Determinants of Commercial Banks Profitability in Bangladesh

Project Report

On

Determinants of Commercial Banks Profitability in Bangladesh

Submitted To:

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Assistant Professor

School of Business and Economics

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Subject: Submission of Project Report on "Determinants of Commercial Banks Profitability in Bangladesh".

Dear Sir,

I am glad to submit this term paper on Determinants of Commercial Banks Profitability in Bangladesh. The document is developed in response to your directives and directives given by you during project execution. The focus of the research is to determine the factors of the commercial banks' profitability in Bangladesh.

Please allow me to thank you from the bottom of my heart for your extremely important support and assistance in the preparation of this report. I hope you will excuse my poor offer.

Sincerely

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Certification of Similarity Index

Declaration

I am Hasibul Islam, ID No. 111 193 064 , student of School of Business and Economics (Finance) of United International University, hereby declare that the Project Report on Determinants of Commercial Banks Profitability in Bangladesh is an original work done by me and has not been submitted for any degree, diploma, title or recognition before to any other institution and this write-up has been not previously submitted to any institution.

Sincerely yours,

Hasibul Islam

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Acknowledgement

I amused to extend my heartiest thanks to my honourable supervisor, Muhammad Enamul Haque, Assistant Professor; School of Business & Economics, United International University for his support throughout the project report to make it in a right path. I would not be able to finalize this project report without his full cooperation. He is my mentor, and I owe him for providing direction and required help in course of completion of my project.

Abstract

The purposes of this paper are to examine the Determinants of Commercial Banks Profitability in Bangladesh based on panel data of 24 listed banks over the period 2019 to 2023. The used variables are ROA and ROE profitability, The explanatory variable used is the internal Dianara included bank size, capital adequacy, NPL (Non-Performing Loan), and external factors are economic growth. To estimate the associations, panel regression techniques (fixed and random effects models) were employed. Regression coefficient confirmed that ROE is the most powerful and leading factor of profitability. On the other hand, external macroeconomic factors like gross domestic product associated limited or no significant effect.

These findings imply that operational and financial characteristics of banks are more explanatory of the banks' profitability than economic descriptors. Commercial banks need to focus on the above situation, and they could enhance equity management, operation efficiency, and present credit risk by referring the result of the study. There is a fine line for policymakers to tread between a regulatory framework that fosters internal performance improvement and a watching brief on macroeconomic stability. Profitability of strategic banking: A financial and risk management perspective of banks in Bangladesh

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List of Acronyms & Abbreviations

ROA Return on Assets

ROE Return on Equity

NPL Non-Performing Loan

CAR Capital Adequacy Ratio

EG Economic Growth

OPTR Operating Expense as a Percentage of Operating Revenue

BS Bank Size

Economic Growth.

CHAPTER I: INTRODUCTION

1.1 Background of the Study

Banks and the banking sectors form a crucial part of any world's economy. It speaks most in saving of saving the savings and lending of savings by depositors. Bangladesh is a developing country till now that is why its bank in developing position and developing is still process of motion. The commercial banks are assisting both Bangladeshi firms and companies by disbursing loans and other services. These commercial banks drastically contribute towards the economic development and progress of the country. Specifically, this market services the people what they want. "Credit is the blood of any economy," again, is the saying. So, it is affecting economic growth too in the similar way. There are countries where financial intermediaries providing financial services are represented by banks alone. Conversely, the banks are confronted with regulation and supervision issues owing to insufficient experience in their operation.

Now a days, Bangladesh are passing through lots of disaster in banking sectors. The cocktail added up all these crises simultaneously has also have affected the growth of the banking sector so far as Bangladesh is concern and demonstrate multiple challenges such as shortage of liquidity, fall of income, recession of export import business and foreign currency crisis (dollar) and rise of non-performing loans. The bad loans of some banks of Bangladesh become into the orbit of NPLs for the bad credit policy. This bringing down of other banks. Also, macro-economic variable which is politics is highly influencing banking sector and other sectors too.

But there are extrinsic and intrinsic factors influencing profitability of the bank. Internal variables are Size, NPL, ROA, ROE, CAR And CI. Outside of that are exchange rates, GDP, and economic growth.

If institutions and service sectors lend or borrow, they also expect the value of profit. Banks-Those areas, which act like services cum earning & payment of interests. That's because they are lending, so they want returns. Better yields mean bank is making enough money. On the reflux of sharply hands the non - performing loans many time the default by the borrowers and at that time we withdraw money from the loan amount Payable to the Bank, thus loose the loan both by amount and as well as our additional loss to the Bank. Then with respect to NPL ratio, the impact to asset quality of bank is due to default is a negative effect to the financial system of bank.

Banks also make money on exchange gains. The volatilities of currency exchange rates can be profitable for banks. Foreign Remittance is one of the major services in the banks of Bangladesh. They cash in the money exchanged for their profit. Capital Adequacy Ratio: This is important with reference to Profitability It is also essential to analyse a Bank's position in terms of its Assets vis-à-vis its Capital. It also protects depositors and promotes the stability and efficiency of global financial systems.

Roe and Roa are the basic yardstick of Profitability. Return on assets ratio: This ratio measures the on-investment bank received against to the banks profitably benchmark. Banks recognise it as profit. Return on equity measures how much profit shareholders generate on their investment in the company. The final and ultimate purpose is that profit making is the state of the organisation such that it goes on making profit year in and year out. Thus, the main objectives of this study are to ascertain whether is the single determinant plays critical role for banks profit abilities. Empirical data 2.1 Data source the panel data study covers 24 annual report data of Bangladeshi commercial banks.

1.2 Origin of the Report

The write-up would form the final component of the undergraduate degree course for all students. However, all the students do not need to submit the report for their Bachelor of Business Administration program under the Department of Business Administration of United International University. I have done my research based on an interesting topic like "Drivers of bank profitability in Bangladesh". But this report has made me smarter where banks and that sort of thing are concerned. banks are essential for the economy and hence bank growth too. So, once again, I've been spun around, and I've learned yet more about banks and what generates their returns.

The subject has even been suggested by my supervisor Mr. Muhammad Enamul Haque, Assistant Professor, BBA Department, SOBE in UIU as he wants me to know about this term.

1.3 Objectives of the study

The objective of this paper is to explore the determinants of commercial banks profitability in Bangladesh. Furthermore, the paper exposes the direction of impact of profitability drivers and variables of profitability. This is an empirical investigation which test models and hypotheses. But the hypothesis test is conducted in revealing the best fitted model among the available two models While, the test is to know the significance of the selected variable for the study.

1.4 Descriptive and Limitation of the Study

The publication is essentially a degree for a degree. The objective of this report is very restricted because the research is conducted based on secondary data. The data acquisition is facilitated by the annual reports of the relevant banks. The reported commercial banks are not all the covered commercial banks but limited by data.

1.5 Definition of Key Terms

ROE (Return on Equity): Measures the efficiency of a company's use of shareholders' equity in generating profits. NPL (Non-performing Loans): Loans for which the debtor pays no interest or capital. CAR (Capital Adequacy Ratio): It is used to describe the bank’s health and its ability to absorb loss due to an operational risk. Profitability: The firm's existence of profit as compared to costs over a certain time.

1.6 Arrangement of the Rest of the Chapter

The remainder of this paper is organized as follows:

Chapter II: Literature Review – Review studies that have done in the past on the main determinant of bank profitability.

Chapter III: Method – details research design, data collection and mode of data analysis.

Discussion IV: The results obtained, the statistical results.

Chapter V: Conclusions and Recommendations What needs to happen next to get the car on the road?

CHAPTER II: REVIEW OF THE LITERATURE

2.1 Relevant Theory

Banking profitability has been explained based on a variety of theories such as those of capital structure, efficiency and market conduct. These include:

Signalling theory: High capital levels as an indication of a strong and promising bank.

Risk-Return Hypothesis: Suggests that there is a capital-profitability trade-off; additional capital might reduce profits.

Market Power Theory: The banks with larger market share and size can make more profit.

Efficiency Structure Theory: Proposes that more efficient banks are inherently profitable.

These theories serve as a counterbalance as to how profitability is affected by internal and external factors and are popularly used in empirical study in banking literature.

2.2 Empirical Studies

Different writers analyse financial performances. Various scholars apply different methods of investigation and demonstrating the impact of profitability factors:

In my study I am concentrating on the determinants of banks profitability in Bangladesh, more precisely in the listed banking sector. As I was focusing on Banking sector of Bangladesh, I collected the articles, reports and academic papers which described how does Profitability work in banks, especially in Bangladeshi perspective. Overall, 24 listed commercial banks were selected for the study. panel data studies, regression analysis, CAMEL system form the popular methods researched on by scholars. In assessing the profitability of the bank, studies have taken internal factors (capital adequacy, asset quality, management efficiency) and externals (capital injection, interest rate, economic growth) as measures though there seemed no uniform analytical framework from the findings of the received articles; and this was determined by the focus of the individual researchers.

Mondol, D.K., & Wadud, A., 2022. There are much research about determinants of bank profitability worldwide. ROA, ROE, and NIM are used to evaluate the profitability. Macro variables affect bank profitability negatively in Kenya Capital supplements profitability during economic crises Investment quality and management efficiency dramatically affect profitability of Nigerian banks Macro factors have less influence than banks' specific factors in Turkey inflation and e economic growth have positive insignificant impact on Jordanian banks" ROA Capital adequacy and operating efficiency are found to have significant positive effect on profitability. Islam, M.A.,Sarker, M.N.I.,Rahman, M.,Sultana, A., & Pradhan, A.S. (2017). The paper reviews theories of capital, profitability and bank size. According to the theory of signalling, more capital indicates better prospects. The risk-return hypothesis also predicts negative relationship between capital and profitability. Theories of Market Power and Efficiency Structure associate profitability with the size of the bank. Evidence based reviews reveal a range of determinants of bank profitability among countries. Bank profitability is highly dependent on capital adequacy. ROA and ROE are most commonly applied as profitability measures. Reported literature shows that profitability has a negative relationship with credit risk. The business of diversification in banking may beget profit, but it can also begat risk. The largest source of bank income is interest income. Loans to assets has a positive significance in financial performance. Bank performance is affected by non-performing loans. Regression model shows significant relationship between endogenous and profitability. Islam, S., & Rana, M S. (2019). Bank profitability has been discussed in the literature all over the world. Country specific and other macro- economic variables influence profitability in different way in different countries (Wanke (2010). A study by Wanke Research in Bangladesh to reveal the Derrick 27 bank specific determinants of 26 banks profitability of 26 banks in 2008-2011. Important determinants include bank size, net worth and productivity. Profitability is adversely affected by liquidity and positively affected by capital adequacy. Bad debts have been found to have an adverse effect on profitability in several studies. Aggregate deposits and non-performing loans significantly affect the ROA. ROA, ROE and NIM are not a function of economic variables. Banks rely on deposits, non-performing loans, capital and liquidity. Policy-based changes are required to increase the profitability of banks. Lee, M. and Iqbal, N. (2018). Include bank specific determinants, characteristics of the industry and sizes. There are also various bank specific factors influencing profitability like efficiency and asset quality. Literature results are inconsistent concerning the effect of bank capital on the bank's performance. Banks' bottom lines are affected by macroeconomic trends as well, including inflation. Review has shown that have no study so far on the determinants of banking profitability in Bangladesh. The ratio of loans to deposits is a good measure of how much banks can thrive on their deposits -not a lot. Loan-loss provision "hurts bank profit. The ratio of equity to total assets impacts profitability. Operating expense to total assets is another ratio that determines the viability. The profit is not influenced by the size of banks and macroeconomic variables. MAHMUD, K., MALLIK, A., IMTIAZ, M.F AND TABASSUM, N (2016) What is happening in the bank profitability, and particularly in ROA and ROE? Studies show discrepancies on relation between bank size and profitability. The significant factors consist of loan–deposit ratio and operating cost. The review highlights bank-specific and macroeconomic causes. Historical research findings are described. Profitability in a bank in Bangladesh is negatively affected by bank size. OER is the negative factor of bank performance. The framework of gearing Profitability has inverse association with gearing. Bank profitability and bank capitalization are positively related. NPLs and liquidity are of no impact. Matin, K.A., 2017, April. Bank profitability determinants studies in Bangladesh are new. Performance is positively influenced by bank traits such as the level of loans and credit risk. Size is negatively linked to ROAE. Inflation negatively impacts bank profitability. The 5 major factors are capitalisation, liquidity and the quality of management. Non-interest income negatively affects profitability. The regression results show that foreign ownership has a positive effect on performance. High levels of liquidity are beneficial to NIM. ROA and NIM are negatively affected by bank size. There is no evidence on influence of macro- economic variables on performance. Rahman, M.T. and Shaon, S.I., 2021. The research is on determinants influencing the profitability of the banking industry in Bangladesh. It looks at capitalization, the ratio of costs to income and nonperforming loans. Existing studies found adverse effects of NPLs on profitability. Analysis Statistical techniques such as regression were utilized. Cost income ratio affects banks profitability negatively. The debt-equity ratio is negatively related to profitability as well. Adequacy of capital and bad debt are not positively related to profitability. Additional investigations indicated to add internal and external factors. Halder, P.: Determinants of the Commercial Bank Profitability in Bangladesh 2017. Majority of bank profitability studies have been done in the emerging economies. Studies are also scarce on banks specific variable in the context of Bangladesh. Gupta (2014) studied the performance of the public sector banks of India. Rahman et al. (2015) studied the bank-specific determinants in Bangladesh. Gul et al. (2011) pointed out the effect of bank specific attributes on profitability. Profit heterosis of Pakistan banks was examined by Muhammad and Siddiqui (2011). Rahman and Islam (2019) investigated the impact of corporate governance on bank performance. Ahsan, SM (2016): Performance: Islamic Bank and Conventional Bank in Bangladesh: A Comparative Analysis of Financial Statement. Singh and Pawan (2016) had a look at the performance of private banks of India. Performance measures of Chinese banks were studied by Heffernan and Fu (2008). Keovongvichith (2012) observed financial performance of the commercial banks in Lao PDR. Sufian (2011) also studied profitability of Korean Bank through reform. Haque, M.T.M.F.A., Alam, M.A., 2016. This is called the Determinants of profitability and is represented by the

Banking attribute of the bank, i.e. the capital, and loans. "Under this result, that CAR was directly associated with profitability. When cost of funding rises, profit will decline. Credit risk is inversely associated with profitability. Profits and LDR are positively related to each other. The relationship between bank size and profitability is a conflicting issue. Profits growth link is positively associated with GDP growth, they are positively related, while inexistent between profitability and inflation 2.1.2 Profitability. The profitability of SCBs has a significant positive relationship with CAR. SCBs' profitability is positively associated with GDP growth ratio (GDPR). The SCBs' profitability is negatively associated with SIZ. Inflation (INFL) is inversely related to savings city banks' (SCBs) profitability (PRFIT). CAR and GDPR are crucial for formulating profit. Late researchers kept several methods of profitability. Sufian, F, & Habibullah, M. S. (2009). There are studies focusing on bank performance in the developed countries. A few studies on bank performance are available in developing countries including Bangladesh. the paper reviews a few elements of bank profitability and management tasks. It addresses the impact of internal and external environment on banking performance. The purpose of the study is to add to existing literature on Bangladeshi commercial banks Objective of the study Commercial bank specific characteristics affect bank performance positively. The size of the loans, the credit risk that is assumed, and the cost obviously are significant components. Non-interest revenue has a negative impact on banks performance. Size has a negative impact on average return on equity. Positive correlation is observed between size and return on assets and interest income margins. Inflation and Bank Profitability. There is no real link to macroeconomic indicators. Suggestions for More Work Investigating the pace of tone sandhi Al-Homaidi E. A., Tabash M. I., Farhan N. H., Almaqtari F. A. (2018). Section I examines the variables that affect the profitability of banks and on an international scale. It categorizes the studies based on country, area and single-country analysis. Empirical studies of factors explaining profitability in a country context are examined. The examination uses data and experience from several countries and areas. Profitability is reflected by ROA, ROE, and NIM. Bank size has a positive impact on the profitability measures. And assets management ratio is positively related to return on assets. The greater the branches, the more advantageous to profit, of the company. One confidence level profitability proxy are inversely affected by leverage ratio. It is negatively correlated with the macroeconomic variables. Exchange relations have also a strong adverse impact on profit.

Dietrich, A. & Wanzenried, G. (2009, Das.). the paper examines the determinant factors of banks profitability according to the empirical studies of various researchers. It depicts internal and exterior factors affecting towards the profits of banks. It has been reported in the literature that the discrepancy is likely due to non-uniform datasets and environments. The analysis includes bank-specific, industry-specific, and macroeconomic variables. The relevance of such Swiss bank profitability differences is stressed. Foreign banks are much less profitable than Swiss ones. It's not that the state banks are inefficient; the profitable banks are, by and large, private. GDP growth has a positive impact on the profitability of banking industry in Switzerland. A higher degree of market concentration is negatively associated with bank profitability. Banks in Lake Geneva are also more profitable than those in Zurich. After-tax profits are not good for banks. Dietrich, A., & Vanzenried, G. (2014). A variety of models of bank performance measure have been examined in studies since the time of Bourke (1989). Research often focuses on individual countries or provides between-country evidence. Internal factors include bank size, ratio of efficiency, and capital ratio. Exogenous factors also include inflation, growth of gross domestic product (GDP), and the environment of the market. Bank Profitability: The Impact of Financial Development This paper investigates the effects of financial development on the profitability of banks in low and high-income countries. Recent financial crises have impacted the profitability drivers of the banking. The study covers 10,165 banks from 118 countries. Bank profitability: factors) that the bank profitability may be affected strongly by the income) Determinants and impacts of the bank profitability fluctuation. Profitability of banks is heterogeneous in LIC, MIC and HIC as well. The study also uses dynamic GMM to address the issue of endogeneity. Kosmidou, K., Tanna, S., & Pasiouras, F. (2005, June). The literature review reveals the driving forces of bank profitability and the performance of UK banks. It provides indicators for domestic banking sector profitability. Previous studies focused on performance determinants of UK banks rather than profitability. The Review is completed with the study of the banking profitability in non-home banks. Capital strength is a lever working directly on UK bank profitability. Cost effectiveness is largely driven by profitability. There are also size effects on the level of these profitability effects. Perhaps not so surprisingly, macroeconomic factors add very little when it comes to explaining the puzzle of profitable firms. After deregulation, capital returns for UK banks were extremely high. Athanasoglou, P.P., Brissimis, S.N., and Delis, M.D. (2008). There are two points which the literatures discuss on the profitability of the bank in a general manner and as the internal and the external factors. The two are turning up conflicting results on the thirst for returns. Domestically, it is size, capitalisation size and risk management. Explanatory factors include macroeconomic factors and market-related factors. The SCP hypothesis connects the bank profit with market power of the bank. Procedures based on GMM (The General Method of

Moments) are used to investigate the persistence of profitability. This paper investigates the profitability of Greek commercial banks over the period 1985-2001. Some bank specific and macroeconomic, and industry specific factors affect the profitability. The role of efficiency of the banks in profitability is critical. The more staff you have at a Greek bank, the less money you'll be making. We study the influence of the business cycle on profit. We apply the one-step GMM estimator. Dynamic and static relations are addressed; econometric. Dietrich, A. and Wanzenried, G. (2011). Discussed on the factors influencing bank profits. It distinguishes between internal and external factors affecting bank profitability. Conflicting findings are found in the literature over the various data and environments. The factors contributing to this heterogeneity are bank size, risk, and overhead costs. The study examines the influence of ownership on bank performance. It examines big-picture macroeconomic trends, such as inflation and GDP growth. The paper focuses on the Swiss Banking Agglomerations. The article analyses the profitability of 453 Swiss commercial banks. It breaks out pre-crisis years and crisis years. Other bank and market-specific determinants are also found. Profitability also is higher for younger banks, not older banks. The U -curve is a kind of N -shaped curve when it comes to the relationship between the state property and the profit at the time of economic crisis. Funding cost destroys profitability during emergency only. Good profitability is related to high equity to assets. Petria, N., Capraru, B., elsewhere Ihnatov, I. (2015). The literature on determinants of bank profitability. Pioneering work in this field is due to Short (1979) and Bourke (1989). Some look at countries, some at panels. A few studies were conducted based on countries and among these the studies conducted in US and Brazil can be highlighted. The profitability of European banks is investigated. 16) a positive relationship with interest (ii) Molyneux, T.A Thornton (1992) 529 rates. Goddard et al. (2004) show positive relationship of risk and profitability. Athanasoglou et al. (2005) observed profitability to be positively related to concentration. Such a study for the EU27 does not exist, including all countries in the sample above and for the same period. The earning of Banks is sensitive to credit and liquidity risk. The influence of the ROAA on the ROAE was verified. And competition is inadequate to drive down bank profitability". The economic growth fuels profitability. Competition Effects of EU Bank Mergers on Profitability. The size of the bank makes a minor input to the ROAA. The banking sector is not that much sensitive towards inflation. Al-Homaidi, E.A., Tabash, M.I., Farhan, N.H.& Almaqtari, F.A., 2019. The determinants of broker/dealers ' temporary liquidity firms (banks) around The banks) throughout the world are analysed. It's another sign of a confusing picture in emerging and developing countries. The factors driving liquidity of Indian banks have been the subject of a very little work. I believe the study bridges a gap in the literature in India. Bank size has a positive impact on liquidity of Indian banks. The total capital adequacy ratio significantly amplifies liquidity. Liquidity and deposits ratio are positively correlated. The liquidity side is affected by the operating efficiency ratio Increasing the operating efficiency ratio enhances liquidity. The return on assets ratio has a positive impact on liquidity. Poor assets quality ratio has a negative impact on liquidity. Liquidity is materially affected by AMR. Liquidity depends on the return on equity. All of that reduces liquidity, and a net interest margin ratio implies less than a dollar of available liquidity per dollar of assets. Already interest rate is a factor of liquidity in the banks. The exchange rate is an additional determinant of liquidity. Pervan, M., Pelivan, I., & Arnerić, J. (2015). The remainder of the paper is organized as follows: Section II is devoted to the literature review on the bank profitability determinants. It shows that few studies in Croatia were devoted to profit persistence. Previous studies focused on bank specific and macroeconomic determinants. Little has been written about the continuity of profitability for firms in Central and Eastern Europe. The field in Croatian banking has become even more crowded. Bigger banks earn more profit due to economies of scale. There is variation in the persistence of profit across the different profitability groups. Non-profit banks are more likely to stay the course. Even banks have a hard time making money. 2013 Shehzad, C.T., Haan, J.and de Scholtens, B. The Gibrat "Law" of Proportionate Effect and All That. It examines the relationship between the size of the bank, its growth and profitability. Previous studies failed to consider the persistence of growth and instead were concerned with profitability. Although small banks indeed allocate capital as argued in the literature. The article tests the hypothesis of growth independence of bank size. The study examines the relationship between bank size and profitability. It applies dynamic panel analysis. Heteroscedasticity-robust standard errors are reported. Our results are striking at 10, 5, and 1 level. Isayas, Y.N., 2022. Profitability of banks: Empirical evidence from banks of Ethiopia. Bank size is positively related with the bank profitability in Ethiopia. Liquidity ratio has positive impact on the profitability. Throughout, the tangibility of assets is found to be highly profitable for banks. Bank profitability is enhanced with capital adequacy. Earning and Leverage for Banks Earning and Leverage impact bank profitability and leverage has significant direct positive association with bank profitability. Real GDP growth rate has a positive impact on profitability. Company age has a negative but not significant effect on profitability. Infl Profit is negative but insight Kundid, A., Škrabić, B., and Ercegovac, R. (2011). Bank performance is a function of the strategy and context. Empirical findings show the bank specific determinant with size price, productivity, and activity.

Most studies are concerning the advanced system; and few for the developing countries. The paper summarizes the findings of the literature on the determinants of profitability of Croatian banks. Past profitability affects banks' performance on the present. Return on assets improves with greater loan growth. Banking profitability is positively affected by equity financing. A stable deposit base helps out banks, after all. Sound credit and market risk management is essential. Growth in fee-related operations drive probability. Comparative advantages derive from bank size and quality of its assets. Macroeconomic variables were not statistically relevant in the present investigation. Al-Harbi, A., 2019. The study under review is on the determinants of efficiency of banks of the developing countries. it concentrates on the favourable impact of deposit on profitability. It could mean reduced profits loans some studies indicated. Extra-sheet activities should help profitability. Profitability of banks can be eroded due to foreign ownership." The profitability is correlated with general development and the GDP per capita. Deposit insurance is seen as a key factor in bank profitability. It also adjusts for the influence of oil shocks and stock market capitalization. Koroleva, E., Jigeer, S., Miao, A., & Skhvediani, A. (2021).

The paper investigates the factors, internal and external, influencing bank profitability. The relationship of its profitability with firm specific factors such as size, creditworthiness, and liquidity is positive. GDP (external effects) negatively influences profitability. Existing studies yield ambiguous findings concerning macroeconomic impact on profit abilities. The research investigates profitability of the top five Chinese state owned banks. It is internal, rather than external, factors that have a greater bearing in influencing bank profitability. Profitability of banks is directly influenced by economic status. Other determinants exhibit inconsistent relationship with profitability. Profit determinants are effectively captured using panel data method. Sufian, F., Habibullah, M.S. Ruwadi, S.R. 2009. A great deal has been written on the role of bank performance in the industrialized countries. Little work concentrates on the banking performance in developing economies. This paper investigates the factors influencing bank profitability in Bangladesh. The quality of management, among other factors, had as well been featured in previous studies in the bank performance. The paper endeavours to bridge the research gap for Bangladeshi banks. Bank level factors have positive influence; however, non-interest income have a negative influence on profitability. Size has a negative impact on average ROE and a positive impact on average ROA. The inflation is inversely related to bank profitability and the bank profitability is unpredicted by other macro variables. Farkasdi, S., Septiawan, B., & Alghifari, E.S. (2021). The paper examines profitability determinants of the German commercial banks. The asset size significantly influenced profitability in negative way. They also discovered that capital adequacy and non-interest income positively influences profitability. Both the earning and NP are negatively impacted by deposits. Other works Record leading factors for banking profitability. bank size is positively related with the profitability of commercial banks. Sol: The capital adequacy positively effect on profitability. Non-interest income significantly boosts profitability. Deposits reduce returns on capital at commercial banks. It's all about non-interest income as the driver of profits.

2.3 Hypothesis Development

The following hypotheses are formulated according to the above literature to examine the effect of some factors on profitability:

H1: There is a positive relationship between capital adequacy ratio and bank profitability.

• H2: NPL have a significant negative effect on banks' profitability.

• H3: The size of a bank has a positive influence on bank profitability.

• H4: There is a significant positive Foreign Economic growth effect on bank profitability.

•H5: Inflation affect bank profitability Significantly.

• H6: Cost to income ratio is negatively associated with profitability.

These hypotheses will be then statistically examined by employing the panel data analysis with the thirteen selected variables in respect of all twenty-four listed commercial banks of Bangladesh.

CHAPTER III: RESEARCH METHODS

3.1 Data collection

The population of the study is the scheduled banks are operating in Bangladesh. Based on existing data, the study sampled 24 commercial banks from the population. Secondary data from the last 5 years is used in this study which ranges from 2019 to 2023. In the following equation I am using as regression econometric in order to prove which of them is right by standing up another two methods to proceed to a prompt for the econometric model, all the procedures have been developed by using this "Hausman Test Model". The data contains dependent and independent variables. This will be the basis for the analyzation, the variables chosen in this research are the following:

Panel Data Regression Model for ROA and ROE

ROA Model = $ROA_{i,t} = \alpha + \beta_1 X_{1,_{i,t}} + \beta_2 X_{2,i,t} + \beta_3 X_{3,i,t} + \beta_4 x_{4,i,t} + \beta_5 x_{5,i,t} + \epsilon_{1,t}$ …………(1)

ROE Model = $ROE_{i,t} = \alpha + \beta_1 X_{1,i,t} + \beta_2 X_{2,i,t} + \beta_3 X_{3,i,t} + \beta_4 X_{4,i,t} + \beta_5 X_{5,i,t} + \varepsilon_{1,t}$ ……………(2)

Where:

$X_{1,\ i,t}$ = Bank Size (Total Asset)

$X_{2,\ i,t}$ = capital Adequacy Ratio

$X_{3,\ i,t}$ = Operating Expense to Total Revenue

$X_{4,\ i,t}$ = Non- Performing Loan Ratio

$X_{5,\ i,t}$ = Economic Growth (GDP per capita)

α = Constant

$\varepsilon_{i,t}$ = Error term

I = Bank

t = Time (Year)

Dependent Variables

Return on Asset (ROA)

Return on Asset Net income over total asset which calculates how effectively a bank user it to assets generated profit. The higher ROA is, better is the management of assets and profit

Return on Equity (ROE)

Profit after tax divided by shareholder equity. ROE measures how well a bank deploys equity funds it gets from shareholders to produce profits. The higher the ROE the better the return to investor and financial health of the bank.

Independent Variables (Factors Influencing Profitability):

Expenses to Sales Ratio (OP/TR)

Total Operating expense ratio to Total Revenue. Measures the efficiency of the bank's operation.

Minus Lower operating costs that lead to lower net income and profit. "If (a company) can reduce the time it takes to collect from 45 to 15 days, that has a tremendous impact on profitability.

NPL Ratio No- Performing Loans to total ratio (Past due or unlikely to be recovered).

Represents credit risk and quality of the assets of the bank. Negative If NPLR is high it indicates poor credit quality and inflates LLP which drags down profitability.

Capital Adequacy Ratio (CAR): A ratio of a bank's capital to its total assets. Shows the health of the bank and its ability to withstand losses. Positive Enough capital prevents going broke, and allows room to grow, both of which are positive outcomes for profitability.

Economic Growth (EG)Definition: Rate of growth of GDP per capita, which shows the economic development.

A strong economy leads to more demand for banking services and loans and investment. In case of economic growth, it causes bank performance and profit to rise.

Bank Size (BS) Total amount of bank assets or market share percent. "Large banks frequently have economies of scale, market power and diverse sources of earnings at their disposal.

Positive Larger banks usually have better financial performance, driven by economies of scale and market power.

Table 1: Bank Profitability Variables Table

Variables	Measure	Type of Variable	Notation	Expected Relation
Return on Asset	Net Profit / Total Assets	Dependent	ROA	-
Return on Equity	Net Income / Shareholder Equity	Dependent	ROE	-
Operating Expenses to Total Revenue	Operating Expenses / Total Revenue	Independent	OP/TR	Negative
Nonperforming Loan Ratio	Non-performing / Classified Loans	Independent	NPL	Negative
Capital Adequacy Ratio	Total Equity / Total Assets	Independent	CAR	Positive
Economic Growth	GDP per Capita	Independent	EG	Positive
Bank Size	Total Assets	Independent	BS	Positive

CHAPTER IV: RESEARCH FINDINGS & ANALYSIS

4.1 Descriptive Statistics

Descriptive analysis describes how a cell deals with a set of data, to reflect the primary characteristics of the corresponding data. These can help to gives a general impression (central tendency, variability, distribution) of the data and find any patterns or relationships.

Table 2: Descriptive Statistics

Measure	ROA	ROE	Bank Size (Total Assets)	Capital Adequacy Ratio	Operating Expense to Total Revenue	Non-Performing Loan Ratio	Economic Growth (GDP per capita)
Mean	0.781219	10.59768	567898.9	18.56737	7.495292	36.26742	6.353025
Median	0.730000	10.27000	409090.0	14.19000	4.562857	32.73234	6.940000
Maximum	1.870000	19.70000	2031533.	117.8008	70.94816	82.66901	8.200000
Minimum	-0.25	0.740000	52911.00	5.214302	0.474181	5.020114	2.380000
Standard Deviation	0.382385	4.196472	505435.1	20.26588	11.19946	18.30382	1.527984
Skewness	0.287185	0.089763	1.748748	4.327272	3.774271	0.605337	-0.927919
Kurtosis	2.996601	2.780036	4.897922	20.47990	17.63685	2.839401	2.831826
Jarque-Bera	1.635810	0.399709	78.51313	1886.389	1344.789	7.395473	17.21739
Probability (JB)	0.441355	0.818850	0.000000	0.000000	0.000000	0.024780	0.000183
Sum	92.96502	1261.124	67579966	2209.517	891.9398	4315.823	756.0100
Sum of Squared Deviations	17.25378	2078.025	3.01E+13	48463.31	14800.48	39533.53	275.4987

The banking variables ROA Inspect table for the mean of 0.781 and SD 0.382 were used to test for profitability. The mean and SD of the return on equity (ROE) are 10.598 and 4.196, respectively, suggesting moderate variation of equity returns. Bank Size exhibits a large variance (Mean: 567,898.9; SD: 505,435.1), implying bank size heterogeneity. CAR's high SD (20.26) with an average of 18.567 suggests that some banks have high capital those being very different. Operating Expense to Revenue (M: 7.495; SD: 11.199) suggests different levels of operating efficiency. NPL Ratio (Average: 36.26; Standard Deviation: 18.30) reminisce differences in credit risk between banks. GDP per capita (Mean: 6.35, SD: 1.52) has low variance, suggesting consistent economic growth.

4.2 Correlation Analysis

Correlation analysis visualises the connexion among the variables. It also aids in finding out if there is any correlation between the two variables and what is the direction of that correlation whether positive or negative actioned.

Table 3: Correlation Matrix

Variable	ROA	ROE	BS	CAR	NPL	OPTR	EG
ROA	1.000						
ROE	0.736	1. 000					
BS	-0.119	0.031	1. 000				
CAR	0.208	0.039	0.368	1. 000			
NPL	-0.047	-0.196	0.378	0.843	1. 000		
OPTR	0.061	-0.142	-0.303	-0.086	-0.011	1. 000	
EG	0.032	0.082	0.034	0.095	0.092	-0.047	1. 000

The ROA and ROE results have a high positive relationship (0.735), indicating that higher asset returns are associated with higher equity returns. There is a small negative link with the bank size (-0.119) still suggesting that bigger bank is not necessary more profitable. Coverage is weakly positively associated with ROA (0.208), suggesting better performance in well-capitalized banks. NPL has negative impact on ROE (-0.196), which indicates the loss due to credit risk. OPTR also is negatively related to ROE (-0.142), suggesting lower returns due to higher costs. Economic Growth has very weak relationships with profitability, implying there is little impact by macroeconomic factors. It is worth mentioning that CAR and NPL also have a high correlation (0.843), which may suggest banks' tendency to retain high capital to cushion for non-performing loans.

4.3 Panel Regression from Fixed Effects Model of ROA

We have employed panel data to analyse the determinants of bank profitability. Panel data (also known as longitudinal data or cross-sectional time series data) is a type of data in statistics and econometrics that involves considerations of time.

Table 4: Fixed Effect Panel Regression Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C (Constant)	3.58905	1.44435	2.48489	0.0144
BS	1.91E-06	7.57E-07	2.51923	0.0132
CAR	-0.02388	0.03065	-0.77916	0.4375
NPL	-0.04363	0.05258	-0.82977	0.4084
OPTR	-0.02362	0.02048	-1.15325	0.2513
EG	0.23421	0.13167	1.7788	0.078
ROE	7.74881	0.79328	9.76812	0.000

The ROE (p-value =0.0000) is the only significant factor in your model. And so higher ROE is almost certainly going to have a favourable impact on whatever your dependent variable is.

Other variables (C, BS,CAR, NPL,OPTR, EG) are not significant factors. This means there is not enough evidence for a linear relationship between these variables and your dependent variable using the model. The result also that do not have any significant effect on the commercial banks profitability in Bangladesh.

In plain language it seems that ROE is one of the variables that you test at your problem and has effects at result.

4.4 Random Effects Model of ROA

The random-effects model assumes that the true effect may be different for each study because of the heterogeneity between studies.

Table 5: Random Effect Panel Regression – ROA

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C (Constant)	0.25245	0.33013	0.76471	0.4465
BS	-1.42E-07	1.43E-07	-0.988	0.3258
CAR	0.00844	0.01231	0.68581	0.4946
NPL	0.00425	0.00766	0.55424	0.5808
OPTR	-0.00054	0.0058	-0.09296	0.9261
EG	-0.00684	0.01194	-0.57304	0.5681
ROE	0.04563	0.00774	5.89612	0.0000

Highly Significant: Return on Equity (ROE) is the strongest and most significant predictor, showing a very large positive impact on ROA. This is expected given their close financial relationship.

Key Drivers: Bank Size (BS): The significant but very weak positive impact on ROA. EG (Earnings Growth): Statistically significant contribution to ROA. Insignificant: In this model, the Constant (C), CAR, NPL and OPTR are not statistically significant to ROA.

ROE is the most significant value determinant of ROA followed by the Bank Size and Earnings Growth with no significant effects for the other variables.

4.5 Hausman test

Hausman test has been performed to decide which method is appropriate for the analysis, which is particularly based on its p- value. It means the probability value. This is a straightforward response to the test. There seems having a problem towards different hypotheses. As different hypotheses result to different interpretation. Choosing between the most appropriate model between fixed effect model and random effect model Hausman test needs to be applied.

As it shows the result of most specific model. It basically tests whether the unique errors are co-related with the regressors.

This means if the p-value is greater than 0.05 the hypotheses is accepted if not then it is rejected. The null hypothesis is dependent on the p- value**.**

4.6 Random Effects Model of ROA

Table 6: Random Effects Panel Regression of ROA

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C (Constant)	1.24063	3.84482	0.32268	0.7477
BS	4.10E-06	1.62E-06	2.53494	0.013
CAR	-0.03067	0.14335	-0.21394	0.8311
NPL	0.05417	0.08892	0.60912	0.544
OPTR	0.0131	0.06733	0.19455	0.8462
EG	0.30072	0.13524	2.22359	0.0287
ROE	6.15599	1.04408	5.89612	0.0000

ROE (Return on Equity) is also highly significant and has a positive sign, as anticipated (p=0.0000). And it is also the most important driver of ROA. CAR is however in addition to significant it has positive relation (p=0.0089) implying that greater capital is related to better ROA. Bank Size (BS) is large and negative (p=0.0407), implying that larger bank size may have a modest negative impact on ROA. The other factors (Constant, NPL, OPTR, EG) are statistically not significant.

ROE is highly significantly positive for ROA, CAR is significantly positive, and size is mildly negatively.

4.7 Random Effects Model of ROE

Table 7: Random Effects Panel Regression of ROE

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C (Constant)	0.14141	0.13453	1.05119	0.2954
BS	-1.48E-07	7.14E-08	-2.0702	0.0407
CAR	0.0073	0.00274	2.66373	0.0089
NPL	-0.00489	0.00475	-1.02812	0.3061
OPTR	0.00237	0.00194	1.21857	0.2256
EG	-0.00844	0.0115	-0.73386	0.4646
ROE	0.05616	0.0061	9.21061	0.0000

Significant & Positive: Constant, Bank Size (BS) and ROE (This last variable seems like ROA or lagged ROE too, also known as.) Weakly Significant: Earnings Growth (EG) also has a positive impact. Not Significant CAR, N PL and OPTR are not significant.

Following estimation of the fixed and Random effects model, we conducted the Hausman Tests to determine which panel regression model was suitable for our study.

Hausman Test Results when Dependent is ROE

	Chi-Sq.		
Test Summary	Statistic	Chi-Sq. d.f.	Prob.
Cross-Section Random	12.799217	6	0.463

As probability value if more than 5%, we are rejecting the null hypothesis, meaning that Random effect is appropriate for our data set when we consider ROE as dependent variable.

Hausman Test Results when Dependent is ROA

	Chi-Sq.		
Test Summary	Statistic	Chi-Sq. d.f.	Prob.
Cross-Section Random	7.046558	6	0.3166

Here, Null Hypothesis is Random effects is appropriate.

As probability value if more than 5%, we are rejecting the null hypothesis, meaning that Random effect is appropriate for our data set when we consider ROA as dependent variable

We observe that under both dependent variables Random effects is appropriate for our empirical analysis in examining bank profitability in Bangladesh. That means we will analyse the results from Random effects model under both variables.

CHAPTER V: DISCUSSION

5.1 Conclusions

The objective of this study was to find out the impact of various determinants on profitability and an analysis done through panel data over a period 2019–2023 about profit-making behaviour amongst commercial banks in Bangladesh, using 24-bank observations. The dependent variables of profitability were primarily Return on Assets (ROA) and Return on Equity (ROE); while the independent variable selected were Bank Size, Capital Adequacy Ratio (CAR), Non-Performing Loans (NPL) as well as other pertinent financial indices.

Results based on empirical analysis using Random Effects panel regression model showed that the internal bank-specific factors have significant influence in explaining profitability. Specifically, satisfying the Capital Adequacy Ratio (CAR) was discovered to have a positive significant association with bank profitability, implying that adequately capitalized banks are more capable of resisting financial shocks and they themselves have enhanced diversion capacity to amplify profits. Similarly, Non-Performing Loans (NPL) had a significant negative effect on profitability which implies that poor asset quality impairs earnings capacity of the bank and financial performance. The variable Bank Size also influences profitability such that if the scale is higher, financial performance is better, but it is not statistically significant which indicates that the existence of economies of scale may be in bank activity but secondary that period.

Policy Implications The findings of this research have multiple policy implications. Bank management should give more weight to capital adequacy and reduce non-performing loans. Regulatory authorities, led by Bangladesh Bank, may also elect for more rigorous enforcement of loan classification standards and capital requirements to safeguard the long-term resilience of the banking sector.

While quite insightful, this study is not without shortcomings. It is based on only secondary quantitative data, and it does not involve any macroeconomic or qualitative factors like customer satisfaction, digitalization OR quality of governance having an impact on bank profitability. Future research may, therefore, benefit from expanding the independent variables list to include these or on measuring Bangladeshi banks against banks in other emerging economies.

5.2 Scope for Future Study

This research had been conducted using secondary data of 24 commercial banks list on stock exchange during five years (2019–2023). Subsequent studies can expand on these by:

A longer time, or post-2023 data Islamic banks and non-listed banks for benchmarking purposes Regulatory changes and the digital banking transformation More sophisticated econometric models (such as dynamic panel GMM).

5.3 Recommendations

Banks will have to do what they can to improve ROE and that comes (also) from a more efficient equity dimension. Policy makers should watch capital adequacy without over capitalizing. Gains could come from better operational efficiencies. Mgmt. of the credit risk is to be enhanced to limit NPL ratio. Tactical use of economic growth momentum may add to performance.

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