A Study on Relationship between Capital Adequacy Ratio (CAR) and Profitability of Islamic Banks in Bangladesh

Ganapati Kumar Biswas and Laboni Mondal

ABSTRACT

The study explored the impact of capital adequacy ratio (CAR) on the profit of Islamic banks in Bangladesh. For conducting the study, we have used a panel data set from 2005 to 2018 of 5 Islamic banks operating in Bangladesh, and we also used the return on equity (ROE) as the proxy of profit. By employing the fixed effect (FE) model, we found that CAR had a significant positive impact, while inflation and domestic credit to GDP had a negative effect on profitability of Islamic banks in Bangladesh. The findings of our study have important implications for the stakeholders, customers, and regulators of banks in Bangladesh.

Keywords: CAR, FE model, INF, ROE.

I. INTRODUCTION

Banks are financial institutions, which deal with public money. They take deposit from public and give loan to these customers who need funds for investment. In the today’s world banks are the central point of all economic activities. Today, banks are no longer financial intermediaries, they provide a wide range of services. Customers from all parts of society come here to satisfy all kinds of banking activities. Banks facilitate payment of goods and provide many services and play a crucial role in international trade, and thus contributes to economic growth (Balassa, 1978; Biswas, 2023a; Biswas & Islam, 2022).

In general, mostly there are two types of banks in any economy: conventional banks and Islamic banks. Islamic banking is a special type of banking, in which interest is prohibited, instead it promoted "Bai", "sadakah" and "jakat". Islamic banks are financial and social institutions whose objectives and activities must comply with Islamic Shariah and should avoid using interest in their activities. Islamic banks are financial and social institutions that comply with Islamic Shariah's objectives and must avoid interest in any activity aimed at implementing Islamic economic and financial principles in the banking industry.

In Bangladesh, Islami Bank Bangladesh Ltd. is the first full-fledged Islamic bank which started its operation in the year of 1983. Most believe that banks based on Islam is Shariah in Bangladesh are unsustainable. But Islami Bank Bangladesh Ltd. is continuing its banking activities through continuous growth and great success. Because of the unprecedented success of Islamic banks in our country, several Islamic banks have also emerged in our banking sector. At present, there are 10 Islamic banks in operating Bangladesh, all of which have a significant market share in the Bangladeshi economy and contributing to the development of the country. Therefore, the aim of this paper is to examine the effect of the capital adequacy ratio (CAR) on the profit of Islamic banks in Bangladesh.

II. LITERATURE REVIEW

To earn profit is the final objective of banks, and it is also a vital indicator of performance for any bank. Profitability analysis of any bank provides meaningful insight about the management efficiency of banks to its stakeholders and customers. There are various measures for profitability of banks and financial institutions, among them two most widely used indicators are return on equity (ROE) and return on assets (ROA). This study used ROE as the proxy of bank profit. On the other hand, Capital adequacy ratio of any bank is calculated based on its total risk-weighted asset, it helps to protect depositors from potential losses that may incur by banks at its day-to-day activities. Usually, capital is used to absorb different kind financial
risks such as credit risks, foreign exchange risks, market risks etc. Bangladeshi banks must maintain a minimum capital ratio (CAR) of 10.0% of risk-weighted assets (RWAs) (at least 5.0% in the core capital).

Many studies have been conducted in the past on determinants of bank profit, which looked for both bank-specific determinants factors and macroeconomic factors of bank profitability around the world. The studies of Islam and Nishiyama (2016), Kanas et al. (2012), and Tan (2016) examined the effect of macroeconomic factors on profitability of banks, while the study of (Ali & Puah, 2018; Bitar et al., 2018) are related to the impact internal factors on the bank’s profit.

Islam and Nishiyama (2016) examined how bank-specific, industry-specific, and macroeconomic factors affect the net interest margins of banks (NIMs). Using data of 4 South Asian countries during spanning from the period 1997 to 2012, the study found that liquid asset to total asset, equity to total asset, and required reserved had a significant positive impact, while relative size had a negative impact on NIM. Furthermore, the study didn’t find any significant relationship between non-performing loan and NIM. Naceur and Omran (2008) examined the influence of bank regulations, market concentration, and financial development on the profit of commercial banks in the Middle East and North Africa (MENA) countries. By using data spanning from 1989–2005, the study revealed that bank capitalization and credit risk had a positive impact on banks’ profitability, which is significant. While macroeconomic and other financial development indicators had no impact on bank performance.

Gul et al. (2011) examined the impact of both internal and external factors on profitability of commercial banks in Pakistan during 2005–2009. Using data of 15 commercial banks of Pakistan, the study revealed that equity capital, loan to total assets, bank size had a positive impact on bank profitability. Macroeconomic factors such as GDP and inflation also had a positive relationship with bank profit in Pakistan.

Sufian (2011) used data of 251 bank from the period of 1992–2003 working in Korea to analyze the profitability of these institutions. The study revealed that liquidity and profitability are inversely, while non-interest income had a positive relationship with profitability. On the other hand, Ali and Puah (2018) found that bank size and profit had positive relationship, while funding risk had a negative relationship with bank profit.

Kosmidou and Zopounidis (2008) evaluated the performance and efficiency of commercial and cooperative banks during the period 2003–2004. The study found that number of accounts and bank profit had a positive relationship for commercial banks, whereas for cooperative banks there was no such definite relationship.

Tan (2016) empirically tested the impacts of risk and competition on profitability in the Chinese banking industry over the period 2003–2011. Using data of 41 banks in China, the study found that taxation had a significant negative effect on ROA, while labor productivity and banking sector development had a positive impact on bank profit in China.

III. DATA AND METHODOLOGY

There are 10 Islamic banks operating in Bangladesh, but I collected data of 5 Islamic banks of Bangladesh for conducting this study. The selected banks are Al-Arafah Islami Bank Ltd. Exim bank Ltd., First Security Islami Bank Ltd., Shahjalal Islami bank Ltd., and Social Islami Bank Ltd.

Return on Equity (ROE) and return on assets (ROA) are two widely parameters of bank profitability. In this study, we consider ROE as the proxy of bank profit, and this is the dependent variable of our study. Capital adequacy ratio (CAR) is one of the principal determinants of bank profit as it determines the loanable fund, which is the major profit earning activities of banks. Domestic credit to gross domestic product (GDP) is also another factor which affects the profit of banks. While inflation gives us the idea about the macroeconomic environment of an economy, which has great impact on the business environment of any economy (Biswas, 2023b; Durevall et al., 2013). Based on the discussion, the explanatory variables of our study are CAR, domestic credit to GDP and inflation. Therefore, we have estimated the following equation to find out the effect of CAR on profitability of Islamic banks of Bangladesh:

\[
ROE_{it} = \alpha_0 + \alpha_1 CAR_{it} + \alpha_2 INF_{it} + \alpha_3 DC_{it} + \nu_t + \epsilon_{it}
\]

where

ROE = return on equity,
CAR = Capital adequacy ratio,
INF = Inflation,
DC = Domestic credit to GDP ratio,
\(\nu_t\) = Bank-specific fixed effect,
\(\epsilon_{it}\) = Idiosyncratic error term.
We have collected the data of ROE and CAR from the respective bank’s annual balance sheet and the other variables are collected from World Development Indicator (WDI) of World Bank. Table I presents the descriptive statistics of the variables used my study.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Observations</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROE</td>
<td>70</td>
<td>0.146</td>
<td>0.081</td>
<td>-0.116</td>
<td>0.384</td>
</tr>
<tr>
<td>CAR</td>
<td>70</td>
<td>0.113</td>
<td>0.064</td>
<td>0.007</td>
<td>0.396</td>
</tr>
<tr>
<td>INF</td>
<td>70</td>
<td>0.071</td>
<td>0.016</td>
<td>0.054</td>
<td>0.114</td>
</tr>
<tr>
<td>DC</td>
<td>70</td>
<td>0.399</td>
<td>0.059</td>
<td>0.293</td>
<td>0.475</td>
</tr>
</tbody>
</table>

From Table I, we see that bank’s average ROE is 0.146 and standard deviation is 0.081, and there is also significant deviation in the ROE of the banks, with minimum is -0.116 and the maximum is 0.384. While the mean ROE is 0.146. The banks also exhibit considerable differences in CAR, the minimum value is 0.007 and the maximum value is 0.396.

Table II represents the correlation matrix among different variables (ROE, CAR, INF, and DC) of my study.

<table>
<thead>
<tr>
<th>Variables</th>
<th>ROE</th>
<th>CAR</th>
<th>INF</th>
<th>DC</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROE</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAR</td>
<td>0.650</td>
<td>1.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>INF</td>
<td>0.098</td>
<td>0.173</td>
<td>1.000</td>
<td></td>
</tr>
<tr>
<td>DC</td>
<td>-0.250</td>
<td>-0.207</td>
<td>-0.300</td>
<td>1.000</td>
</tr>
</tbody>
</table>

From Table II, we observe that CAR has the highest correlation with ROE, while domestic credit to GDP (DC) is negatively correlated with ROE. While inflation (INF) and domestic credit (DC) have negative correlation, and INF and ROE are positively correlated.

Fig. 1 represents the trend of ROE of all banks used in our study.

![Fig. 1: Trends of profit for different banks.](image)


From Fig. 1, we see that ROE of the banks of my study have converged during time. At the beginning of my study period i.e., in the year of 2005, Shahjalal Islami Bank Ltd. had the highest ROE, while Social Islami Bank Ltd. had the lowest ROE, which was negative, and ROE of First Security Islami Bank was around zero (0). But with the time being, ROE of these banks converged around the value 0.20.

IV. RESULTS AND FINDINGS

As the data set is a panel data, there may be temptation to employ widely used pooled regression technique for data analysis. But using pooled regression may lead to inappropriate estimation because of unobserved heterogeneity among the cross-sectional unit. In our study, we used fixed effect (FE) estimation technique to control for such heterogeneity. The results of the FE estimation of Equation (1) is shown in Table III.
As can be seen from Table III that CAR has a positive effect on ROE, which is statistically significant at 1% significance level, and the finding is in line with the findings of (Athanasoglou et al., 2008; Nguyen, 2020; Saleh & Abu Afifa, 2020). The results indicates that 1% increase in CAR increases ROE by 0.802 percentage point. On the other hand, inflation (INF) and domestic credit to GDP (DC) had a negative impact on ROE, but these effects are not statistically significant.

V. CONCLUSION

Islamic banks have a significant market share in Bangladesh economy, and this share is increasing day by day. Thus, Islamic banks are contributing greatly to the economic activities of the economy, which help the country to achieve sustainable growth.

This study examined the impact of capital adequacy ratio (CAR) on the profitability of Islami Banks working in Bangladesh and return on equity (ROE) is used as proxy for profit. For empirical analysis, we used a panel data of 5 Islamic banks of Bangladesh and estimated the fixed effect (FE) model in which return on equity (ROE) is the dependent variable and CAR is the main control variable. I have also used inflation and domestic credit to GDP as other control variables. The study revealed that CAR had a significant positive effect, while inflation and domestic credit had a negative impact, which is not significant on the profit of Islami Banks in Bangladesh. The findings of our study have important implications for the stakeholders and regulators of banks in Bangladesh. CAR seems to be an important deciding factor for the profitability of Islamic Banks in Bangladesh, so the management of the banks should engage resources to build expertise on efficient management of CAR to achieve higher profitability.

CONFLICT OF INTEREST

The authors declare that they do not have any conflict of interest.

REFERENCES


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