Internship Report On

Determinants of Bank's Profitability: A Study on Sonali Bank PLC

Submitted in partial fulfillment of the requirements for the degree of Bachelor of Business Administration (BBA)

Supervised By

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ID No: 12117015
Session: 2020-2021
Program: BBA
Department of Finance and Banking
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20th April, 2026

Letter of Transmittal

20th April, 2026

Manjurul Alam Mazumder

Associate Professor

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Comilla University, Cumilla.

Subject: Submission of Internship Report on **"Determinants of Bank's Profitability: A Study on Sonali Bank PLC"**

Honorable Sir,

With due respect, I would like to submit my internship report titled "Determinants of Bank's Profitability: A Study on Sonali Bank PLC", which has been prepared as a partial fulfillment of my degree requirements.

In this report, I have attempted to analyze the determinants of bank profitability, focusing on Sonali Bank PLC. The study examines how factors such as Capital Adequacy Ratio (CAR), Loan-to-Deposit Ratio (LDR), Cost-to-Income Ratio (CIR), Bank Size (BS), and Net Interest Margin (NIM) influence the bank's profitability, measured by Return on Assets (ROA).

I would like to express my sincere gratitude for your valuable guidance, continuous support, and encouragement throughout the preparation of this report. I sincerely hope that this report meets your expectations. I would be grateful if you kindly accept and approve my submission.

Thank you for your kind consideration.

Sincerely yours-

(Md. Rizon Khan)

Regi. No: 12117015

Session: 2020-21

Department of Finance and Banking,

Comilla University, Cumilla.

Supervisor's Declaration

20th April 2026

This is to certify that the research report on "**Determinants of Bank's Profitability: A Study on Sonali Bank PLC**" has been completed by Md Rizon Khan (Id No: 12117015, Reg No: 12117015, Session: 2020-2021), as partial fulfillment of the requirements for the Bachelor of Business Administration (BBA) degree from the Department of Finance and Banking, Faculty of Business Studies, Comilla University, Cumilla.

This report has been prepared under my supervision and is a result of authentic work carried out successfully.

(Manjurul Alam Mazumder)

Associate Professor
Department of Finance and Banking
Comilla University, Cumilla.

Student’s Declaration

I, **Md. Rizon Khan**, a student of the Department of Finance and Banking, BBA 8th Batch, bearing ID: 12117015, hereby declare that the research report titled “Determinants of Bank’s Profitability: A Study on Sonali Bank PLC” represents the result of my own work, conducted under the supervision of **Manjurul Alam Mazumder**, Associate Professor, Department of Finance and Banking, Comilla University, Cumilla.

I further declare that this report has been prepared for academic purposes as part of the BBA program, and I have used the current data and situation of the organization in this study.

(Md. Rizon Khan)

Id No: 12117015
Session: 2020-21
BBA 8th Batch
Department of Finance and Banking
Comilla University, Cumilla.

Acknowledgement

I would like to express my sincere gratitude to Almighty Allah for granting me the strength, patience, and ability to successfully complete this internship report titled “Determinants of Bank’s Profitability: A Study on Sonali Bank PLC”.

I am deeply indebted to my respected supervisor Manjurul Alam Mazumder, for his continuous guidance, valuable suggestions, and constructive feedback throughout the preparation of this report. His support and encouragement have been instrumental in completing this study effectively.

I would also like to extend my heartfelt thanks to the management and officials of Sonali Bank PLC, who provided me with the necessary information, practical insights, and cooperation during my internship period. Their assistance greatly contributed to the successful completion of this report.

I would like to acknowledge the supportive academic environment provided by my department, which has enhanced my knowledge and research capabilities. I am also thankful for the opportunity to apply theoretical knowledge in a practical setting through this internship program.

Furthermore, I am grateful to my teachers, friends, and family members for their constant support, motivation, and encouragement throughout my academic journey. Their inspiration has been a key factor in completing this report successfully.

Finally, I acknowledge all those who have directly or indirectly contributed to the completion of this report.

Internship Certificate

সোনালী ব্যাংক পিএলসি.

Sonali Bank PLC.

"বিশ্বস্ত ও স্মার্ট"

No: SBPLC/Cant/Cumilla/Intern/2026/121 Date: 25/03/2026

TO WHOM IT MAY CONCERN

This is to certify that **Md. Rizon Khan**, **S/O Md. Saifur Rahman Bakul & Hosneara**, a student of the Department of Finance and Banking of Comilla University, session: 2020–2021, bearing ID: 12117015, has successfully completed his internship program at **Sonali Bank PLC, Cumilla Cantonment Branch, Cumilla from 28/01/2026.** He was found regular, sincere, and dutiful in his work.

During the period, he went through the day-to-day operations of the different wings of the bank and gathered good knowledge about the overall banking department.

I wish him every success in life.

25·03·26

Abdur Rahman
Manager
(Senior Principal Officer)
Sonali Bank PLC
Cumilla Cantonment Branch, Cumilla.

Abdur Rahman
Manager
Sonali Bank PLC.
Cumilla Cantonment Branch, Cumilla.

Certificate of Anti-Plagiarism

It is certified that the Internship Report titled "Determinants of Bank's Profitability: A Study on Sonali Bank PLC"submitted by Md Rizon Khan (Id No.12117015) of the Department of Finance and Banking, Comilla University has been examined with the anti-plagiarism tool.

I undertake that:

I. The report has significant new work/knowledge as compared already published or are under consideration to be published elsewhere. No sentence, equation, diagram, table, paragraph or section has been copied verbatim from previous work unless it is placed under quotation mark and duly referenced.

II. The work presented is original and own work of the author i.e. there is no plagiarism. No ideas, processes, results or words of others have been presented as the author's own work.

III. There is no fabrication of data or results which have been compiled and analyzed.

IV. There is no falsification by manipulating research materials, equipment or processes, or changing or omitting data or results such that the research is not accurately represented in the research record.

N.B. Plagiarism Checker Report received from the Finance and Banking Department, Comilla University is also enclosed along with this Summary of Results.

Date: 20th April, 2026

Place: Comilla University, Cumilla

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Executive Summary

This report investigates the determinants of profitability of Sonali Bank PLC, a key state-owned commercial bank playing a significant role in Bangladesh's financial system. Profitability is measured using Return on Assets (ROA), which reflects how efficiently the bank utilizes its assets to generate earnings. The study focuses on identifying how selected internal financial factors influence profitability over the period 2015–2024.

The analysis is conducted using a quantitative time-series approach based entirely on secondary data collected from the bank's annual reports and the Dhaka Stock Exchange. To ensure robustness, the study employs descriptive statistics, correlation analysis, and Ordinary Least Squares (OLS) regression, along with diagnostic tests for multicollinearity, heteroskedasticity, and autocorrelation. The explanatory variables include Capital Adequacy Ratio (CAR), Loan to Deposit Ratio (LDR), Cost to Income Ratio (CIR), Net Interest Margin (NIM), and Bank Size (LSIZE).

The empirical findings demonstrate that profitability is primarily influenced by operational efficiency and income-generating capacity. Net Interest Margin (NIM) emerges as the most significant and positive determinant, indicating that effective management of interest income and expenses is critical for enhancing financial performance. In contrast, Cost to Income Ratio (CIR) shows a strong negative and statistically significant relationship with profitability, highlighting that inefficiency in cost management directly reduces earnings. Additionally, Capital Adequacy Ratio (CAR) exhibits a positive and statistically significant effect in the robust model, suggesting that a stronger capital base contributes to financial stability and improved profitability.

Conversely, Loan to Deposit Ratio (LDR) and Bank Size (LSIZE) do not show statistically significant effects on profitability. This implies that neither aggressive lending strategies nor expansion in size alone is sufficient to enhance financial performance. Rather, the quality of financial management and operational discipline are more decisive factors.

In conclusion, the study establishes that profitability in Sonali Bank PLC is largely driven by efficient cost management, effective interest margin optimization, and adequate capital strength. Based on these insights, it is recommended that the bank prioritize improving interest income strategies, strengthening cost control mechanisms, and maintaining a solid capital structure to ensure sustainable financial performance in the long run.

Acronym

Acronym	**Full Form**
ROA	Return On Assets
CAR	Capital Adequacy Ratio
LDR	Loan to Deposit Ratio
CIR	Cost to Income Ratio
LSIZE	Bank Size
NIM	Net Interest Margin
SKEW	Skewness
KURT	Kurtosis
VIF	Variance Inflation Factor
OLS	Ordinary Least Squares

Chapter 1: Introduction

1.1 Introductions

A strong and efficient banking sector is essential for the steady growth of any economy, as it helps channel savings into productive investments. In the existing literature, profitability is often considered one of the most reliable indicators of a bank's overall performance, since it shows how effectively the bank is able to utilize its resources and generate income (Athanasoglou et al., 2008; Dietrich & Wanzenried, 2011). More recent studies have also pointed out that internal bank-specific factors continue to play a crucial role in shaping profitability, particularly in developing countries (Naili & Lahrichi, 2022; Saif-Alyousfi, 2022).

In Bangladesh, state-owned commercial banks such as Sonali Bank PLC hold a significant position in the financial system by ensuring stability and expanding banking services across different regions. While working as an intern at Sonali Bank PLC, I noticed that the bank's profitability is influenced by a number of internal financial indicators rather than a single factor.

Keeping this in mind, the present study attempts to explore the determinants of profitability of Sonali Bank PLC by using Return on Assets (ROA) as the dependent variable. To explain profitability, several key variables have been taken into account, including Capital Adequacy Ratio (CAR), Loan to Deposit Ratio (LDR), Cost to Income Ratio (CIR), Net Interest Margin (NIM), and the size of the bank, which is measured by the natural logarithm of total assets (LSIZE). The analysis is based on recent 10 years, data covering the period from 2015 to 2024, with the aim of understanding how these factors have influenced the bank's financial performance over time.

1.2 Background of the Study

The banking sector is widely considered one of the key drivers of economic development, as it facilitates the flow of funds from savers to investors and supports overall financial stability. In developing economies like Bangladesh, banks play an even more important role by contributing to investment, employment, and financial inclusion. As a result, the performance of banks, particularly their profitability, has become an important topic for researchers and policymakers over time (Mehzabin et al., 2023; Mondol & Wadud, 2022).

Profitability is often used as a primary measure of a bank's success, as it reflects how efficiently the bank is able to utilize its available resources. However, profitability is not determined by a single factor. Instead, it depends on a combination of internal financial conditions and management practices. Earlier studies suggest that factors related to capital strength, liquidity management, cost efficiency, and income generation have a noticeable impact on bank performance (Berger, 1995; Goddard et al., 2004).

In this context, certain financial indicators are commonly used to capture these internal conditions. For instance, Capital Adequacy Ratio (CAR) provides an idea about the bank's ability to withstand financial risks, while Loan to Deposit Ratio (LDR) reflects how actively the bank is using its deposit base for lending purposes. At the same time, Cost to Income Ratio (CIR) helps to understand how efficiently the bank is managing its operating expenses in relation to its income. Similarly, Net Interest Margin (NIM) indicates how effectively the bank is earning from its core interest-based activities. In addition, the overall size of the bank, measured through the natural logarithm of total assets (LSIZE), can also influence performance, as larger banks may benefit from scale advantages but may also face operational complexities.

In recent years, the banking sector of Bangladesh has gone through several changes, including increased competition and regulatory adjustments, which have made profitability management more challenging. In such a situation, it becomes necessary to take a closer look at how these internal factors influence the performance of individual banks.

Sonali Bank PLC, being one of the largest state-owned commercial banks in Bangladesh, plays a significant role in the country's financial system. Due to its extensive operations and wide customer base, understanding the determinants of its profitability is particularly important. While working at Sonali Bank PLC, it was observed that the bank's financial performance is influenced by multiple internal variables rather than a single factor.

Considering these aspects, the present study aims to examine how these bank-specific factors affect profitability, measured by Return on Assets (ROA), using data collected over the period from 2015 to 2024. This analysis is expected to provide a clearer understanding of the key drivers of profitability and contribute to a better evaluation of the bank's financial performance over time (Flamini et al., 2009).

1.3 Problem Statement

Although Sonali Bank PLC is one of the largest state-owned commercial banks in Bangladesh, its profitability has not always remained stable over time. In different years, the bank has shown fluctuations in performance, which raises questions about what factors are actually influencing its profitability. Simply looking at profit figures does not give a clear explanation, because there are several internal elements that may be working behind the changes.

While working at Sonali Bank PLC during my internship, I noticed that the bank's performance cannot be explained by a single factor. Issues related to capital strength, loan management, operating costs, and income generation seem to affect the overall results in different ways. However, these factors are not always analyzed together in a structured manner. As a result, it becomes difficult to understand which of them has a stronger impact on profitability and how they interact with each other over time.

Another challenge is that, in the context of Bangladesh, state-owned banks like Sonali Bank often have additional responsibilities, such as supporting government initiatives and serving a wider population. These responsibilities may sometimes influence their financial outcomes, making profitability more complex compared to private banks. Because of this, it is important to take a closer look at the internal financial indicators of the bank rather than relying only on general assumptions.

In this study, Return on Assets (ROA) is used as a measure of profitability, as it reflects how efficiently the bank uses its total assets to generate income. At the same time, several bank-specific variables such as Capital Adequacy Ratio (CAR), Loan to Deposit Ratio (LDR), Cost to Income Ratio (CIR), Net Interest Margin (NIM), and bank size (LSIZE) are considered to examine their influence on profitability. However, there is still a lack of clear evidence on how these variables collectively affect the performance of Sonali Bank PLC over a longer period. Therefore, the main problem addressed in this study is to identify and analyze the key internal factors that influence the profitability of Sonali Bank PLC using data from 2015 to 2024. By doing so, the study aims to provide a clearer understanding of the relationship between these financial indicators and profitability, which may help in better decision-making and performance evaluation.

1.4 Significance of the Study

The importance of this study mainly comes from the need to better understand what actually drives the profitability of a state-owned commercial bank like Sonali Bank PLC. Since profitability is closely linked with a bank's long-term sustainability, knowing the factors behind it can be useful not only for academic purposes but also for practical decision-making.

One of the key values of this study is that it focuses on bank-specific internal factors rather than broad external issues. By looking at variables such as CAR, LDR, CIR,LSIZE and NIM, the study tries to show how everyday financial decisions inside the bank may influence overall performance. This can help in identifying which areas require more attention, especially in terms of cost control, asset utilization, and income generation.

Another important aspect is that the study is based on real data from Sonali Bank PLC over a relatively long period, from 2015 to 2024. This allows a more realistic understanding of how the bank has performed over time, instead of relying on short-term observations. For students and future researchers, this can serve as a reference point for similar studies on the banking sector in Bangladesh.

From a practical point of view, the findings of this study may also be helpful for bank management. If the key factors affecting profitability are clearly identified, it becomes easier to take more informed decisions and improve financial performance. At the same time, policymakers and stakeholders may also get a better idea about the condition of state-owned banks.

Overall, this study tries to connect theoretical ideas with real-world data and experience. By focusing on Sonali Bank PLC, it adds a small but meaningful contribution to understanding how profitability works in the context of Bangladesh's banking sector.

1.5 Scope of the Study

This study is limited to analyzing the profitability of Sonali Bank PLC by focusing on a set of selected internal financial factors. It does not attempt to cover the entire banking sector of Bangladesh; rather, the analysis is centered on a single state-owned commercial bank in order to gain a more focused and detailed understanding of its performance.

The study uses annual data of Sonali Bank PLC for the period from 2015 to 2024. By covering these ten years, the analysis tries to capture changes in performance over time instead of depending on a short-term view. However, the findings are based only on the available data for this period, which means the results may differ if a longer timeframe or more recent data is considered.

In terms of variables, the study mainly looks at internal bank-specific indicators such as Capital Adequacy Ratio (CAR), Loan to Deposit Ratio (LDR), Cost to Income Ratio (CIR), Net Interest Margin (NIM), and bank size (LSIZE), while profitability is measured using Return on Assets (ROA). External factors such as inflation, interest rate changes, or macroeconomic conditions are not included in this analysis. Because of this, the study focuses more on internal management and operational aspects rather than the broader economic environment.

Another point to consider is that the findings of this study are specific to Sonali Bank PLC and may not be directly applicable to other banks, especially private commercial banks that operate under different conditions. Still, the results may provide some general insights that could be useful for understanding similar institutions.

Overall, the scope of this study is to provide a clear and focused analysis of how selected internal financial factors influence the profitability of Sonali Bank PLC within a defined time period, without going beyond these specific boundaries.

1.6 Research Questions

To understand the factors influencing the profitability of Sonali Bank PLC, this study is guided by the following questions:

Q1: How does the Capital Adequacy Ratio (CAR) relate to the profitability of Sonali Bank PLC?

Q2: In what way does the Loan to Deposit Ratio (LDR) affect the bank's ability to generate profit?

Q3: Does the Cost to Income Ratio (CIR) have any noticeable impact on the bank's profitability?
Q4: How does Net Interest Margin (NIM) influence the earnings performance of the bank?
Q5: What role does the overall size of the bank (LSIZE) play in shaping its profitability?

These questions are designed to explore how each internal factor is connected to profitability, rather than looking at the bank's performance in a general way.

1.7 Objectives of the Study:

The main objective of the study is to examine the determinants of profitability of Sonali Bank PLC.

Specific objectives of the study are as follows:

To analyze how the Capital Adequacy Ratio (CAR) is connected with profitability.
To find out how Loan to Deposit Ratio (LDR) affects the bank's earnings.

To identify how Cost to Income Ratio (CIR) is related to the bank's performance.

To look at how Net Interest Margin (NIM) influences profitability.

Chapter 2: Organizational Profile Of Sonali Bank PLC

2.1 Introduction

This chapter offers a detailed picture of Sonali Bank PLC, focusing on how the bank operates and why it holds importance within Bangladesh's financial system. Since the main study looks at profitability, understanding the organization itself becomes necessary. The discussion in this chapter helps to connect the bank's structure, activities, and overall role with its financial performance.

2.2 Background and Establishment

Sonali Bank PLC is recognized as the largest state-owned commercial bank in Bangladesh. It began its journey in 1972, shortly after the country's independence, when several existing banks were brought together under a nationalized system. From that point onward, the bank gradually expanded its services and established a strong presence across the country.

Over time, Sonali Bank has adapted to changes in the banking environment. It has introduced modern banking practices, improved internal systems, and taken steps toward digitalization to remain relevant in a competitive sector.

2.3 Nature of Operations

The bank carries out a wide range of financial activities. Its operations are not limited to basic deposit and loan services; rather, it handles various types of transactions involving individuals, businesses, and government institutions.

A significant part of its responsibility comes from its public ownership. Sonali Bank often participates in government-related financial activities, including fund management and implementation of policy-driven programs. Because of this, its role goes beyond profit-making and includes supporting broader economic objectives.

2.4 Vision, Mission and Strategic Direction

Vision:

To strengthen its position as a dependable banking institution that contributes to sustainable economic progress.

Mission:

- To deliver efficient financial services,
- Ensure stability in operations and

▪ Support national development through responsible banking practices.

Strategic Focus:

▪ Improving service quality and customer experience.

▪ Strengthening risk management practices.

▪ Expanding digital banking services.

▪ Enhancing operational efficiency.

2.5 Management and Organizational Setup

The bank follows a structured chain of command. Policy decisions are taken at the top level by the Board of Directors, while execution is handled by senior management led by the Managing Director and CEO.

Different functional divisions manage specific tasks such as credit operations, foreign exchange, general banking, and administrative activities. This division of responsibilities helps maintain order in daily operations and ensures that each segment of the bank runs smoothly.

2.6 Range of Services

Sonali Bank PLC provides a variety of financial services designed to meet different needs:

▪ Deposit facilities, including savings and current accounts

▪ Loan and financing options for individuals and businesses

▪ Foreign exchange services for trade-related transactions

▪ Remittance services for both domestic and international transfers

▪ Digital banking services to improve accessibility and speed

▪ Through these services, the bank serves a diverse group of customers across different sectors.

2.7 Branch Network and Coverage

One of the key strengths of Sonali Bank is its extensive branch network. The bank operates across both urban centers and rural areas, allowing it to reach a wide customer base. This widespread presence plays an important role in promoting financial inclusion, especially in regions where banking facilities are limited.

In addition to local operations, the bank is also involved in international transactions, mainly through foreign exchange services and remittance handling.

2.8 Contribution to the Economy

Sonali Bank PLC plays a noticeable role in supporting the national economy. As a state-owned institution, it is actively involved in financing different sectors such as agriculture, industry, and trade. It also assists in handling government transactions and public funds. Beyond financial activities, the bank contributes to economic stability by ensuring that essential banking services remain accessible to a large portion of the population.

2.9 Performance and Current Challenges

The performance of the bank depends on how effectively it manages its internal resources and responds to external conditions. In recent years, efforts have been made to improve efficiency, strengthen financial control, and modernize operations.

At the same time, certain challenges remain. These include maintaining cost efficiency, managing loan quality, and adapting quickly to technological changes. Addressing these issues is important for improving overall performance.

Chapter 3: Literature Review

In recent years, bank profitability has continued to receive considerable attention in financial research, mainly because it reflects how effectively banks are able to utilize their resources and remain competitive in a changing environment (Naili & Lahrichi, 2022; Sultana et al., 2021). Rather than being driven by a single element, profitability is generally shaped by a mix of internal financial conditions and managerial decisions, which work together over time (Mohammad et al., 2015; Saif-Alyousfi, 2022).

A number of recent studies have focused on bank-specific factors while explaining variations in profitability. Capital adequacy ratio (CAR), for instance, is often linked with financial strength, as a well capitalized bank is usually in a better position to absorb risks and maintain stable performance (Hasan et al., 2025; Lee & Hsieh, 2013). Alongside this, the way a bank manages its lending activities, often measured by loan to deposit ratio(LDR), also matters. If loans are not properly monitored, it may lead to liquidity issues, which can eventually affect earnings (Faniband, 2020; Karim et al., 2024; Rahman, 2016; Salsabila et al., 2024).

Efficiency in operations is another area that has been widely discussed. Research indicates cost to income ratio(CIR) that when operating costs become too high compared to income, it can negatively affect profitability (Adeabah & Andoh, 2020; Kiliç, 2025). On the other hand, banks that maintain better control over their expenses are more likely to perform well financially (Anggraini et al., 2025; Jeris, 2021).

Income-related measures, particularly net interest margin(NIM), have also been highlighted as important indicators. A higher margin often suggests that the bank is managing its interest-based activities more effectively (Ahmad & Matemilola, 2013; Yuan et al., 2022). At the same time, the size bank (LSIZE), measured by the natural logarithm of total asstes is often considered when analyzing performance. Larger institutions may enjoy certain advantages such as economies of scale, although this relationship is not always consistent across different banking environments (Akinola, 2022; Aladwan, 2015).

In the context of developing economies, recent research suggests that internal financial indicators tend to play a more dominant role compared to external macroeconomic factors (Rehman et al., 2018). In Bangladesh, some studies have pointed out that state-owned banks operate under additional pressures, including policy-related responsibilities and higher operating costs, which can influence their profitability (Banik & Das, 2013; Rayhan et al., 2011).

Even though there is a growing body of research on bank profitability, certain limitations can still be observed. Many studies rely on cross-country data or focus mainly on private commercial banks. Fewer studies examine individual state-owned banks over a longer period, and not all of them consider a consistent set of internal variables together. As a result, the combined effect of these factors is not always clearly understood (Haque, 2023; Rajee et al., 2025).

Although a good number of studies have examined bank profitability, most of them focus on cross-country data or mainly on private commercial banks. Very few studies give specific attention to individual state-owned banks in Bangladesh, especially over a longer time period. Because of this, it becomes difficult to clearly understand how profitability behaves in the case of a large public bank like Sonali Bank PLC. Another issue is that earlier studies often consider only a limited number of variables or focus on them separately. As a result, the combined effect of important internal factors such as capital strength, loan management, cost efficiency, interest margin, and bank size is not always clearly explained. This creates a gap in understanding how these factors work together to influence profitability. In addition, many studies are based on short-term data, which may not fully capture changes in performance over time. There is still a lack of research that uses a consistent set of internal financial variables and examines them over a longer period using recent data.

Considering these points, this study tries to address the gap by focusing on Sonali Bank PLC and analyzing how CAR, LDR, CIR, NIM, and LSIZE affect profitability, measured by ROA, over the period from 2015 to 2024. By taking a single-bank approach and using a longer time frame, the study aims to provide a clearer and more practical understanding of the factors influencing profitability in this context.

Chapter 4: Research Methodology

4.1 Methodology

This study follows a quantitative approach to examine the factors that influence the profitability of Sonali Bank PLC. The analysis is based on secondary data collected from different reliable sources. Since the data is taken for a single bank over a period of time from 2015 to 2024, the study uses a time series perspective rather than a panel structure.

The main purpose of this methodology is to understand how selected internal financial variables are related to the bank's profitability. Return on Assets (ROA) has been used as a measure of profitability, while Capital Adequacy Ratio (CAR), Loan to Deposit Ratio (LDR), Cost to Income Ratio (CIR), Net Interest Margin (NIM), and bank size (LSIZE) have been considered as explanatory variables.

The required data has been collected mainly from the annual reports of Sonali Bank PLC and the Dhaka Stock Exchange (DSE). After collecting the data, it has been organized and analyzed using appropriate statistical techniques to identify the relationship between the variables.
Overall, this methodology focuses on analyzing the trend and relationship of the selected variables over time in order to provide a clear understanding of the factors affecting the profitability of Sonali Bank PLC.

4.2 Sources Of Data

This study is based entirely on secondary data, as no primary data has been collected for this analysis. The required information has been gathered from reliable and publicly available sources. Most of the data has been taken from the published annual reports of Sonali Bank PLC, which provide detailed financial information for each year.

In addition to this, relevant data has also been collected from the Dhaka Stock Exchange (DSE), where financial disclosures and summary information of listed companies are available. These sources were selected because they are considered authentic and widely used for academic and financial analysis.

The dataset covers a 10 years period from 2015 to 2024. All the variables used in this study, such as Return on Assets (ROA), Capital Adequacy Ratio (CAR), Loan to Deposit Ratio (LDR), Cost to Income Ratio (CIR), Net Interest Margin (NIM), and bank size (LSIZE), have been calculated or directly obtained from these sources. The collected data has been carefully organized and checked to ensure consistency before conducting the analysis.

4.3 Research Design

This study follows a quantitative research design to examine how different internal financial factors influence the profitability of Sonali Bank PLC. The analysis is based on numerical data collected over a specific period of time, which allows the study to observe changes and patterns in the bank's performance.

Since the data has been taken for a single bank over multiple years, the study adopts a time series approach. This helps to track how profitability and the selected variables behave over time and how they are related to each other. The main focus is to identify whether changes in internal factors lead to changes in profitability.

To carry out the analysis, statistical techniques have been used to examine the relationship between the dependent and independent variables. Return on Assets (ROA) has been considered as the dependent variable, while Capital Adequacy Ratio (CAR), Loan to Deposit Ratio (LDR), Cost to Income Ratio (CIR), Net Interest Margin (NIM), and bank size (LSIZE) have been treated as explanatory variables.

Overall, the research design is structured in a way that allows a clear and straightforward analysis of how these variables interact with each other over time and how they affect the profitability of Sonali Bank PLC.

4.4 Research Instruments

For this study, no direct interaction such as surveys or interviews has been carried out. Instead, the work is entirely based on financial information that has already been published. The necessary figures have been taken mainly from the annual reports of Sonali Bank PLC and the data available through the Dhaka Stock Exchange (DSE).

After gathering the information, the next step was to prepare it in a usable form. The raw figures were organized year by year so that they could be compared easily. Where needed, certain values were calculated from the available data to maintain consistency across all years. This helped in creating a complete dataset covering the period from 2015 to 2024.

To make sense of the data, simple analytical methods were applied. The study looks at how the values change over time and how different factors move in relation to each other. By doing this, it becomes easier to see whether any pattern exists between the selected variables and the bank's profitability. In short, this study depends on properly arranged financial data and straightforward analysis, rather than any complex tools or field-based methods.

4.5 Variable Description

The former researchers (Heffernan & Fu, 2010; Maudos & Fernández de Guevara, 2004; Ramadan et al., 2011; Short, 1979; Tan & Floros, 2012; Thomas & Saunders, 1981) examine factors such as Capital Adequacy Ratio, Loan to Deposit Ratio, Cost to Income Ratio, Net Interest Margin, and Bank Size that influence the Return on Asset.

Table 4.1: Variable Measurement

Serial No.	Variable Name	Variable Definition	Sources
Dependent Variable			
1	**Return On Asset(ROA)**	Return on Assets measures how efficiently a bank uses its total assets to generate profit.	(Singh et al., 2024)
Independent Variable			
2	**Capital Adequacy Ratio(CAR)**	CAR indicates the bank's capital strength and its ability to absorb potential losses.	(Azadinamin, 2012)
3	**Loan to Deposit Ratio (LDR)**	LDR shows the proportion of loans provided by a bank compared to its total deposits.	(Mishkin, 1976)
4	**Cost to Income Ratio (CIR)**	CIR measures operational efficiency by comparing operating expenses with operating income.	(Burger & Moormann, 2008)
5	**Bank Size(LSIZE)**	Bank size is commonly measured using the natural logarithm of total assets.	(Smirlock, 1985)
6	**Net Interest Margin(NIM)**	NIM represents the difference between interest income and interest expense relative to earning assets.	(Thomas & Saunders, 1981)

4.6 Hypothesis Development

In this study, a set of hypotheses has been prepared to examine how different internal financial factors are related to the profitability of Sonali Bank PLC. These hypotheses are not made randomly; rather, they are based on general financial understanding and the patterns observed in previous studies. The main idea is to check whether changes in certain internal indicators are linked with changes in profitability over time.

Profitability has been represented by Return on Assets (ROA), which shows how efficiently the bank is using its total assets. On the other hand, Capital Adequacy Ratio (CAR), Loan to Deposit Ratio (LDR), Cost to Income Ratio (CIR), Net Interest Margin (NIM), and bank size (LSIZE) have been selected as the main explanatory variables. Each of these variables reflects a different aspect of the bank's financial condition, such as capital strength, loan management, cost efficiency, income generation, and overall size.

Based on this understanding, the following hypotheses have been developed:

H1: Capital Adequacy Ratio (CAR) has a significant relationship with ROA.

H2: Loan to Deposit Ratio (LDR) is significantly associated with ROA.

H3: Cost to Income Ratio (CIR) has a significant effect on ROA.

H4: Net Interest Margin (NIM) is significantly related to ROA.

H5: Bank size (LSIZE) has a significant influence on ROA.

These hypotheses will later be tested using statistical analysis to see whether the relationships are supported by the data collected for the period from 2015 to 2024.

4.7 Data Analysis Tools & Techniques

The analysis in this study has been carried out using a combination of software tools, mainly Stata 18.0, Microsoft Excel, and Microsoft Word. Each of these has been used for a specific purpose during the different stages of the work.

At the initial stage, Microsoft Excel has been used to organize the collected data in a structured way. The raw figures taken from the annual reports were arranged year-wise, and necessary calculations were done to prepare the final dataset. This step helped to ensure that the data was clean and ready for further analysis.

After preparing the dataset, Stata 18.0 has been used for the main statistical analysis. Descriptive statistics were first generated to understand the basic characteristics of the variables. Then, correlation analysis was carried out to observe how the variables move with each other. To examine the effect of independent variables on profitability, an Ordinary Least Squares (OLS) regression model was applied.

In addition to the regression analysis, a few diagnostic checks were also performed to make sure the results are reliable. Multicollinearity was examined using the Variance Inflation Factor (VIF), heteroskedasticity was tested using the Breusch Pagan test, and autocorrelation was checked through the Durbin Watson statistic.

Finally, Microsoft Word has been used to present the results in a clear and organized format, including tables and explanations. The overall approach was kept straightforward so that the findings could be easily understood.

4.8 Model Specification

To examine how the selected financial factors are related to profitability, a regression model has been used in this study. The model is set in a simple form so that the relationship between the variables can be clearly understood.

The empirical model used in this study is specified as follows:

$$ROA_t = \beta_0 + \beta_1 CAR_t + \beta_2 LDR_t + \beta_3 CIR_t + \beta_4 NIM_t + \beta_5 LSIZE_t + \varepsilon_t$$

Where,

▪ CAR stands for Capital Adequacy Ratio,

▪ LDR represents Loan to Deposit Ratio,

▪ CIR stands for Cost to Income Ratio,

▪ NIM refers to Net Interest Margin,

▪ LSIZE indicates Bank Size and

▪ ROA stands for Return on Asset.

Additionally, t represents the time period (2015-2024). Since the study focuses on a single bank, no cross-sectional index is used. β_0 is the intercept term, β_1– β_5 represent the coefficients of the explanatory variables, and ε_t it is the error term.

Overall, the findings from this analysis give a clearer picture of how the selected variables are associated with the profitability of Sonali Bank PLC over time.

4.9 Conceptual Framework

The conceptual framework of this study presents a clear idea of how the selected financial factors are linked with the profitability of Sonali Bank PLC. It shows the direction of the analysis by identifying which variables are expected to influence the outcome and how they are connected within the study.

In this framework, profitability is represented by Return on Assets (ROA), which is treated as the main outcome of interest. The study focuses on a set of internal financial indicators, namely Capital Adequacy Ratio (CAR), Loan to Deposit Ratio (LDR), Cost to Income Ratio (CIR), Net Interest Margin (NIM), and Bank Size (LSIZE). These variables have been chosen because each one reflects a different side of the bank's financial condition.

CAR reflects the strength of capital, while LDR gives an idea about lending behavior in relation to deposits. CIR highlights how efficiently operating expenses are managed, whereas NIM captures income generated from interest-based activities. Bank size, measured through the logarithm of total assets, represents the overall scale of operations.

The framework assumes that these variables influence profitability in different ways. Some may contribute positively, while others may have a negative effect depending on how they change over time. By bringing these elements together, the framework provides a structured view of how internal financial factors are expected to relate to ROA.

In simple terms, the conceptual framework helps to organize the study by showing the connection between the independent variables and the dependent variable, making the overall analysis easier to understand.

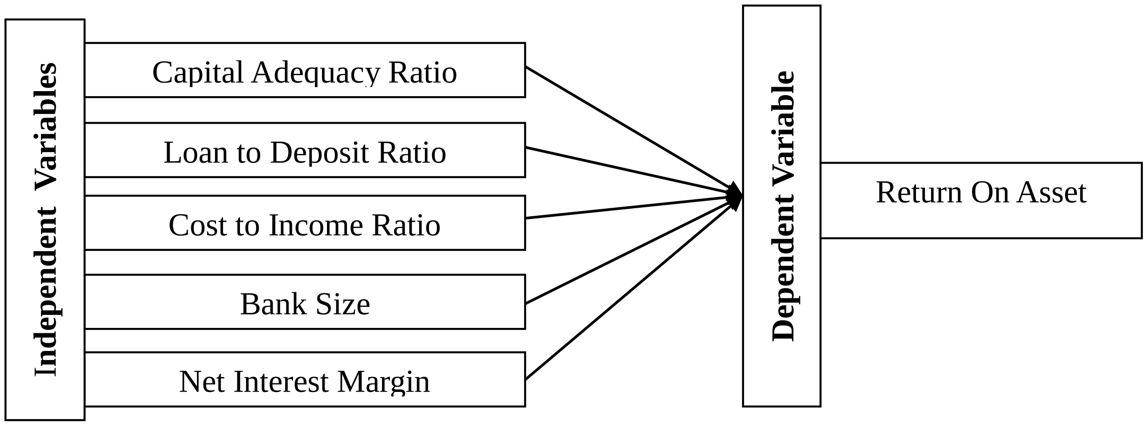

Figure 4.1: Conceptual Framework of the Study

4.10 Theoretical Framework

The theoretical framework of this study provides the basic ideas that help explain why the selected financial indicators may influence bank profitability. It connects the variables used in the analysis with established concepts in banking and financial management, so that the relationships are not only observed from data but also supported by logical reasoning.

In banking, profitability is often linked with how well a bank manages its resources, risks, and operational activities. Return on Assets (ROA), which has been used as the outcome variable in this study, reflects the bank's ability to generate earnings from its asset base. From a theoretical point of view, better use of assets generally leads to improved financial performance.

Capital Adequacy Ratio (CAR) is related to the idea of financial stability. A bank with a stronger capital position is usually better prepared to absorb unexpected losses, which can support steady performance. Loan to Deposit Ratio (LDR) is connected with liquidity management, as it shows how deposits are being transformed into loans. Proper balance in this area helps maintain both earning capacity and financial safety.

Cost to Income Ratio (CIR) reflects operational efficiency. When expenses are managed carefully in relation to income, the bank is more likely to achieve better results. On the other hand, higher costs without a corresponding increase in income may reduce overall performance. Net Interest Margin (NIM) is linked with income generation from core banking activities, especially interest-based operations. A higher margin generally indicates better management of earning assets.

Bank size (LSIZE) is often associated with economies of scale. Larger banks may benefit from wider operations and better access to resources, although this advantage may not always remain consistent in every situation.

Taken together, these theoretical ideas help to explain why the selected variables are expected to have an influence on profitability. The framework supports the structure of the study by linking each variable with a relevant financial concept, making the analysis more meaningful and easier to interpret.

Chapter 5: Analysis and Findings

5.1 Descriptive Analysis

Table 5.1 presents a summary of the main characteristics of the variables used in this study. It provides an overall picture of how the data behave over the selected period.

The average value of Return on Assets (ROA) is 0.252, which indicates that the bank generated a moderate level of profit from its total assets during the study period. The variation in ROA is relatively low, as reflected by its standard deviation of 0.101, suggesting that profitability did not fluctuate drastically from year to year.

Capital Adequacy Ratio (CAR) shows a mean value of 10.121, with a narrow range between 10.02 and 10.35. This indicates that the bank maintained a fairly stable capital position throughout the period. The relatively small dispersion also suggests consistency in maintaining regulatory requirements.

The Loan to Deposit Ratio (LDR) has an average of 45.2, with values ranging from 40 to 50. This reflects a balanced approach in converting deposits into loans, without extreme shifts in lending behavior.

Cost to Income Ratio (CIR) records a mean of 74.641, which appears comparatively high. This suggests that operating costs take up a significant portion of income, indicating potential inefficiency in cost management. The wider spread of values also shows noticeable changes in cost conditions over time.

Bank size (LSIZE), measured through the logarithm of total assets, has an average of 13.879 with limited variation. This indicates that the overall scale of the bank remained relatively stable during the study period.

Net Interest Margin (NIM) shows a mean value of 0.26, but it also exhibits greater variability compared to some other variables. The presence of both negative and positive values suggests that income from interest-related activities was not consistent across the years.

In terms of distribution, most variables do not show extreme skewness or kurtosis, indicating that the data are reasonably well-behaved and suitable for further statistical analysis.

Table 5.1 Descriptive Analysis

Variables	Obs.	Mean	Std. Dev	Min.	Max.	Skew.	Kurt.
ROA	10	0.252	0.101	0.08	0.4	-0.3	2.183
CAR	10	10.121	0.118	10.02	10.35	1.348	3.086
LDR	10	45.2	3.425	40	50	-0.162	1.759
CIR	10	74.641	9.571	61.89	94.01	0.534	2.903
LSIZE	10	13.879	0.674	12.79	14.77	-0.297	1.912
NIM	10	0.26	0.608	-1	0.9	-0.99	2.865

Note: The table reports the mean, standard deviation, minimum, maximum, skewness, and kurtosis. Variables include return on assets, capital adequacy ratio, loan to deposit ratio, cost to income ratio, bank size and net interest margin over the period 2015 to 2024, resulting in 10 yearly observations. All analyses were conducted using Stata 18.0.

5.2 Correlation Analysis

Table 5.2 reports the pairwise correlation coefficients along with their corresponding p-values. A strong positive relationship is observed between ROA and LDR ($r = 0.928$, $p < 0.01$) as well as between ROA and NIM ($r = 0.971$, $p < 0.01$), indicating that both variables are significantly associated with bank profitability. These results suggest that higher lending relative to deposits and improved interest margins are linked with better financial performance.

In contrast, ROA shows a negative association with CAR ($r = -0.502$) and CIR ($r = -0.384$); however, these relationships are not statistically significant at conventional levels, as their p-values exceed 0.05. This implies that although the direction is negative, the evidence is not strong enough to confirm a reliable relationship in this sample.

Among the independent variables, LDR and NIM are highly correlated ($r = 0.901$, $p < 0.01$), which is statistically significant and indicates a close movement between these two indicators. CAR is negatively related to both LDR ($r = -0.614$) and NIM ($r = -0.475$), though these relationships are not statistically significant. CIR has a significant positive relationship with CAR ($r = 0.730$, $p < 0.05$), while its associations with other variables remain weak and statistically insignificant.

Bank size (LSIZE) does not exhibit any significant relationship with the other variables, as reflected by high p-values across the matrix. Overall, although some correlations are relatively high, especially between LDR and NIM, the results do not immediately indicate a severe multicollinearity problem. This is further examined using the VIF test in the following section.

Table 5.2 Pairwise Correlation Matrix

Variables	ROA	CAR	LDR	CIR	LSIZE	NIM
ROA	1.000					
CAR	-0.502 (0.139)	1.000				
LDR	0.928 (0.000)	-0.614 (0.059)	1.000			
CIR	-0.384 (0.273)	0.730 (0.017)	-0.396 (0.258)	1.000		
LSIZE	0.093 (0.799)	-0.397 (0.256)	0.261 (0.466)	-0.348 (0.324)	1.000	
NIM	0.971 (0.000)	-0.475 (0.165)	0.901 (0.000)	-0.227 (0.528)	0.008 (0.982)	1.000

Note: The table presents Pearson correlation coefficients with p-values shown in parentheses. Statistical significance is considered at 1% and 5% levels. All analyses were conducted using Stata 18.0.

5.3 Multicollinearity Diagnosis (VIF Test)

The multicollinearity diagnostics suggest that the explanatory variables are reasonably independent from one another. Although the Capital Adequacy Ratio (CAR) records the highest VIF value (9.170), it still remains within the commonly accepted limit. The Loan to Deposit Ratio (LDR) also shows a relatively elevated value (7.960), but not at a level that would distort the estimation.

In contrast, the remaining variables CIR, LSIZE, and NIM display noticeably lower VIF figures, indicating weak overlap among them. The tolerance values further support this observation, as all are comfortably above the minimum threshold.

Taken together, these results do not point to any critical multicollinearity issue in the model. Therefore, the selected variables can be retained without concern for serious instability in the regression estimates.

Table 5.3 Multicollinearity Test (VIF)

Variables	VIF	Tolerance(1/VIF)
Capital Adequacy Ratio(CAR)	9.170	0.109
Loan to Deposit Ratio(LDR)	7.960	0.126
Cost to Income Ratio(CIR)	3.040	0.329
Bank Size(LSIZE)	2.290	0.436
Net Interest Margin(NIM)	1.610	0.622
Mean VIF=4.810		

Note: This table presents the variance inflation factor (VIF) alongside the corresponding tolerance values for each explanatory variable. In general, VIF values that remain under 10 and tolerance levels above 0.10 suggest that the variables do not excessively overlap. Based on these criteria, the results imply that multicollinearity is not a serious concern in this analysis. All analyses were conducted using Stata 18.0.

5.4 Heteroskedasticity test

The Breusch-Pagan / Cook-Weisberg test does not provide evidence of heteroskedasticity in the model. The reported p-value (0.9708) is far above the conventional significance levels, indicating that the null hypothesis of constant variance cannot be rejected. This suggests that the error terms are homoskedastic, and the model does not suffer from unequal variance issues.

Table 5.4 Heteroskedasticity test (Breusch-Pagan / Cook-Weisberg)

Test Statistic (χ^2)(1)	0.00
p-value	0.9708
Note: The null hypothesis assumes constant variance of the error terms. The test results suggest no evidence of heteroskedasticity, as the p-value is well above the standard significance level. Therefore, the assumption of constant variance holds for the model. All analyses were conducted using Stata 18.0.	

5.5 Autocorrelation Test (Durbin-Watson)

The reported Durbin-Watson value of 2.2958 is close to the benchmark value of 2, suggesting that there is no evidence of autocorrelation in the model residuals. This indicates that the error terms are independent, and the model satisfies the assumption of no serial correlation.

Table 5.5 Autocorrelation Test (Durbin-Watson)

Test Statistic	Value
Durbin-Watson (d)	2.2958
Note: The Durbin-Watson statistic is used to detect autocorrelation in the residuals. Values close to 2 indicate no autocorrelation. The obtained Durbin-Watson value suggests that there is no autocorrelation in the model. Therefore, the assumption of independent error terms is satisfied. All analyses were conducted using Stata 18.0.	

5.6 Regression Analysis: Ordinary Least Squares (OLS) Model

The regression results provide a clear picture of how different bank-specific variables influence return on assets (ROA). Overall, the model performs strongly, as reflected by a very high R-squared value (0.991), indicating that almost all variation in ROA is explained by the selected variables. The F-statistic is also statistically significant ($p < 0.01$), confirming that the model as a whole is well-fitted.

Looking at individual variables, Capital Adequacy Ratio (CAR) shows a positive relationship with ROA ($\beta = 0.193$). Although the coefficient suggests that better capital strength improves profitability, its p-value (0.052) places it just slightly above the conventional 5% significance level. This implies a weak but suggestive effect.

In contrast, Loan to Deposit Ratio (LDR) does not demonstrate any meaningful impact. Its coefficient is very small (0.005) and statistically insignificant ($p = 0.264$), indicating that variations in lending relative to deposits do not noticeably influence profitability in this model.

The coefficient of Cost to Income Ratio (CIR) is negative and statistically significant ($\beta = -0.003$, $p < 0.05$). This aligns with economic intuition: higher operating costs relative to income reduce bank profitability. Among all variables, this effect appears both consistent and reliable.

Bank Size (LSIZE), although positively signed ($\beta = 0.005$), fails to reach statistical significance ($p = 0.619$). This suggests that, within the observed sample, scale does not play a decisive role in determining returns.

On the other hand, Net Interest Margin (NIM) stands out with a strong positive and highly significant coefficient ($\beta = 0.141$, $p < 0.01$). This indicates that banks earning higher spreads between interest income and expenses tend to achieve better profitability. It is one of the most influential variables in the model.

The constant term is negative (-1.842) and marginally significant, which may reflect baseline conditions when all explanatory variables are held constant. In terms of diagnostic measures, the model’s explanatory power is extremely high, but such a large R-squared should be interpreted with caution, as it may also reflect limited sample size. Information criteria values (AIC = -53.721 and BIC = -51.906) further support the model’s adequacy.

Taken together, the results suggest that profitability is mainly driven by efficiency (CIR) and interest earnings (NIM), while other factors such as bank size and lending structure show limited influence in this specification.

Table 5.6 Baseline OLS Regression Results

Dependent variable: Return On Assets (ROA)

Variables	**Coef.**	**Std.Err.**	**t-value**	**p-value**	**95% CI**	**Sig**
CAR	0.193	0.07	2.74	0.052	[-0.002, 0.389]	*
LDR	0.005	0.004	1.30	0.264	[-0.006, 0.017]	
CIR	-0.003	0.001	-3.79	0.019	[-0.005, -0.001]	**
LSIZE	0.005	0.009	0.54	0.619	[-0.02, 0.03]	
NIM	0.141	0.022	6.36	0.003	[0.079, 0.202]	***
Constant	-1.842	0.75	-2.46	0.07	[-3.925, 0.24]	*

Mean dependent variable	0.252	SD dependent variable	0.101
R-squared	0.991	Number of observations	10
F-test	88.633	Prob > F	0.000
Akaike Information Criterion (AIC)	-53.721	Bayesian Information Criterion (BIC)	-51.906

Note: *** *p< 0.01*, ** *p< 0.05*, * *p< 0.1*

Reported results include coefficient estimates with corresponding standard errors, t-values, and probability values. * The symbols ** , and *** indicate significance at 10%, 5%, and 1% levels. The confidence intervals provide an interval estimate for each parameter. All analyses were conducted using Stata 18.0.

5.7 Final Regression Model (Robust)

The robust regression estimates offer a more reliable view of the relationships by correcting for potential heteroskedasticity. The model still fits the data very well, as indicated by the high R-squared (0.991) and a highly significant F-statistic ($p < 0.01$), suggesting that the explanatory variables jointly account for most of the variation in ROA.

Starting with CAR, the coefficient remains positive (0.193) and becomes statistically significant at the 5% level ($p = 0.012$). This indicates that stronger capital positions are associated with improved profitability, and the effect is now more dependable compared to the baseline model.

For LDR, the coefficient is positive but not statistically significant ($p = 0.204$). This implies that changes in lending relative to deposits do not have a clear or consistent impact on ROA in this specification.

The CIR variable shows a negative and highly significant effect ($\beta = -0.003$, $p < 0.01$). This confirms that higher operating costs reduce profitability, and the relationship appears even stronger after applying robust standard errors.

LSIZE continues to show no meaningful influence ($p = 0.574$), suggesting that bank size alone does not explain variations in returns within this dataset.

In contrast, NIM remains one of the most influential factors. Its coefficient (0.141) is positive and strongly significant ($p < 0.01$), indicating that higher interest margins consistently contribute to better financial performance.

The constant term is negative and statistically significant, reflecting the baseline level of ROA when all explanatory variables are held constant.

After adjusting for potential estimation issues, the key drivers of profitability remain largely unchanged. Efficiency (CIR) and interest margin (NIM) play dominant roles, while capital strength (CAR) also emerges as a significant contributor. Other variables show limited explanatory power in this model.

Table 5.7 Final Robust Regression Results

Variables	Coef.	Std.Err.	t-value	p-value	95% CI	Sig
CAR	0.193	0.044	4.36	0.012	[0.07, 0.316]	**
LDR	0.005	0.004	1.52	0.204	[-0.005, 0.016]	
CIR	-0.003	0.001	-5.58	0.005	[-0.004, -0.001]	***
LSIZE	0.005	0.008	0.61	0.574	[-0.17, 0.027]	
NIM	0.141	0.019	7.56	0.002	[0.089, 0.193]	***
Constant	-1.842	0.478	-3.86	0.018	[-3.169, -0.516]	**

Mean dependent variable	0.252	SD dependent variable	0.101
R-squared	0.991	Number of observations	10
F-test	304.944	Prob > F	0.000
Akaike Information Criterion (AIC)	-53.721	Bayesian Information Criterion (BIC)	-51.906

Note: *** p< 0.01, ** p< 0.05, * p< 0.1

The table presents the regression results, including coefficients, standard errors, t-values and p-values. Significance levels are marked by , * and * for 10%, 5% and 1% respectively. Confidence intervals are also reported to show the range within which the estimates may lie. All analyses were conducted using Stata 18.0.

5.8 Findings

The results of this study give a clear understanding of what actually drives bank profitability in the selected sample. Among all the variables, net interest margin (NIM) appears to be the strongest factor. Banks that are able to earn more from the difference between interest income and interest expense tend to perform better in terms of return on assets.

Cost to income ratio (CIR) shows a negative impact, which is quite expected. When operating costs increase relative to income, profitability goes down. This suggests that managing expenses efficiently is very important for improving overall performance.

Capital adequacy ratio (CAR) has a positive effect on profitability, especially in the robust model where the relationship becomes more reliable. This indicates that maintaining a strong capital base helps banks stay stable and perform better.

On the other hand, loan to deposit ratio (LDR) does not show any strong or consistent influence. Although it is related to lending activity, its effect on profitability is not clearly visible in this analysis.

Bank size (LSIZE) also does not seem to play a significant role. Larger size does not automatically guarantee higher returns in this case, which means efficiency and income management matter more than just scale.

The diagnostic tests further support the validity of the model. There is no serious multicollinearity problem, the variance of errors remains stable, and no autocorrelation issue is detected. These results increase confidence in the reliability of the regression estimates.

Overall, the findings suggest that profitability is mainly influenced by how efficiently a bank operates and how well it manages its core income sources, rather than its size or lending structure.

Chapter 6 : Recommendations and Conclusion

6.1 Recommendations of the study

Based on the findings of this study, several practical steps can be considered to improve the overall performance of Sonali Bank PLC. First, more attention should be given to improving net interest margin. Since this variable shows a strong and consistent impact on profitability, the bank needs to manage its interest-earning assets and liabilities more carefully. Better pricing of loans and efficient handling of deposit costs can help in this regard. Second, controlling operating costs is equally important. The negative effect of the cost to income ratio clearly indicates that rising expenses reduce profitability. Therefore, the bank should focus on reducing unnecessary administrative costs, improving internal efficiency, and making better use of digital systems to lower operational pressure.

Third, maintaining a strong capital position should remain a priority. A stable capital base not only supports financial performance but also helps the bank deal with unexpected risks. Proper monitoring of capital adequacy will ensure long-term stability.

In addition, although the loan to deposit ratio does not show a strong direct impact, the bank should still maintain a balanced lending strategy. Careful loan selection and proper risk assessment are necessary to avoid future financial stress.

The findings also suggest that increasing the size of the bank alone is not enough to improve performance. Instead of focusing only on expansion, more emphasis should be placed on how efficiently resources are being used.

Finally, continuous monitoring and evaluation of financial performance should be strengthened. Regular analysis of key indicators can help management take timely decisions and adjust strategies when needed.

6.2 Conclusion

This study was carried out to understand what actually influences the profitability of Sonali Bank PLC over the selected period. Instead of assuming that all financial indicators contribute equally, the analysis makes it clear that only a few of them play a meaningful role.

One of the most noticeable findings is the importance of net interest margin. When the bank is able to maintain a better spread between its interest income and expenses, its profitability improves in a consistent way. At the same time, the cost to income ratio shows the opposite effect. As operating costs increase, the bank's performance tends to decline, which points to the need for better cost control.

Capital adequacy also appears to support profitability, especially when the model is adjusted for possible estimation issues. This suggests that maintaining a stronger capital base helps the bank remain more stable and perform better. On the other hand, loan to deposit ratio does not show a clear impact, meaning that higher lending alone does not guarantee improved returns. Similarly, bank size does not seem to make a noticeable difference, indicating that expansion by itself is not enough to enhance performance.

The diagnostic tests confirm that the model is statistically sound, with no serious issues related to multicollinearity, heteroskedasticity, or autocorrelation. This strengthens the reliability of the results.

Overall, the findings suggest that profitability in Sonali Bank PLC depends more on how efficiently the bank manages its income and expenses rather than on its size or lending level. Focusing on operational efficiency and improving interest-based earnings seems to be more important for achieving better financial outcomes.

6.3 Contribution of the study

This study adds value by focusing on a single state-owned bank and looking closely at its financial performance over a specific period. Instead of using a broad sample, it concentrates on Sonali Bank PLC, which makes the analysis more detailed and easier to relate to real operational conditions. Another contribution lies in the selection of variables. By combining indicators such as capital strength, lending behavior, cost efficiency, interest margin, and bank size, the study brings several important aspects of banking performance into one framework. This helps in understanding how these factors work together rather than looking at them separately. The use of recent data also makes the findings more relevant. The study reflects the current financial environment and provides an updated picture of how internal factors influence profitability. This can be useful for both academic purposes and practical decision-making.

In addition, the analysis applies different statistical techniques step by step, which improves the reliability of the results. By checking issues like multicollinearity, heteroskedasticity, and autocorrelation before presenting the final model, the study ensures that the conclusions are based on a stable and consistent estimation. Overall, the study provides a clear and focused understanding of what matters most for profitability in a state-owned bank. It can serve as a reference for future research as well as for those who want to better understand financial performance in a similar context.

6.4 Limitations of the Study

Like any research, this study also has a few limitations that should be kept in mind while interpreting the results. At First, the analysis is based on a single bank, Sonali Bank PLC. While this allows for a more focused understanding, it also means that the findings may not fully represent the overall banking sector. Results could differ if other banks were included. Number two, the study uses a limited number of observations, as it relies on yearly data from 2015 to 2024. Because of this, the sample size is relatively small, which may affect the strength of statistical conclusions.

Another prime limitation is the use of only internal financial variables. External factors such as inflation, interest rate changes, or overall economic conditions have not been included, even though they may also influence bank profitability.

In addition, the data are collected from secondary sources, mainly annual reports. While these are reliable, there is always a possibility of reporting differences or lack of detailed information.

Overall aspects, the study applies a specific set of statistical methods. Although these methods are appropriate, using different models or additional techniques might produce slightly different results.

6.5 Direction of Future Research

This study focuses on a single bank and a limited set of internal financial indicators. Future research can expand this scope by including multiple banks from both public and private sectors. A broader sample would allow for comparison and provide a more general understanding of bank profitability. Another possible direction is to include external factors such as inflation, interest rate movements, or overall economic conditions. These elements often influence banking performance, and combining them with internal variables could offer a more complete picture.

Researchers may also consider using a longer time period or higher-frequency data, such as quarterly observations. This could help capture short-term changes and provide more detailed insights into performance trends. In addition, different methodological approaches can be explored. Applying alternative econometric models or advanced techniques may help to verify the robustness of the results and uncover relationships that are not visible in a basic model.

At last, future studies could examine specific areas such as risk management, non-performing loans, or digital banking practices to understand how these factors contribute to profitability in a changing financial environment.

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