products and experienced as well as capable management of Islamic banks in Bangladesh. Under the circumstances, central bank needs to come out with specific regulatory policy framework in order to improve investment opportunity and managerial capability so that Islamic bank can invest their high capitalization for different maturity periods.

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Notes

Note 1. Commercial banks offering interest based banking products.

Note 2. Commercial banks offering interest free banking products.

Note 3. A legal framework which is based on Islamic principles of jurisprudence used to regulate every aspects of human life.

Note 4. Central Bank of Bangladesh.

Note 5. The bank established in 1987, April in the name of Al-Baraka bank which was suffering from huge cumulate loss and provision short fall during 2000s. The name of the bank has been changed to ICB Islamic bank and converted to full-fledged Islamic bank in 2008, February which not yet recovered from the crisis.

Note 6. IIMM has been introduced in Bangladesh since December 2012 in order to facilitate Islamic banks to support them in liquidity management.

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