



Determining the Internal Factors of Bank Profitability: Empirical Insights from an Emerging Economy



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ABSTRACT

Objective— The primary aim of this research is to examine the bank-specific variables that impact the profitability of banks in Bangladesh.

Methodology/Technique – The present study demonstrates the ways in which bank-specific variables have affected the profitability of Bangladeshi banks. Only state-owned commercial banks (SCBs) were considered for this purpose. The study selected six operational SCBs as the sample size, using panel data from 2015 to 2024 to conduct a random effects regression model.

Findings – The research examined internal characteristics like size, liquidity risk, operational efficiency, credit risk, financial risk, and capital sufficiency. According to the empirical inquiry, operating efficiency, financial risk, and liquidity risk are the most important bank-specific features that bank managers may use to formulate future strategies.

Novelty – Numerous previous investigations have offered diverse insights for the variables affecting bank profitability, including both external and internal factors. This research examined the bank-specific variables that contribute to the profitability of the Bangladeshi banking system, a rising country in South Asia. Furthermore, in this paper, the factors affecting only the SCBs' profitability are clarified, which provides some useful empirical insights in this field.

Type of Paper: Empirical

JEL Classification: C23, G21

Keywords: State-Owned Commercial Banks, Profitability, Panel Regression, Internal Factors, Bangladesh

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1. Introduction

A financial system's primary goal is to facilitate the transfer of money between savers and borrowers. A healthy financial system should exhibit increasing profitability, an increase in the amount of money moving from fund providers to demanders, and improved customer service. Emerging countries often have small or nonexistent financial markets, unlike other developed nations where the banking system and financial markets work together to route cash.

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The banks serve as a middleman between fund providers and demanders, performing all activities to ensure the secure and effective flow of funds. The banking industry also plays a vital role in stimulating the economy and facilitating financial transactions by converting savings into earning assets. The paper's goal is to evaluate State Owned Commercial Banks' (SCBs') operational effectiveness in Bangladesh's banking sector between 2015 and 2024. The National Commission on Money, Credit, and Banking recommended significant structural reforms to Bangladesh's financial intermediation system, and Bangladesh Bank (BB), the country's central bank, has implemented these changes ever since, along with a number of initiatives aimed at enhancing the stability, viability, and effectiveness of the banking sector. Efforts have been made, among other things, to increase accountability and transparency, deregulate interest rates, tighten loan categorization guidelines, and reduce BB's influence over financial transactions and loan recovery procedures. These actions have prompted local operating banks to take the initiative in diversifying and strengthening their portfolios, and they have also improved non-performing loan ratios and significantly increased revenues for all Bangladeshi banks. A series of questions served as the introduction to the article. Why are certain State-Owned Commercial Banks (SCBs) more prosperous than others? How much of the variations in endogenous factors under bank management's control account for fluctuations in banks' profitability? In order to develop future policies for increased profitability of state-owned banks, the answers to these questions would help identify those factors that make SCBs effective. This study provides additional empirical evidence on the factors influencing profitability in state-owned banks in emerging economies, supporting the earlier research (Akhavain et al., 1997). While the profitability of the banking industry in industrialized economies has been thoroughly studied in the past, practically no empirical study has been done on the variables influencing bank performance in developing economies (moreover, the existing literature on Bangladesh's banking sector excludes this type of study).

In Bangladesh, (Sufian & Habibullah, 2009) explored conventional and Islamic banks to identify both the internal and external factors that affect banks' profitability. Although a great deal of research has been conducted on the variables affecting the profitability of conventional and Islamic banks, most of these studies have examined both the internal and external characteristics of the bank simultaneously. Therefore, the main purpose of this paper is to analyse only the internal factors of state-owned commercial banks (SCBs) in Bangladesh that may influence their profitability.

2. Literature Review and Hypothesis Development

Researchers have made an effort in the past to explore the factors influencing the banking industry's profitability. But few researchers focused their research only on internal banking attributes, which govern bank operations (Naceur & Goaied, 2001) (Flamini et al., 2009) (Ostadi & Monsef, 2014) (Ijaz et al., 2015) on the other hand, other researchers incorporated the external factors (Short, 1979) (Bourke, 1989) (Molyneux & Thornton, 1992) (Iqbal et al., 2005) (Riaz & Mehar, 2013).

The variables that the bank's management controls through policy and decision-making are known as internal drivers of bank profitability. Bank capitalization, net profit margin, capital ratios, overhead expenses, and liquidity ratios are the internal variables that are most frequently used. The term "external drivers of bank profitability" refers to factors that occur outside a bank's control and are not influenced by its policies or actions. Inflation, GDP, business sector growth, regulation, premium rate, and business sector structure are considered external factors. A few studies in the past have focused on developing economies, such as Pakistan; most studies on the banking industry have been conducted in industrialized economies. (Burki & Niazi, 2010) (Riaz & Mehar, 2013) (Naceur & Goaied, 2001) reported that the key factors that significantly influenced Tunisian banks' performance between 1980 and 1995 were their capitalization, work

efficiency, portfolio structure, and capital profitability. (Abreu & Mendes, 2001), studied four countries in the European Union between 1986 and 1999, examining the effects of bank-related variables on the profitability of each country.

(Bashir, 2003) The study investigated the factors influencing the profitability of 14 Islamic banks in eight countries (Kuwait, Jordan, Bahrain, Sudan, Qatar, Turkey, Egypt, and the United Arab Emirates) between 1993 and 1998, using ROA and ROE as the dependent variables. According to (Goddard et al., 2004), the findings of the OLS regression demonstrated a strong correlation between greater capital-to-asset and loan-to-asset ratios and better bank profitability. The use of panels and cross-sectional regression models revealed a favorable link between bank size and overall performance. After examining the factors that influenced UAE banks' profitability between 1987 and 2002, (Hassan Al-Tamimi, 2006) Likewise, came to the same conclusion: bank size positively affects performance and profitability (ROA and ROE).

H1: There is a positive association between bank size and profitability.

Athanasoglou et al. (2006) examined the determinants of the profitability of South Eastern European (SEE) banks for the years 1998–2002. The study found that the concentration of banks led to an increase in profitability. Using data from 14 Chinese banks between 1996 and 2004, Wum et al. (2007) examined the effect of bank size on profitability. According to the findings, banks' return on assets (ROA) improved with bank size. Using ROA as an explained variable, (Kosmidou & Zopounidis, 2008) assessed the performance of Greek banks between 1990 and 2002. Additional explanatory factors included the proportion of equity to total assets, the percentage of loans to customers and short-term financing, the percentage of loan loss reserves to gross loans, and the accounting value of total assets as a measure of bank size. The study found that bank size has a positive impact on profitability.

H2: There is a positive association between capital adequacy and profitability.

H3: There is a positive association between credit risk and profitability.

(Sufian & Habibullah, 2009) used dependent variables as ROA and ROE, and examined the external and internal factors that affected Thai banks' profitability between 1999 and 2005. According to the study, bank capitalization and size have a favorable effect on profitability; on the other hand, credit risk has a negative impact on bank profitability. (Flamini et al., 2009) analyzed data on various characteristics from 389 banks in 41 countries in Sub-Saharan Africa to show that bank ROA is correlated with larger bank sizes in addition to credit risk. (Burki & Niazi, 2010) examined the effects of cash-related changes on the profitability of Pakistani banks using data from 40 banks over the years 1991–2000. They found that factors such as bank size and deposit ratios influence bank performance and efficiency. Empirical data were presented on the impact of internal bank characteristics on the profitability of a sample of ten commercial banks listed on the Istanbul Stock Exchange between 2002 and 2010 (Anbar & Alper, 2011). The study revealed that banks' profitability is positively impacted by their asset size, but their credit portfolio size and the number of loans under review have a negative influence. (Olson & Zoubi, 2011) examined the impact between the economic factors and bank accounting profitability metrics in ten Middle East and North African (MENA) nations between 2000 and 2008. The study found that a bank's return on assets and return on equity are positively impacted by its size. Additionally, it was demonstrated that cost efficiency negatively impacted profitability. The study by (Ostadi & Monsef, 2014) focused on the factors that influence the profitability of Iranian banks. Profitability (as determined by ROE and ROA) was the dependent variable, while the independent

variables were bank deposits, bank size, bank capital, and liquidity concerns. The size of the bank has a significant impact on its profitability, according to the results. The discussion above demonstrates the substantial correlations between internal bank characteristics and profitability that have been demonstrated in numerous previous research investigations. However, the research results varied significantly due to the use of different institutional contexts and data sets. Based on the above discussion for this study, the following hypothesis gap has been identified.

H4: *There is a positive association between operational efficiency and profitability.*

H5: *There is a positive association between liquidity risk and profitability.*

H6: *There is a positive association between financial risk and profitability.*

Conceptual Framework

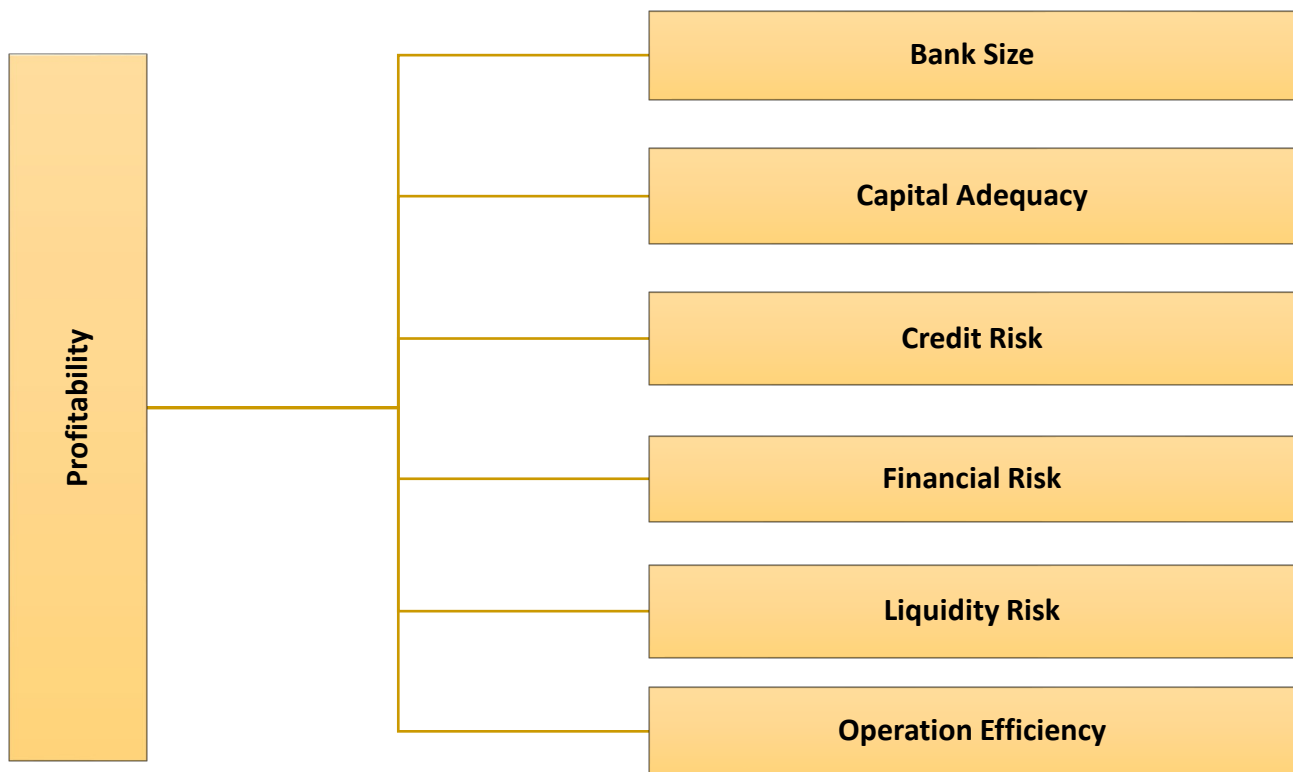


Figure 1: Conceptual Framework

3. Methodology

Methodology: The study gathers bank-specific information from the annual reports—specifically, statements of financial position and income statements—of six state-owned commercial banks. The dataset

covers a ten-year period, from 2015 to 2024. We gathered 60 sample years of observations by combining all available data. An analysis of the factors influencing SCB profitability in Bangladesh was conducted using regression methods for panel data. Panel data are widely utilized because they provide more useful information, as they include both time series information that captures dynamic adjustments and cross-sectional information that captures individual variability. The profitability of SCBs in Bangladesh was analyzed using regression methods for panel data. Panel data are widely used because they provide more detailed information, including time series data that shows changes over time and cross-sectional data that reflects differences between individuals. In summary, panel modelling addresses diversity across individual components while facilitating the identification of common properties. Panel data regression approaches employ two models: the fixed effects model and the random effects model (Abduh & Issa, 2018). Hausman tests were applied in this study (Nicola et al., 2015), and the results accepted the random effect for model estimation, allowing for the selection of the best approach. To study the determinants of the profitability of SCBs, this study adopts the following regression equations:

$$ROA_{i,t} = \alpha + \beta_1 X_{i,t} + \varepsilon_{i,t}$$

Where $ROA_{i,t}$ is the return on assets for bank i in year t , α is a constant, $X_{i,t}$ represents bank-specific characteristics of bank i in year t , β_1 are regression coefficients, and $\varepsilon_{i,t}$ is the error term.

Table 1: Variable Items

Variables	Types of Variables	Notation	Description	Expected Sign
Return on Assets	Explained	ROA	The return on total assets of the banks	
Bank Size	Explanatory	BSIZE	Logarithm of total assets	+/-
Capital Adequacy	Explanatory	CA	Total equity over total assets	+/-
Credit Risk	Explanatory	CR	NPL over gross loans	-
Operational Efficiency	Explanatory	OE	Cost over income	+/-
Liquidity Ratio	Explanatory	LR	Total Loans to total deposits	+/-
Financial Risk	Explanatory	FR	Total Liability over total assets	+

4. Descriptive Statistics

Before proceeding with the study's analysis, it is necessary to discuss a few initial aspects of our data. Table 2 displays the descriptive statistics for the independent variables and profitability indicators (ROA) in this model. The average return on assets for the banks chosen for this analysis is -0.0003778, with a standard deviation of 0.0154553. All other independent variables, however, have positive means. The most excellent BSIZE average (5.552338) varies depending on the bank (max = 4.514687, min = 6.234131). The average total equity-to-total assets ratio is 0.1065782, with a standard deviation of 0.1198461. Regarding financial risk, the means for credit risk, operating efficiency, and financial risk are 1.04, 0.2634, and .566, correspondingly.

Table 2: Summary Statistics of Sample Variables

	Mean	Standard Deviation	Minimum	Maximum
ROA	-.0003778	.0154553	-.0729238	.0255869
BSIZE	5.552338	.4757848	4.514687	6.234131

CA	.1065782	.1198461	-.0029398	.4799326
FR	1.046318	1.15139	.5200674	9.772505
OE	.5667162	.6236214	-2.714036	1.744415
CR	.2634261	.2457942	.0174715	1.713689
LR	.6873502	.2411855	.0746128	1.855508

Correlation Analysis

This study employed correlation analysis to assess the strength of the association between the independent and explanatory factors.

Table 3 shows the Pearson's correlation coefficient for the profitability model with ROA. It indicates that OE ($r = .0074$) and LR ($r = -.0736$) are weakly correlated with ROA with positive and negative signs, respectively. CR ($r = -0.5113$) and LR (-0.0154) also have moderately negative correlations with the bank's profitability. On the other hand, CA ($r = .3879$) and FR ($r = .0223$) exhibit moderate and weak positive relationships, respectively, with ROA.

Table 3: Results of the estimated correlation coefficient

	BSIZE	CA	FR	LR	CR	OE	ROA
BSIZE	1.000						
CA	-0.7415	1.000					
FR	-0.0075	-0.1358	1.000				
LR	-0.5583	0.3525	-0.0503	1.000			
CR	-0.2304	0.0114	-0.0121	-0.0630	1.000		
OE	0.0686	0.0665	-0.0293	-0.0868	-0.1280	1.000	
ROA	-0.0790	0.3879	0.0223	-0.0736	-0.5113	0.0074	1.000

Regression Results:

This section analyses the regression of the sampled bank's probability indicator with its internal variables. STATA 12 runs a random effect model. ROA is regressed with six independent variables for the period 2012–2021.

Table 04: Results of Regression

ROA	Coefficient	Std. Error	t- Statistics	Prob.
BSIZE	.0023287	.0059864	0.39	0.697
CA	.072423	.0202133	3.58	0.000
FR	.0010113	.0013383	.76	0.450
LR	-.0174407	.0078729	-2.22	0.027
CR	-.0335379	.0067526	-4.97	0.000
OE	-.0030884	.0024489	-1.26	0.207
Cons	.004887	.0390029	0.01	0.990
R- squared	.2307			
F- statistics				
Prob (F- statistics)	0.000			

The findings in Table 4 are linked to the regression of ROA on a set of bank-specific variables. The R-squared value is 0.2307, indicating that approximately 23% of the variation in the independent variables is explained by the dependent variable, ROA. The F-test assesses the adequacy of a model. Table 4 indicates that the model's F-test result is statistically significant, suggesting that the model effectively elucidates the relationship between the independent variables and ROA.

As previously noted, the current study utilizes six bank-specific characteristics. However, the results show that the credit risk, liquidity ratio, and capital adequacy of the state-owned commercial banks significantly influence their profitability. At a 1% significance level, there is a positive correlation between bank total assets and ROA. The analysis reveals a negative association between financial risk and operational efficiency, as previously anticipated; however, this relationship is not statistically significant.

5. Conclusion

The goal of this empirical study is to advance understanding in this field and offer strategies for raising the profitability of state-owned commercial banks. Furthermore, the results of this empirical paper have consequences for policymakers, scholars, and practitioners. However, policymakers should consider how important it is to employ banks' internal resources effectively to increase the profitability of SCBs. The results recommend that several factors, including capital sufficiency, credit and liquidity risk, have a significant impact on the profitability of SCBs in Bangladesh. Additionally, results clearly suggest that among the sample banks examined, bank size in terms of assets is not the only determining factor for profitability. According to the study, state-owned commercial banks in Bangladesh should be encouraged to implement advanced methods for managing their non-performing loans, along with technology and skilled personnel, to enhance productivity. This will enable banks to select the most suitable borrowers and to improve their profitability by reducing the number of fraudulent loans.

This research provides valuable new insights into the identification of state-owned banking businesses in Bangladesh and offers a more comprehensive knowledge of the elements influencing the profitability of SCBs. Decision-makers in the banking industry may find it helpful when it comes to profitability-related issues. Additionally, we support further studies on the profitability of banks and their performance, incorporating other factors (such as variables related to management and governance) and analytical techniques that may offer fresh perspectives on enhancing banking procedures.

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