



ADDIS ABABA UNIVERSITY
COLLEGE OF BUSINESS AND ECONOMICS
SCHOOL OF COMMERCE

**FACTORS AFFECTING FINANCIAL PERFORMANCE OF
ETHIOPIAN COMMERCIAL BANKS**

Eyob Yimer Tefera

**A Research Project Submitted to the Department of Business Leadership as a
Partial Requirement for the Degree of Master of Arts in Business Leadership**

Advisor:

Sisay Debebe (PhD)

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By: Eyob Yimer Tefera

Advisor: Sisay Debebe (PhD)

June 2023

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DECLARATION

I, Eyob Yimer Tefera, certify that the thesis entitled “Factors Affecting Financial Performance of Ethiopian Commercial Banks” is carried out independently and submitted in partial fulfillment of the requirements for the Degree of Master of Arts in Business Leadership with the guidance and support of the research advisor. The paper complies with the regulations of the university and it has not been previously submitted to Addis Ababa University or any other university for any degree award. All the sources of materials used for the purpose of this project have been duly acknowledged.

Declared by:

Name: Eyob Yimer Tefera

Signature -----

Date -----

Confirmed by Advisor:

Name: Dr. Sisay Debebe

Signature -----

Date -----

STATEMENT OF CERTIFICATION

This is to certify that the thesis entitled “Factors Affecting Financial Performance of Ethiopian Commercial Banks” submitted by Eyob Yimer Tefera has been completed under my supervision for partial fulfillment of the requirements for the degree of “Master of Arts in Business Leadership” of Addis Ababa University. I hereby certify that the study is an original work conducted by the candidate and has not been previously submitted for any other academic qualification or degree. I further certify that the candidate has fulfilled all the necessary requirements and that the document meets all the required standards for the degree of “Master of Arts in Business Leadership”.

Certified by:

Research Advisor: Sisay Debebe (PhD)

Signature: _____

Date: _____

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It is hereby approved that the thesis “Factors Affecting Financial Performance of Ethiopian Commercial Banks” by Eyob Yimer Tefera, submitted in partial fulfillment for the degree of Master of Arts in Business Leadership, has been examined and found to be satisfactory regarding originality, quality, and scholarly presentation. The candidate has met all the necessary requirements set forth by the university and has successfully completed the thesis under the supervision of Dr. Sisay Debebe. Therefore, with the approval of the committee, the candidate is deemed qualified for the degree of Master of Arts in Business Leadership.

Approved by the Board of Examiners:

Advisor	Signature	Date
Examiner	Signature	Date
Examiner	Signature	Date

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ABSTRACT

The banking sector plays a crucial role in the economic development of Ethiopia by mobilizing savings, providing credit facilities, facilitating the payment system, promoting foreign exchange transactions, and managing risks. As a result, it is imperative to undertake an analysis of the financial performance of banks with a view to creating and maintaining a healthy, effective, and efficient banking sector. This research project tries to examine the overall trend in the financial performance of Ethiopian commercial banks and the factors affecting their profitability during the period from 2010 to 2021 based on secondary quantitative data collected from the 12 most prominent state-owned and private banks. It also carries out an econometrics analysis to find correlation and causality between the internal bank-specific, sector-specific, and external macroeconomic variables on the one hand and the banks' profitability on the other hand. Accordingly, the study has revealed that the Ethiopian banking sector has grown in size as measured by the accumulation of assets, improved its asset quality as measured by the improved quality of its loan portfolio, and enhanced its liquidity management. On the other hand, the sector has experienced a deteriorating trend in capital adequacy ratio, management efficiency, earning ability, and overall profitability. Next, the regression estimation result has uncovered that both earning ability and capital adequacy have a statistically significant strong and positive impact on the financial performance of Ethiopian banks. In contrast, the quality of assets, efficiency of management, and liquidity balance have a statistically significant strong and negative impact on the financial performance of banks. Hence, it is concluded that CAMEL variables have a statistically significant strong impact on the performance of Ethiopian banks. Meanwhile, this research does not find enough evidence to determine the impact of bank size, Ethiopia's real GDP growth rate, and inflation rate on the profitability of commercial banks. Consequently, it is recommended that firstly, with a view to promoting the health and performance of the banking sector, the regulatory body (NBE) should strengthen its vigilance as well as its enabling and supervisory role to nurture a healthier and more profitable banking ecosystem in Ethiopia. Secondly, banks ought to further improve the quality of their loan portfolio by practicing vigorous credit risk management and performing robust credit appraisals. Thirdly, the management of banks should devise mechanisms to enhance cost control, efficient utilization of resources, and diversify their income source to curb the deteriorating trend of management's efficiency and earning ability and to maximize the profitability of the sector. Lastly, banks should strive to turning over their excess liquid assets into lending and/or investment opportunities with the view of expanding their revenue streams and improving their overall profitability.

Key Terms: Commercial Banks, Financial Performance, Profitability, CAMEL, Bank Size, Economic Growth (GDP), Inflation

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LIST OF ACRONYMS

AB	Awash Bank
AB	Anbesa Bank
AQ	Asset Quality
BIB	Berhan Bank
BOA	Bank of Abyssinia
BS	Bank Size
BUB	Bunna Bank
CAMEL	Capital, Asset, Management, Earning, and Liquidity
CBE	Commercial Bank of Ethiopia
CBO	Cooperative Bank of Oromia
DB	Dashen Bank
DBE	Development Bank of Ethiopia
EA	Earning Ability
FDRE	Federal Democratic Republic of Ethiopia

GDP	Gross Domestic Product
GOE	Government of Ethiopia
HB	Hibret Bank
LB	Liquidity Balance
ME	Management Efficiency
MoF	Ministry of Finance
NBE	National Bank of Ethiopia
NCERT	National Council of Educational Research and Training
NIB	Nib Bank
NIM	Interest Margin
ROA	Return on Asset
ROE	Return on equity
WB	Wegagen Bank
ZB	Zemen Bank

CHAPTER ONE

1. INTRODUCTION

1.1 Background of the Study

A commercial bank is a financial institution that accepts deposits, offers checking account services, makes various loans, and offers basic financial products like certificates of deposit and savings accounts to individuals and small businesses. A commercial bank is where most people do their banking. Commercial banks make money by providing and earning interest from loans such as mortgages, auto loans, business loans, and personal loans. Customer deposits provide banks with the capital to make these loans (Harvard Business School Press, 2005).

The Ethiopian banking sector emerged in the late 19th and early 20th centuries with the establishment of foreign banks, such as The National Bank of Egypt and the Ottoman Bank. However, the sector was not developed until the 1960s and 1970s, when the government nationalized all banks and created a centralized banking system.

During the 1980s and 1990s, the country experienced economic and political instability, resulting in the closure of several banks. The Government of Ethiopia (GOE) allowed the establishment of private banks and insurance companies in 1994 but does not yet permit foreign ownership in this sector. The Ethiopian banking sector is currently comprised of a central bank (The National Bank of Ethiopia/NBE), one state-owned development bank (Development Bank of Ethiopia/DBE), a government-owned commercial bank (Commercial Bank of Ethiopia/CBE), and 28 operating and licensed private banks. The sector is regulated by the NBE, which sets policies and guidelines for banks to operate. Monetary and Banking Proclamation No.83/1994 and the licensing and supervision of Banking Business No. 84/1994 have founded the legal basis for the banking sector. (National Bank of Ethiopia/NBE, 2022).

According to the latest (2022) report of the regulatory body (NBE), the Ethiopian banking sector has registered remarkable growth in the past several years. The sector has continued to register growth in asset, capital, deposit, loan distribution, loan collection, and other financial growth indicators. In terms of financial soundness, the banking sector is healthy as indicated by Capital Adequacy Ratio, Liquidity, and Non-Performing Loans. The number of banks has increased

from 18 to 30, and their branches reached 8,944, as of June 30, 2022, from 5,564 four years ago. With the expansion of bank branches, the ratio of a branch per population reached 1 to 11, 516 (one bank branch serves 11, 516 people). The total deposits, over the last four years, have increased from Birr 899 billion in 2019 to Birr 1.7 trillion in 2022. In addition, the introduction of new technologies such as mobile banking and electronic payment systems has also contributed to the growth and modernization of the sector.

Similarly, the sector has registered development in terms of key financial parameters over the years. For instance, as per the report of (NBE, 2022), the total capital of the banks has boosted from Birr 98.9 billion in 2019 to Birr 199.1 billion in 2022. The growth registers 27% average yearly growth. Moreover, the total asset of banks has ascended from Birr 1.3 trillion to Birr 2.4 trillion Birr registering 92% growth. The net income of banks has increased from Birr 22.4 billion in 2019 to Birr 49.9 billion in 2022 registering 122% growth. Overall, the banks have continued to operate safely and soundly, though there is a need for strengthening advanced preparation for opening up the banking sector to foreign investors was emphasized.

The most recent audited financial statements of the banks show that Commercial Bank of Ethiopia (CBE) is the leading bank in Ethiopia, holding the lion's share of total bank assets, deposits, and loans, followed by Awash Bank and Bank of Abyssinia. The banking sector is largely concentrated in urban areas, with limited reach in rural areas. However, the government is working to expand financial inclusion and increase access to finance in rural communities. Overall, the Ethiopian banking sector is seen as stable and well-regulated, with significant potential for growth and expansion (International Trade Administration, 2022).

However, despite this growth, the sector remains underdeveloped compared to other African countries. The banking sector still faces challenges, such as limited access to finance for small businesses, limited technological infrastructure, inaccessibility of financial services in rural areas, weak risk management practices, and high levels of non-performing loans (Tilahun, 2017).

The other important issue regarding the Ethiopian banking system is that it is still largely a cash-based system, with limited use of electronic payment systems. However, this is changing as more citizens gain access to smartphones and the internet, leading to increased use of mobile banking.

Largely, the Ethiopian banking system is still developing, with ongoing efforts to modernize the financial infrastructure, improve access to credit, and encourage financial inclusion.

Banks play a vital role in economic development by engaging themselves in an intermediary role which enhances investment and growth. On the other hand, bank performance also is influenced by the business cycle or economic performance. Therefore, financial performance analysis of commercial banks has been of great interest to academic research. (Dermerguc-Kunt, A. and Huizinga, H., 2001).

Financial performance analysis is an essential tool for assessing the overall performance and health of banks. A variety of financial ratios can be used to evaluate the performance of banks, such as profitability ratios, liquidity ratios, and solvency ratios. Thus, these ratios can be used to determine the performance of banks.

There are internal and external factors that affect the performance of commercial banks. Although some researchers conducted studies on the area of Ethiopian banks' financial performance analysis and factors affecting it, those determinant internal and external factors for performance have been debated for many years and are still unresolved academic issues in financial literature (Anteneh, 2018). In addition, the relative importance of those internal and external factors needs to be identified to have a full picture of banks' financial performance in Ethiopia.

Generally, this study can provide valuable insights into the same. In doing so, this paper will assess the overall trend of banks' performance over the years and examine the impact of internal and external factors on their performance based on the data to be collected from the respective banks.

1.2 Statement of the Problem

Ethiopia's banking sector has experienced significant growth in recent years. As the economy has grown, the demand for financial services has increased, driving the expansion of the banking sector. In turn, the banking sector plays a vital role in the country's economy. The banks mobilize savings from the public and provide financing opportunities to different productive sectors such as agriculture, manufacturing, construction, and services. The financed projects and businesses

contribute to the growth of the economy and increase employment opportunities. In addition, the Ethiopian banking industry is facilitating international trade; the banks are promoting financial inclusion; and they are assisting government policy initiatives in the areas of investment, job creation, poverty reduction, and overall economic growth (NBE, 2023).

Meanwhile, the performance of commercial banks can be affected by internal and external factors. These factors can be classified into bank-specific (internal) and macroeconomic variables. The internal factors are individual bank characteristics that are influenced by the internal decisions of management and the board. The external factors are sector-wide or country-wide factors that are beyond the control of the company and affect the profitability of banks (Flamini, C., Valentina C., McDonald, G., Liliana, S. (2009)).

There is not enough research on the Ethiopian Banking sector. The existing few studies mainly focus on the trend of individual or very few banks. Such works conducted in the area showed that Ethiopian banks are profitable, though exhibiting declining profitability trajectories. Some studies further provided insights into the liquidity and solvency of banks, highlighting the need to establish sound liquidity and solvency risk management practices. Overall, despite the significant strides made by Ethiopian banks in recent years, there is a lack of comprehensive analysis of the sector.

A review of empirical works made by the researcher shows that most of the researches conducted on the Ethiopian banking sector focused on bank-specific internal factors. Only very few of them, such as Tesfaye (2012) and Ashenafi (2022), attempted to include the impact of bank size on performance. However, as long as the knowledge of this researcher is concerned, the impact of external factors on the performance of Ethiopian banks is largely a vacant area in the extant literature. For instance, the impact of macroeconomic variables on banks' performance is not adequately researched. Such study gaps have motivated this researcher to undertake the study.

Even those few studies in the area have come up with mixed results regarding the determinant factors of banks' performance. For instance, a study by Ashenafi (2022) revealed that asset quality, earning quality, liquidity, bank size, and operating cost efficiency were significant variables in explaining profitability), although capital adequacy and management efficiency were

not. In contrast, an empirical study by Anteneh (2018) has shown that capital adequacy, asset quality, management efficiency, liquidity, and net interest margin were significant variables to explain profitability; however, earning quality and size of banks were not significant variables to influence profitability. In addition, most of the studies employed data from only individual or few banks and limited time coverage. Such vacant study areas, limitations in research designs, and varied findings have motivated this researcher to conduct a more comprehensive study on the area. Therefore, this research is intended and designed to fill these knowledge and study gaps.

Accordingly, the researcher believes that conducting research regarding the factors affecting the financial performance of Ethiopian banks is vital for the growth and development of the banking sector in particular and the overall economy of the country in general. It can help identify trends in the industry and such information can be used to make informed decisions and help predict future market conditions. In addition, it evaluates banks' efficiency in utilizing their resources. Banks can use this information to improve their operations and increase profitability. Banks face numerous risks in their operations, such as credit risk, market risk, and liquidity risk. Studying financial performance can help identify potential risks and implement strategies to mitigate them. Finally, assessing the financial performance of banks can be used to compare the performance of different banks within the industry. This information can be used to identify areas where a specific bank is lagging behind its competitors and develop plans to address the issues.

Consequently, this study has attempted to fill the existing knowledge and study gap in the area by conducting the research based on data of very comprehensive panel data of 12 years of audited financial statements of the 12 most prominent Ethiopian banks. As far as the knowledge of the researcher is concerned, there is no prior study before this one with such vigorous coverage of banks, time, and study variables. In doing so, it assesses and investigates the general trend in the performance of the banking sector, ranks individual bank performance, and statistically tests the impact of bank-specific internal factors, sector-specific factors, and external (macroeconomic) factors on the performance of Ethiopian banks. Thus, this paper is of vital help for the respective banks and major policymakers to explicitly identify the existing strengths and weaknesses and devise mechanisms to address the critical issues with the broad view of creating

a healthy banking sector as well as harnessing the full potential of the banking sector to the country's economy and the society at large.

1.3 Objectives of the Study

1.3.1 General Objectives

The general objective of this research is to assess the financial performance of commercial banks and to identify factors affecting financial performance of Ethiopian commercial banks.

1.3.2 Specific Objectives

The following are the specific objectives of the study:

- To find out the trend of financial performance of commercial banks;
- To compare and contrast banks in terms of their financial performance; and
- To identify internal and external factors affecting the financial performance of commercial banks in Ethiopia

1.4 Hypotheses of the Study

Depending on the extant theoretical and empirical research works on the study area. The researcher has developed the following hypotheses about the internal and external factors affecting the performance of Ethiopian banks.

H1: Capital Adequacy has a positive impact on the financial performance of banks.

H2: Asset Quality has a negative impact on banks' financial performance.

H3: Management Efficiency negatively affects the performance of banks.

H4: Earning Quality has a positive impact on banks' performance.

H5: Maintaining excess Liquidity Balance negatively affects banks' financial performance.

H6: The size of banks positively affects the performance of banks.

H7: Economic growth positively affects banks' performance.

H8: Inflation positively affects the financial performance of banks.

1.5 Significance of the Study

Researching the trend of the financial performance of banks and the role of internal and external factors in their performance is important for Ethiopia as the banking sector is playing (and is expected to play even more) its role for the economic development of Ethiopia. Accordingly, the outputs of this study could be used by the banks, the regulatory body, and other policymakers to improve the performance of banks in the country. In addition, this study is expected to contribute some useful work to the existing body of literature regarding the issue under consideration.

1.6 Scope and Limitation of the Study

The study covered the financial performance of only 12 major commercial banks in Ethiopia. In addition, it covers the period from 2010 to 2021 (only 12 years). These number of banks and time coverage are selected since these are the only banks and years for which organized audited financial statements could be accessible for the researcher (as the details are explained in chapter three of this proposal). In addition, this research project encompasses only commercial banks operating in Ethiopia. Moreover, the study is conducted based on only secondary quantitative data. However, it would have added more value to the research if primary qualitative data were employed in addition to the secondary quantitative data. Meanwhile, this paper did not make use of primary qualitative data. Thus, these can be taken as the limitations of this study.

1.7 Organization of the Thesis

This paper is organized as follows. The first part introduces the research paper; then describes its objectives, research questions, significance, scope, etc. The next part of the paper discusses the related literature on indicators and determinants of the financial performance of Ethiopian banks. This is followed by a section that provides the detailed design and methodology of the research. Then, the findings of the study are presented, critically analyzed, and interpreted. The last part summarizes the findings, concludes the study, and proposes recommendations to improve the existing situation regarding the financial performance of Ethiopian banks.

CHAPTER TWO

2. REVIEW OF RELATED LITERATURE

This part deals with the important issues, features, and relationships among the variables are employed to construct the conceptual framework of the paper. More specifically, the theoretical literature about the indicators and determinants of banks' financial performance along with their measurements are identified and discussed. In addition, an attempt is made later in this part to explore and examine the extant empirical findings on the factors affecting the financial performance of Ethiopian banks.

2.1 Theoretical Literature Review

2.1.1 Introduction

2.1.1.1 Meaning of Financial Statements Analysis

According to the National Council of Educational Research and Training/NCERT (2004), financial statement analysis is a judgmental process that aims at estimating the current and past financial positions and the results of the operation of an enterprise, with the primary objective of determining the best possible estimates and predictions. It essentially involves regrouping and analysis of information provided by financial statements to establish relationships and throw light on the points of strengths and weaknesses of a business enterprise, which can be useful in decision-making involving comparison with other firms (cross-sectional analysis) and with firms' performance, over a time period (time series analysis).

The process of critical evaluation of the financial information contained in the financial statements to understand and make decisions regarding the operations of the firm is called Financial Statement Analysis. It is a study of the relationship among various financial facts and figures as given in a set of financial statements, and the interpretation thereof to gain an insight into the profitability and operational efficiency of the firm to assess its financial health and prospects.

2.1.1.2 Importance of Financial Performance Analysis

Many authors agree that ensuring error-free financial management and performance improvement is the main significance of performing financial performance analysis. In addition, the mitigation of finance and business-related risks is among the reasons why companies conduct financial performance analyses.

According to the National Council of Educational Research and Training (2004), successful financial performance analysis can drive change in the organization. It can help businesses have a competitive advantage. Moreover, it can remove roadblocks and bottlenecks, instigating growth. Established businesses perform financial performance analyses to reach their goal without any hiccups.

Financial analysis is the process of identifying the financial strengths and weaknesses of the firm by properly establishing relationships between the various items of the balance sheet and the statement of profit and loss. Financial analysis can be undertaken by the management of the firm, or by parties outside the firm, viz., owners, trade creditors, lenders, investors, labor unions, analysts, and others. The nature of the analysis will differ depending on the purpose of the analyst. A technique frequently used by an analyst need not necessarily serve the purpose of other analysts because of the difference in the interests of the analysts. Financial analysis is useful and significant to different users in the following ways:

Finance Manager: Financial analysis focuses on the facts and relationships related to managerial performance, corporate efficiency, financial strengths and weaknesses, and creditworthiness of the company. A finance manager must be well-equipped with the different tools of analysis to make rational decisions for the firm. The tools for analysis help in studying accounting data to determine the continuity of the operating policies, the investment value of the business, credit ratings, and testing the efficiency of operations. The techniques are equally important in the area of financial control, enabling the finance manager to make constant reviews of the actual financial operations of the firm to analyze the causes of major deviations, which may help in corrective action wherever indicated.

Top Management: The importance of financial analysis is not limited to the finance manager alone. It has a broad scope which includes top management in general and other functional

managers. Management of the firm would be interested in every aspect of the financial analysis. It is their overall responsibility to see that the resources of the firm are used most efficiently and that the firm's financial condition is sound. Financial analysis helps the management in measuring the success of the company's operations, appraise the individual's performance, and evaluate the system of internal control.

Trade Payables: Trade payables, through an analysis of financial statements, appraises not only the ability of the company to meet its short-term obligations but also judge the probability of its continued ability to meet all its financial obligations in the future. Trade payables are particularly interested in the firm's ability to meet its claims over a very short time. Their analysis will, therefore, evaluate the firm's liquidity position.

Lenders: Suppliers of long-term debt are concerned with the firm's long-term solvency and survival. They analyze the firm's profitability over some time, its ability to generate cash, to be able to pay interest and repay the principal, and the relationship between various sources of funds (capital structure relationships). Long-term lenders analyze historical financial statements to assess their future solvency and profitability.

Investors: Investors, who have invested their money in the firm's shares, are interested in the firm's earnings. As such, they concentrate on the analysis of the firm's present and future profitability. They are also interested in the firm's capital structure to ascertain its influences on the firm's earnings and risk. They also evaluate the efficiency of the management and determine whether a change is needed or not. However, in some large companies, the shareholders' interest is limited to deciding whether to buy, sell or hold the shares.

Labor unions: Labor unions analyze the financial statements to assess whether they can presently afford a wage increase and whether they can absorb a wage increase through increased productivity or by raising the prices.

Others: Economists, researchers, etc., analyze the financial statements to study the present business and economic conditions. Government agencies need it for price regulations, taxation, and other similar purposes.

2.1.1.3 Objectives of Financial Performance Analysis

Analysis of financial statements reveals important facts concerning managerial performance and the efficiency of the firm. Broadly speaking, the objectives of the analysis are to apprehend the information contained in financial statements to know the weaknesses and strengths of the firm and to make a forecast about the prospects of the firm thereby, enabling the analysts to take decisions regarding the operation of, and further investment in the firm. To be more specific, the analysis is undertaken to serve the following objectives.

- To assess the current profitability and operational efficiency of the firm as a whole as well as its different departments to judge the firm's financial health.
- To ascertain the relative importance of different components of the financial position of the firm.
- To identify the reasons for the change in the profitability/financial position of the firm.
- To judge the ability of the firm to repay its debt and assess the short-term as well as the long-term liquidity position of the firm.

Through the analysis of the financial statements of various firms, a business leader or economics can judge the extent of concentration of economic power and pitfalls in the financial policies pursued. The analysis also provides the basis for many governmental actions relating to licensing, controls, fixing of prices, a ceiling on profits, dividend freeze, tax subsidy, and other concessions to the corporate sector.

2.1.1.4 Techniques of Financial Analysis

According to Indira Gandhi University (2013), Financial analysis is conducted to answer several questions. The three most common types of such analysis are listed below along with the questions to be answered.

Ratio Analysis

Ratio analysis answers how the company has performed on profitability and productivity of assets. The performance of companies on these parameters is normally assessed through the computation of important ratios. Ratio analysis integrates financial statements to assess the financial health of firms.

Trend/Time Series Analysis

Trend analysis answers how the company has grown over the years. Since growth is important for long-term survival, managers would be interested to assess the growth of the company on various components. This is achieved by taking base year values as 100 and then subsequent years values are adjusted to show the growth rate.

Common Size Statement Analysis

This one shows how a company is different from other companies in the industry in the distribution of assets, liabilities, costs, etc. Since the size of the companies compared is different, there is a need to bring them on a certain common scale. Comparison is possible by reducing the financial statements on a percentage basis. Such common size statement analysis performed yearly explains changes in assets/liability mix and cost structure.

2.1.2 Bank Performance Indicators

Financial performance analysis is an essential tool for assessing the overall performance and health of banks. Financial performance indicators are critical in measuring a bank's performance. The most commonly used indicators include profitability, liquidity, solvency, and efficiency (Mihiretu et al., 2020). Profitability indicators include return on assets, return on equity, and net interest margin. Liquidity indicators include the loan-to-deposit ratio, deposit-to-asset ratio, and cash-to-deposit ratio. Solvency indicators include capital adequacy ratio and non-performing loan ratio. Lastly, efficiency indicators include cost-to-income-ratio, asset turnover ratio, and loan loss provision-to-loan ratio.

Among all, profitability ratios are the most often used ratios by researchers to assess the financial performance of banks. Studies have found profitability ratios such as return on asset (ROA) and return on equity (ROE) to be useful indicators of banks' profitability in Ethiopia. In addition, the three measures we discuss in this section are probably the best-known and most widely used of all financial ratios. In one form or another, they are intended to measure how efficiently the firm uses its assets and how efficiently the firm manages its operations. The focus here is on the bottom line - net income (Ross, Westerfield, and Jordan; 2020).

2.1.2.1 Return on Asset (ROA)

Return on assets (ROA) is a measure of profit per Birr of assets. It is a financial ratio that measures a company's efficiency in generating profits from its assets. The higher the ROA, the more efficiently a company is using its assets to generate profit. It is a commonly used metric for evaluating a company's financial performance and can be compared over time or against other companies in the industry. It can be defined several ways, but the most common is by dividing a company's net income by its total assets: $ROA = \text{Net income} / \text{Total Assets}$

2.1.2.2 Return on Equity (ROE)

Return on equity (ROE) is a measure of how the stockholders fared during the year. It is a two-part measure of financial performance that brings together the income statement and balance sheet. It is calculated by dividing net income by shareholders' equity, expressed as a percentage. ROE is considered a gauge of a bank's profitability and its efficiency in generating profits. The higher the bank's ROE, the more profitable it is. ROE is usually measured as $ROE = \text{Net income} / \text{Total Equity}$ (European Union, 2019).

2.1.2.3 Net Interest Margin (NIM)

Net Interest Margin (NIM) is a measure of a bank's profitability that reflects the difference between interest earned on loans and interest paid to depositors and other creditors. It's essentially the difference between the interest income generated by a bank's assets and the expenses associated with its liabilities, expressed as a percentage of the bank's total assets. In other words, it represents the net revenue a bank earns from the interest on its loans, minus the interest it pays out on its deposits and other borrowings. A higher NIM indicates that a bank is earning more income from its core lending and deposit-taking activities and therefore is more profitable. Thus, a high net interest margin is desirable (Corporate Finance Institute, 2022).

The most common profitability indicators include Return on Asset (ROA), Return on Equity (ROE), and Net Interest Margin (NIM). All of them focus on measuring how efficiently a bank uses its assets efficiently manages its operations to generate better net income. However, a review of the existing empirical works on banks' profitability shows that using ROA to measure the profitability of banks has advantages over using ROE and NIM. Firstly, ROA is a more rounded measure of banks' performance as it measures the ability to generate profit from all assets, not only from equity as ROE, not only from interest income as NIM. Secondly, ROE is

influenced by leverage, which might result in higher ROE while exposed to higher risk. In contrast, ROA is a more reliable measure of profitability. Thirdly, ROA is a more stable measure to measure profit over a longer period, while NIM is volatile in the short term, and ROE could be affected by capital structure changes. Fourthly, ROA enables the comparison of the profitability of banks of different sizes (European Central Bank, 2010).

2.1.3 Factors Affecting Financial Performance of Banks

Several determinants or factors affect the performance of banks. While some of such determinants are internal to the banks, others are external. The most prominent ones are identified and discussed below:

2.1.3.1 Internal Factors

Individual bank features that influence the bank's performance are known as internal factors. Internal decisions made by management and the board of directors have a significant impact on these aspects (Aburime, 2005).

CAMEL Rating System for Banks:

CAMEL is the most common and widely used approach to analyze the financial performance and overall health of banks across the world. Several studies have used the CAMEL model to examine factors affecting bank profitability with success. The CAMEL model of rating was first developed in the 1970s by the three federal banking supervisors in the United States (the Federal Reserve, the Federal Deposit Insurance Corporation, and the Office of the Comptroller of the Currency) as part of the regulators' "Uniform Financial Institutions Rating System," to provide a convenient summary of bank condition at the time of on-site examination¹. The system became internationally known with the abbreviation CAMEL, reflecting five assessment areas: capital, asset quality, management, earnings and liquidity (UFIRS, 2023).

The system is also used for "early identification of problems in banks operation" (Uzhegova, 2010). Though some alternative bank performance evaluation models have been proposed, the CAMEL rating system for banks is a well-known framework used to evaluate financial institutions like banks. In addition, this system is used by regulatory authorities to evaluate the performance of banks and other financial institutions. The Camel rating system evaluates banks on the following factors:

2.1.3.1.1 Capital Adequacy

This reflects the bank's ability to maintain a strong capital base to support its operations. Factors that are considered include the bank's capital adequacy ratio, risk-weighted assets, and overall financial leverage.

2.1.3.1.2 Asset Quality

This measures the bank's ability to manage and control risk in its lending portfolio. Factors that are considered include the level of non-performing loans (NPL), NPL to Total loans ratio, and loan loss reserves.

2.1.3.1.3 Management Efficiency

This assesses the quality of the bank's management and governance practices. It measures a bank management's ability to use the resources efficiently, increasing revenue, and lowering operating costs. It can also be used to determine whether a bank is overstaffed or understaffed. It also assesses the bank's efficiency in terms of maximizing profits per employee. Ratios of operating cost to operating income, total advances to total deposit, total deposit to the number of employees, and profit to the number of employees can all be used to calculate it (Srinivasan and Saminatham, 2016). The ratio of operating costs to net operating revenue was used to determine the operating efficiency of Kenyan commercial banks, and the findings showed that inefficiency in operating costs leads to low profitability (Olweny, 2011). In addition, the board of directors' qualifications and experience can be used to indicate management quality.

2.1.3.1.4 Earnings Ability

This evaluates the bank's profitability by the ability to generate sustainable earnings over time. Nowadays, much focus is being given to non-interest sources of income as such types of income have a lesser cost of funds (no interest to depositors) and contribute to higher profit margins of banks. Factors that are considered include the bank's share of non-interest income, net interest margin, and operating costs.

2.1.3.1.5 Liquidity Adequacy

This measures the bank's ability to meet its financial obligations promptly. It can also be described as a bank's ability to fund asset growth and meet liabilities as they become due without incurring unacceptably high losses (Bank for International Settlement 2008). Factors that are

considered include the level of liquid assets on hand, the bank's funding sources, and its access to funding in times of stress (e.g., ratios of deposit to total assets and loan to deposit).

2.1.3.1.6 Bank Size

In addition to components of the CAMEL system, bank size is also identified by researchers to have the capacity to determine banks' financial performance. For instance, Jeevitha et al. (2011) argue that although commercial banks of all sizes provide credit and other financial products to their customers, large banks have sufficient capital to meet the credit demands of large businesses and operate at a scale that allows them to provide more specialized banking products more efficiently, resulting in higher profits.

2.1.3.2 External/Macro-economic Factors

External/Macroeconomic factors are country-wide elements that affect bank profitability and are beyond the control of the specific bank (Aburime, 2005). The major macroeconomic factors that have an impact on banks' financial performance are economic growth (GDP) and inflation. Each of them is discussed subsequently.

2.1.3.2.1 Economic Growth (GDP)

The relationship between GDP growth and banks' profitability is multifaceted. In general, a strong and growing economy, as indicated by high GDP growth, is beneficial for the profitability of banks and other financial institutions. When the economy is growing, businesses and individuals are more likely to be taking out loans and other financial products, which means increased revenue for banks. Furthermore, banks can be vulnerable to economic shocks, such as recessions or market downturns, which can negatively impact their profitability (Abbas, Ullah, Ali, Hussain, and Ashraf; 2022).

2.1.3.2.2 Inflation

Inflation can have both positive and negative impacts on bank profitability depending on various factors. According to Jeevitha, Mathew, and Shradha (2019), the following are some impacts of inflation on bank profitability.

Interest income: Inflation can increase interest rates, which can lead to higher interest income for banks. Banks can charge higher interest rates on loans, resulting in higher net interest margins (NIM) and profitability.

Loan quality: Inflation can also lead to an increase in default risk, which may result in increased non-performing assets and loan loss provisions, leading to a decrease in profitability.

Net interest margin (NIM): Inflation can impact the net interest margin by affecting the cost of funds for the bank. If the cost of funds increases, the NIM may decrease, resulting in a dip in profitability.

Deposits: Inflation can affect deposit balances and the overall deposit mix, which can impact profitability. During inflation, people tend to move their funds out of low-interest-bearing accounts like savings accounts. Banks may have to offer higher interest rates on deposits to attract deposits that can impact their profitability (which is not a common practice among Ethiopian commercial banks).

Asset quality: Inflation can also lead to higher prices of assets such as real estate. While this may increase the value of the bank's assets, it may also impact the quality of the assets, leading to an impact on profitability.

In summary, inflation can impact various aspects of a bank's operations, and the net impact on profitability can be positive or negative, depending on the specific circumstances.

2.2 Review of Empirical Literature

In this sub-section, the extant empirical works regarding the financial performance of banks, and major internal and external determinant factors that have an impact on the financial performance of banks both in Ethiopia and elsewhere are reviewed and examined thoroughly as follows.

Several studies have investigated the financial performance of banks in Ethiopia. In an attempt to analyze the financial performance of selected commercial Banks in Ethiopia, Ashenafi (2022) used a quantitative technique and investigated the interconnection between CAMEL ratios and profitability, as well as the effects of CAMEL variables, bank size, and operating cost efficiency on profitability measurements of return on asset. Accordingly, the study revealed that asset quality, earning quality, liquidity, bank size, and operating cost efficiency were significant

variables in explaining profitability (ROA), although capital adequacy and management efficiency were not. According to this study, banks shall concentrate on raising their total asset by mobilizing deposits and converting them to loans, as total assets or bank size is a determinant factor in improving their financial performance.

Likewise, Anteneh (2018) has conducted an empirical study on the effects of CAMEL variables, bank size, and net interest margin on profitability (ROA and ROE). The econometric analysis showed that asset quality, management efficiency, liquidity, size of the bank, and net interest margin were significant variables to explain ROA, unlike capital adequacy and earning quality which were not significant variables. Similarly, capital adequacy, asset quality, management efficiency, liquidity, and net interest margin were significant variables to explain ROE, but earning quality and size of the bank were not significant variables to influence ROE.

In addition, Tesfaye (2014) researched the determinants of Ethiopian banks' performance considering bank-specific and external variables on selected banks' profitability for the 1990-2012 period. He finds that bank-specific variables by large explain the variation in profitability. High performance is related to the ability of banks to control their credit risk, diversify their income sources by incorporating non-traditional banking services and control their overhead expenses. Furthermore, the paper finds that banks' capital and liquidity status is not significant to affect the performance of banks. On the other hand, the paper finds that bank size and macroeconomic variables such as real GDP growth rates have no significant impact on banks' profitability. However, he found out inflation rate to be a significant driver of the performance of Ethiopian commercial banks.

In comparison, a study conducted on the financial performance of commercial banks in Kenya by Ongore (2015) has shown that bank-specific factors significantly affect the performance of commercial banks in Kenya, except for the liquidity variable. But the overall effect of macroeconomic variables was inconclusive. The moderating role of ownership identity on the financial performance of commercial banks was insignificant. Thus, the researcher finally concluded that the financial performance of commercial banks in Kenya is driven mainly by commercial banks' board and management decisions, while macroeconomic factors have an insignificant contribution. More specifically, the positive impact of capital adequacy on

commercial banks' financial performance is also confirmed in other African countries such as Nigeria (Charles, 2013).

In contrast, a study conducted by Alemayehu and Abuka (2019) analyzed the financial performance of eight commercial banks in Ethiopia from 2010 to 2017. The study found that the profitability and efficiency of Ethiopian banks were low compared to other African banks. A study by Mihiretu et al. (2020) found that the liquidity risk in Ethiopian banks is high, creating a potential threat to the sustainability of the banking sector. Another study by Beyene and Kassa (2019) concluded that Ethiopian banks have experienced steady growth in profitability over the years, but there was no significant relationship between liquidity and profitability in the Ethiopian banking sector.

In research conducted earlier, Muluaem (2015) analyzed the financial performance of Ethiopian commercial banks using the CAMEL approach. The result showed that capital adequacy, Asset Quality, and Management efficiency have negative relation whereas earning and liquidity show a positive relationship with both profitability measures with strong statistical significance except Capital Adequacy which is insignificant for ROA whereas Asset quality is for ROE. Moreover, the ranking of banks' results showed that the leading banks are: Bunna Bank ne in terms of capital adequacy, asset quality, and liquidity ratio; Commercial Bank of Ethiopia in terms of Management efficiency and Earning ratio; and Wogagen Bank by the composite rate. Finally, the study suggested that focusing on and reengineering the banks' internal drivers could enhance the profitability of commercial banks in Ethiopia.

In this regard, a study by Banerjee (2020) has found that Indian commercial banks that were able to better manage their performing loans and can successfully channel their available funds to profitable investment opportunities enjoyed a positive and significant impact on their efficiency on financial performance (ROA) and such a variable can act as a vital indicator for bank performance. In doing so, banks with higher efficiency were better able to manage their performing loans. However, he found out that the variations in the financial performance of Indian commercial banks were not only due to key bank-specific and industry-specific variables but also the Indian banks are sensitive to variations in macroeconomic factors.

Overall, a critical analysis of the literature on bank performance reveals that most of such studies use profitability measures (ROA and/or ROE) as a common proxy of their financial performance. They also employ CAMEL rating system components to gauge the performance of banks. The empirical literature suggests that the Ethiopian banking system is underdeveloped compared to other African countries. The financial performance analysis of Ethiopian banks reveals that their profitability and efficiency are low, while liquidity risk is high. However, the findings have come up with mixed findings over the years regarding the determinant factors of the financial performance of Ethiopian banks. Therefore, the studies so far are not conclusive, and thus, more research is needed to evaluate the financial performance of Ethiopian Banks.

2.3 Conceptual Framework of the Study

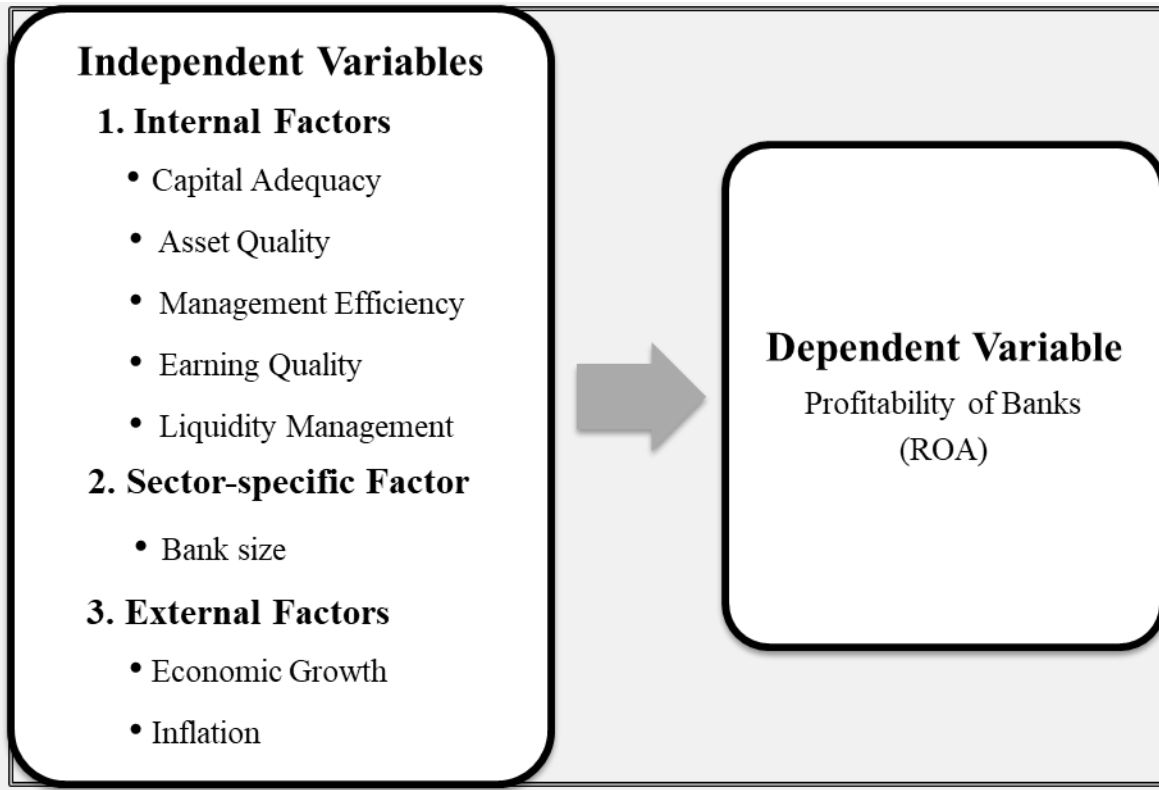
The conceptual framework for the title "Financial Performance Analysis of Banks in Ethiopia" is developed based on the following components:

Banking Industry in Ethiopia: The first component of the framework focuses on the banking industry in Ethiopia. This component provides an overview of the banking sector in Ethiopia, which is constituted of 30 commercial banks in the country.

Banks' Financial Performance Indicators: The second component of the framework identifies various financial performance indicators that can be used to evaluate the financial performance of banks in Ethiopia. These indicators are the most commonly employed measures of bank performance – profitability, which is represented by Return on Asset (ROA).

Banks' Financial Performance Determinants: The third component of the framework analyzes the determinants of financial performance represented by internal factors (CAMEL Rating System components: Capital Adequacy, Asset Quality, Management Quality, Earning Quality, and Liquidity Adequacy), sector-specific factors (Bank Size), and external factors (macro-economic conditions: GDP growth and inflation).

Generally, the relationship between the dependent and independent variables is depicted in Figure 2.3 below.



Source: Compiled by the researcher, 2023

Figure 2.3: Conceptual Framework of the Study

CHAPTER THREE

3. RESEARCH METHODOLOGY

3.1 Research Design and Approach

This study adopted an explanatory research type as it helps explain the trend in the financial performance of Ethiopian banks. This type of research enables to establish and explain any correlation and causality between CAMEL variables, bank size, and macroeconomic variables on the one hand and the financial performance of banks in Ethiopia on the other hand. Similarly, the type of research design employed to achieve this research's general and specific objectives is also descriptive. This is because the researchers have no control or effect on the variables of the study and it is intended to clarify the prevailing situations in detail. Therefore, this study employed the appropriate research design, i.e., a mixture of explanatory and descriptive research design.

Then again, since the purpose of this research is to examine the financial performance of banks over the years using CAMEL variables, bank size, and macro-economic variables, as well as their relationship with banks' profitability, based on panel data of major commercial banks, quantitative research type is used to deal with this objective.

3.2 Type and Source of Data

Secondary quantitative data are used to meet the objective of the research. Thus, the data related to CAMEL variables, bank size, and Ethiopian banks' financial performance indicators are collected from the respective banks' annual reports covering the period from 2010 to 2022. In addition, data related to the two macro-economic variables (economic growth and inflation) are collected from the appropriate government organ (National Bank of Ethiopia/NBE and FDRE Ministry of Finance/MoF).

3.3 Target Population

According to the 2022 annual report of NBE, there are about 30 banks in Ethiopia. While two of them are government-owned, the rest are private banks. One of the two government-owned banks is the Development Bank of Ethiopia (DBE), which is not a commercial bank. Therefore, the target population of this study is all 29 private and government-owned commercial banks in Ethiopia.

3.4 Sample Size and Sampling Technique

This study adopted a purposive sampling (non-probability sampling) technique. This is dictated by the type and source of data required to undertake this research. Among the target population of 29 commercial banks in the country, the year of establishment of some of the banks is recent, which does not allow the researcher to have enough observation/data to undertake the data analyses and interpretations. Thus, such banks are not selected as samples. Next, according to the preliminary assessment of whether the required data could be obtained or not, out of the total target population of 29 banks, the researcher could not assume to find all the annual audited financial statements for a few banks covering the period from 2010 to 2021. Hence, such banks are not also selected as samples.

Finally, based on the availability of organized annual audited financial statements of the respective banks for consecutive many years (2010-2021), the 12 most prominent commercial

banks that possess most of the assets of the Ethiopian banking sector are purposively selected as samples of the study. These are the Commercial Bank of Ethiopia (CBE), Awash Bank (AB), Bank of Abyssinia (BOA), Dashen Bank (DB), Wegagen Bank (WB), Hibret Bank (HB), Zemen Bank (ZB), Cooperative Bank of Oromia (CBO), Berhan Bank (BIB), Lion Bank (LB), Bunna Bank (BIB) and Nib Bank (NIB). The researcher strongly believes that the data to be obtained from these banks will represent the target population.

3.5 Time Coverage of the Study

The study covered the period from 2010 to 2021. This period is selected because it is the only period in which organized and readily available data related to the financial performance of many of the commercial banks in the country could be obtained. Data covering this period is believed to be enough to be able to analyze the financial performance of banks over the years and establish any relationship between banks' profitability and banks' financial performance determinants.

3.6 Methods of Data Analysis

Various statistical tools are employed to analyze the quantitative data that are collected from secondary sources. Descriptive statistical tools like tables and graphs are used in analyzing the trend of the financial performance of banks. Moreover, percentages and averages are also used. In addition, inferential statistical tools such as correlation and regression analysis are employed to see the relationship and causality in banks' profitability and bank-specific internal factors, bank size, and macroeconomic factors. For simplicity purposes, on top of MS Excel, the quantitative data is analyzed using the latest version of Stata software (Stata 18).

3.7 Model Specification

This study will conduct an empirical analysis using an econometric technique. In doing so, the financial performance of Ethiopian Banks is captured by 8 (seven) independent variables: Capital Adequacy, Asset Quality, Management Efficiency, Earning Quality, Liquidity Adequacy, Bank Size, Economic Growth, and Inflation. Therefore, the following mathematical equation/model is devised assuming that the impact of the above-mentioned independent variables on the dependent variable (financial performance of banks represented by profitability/ROA) is undertaken in a production function framework. Hence,

$$FPB = f(CA, AQ, ME, EA, LA, BS, GDP, INF)$$

Where,

FPB is the financial performance of banks represented by profitability.

CA is capital adequacy measured by the ratio of the amount of capital that banks hold in relation to their assets measured by the capital adequacy ratio (CAR), which is computed by dividing capital by total assets.

AQ is asset quality measured by the ratio of provision for non-performing loans to total loans of banks.

ME is management efficiency capturing efficient management practices to improve a bank's profitability through better monitoring and control of operational expenses and via efficient utilization of resources, which is measured by the ratio of total expenditure to total income.

EA is earning ability represented by the capacity of banks for growth and its sustainability is measured by the ratio of non-interest income to the total income of banks.

LB is liquidity balance represented by maintaining the right balance of liquidity to maximize conversion of deposits into lending and investment opportunities, thereby, maximizing income and profitability while meeting short-term obligations, measured by the ratio of liquid assets to total deposit.

BS is the relative size of the respective banks measured by the value of total assets.

GDP is economic growth measured and represented by the annual real GDP growth rate of Ethiopia.

INF is inflation measured and represented by the annual inflation rate of the country

Thus, from the above equation, the following econometric model is derived to examine the impact of MSE support schemes on MSE development.

$$ROA_{it} = \alpha + \beta_1 CA_{it} + \beta_2 AQ_{it} + \beta_3 ME_{it} + \beta_4 EA_{it} + \beta_5 LB_{it} + \beta_6 BS_{it} + \beta_7 RGDPGR_t + \beta_8 INFGR_t + e_{it}$$

Where,

The subscript i refer to firm i

The subscript t refers to year t

ROA_{it} is the profitability of bank i at time t in a ratio

CA_{it} is the capital adequacy ratio (CAR) of bank i at time t in a ratio

AQ_{it} is the proportion of non-performing loans to total loans of bank i at time t in a ratio

ME_{it} is management efficiency to control operational expenses relative to the total income of bank i at time t in a ratio

EA_{it} is earning ability of bank i at time t in a ratio

LB_{it} is liquidity balance bank i at time t in ratio.

BS_{it} is the size of bank i at time t in Birr value of total assets.

$RGDPGR_t$ is Ethiopia's annual real GDP growth rate of Ethiopia in percent at time t

$INFGR_t$ is the annual inflation rate of Ethiopia in percent at time t

α = is the intercept or constant term

$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6, \beta_7,$ and β_8 are the slope or coefficients to be estimated

e_{it} = is the standard error, where i is cross-sectional and t time identifier

Therefore, based on the above model estimations, the causality among the study variables is examined empirically.

3.8 Definition of Variables (and Measurement & Hypothesis)

The dependent and independent variables of the study are identified and discussed subsequently.

Dependent Variable

The dependent variable of the study is banks' profitability measured and represented by Return on Asset (ROA). ROA is the most preferable and advantageous measure of banks' financial performance and profitability (as elaborated in-depth in part two of this study). ROA is a financial ratio that measures a bank's ability to generate profit in relation to its total assets. It reflects how efficiently a company is using its assets to generate profits and it is often used to compare the profitability of different companies in the same industry. It is measured by dividing the bank's net income by its total assets. A higher ROA indicates that a bank is generating more profit per Birr of assets and is often considered the most appropriate indicator of a bank's financial performance (European Central Bank, 2010). This is the variable commonly used by almost all researchers who conducted studies in the research area under consideration. This include Samuel (2015) in Ethiopia, Obamuyi (2013) in Nigeria, and Kosmidou (2008) in Greece.

Independent Variables

The dependent variable (financial performance of banks represented by profitability and measured by ROA) is assumed to be affected by bank-specific internal factors, a sector-specific factor, and external (macro-economic) factors: Internal factors are those which are internal to the respective bank's management. These normally include CAMEL variable, namely: Capital Adequacy, Asset Quality, Management Efficiency, Earning Quality, and Liquidity Adequacy. The sector-specific variable is captured by the banks' size. The external factors are those beyond the control of the respective banks. These mainly relate to macroeconomic variables; namely: economic growth and inflation (Fitch, 1990; Uzhegova, 2010; and Kambhamettle, 2012).

Internal Factors:

Capital Adequacy

Capital adequacy denotes the amount of capital that banks hold in relation to their assets. It measures the bank's ability to absorb unexpected losses. Banks need to maintain sufficient capital to absorb potential losses and maintain investor confidence. Capital adequacy has a direct impact on the profitability of banks. A higher capital adequacy ratio (CAR) indicates that a bank has enough capital to absorb potential losses. This reduces the risk of insolvency, which in turn makes the bank more attractive to customers and investors. This can result in increasing demand for its services and products. Additionally, a higher CAR allows banks to pursue more aggressive

lending and investment strategies, which can generate higher profits. On the other hand, a low CAR indicates that the bank has insufficient capital, and it may be forced to reduce lending and investment activities to minimize the risk of insolvency. This means that the bank is less competitive and might not generate higher profits (Dang, 2011).

Therefore, capital adequacy is a critical determinant of banks' profitability. As a result, regulatory authorities often monitor the capital adequacy ratios of banks and require them to maintain a minimum CAR to ensure their financial stability and protect the interests of depositors and investors. Here, capital adequacy is measured by the capital adequacy ratio (CAR), which is computed by dividing total capital employed by a bank to its total assets. This measure is commonly used by researchers like Tesfaye (2014).

Asset Quality

Here, a bank's asset means the loans it has provided to its customers. When these loans become non-performing or default, it can negatively impact the bank's profitability. Banks earn money mainly by charging interest on loans. Thus, a default means that the bank will not receive principal and interest for the loan. This can lead to a decline in the bank's revenue and profitability.

Therefore, if a bank's significant portion of loans are performing, then, it is said that it has a high-quality asset portfolio, which will enable it to generate steady income and profits. In contrast, if a bank has a high proportion of non-performing/bad loans, it will have to spend more money on provisions and write-offs, which can negatively impact its profits.

Therefore, asset quality is a critical factor that impacts a bank's profitability. Accordingly, banks focus on maintaining a high-quality asset portfolio to improve their profitability. They need to have vigorous credit risk management policies and perform robust credit appraisal to ensure that they are lending only to trustworthy borrowers and that they can recover their money in case of a default. This study used the most commonly used measure of asset quality, i.e., the ratio of provision for non-performing loans to total loans. This measure is used almost by all studies in the area such as Ashenafi (2022), Mulualem (2015), Tesfaye (2014), and Dang (2011).

Management Efficiency

Management efficiency is believed to have a big impact on a bank's profitability. One of such mechanisms is via cost control. Banks can improve their profitability by reducing their operational costs. Effective management practices can lead to better monitoring and control of expenses, which results in lower costs and improved profit margins for the bank. The second one is related to efficient utilization of resources. Effective management practices can help identify areas where resources are being underutilized or overutilized, which then, will help banks in a more productive and balanced allocation of resources. Furthermore, effective management practices can help banks identify and mitigate risks, which is critical for profitability. Therefore, banks can improve their profitability and maintain a healthy financial position with management efficiency. This study used the ratio of total expenditure to total income to gauge management efficiency (Srinivasan & Saminatham, 2016; and Olweny, 2011).

Earnings Quality

Earning quality relates to capacity of growth and its sustainability. Hence, it is believed to have a significant impact on banks' profitability. A high-quality earning stream contributes to more stable and predictable profits, which provides a foundation for sustainable growth. Banks with higher quality earnings are likely to have a lower cost of capital, which translates into a higher return on asset (ROA). On the other hand, lower earning quality may lead to lower profitability in banks, as it may result in increased losses and harms the confidence of investors. As a result, as earning quality is essential to maintain their economic viability, banks need to manage their revenue streams effectively to improve their profitability. Normally, interest income is obtained by incurring interest on deposits of customers. Thus, more emphasis is being given to non-interest income, which is associated with a lower cost of funds and higher profit margin. Hence, this study employed the ratio of non-interest income to the total income of banks to measure earning quality.

Liquidity Adequacy

Liquidity adequacy refers to having sufficient liquidity to ensure that a bank can meet its financial obligations in the short-term. The impact of liquidity adequacy on a bank's profitability can be both positive and negative. For instance, having sufficient liquidity ensures that a bank can meet its short-term financial obligations like paying depositors' withdrawals and meeting loan demand. This can lead to increased customer confidence and loyalty, which can increase

deposits and loan demand and ultimately results in profitability. In contrast, holding excess liquidity can be costly for banks as since they pay interest expense to depositors. This can result in a lower net interest income, which is the primary source of revenue for banks. Moreover, excess liquidity can lead to missed investment opportunities, which can lower profitability (NBE Directive No. SBB 55/2013, 2013).

Therefore, banks need to strike a balance between maintaining adequate liquidity levels and maximizing their profitability. Regulators also impose minimum liquidity requirements on banks to ensure their safety and soundness. The ratio of liquid assets to total deposit is used to measure adequacy of liquidity in this study as it is believed that gauging banks' ability to pay depositors' withdrawals is the most pragmatic way of measuring this variable (Bank for International Settlement, 2008).

Bank Specific Factor:

Bank Size

Bank size is also identified by researchers to have the capacity to determine banks' financial performance in addition to the CAMEL variables. The impact of bank size on bank profitability can vary depending on different factors. Some studies suggest that larger banks tend to have higher profitability due to economies of scale, lower operating costs, and greater resources to invest in technology and innovation. However, larger banks may also face greater regulatory scrutiny and have more complex organizational structures that can increase costs and reduce profitability. On the other hand, smaller banks may have more flexibility in adapting to market changes and customer needs, leading to higher profitability. Ultimately, the impact of bank size on profitability depends on several factors such as market conditions, economic factors, and management strategies (Jeevitha et al., 2011). Here, bank size is measured by total assets of the banks. This measure is used by many authors such as Smirlock (1985) and Tesfaye (2014).

External Factors:

The main external factors that are believed to have impact on banks' profitability are the two macroeconomic variables: economic growth (GDP) and inflation (Aburime, 2005).

Economic Growth (GDP)

A strong and growing economy (high GDP growth) is beneficial for the profitability of banks. On one hand, when the economy is growing, businesses and individuals are more likely to be taking out loans and other financial products, which means increased revenue for banks. On the other hand, banks can be vulnerable to economic shocks, such as recessions or market downturns, which can negatively impact their profitability (Abbas, Ullah, Ali, Hussain, and Ashraf; 2022). This study will use GDP growth rate to represent economic growth. The annual real GDP growth rate of Ethiopia is employed to capture economic growth. This measure is commonly used by other researchers such as Tesfaye (2014), and Banerjee (2022).

Inflation

The impact of inflation on banks' profitability can be both positive and negative depending on various factors. For instance, inflation can increase interest rates, which can lead to higher interest income for banks, resulting in higher net interest margin (NIM) and profitability. Contrarily, inflation may increase default risk, which may result in increased non-performing assets and loan loss provisions, leading to a decrease in profitability. Similarly, inflation may affect the cost of funds for the bank, and thus, decreases NIM, resulting in a decrease in profitability. Overall, inflation can impact various aspects of a bank's operations, and the net impact on profitability can be positive or negative, depending on the specific circumstances (Athanasoglou et al., 2005). The annual inflation rate of the country is used in this study.

CHAPTER FOUR

4. DATA PRESENTATION, ANALYSIS, AND INTERPRETATION

This part of the paper presents, analyzes, and interprets the findings of the study that are uncovered using the data and methodologies described in the previous part.

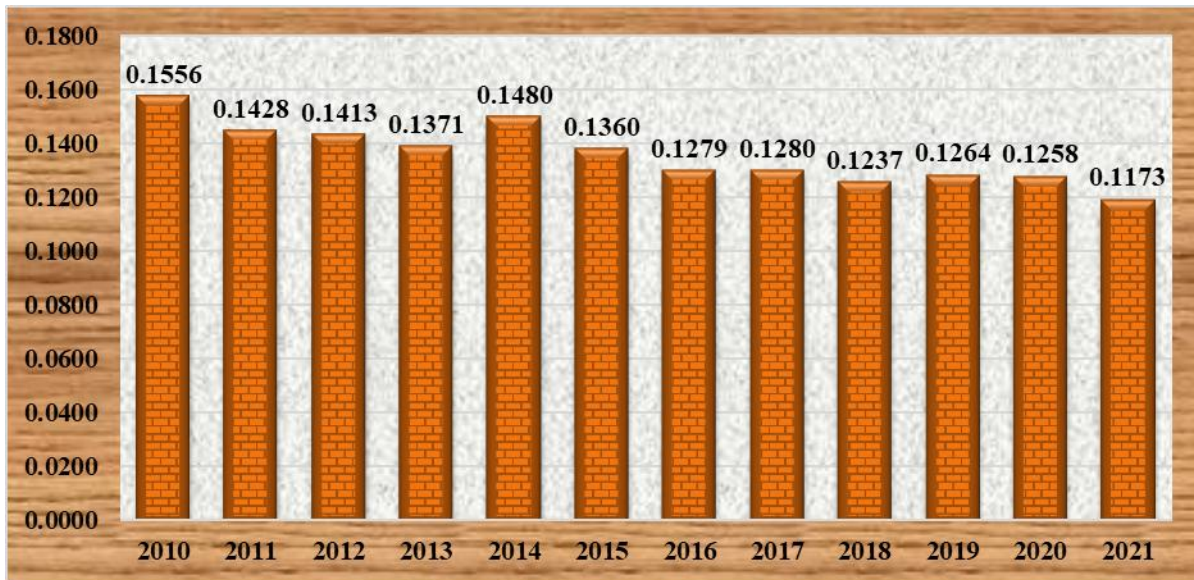
4.1. The Trend of Financial Performance of Banks in Ethiopia

This sub-section deals with the performance of Ethiopian banks over the years (from 2010 to 2021). More specifically, the trend of banks' financial performance is presented and discussed in terms of the most common bank performance measurement parameters, i.e., CAMEL ratio variables (namely, capital adequacy, asset quality, management efficiency, earning ability, and liquidity). In addition, the development in the total asset of banks and trajectories in the profitability of the banking sector are presented and discussed subsequently.

4.1.1. The Trend of Capital Adequacy Ratio (CAR) in the Banking Sector

Capital Adequacy Ratio (CAR) gauges a bank's financial stability. It suggests the ability to absorb unexpected losses. This study adopted the ratio of capital to total assets of banks as a measurement of capital adequacy.

As depicted in Figure 4.1.1, the trend in the average CAR of the banking sector showed a generally declining trend over the years, except for the years 2014 and 2019. More specifically, it begins at its pick of 0.1556 in 2010, then, declined for consecutive 3 years, increased to 0.1480 in 2014, fall once again for the next 2 years, stayed almost stagnant for a year, declined in the following year, raised marginally in 2019, and finally reached its lowest ever CAR (0.1173) in 2021. Overall, the average CAR of the banking sector during the period from 2010 to 2021 was 0.1342 (13.42%), which is above the minimum set by international standards.



Source: Researcher's computation using banks' annual report

Figure 4.1.1: Trend in the Average CAR of the Banking Sector (2010 to 2021)

Table 4.1.1 demonstrates the CAR performance of individual banks during the 12 years covered by this study (2010-2021). Accordingly, banks are ranked based on their average CAR score during 2010-2021. Hence, the top three banks in terms of highest CAR are Bunna Bank (BUB), Berhan Bank (BIB), and Wogagen Bank (WB). On the other hand, the bottom three are Commercial Bank of Ethiopia/CBE, Cooperative Bank of Oromia (CBO), and Dashen Bank (DB). This is partly due to the size of the total asset of the respective banks, as discussed later in the subsequent section. Characteristically, while those banks with smaller total asset sizes registered a higher CAR, other banks with larger total asset sizes registered a lower CAR.

Table 4.1.1: Trend in CAR of Ethiopian Banks (2010 to 2021)

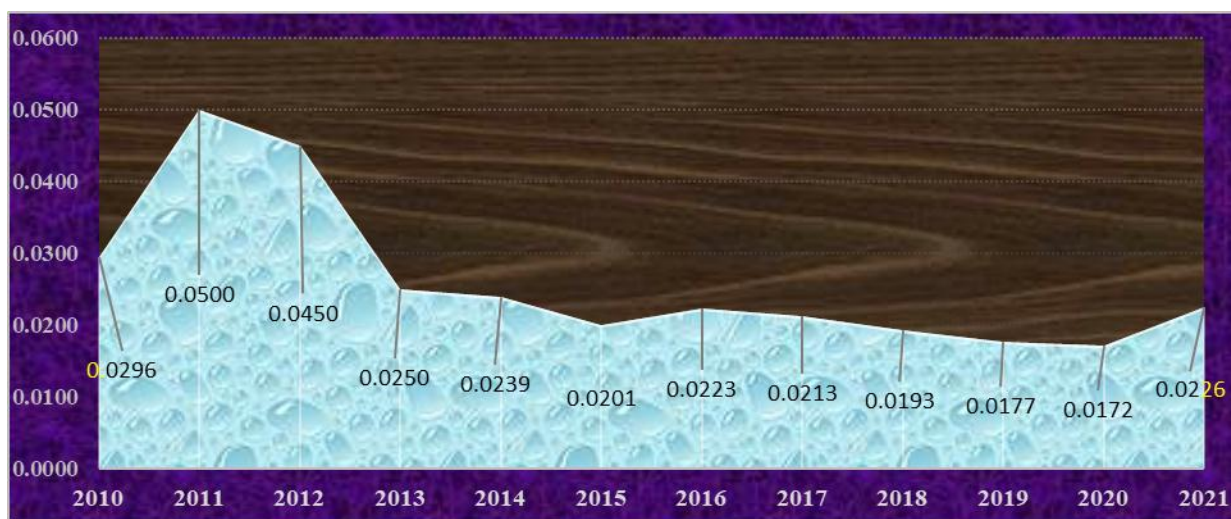
Banks	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Average	Rank
CBE	0.0751	0.0555	0.0487	0.0471	0.0454	0.0442	0.0419	0.0909	0.0823	0.0705	0.0608	0.0543	0.0597	12
AB	0.1063	0.1205	0.1258	0.1162	0.1175	0.1263	0.1263	0.1146	0.1175	0.1291	0.1341	0.1232	0.1214	7
BOA	0.0932	0.0908	0.1100	0.1090	0.1356	0.1325	0.1262	0.1290	0.1327	0.1260	0.0998	0.0833	0.1140	9
DB	0.0909	0.0953	0.1043	0.1036	0.1183	0.1181	0.1175	0.1153	0.1291	0.1218	0.1218	0.1069	0.1119	10
HB	0.1081	0.1167	0.1254	0.1203	0.1326	0.1174	0.1200	0.1149	0.1054	0.1080	0.1245	0.1198	0.1178	8
WB	0.1832	0.1659	0.1922	0.1761	0.1860	0.1761	0.1733	0.1602	0.1397	0.1442	0.1338	0.1265	0.1631	3
NB	0.1535	0.1646	0.1846	0.1822	0.1828	0.1642	0.1591	0.1405	0.1267	0.1308	0.1363	0.1294	0.1546	4
CBO	0.1069	0.0983	0.1137	0.1065	0.1483	0.1231	0.1142	0.0856	0.0795	0.0787	0.0974	0.0873	0.1033	11
ZB	0.1502	0.1491	0.1172	0.1519	0.1674	0.1569	0.1359	0.1360	0.1364	0.1588	0.1688	0.1783	0.1506	5

BIB	0.2697	0.1641	0.1838	0.1736	0.1970	0.1742	0.1473	0.1797	0.1565	0.1458	0.1604	0.1392	0.1743	2
LB	0.1773	0.1952	0.1793	0.1842	0.1738	0.1403	0.1317	0.1320	0.1263	0.1255	0.1095	0.1130	0.1490	6
BUB	0.3522	0.2975	0.2103	0.1750	0.1716	0.1590	0.1409	0.1378	0.1523	0.1772	0.1629	0.1468	0.1903	1

Source: Researcher’s computation using banks’ annual report

4.1.2. The Trend in Asset Quality of the Banking Sector

Asset quality is one of the key indicators of the health and financial performance of banks. It denotes the quality of the loan portfolio and managing the credit risk of banks. Banks need to establish and implement prudent lending systems, procedures, and practices to minimize their credit risk to the lowest possible. The common measurement of asset quality is the ratio of provision for non-performing/bad loans to total loans, which is also adopted by this study.



Source: Researcher’s computation using banks’ annual report

Figure 4.1.2: Trend in the Average Asset Quality Ratio of the Banking Sector (2010 to 2021)

Figure 4.1.2 shows that the asset quality of the banking sector, on average terms, has improved over the years. Initially, the ratio of provision to non-performing loans to total loans has deteriorated to its highest-ever ratio of 0.05 (5%). Then, it improved continually over the next years and reached an average of 0.02 (2%) in the 2021 fiscal year. The average asset quality ratio of banks during the study period was about 0.026 (2.6%). This is a favorable performance by the Ethiopian banking sector since it is much lower than the standard established by regulatory authorities.

Table 4.1.2: Trend in Asset Quality Ratio of Ethiopian Banks (2010 to 2021)

Banks	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Average	Rank
CBE	0.0197	0.0260	0.0238	0.0268	0.0269	0.0265	0.0272	0.0439	0.0362	0.0442	0.0412	0.0386	0.0318	10
AB	0.0471	0.3317	0.3233	0.0230	0.0227	0.0174	0.0153	0.0146	0.0082	0.0087	0.0177	0.0175	0.0706	12
BOA	0.0741	0.0333	0.0257	0.0199	0.0179	0.0151	0.0135	0.0065	0.0117	0.0132	0.0121	0.0147	0.0215	7
DB	0.0218	0.0204	0.0215	0.0225	0.0185	0.0157	0.0166	0.0189	0.0098	0.0065	0.0022	0.0055	0.0150	3
HB	0.0365	0.0277	0.0233	0.0186	0.0144	0.0122	0.0130	0.0125	0.0130	0.0051	0.0068	0.0094	0.0160	4
WB	0.0397	0.0454	0.0243	0.0224	0.0167	0.0161	0.0163	0.0137	0.0175	0.0216	0.0196	0.0460	0.0249	8
NB	0.0390	0.0412	0.0271	0.0250	0.0210	0.0150	0.0177	0.0163	0.0150	0.0098	0.0084	0.0077	0.0203	5
CBO	0.0253	0.0200	0.0144	0.0172	0.0184	0.0256	0.0527	0.0322	0.0238	0.0341	0.0280	0.0194	0.0259	9
ZB	0.0156	0.0178	0.0179	0.0852	0.0883	0.0553	0.0440	0.0456	0.0426	0.0216	0.0175	0.0161	0.0390	11
BIB	0.0100	0.0112	0.0117	0.0152	0.0163	0.0139	0.0148	0.0144	0.0143	0.0116	0.0107	0.0291	0.0144	2
LB	0.0162	0.0145	0.0155	0.0130	0.0134	0.0166	0.0197	0.0201	0.0248	0.0194	0.0243	0.0479	0.0204	6
BUB	0.0101	0.0113	0.0112	0.0116	0.0121	0.0115	0.0170	0.0167	0.0145	0.0159	0.0177	0.0195	0.0141	1

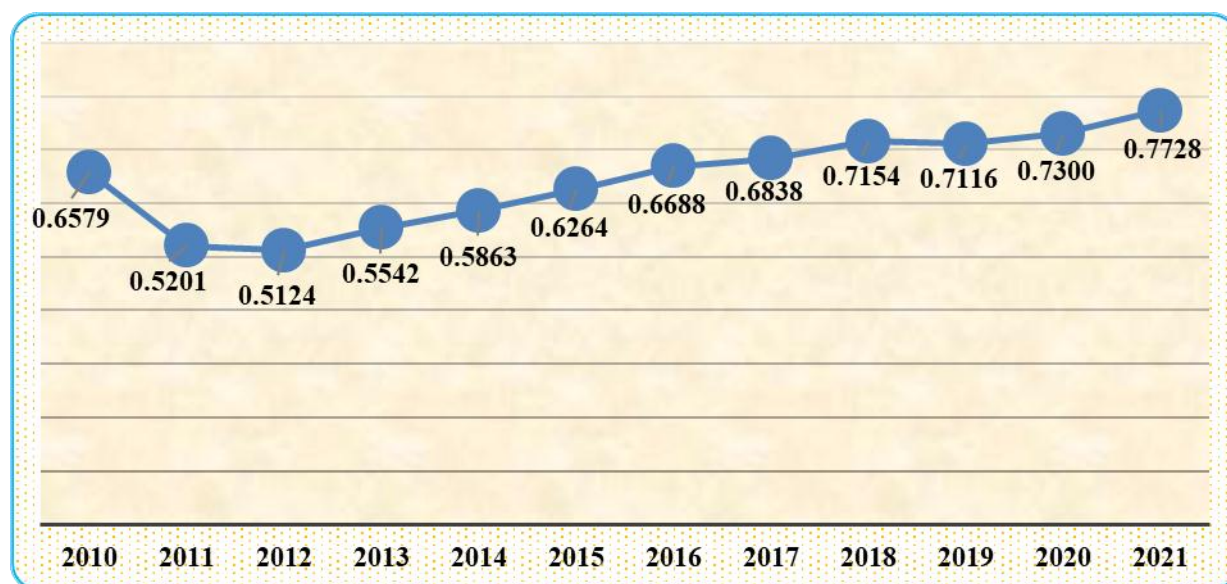
Source: Researcher's computation using banks' annual report

Regarding the performance of respective banks, they are ranked based on their average asset quality ratio score in the 12 years (2010-2021) as exhibited in Table 4.1.2. Accordingly, the top three banks in terms of managing credit risk and maintaining quality portfolios (lower ratio of provision for bad loans to total loans) are BUB (1.41%), BIB (1.44%), and DB (1.5%). In contrast, the bottom three banks are AB (7%), ZB (3.9%), and CBE (3.2%).

4.1.3. The Trend of Management Efficiency in the Banking Sector

The management of banks has an important bearing on the performance of banks. Meanwhile, measuring management efficiency calls for consideration of various issues, including internal working and cost control systems put down by the management, quality of staff, existing practices, and other essential issues of management decisions that have meaningful guidance and impact on banks' performance. This study adopted the most common measurement employed by many authors, which is related to the efficiency ratio. That is the expense incurred to generate

income (the ratio of total expenses to total income). This ratio helps measure and compare banks based on the expense they incur to generate each Birr of their income.



Source: Researcher's computation using banks' annual report

Figure 4.1.3: Trend of the Average Management Efficiency Ratio of the Banking Sector

As demonstrated in Figure 4.1.3, management efficiency (ratio of total expenses to total income) of the Ethiopian banking sector showed largely a worsening trend over the course of the study period. Especially, after having had improvement in the beginning two years, it has been continuously deteriorating for nine years (from 2013 to 2021). This is not a good performance for the banking sector. Therefore, it needs due attention from the banks' management to alter this adverse course. One of the major contributors to the rising expenses of banks as compared to their income is personnel expense (staff salary and benefits). This is because attracting and retaining competent and experienced staff has become a big arena of competition in the banking sector. On average, for the twelve years covered by the study (2010-2021), the banking industry used to incur Birr 0.645 of expenses to generate one Birr of income.

Table 4.1.3: Trend in Management Efficiency Ratio of Ethiopian Banks (2010 to 2021)

Banks	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Average	Rank
CBE	0.3752	0.3941	0.3147	0.3763	0.4367	0.4527	0.5046	0.6121	0.7432	0.7109	0.7707	0.7598	0.5376	1
AB	0.4891	0.4555	0.5223	0.5893	0.5686	0.6257	0.6509	0.6412	0.6368	0.5849	0.6474	0.6491	0.5884	3

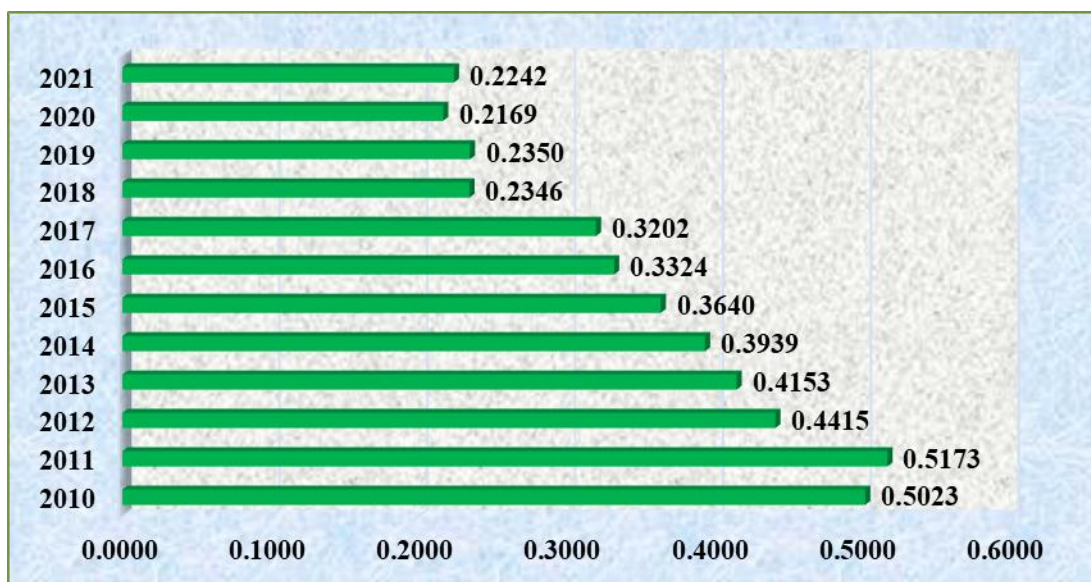
Banks	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Average	Rank
BOA	0.5813	0.5819	0.6009	0.5935	0.6530	0.6902	0.7017	0.7152	0.7661	0.7612	0.8168	0.8034	0.6888	10
DB	0.5248	0.5087	0.4823	0.5525	0.5536	0.6168	0.6522	0.7131	0.7419	0.7713	0.7654	0.7635	0.6372	7
HB	0.5150	0.4885	0.5112	0.5871	0.6534	0.7314	0.7440	0.7570	0.7554	0.7429	0.7703	0.7638	0.6683	8
WB	0.4383	0.4378	0.4305	0.5365	0.6128	0.6588	0.6879	0.6696	0.6599	0.7712	0.7561	0.9614	0.6351	6
NB	0.4874	0.4760	0.4871	0.5552	0.6009	0.7331	0.6794	0.6502	0.7348	0.7221	0.7122	0.7212	0.6300	4
CBO	0.7187	0.6451	0.5402	0.5061	0.4604	0.6129	0.9657	0.8429	0.7389	0.7934	0.7522	0.7888	0.6971	11
ZB	0.4841	0.4435	0.5375	0.6943	0.6385	0.5997	0.6160	0.6313	0.6986	0.5989	0.5347	0.5477	0.5854	2
BIB	1.7309	0.6135	0.5745	0.5838	0.5934	0.6283	0.5551	0.5955	0.7345	0.7371	0.7530	0.9016	0.7501	12
LB	0.5528	0.5617	0.5232	0.4930	0.6282	0.5687	0.6092	0.6634	0.6813	0.6864	0.7490	0.8973	0.6345	5
BUB	0.9976	0.6353	0.6248	0.5826	0.6366	0.5986	0.6592	0.7135	0.6932	0.6589	0.7322	0.7155	0.6873	9

Source: Researcher's computation using banks' annual report

In the same token, the trend in management efficiency of the respective banks covered by the study is presented in Table 4.1.3. While the leading banks in terms of management efficiency are CBE (spent Birr 0.538 to generate one Birr of income), followed by ZB (0.585) and AB (0.588), the least performing banks are BIB (spending Birr 0.75 to generate one Birr of income), CBO (0.697), and BOA (0.689).

4.1.4. The Trend of Earning Ability in the Banking Sector

The ability of banks to income from diversified sources is believed to determine the sustainability of banks. Especial emphasis is given to non-interest income sources as such income sources do not require banks to incur interest expenses and are associated with the lesser cost of funds, thereby contributing to a higher profit margin for banks. Accordingly, the share of non-interest income out of the total income is used to capture earning ability of banks. Among others, these income sources include commissions, gains from foreign currency exchange transactions, other bank services, and transaction fees, and other income sources.



Source: Researcher's computation using banks' annual report

Figure 4.1.4: Trend of the Average Earning Ability Ratio of the Banking Sector

As it is obvious from Figure 4.1.4, the earning ability of the Ethiopian banking sector has shown mostly a declining trend during the study period. If this unfavorable trajectory carries on, it will put the sustainability of Ethiopian banks in jeopardy. Overall, for the twelve years covered by the study, the average share of non-interest income from the total income of banks is approximately 35%.

Table 4.1.4: Trend in Earning Ability Ratio of Banks (2010 to 2021)

Banks	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Average	Rank
CBE	0.3897	0.4164	0.4208	0.3051	0.3023	0.2776	0.2254	0.1943	0.0420	0.1589	0.1758	0.1863	0.2579	12
AB	0.5583	0.5745	0.3980	0.3730	0.3659	0.3648	0.3192	0.3126	0.2230	0.2581	0.2288	0.2786	0.3546	7
BOA	0.4416	0.3980	0.3120	0.3251	0.2751	0.2930	0.3280	0.3262	0.1688	0.1829	0.1707	0.2471	0.2890	10
DB	0.4995	0.5292	0.4919	0.4469	0.4681	0.4377	0.4433	0.3938	0.2678	0.2310	0.2365	0.2237	0.3891	2
HB	0.5084	0.4626	0.3763	0.3361	0.3124	0.2893	0.2674	0.2296	0.2167	0.1741	0.1388	0.1741	0.2905	9
WB	0.5627	0.6136	0.4511	0.3965	0.3825	0.3564	0.3319	0.3724	0.3148	0.2161	0.2653	0.2156	0.3732	5
NB	0.5215	0.4931	0.4290	0.3297	0.3319	0.1523	0.2026	0.2300	0.1656	0.1444	0.1425	0.1023	0.2704	11
COOP	0.4170	0.5063	0.4340	0.5566	0.5212	0.4353	0.2362	0.2676	0.2821	0.2451	0.2755	0.3253	0.3752	4
ZB	0.7669	0.7214	0.6143	0.6294	0.5488	0.4769	0.4781	0.5206	0.3727	0.3588	0.3185	0.3768	0.5153	1
BIB	0.2925	0.4928	0.4711	0.4822	0.4393	0.4357	0.4144	0.4094	0.2810	0.3039	0.2792	0.2595	0.3801	3
LB	0.4923	0.4627	0.4731	0.4312	0.3886	0.4884	0.4108	0.2676	0.2218	0.2459	0.1394	0.0867	0.3424	8
BUB	0.5769	0.5365	0.4264	0.3718	0.3903	0.3605	0.3318	0.3177	0.2584	0.3004	0.2314	0.2139	0.3597	6

Source: Researcher's computation using banks' annual report

The earning ability of the respective banks is presented in Table 4.1.4. Accordingly, the top three banks in terms of fetching a larger proportion of their income from non-interest sources (relative to other banks) are ZB (51.5% of its income is from non-interest sources), followed by DB (38.9%) and BIB (38.1%). On the other hand, the bottom three banks in terms of earning ability are CBE (only 25.8% of its income is from non-interest sources), NB (27%), and BOA (28.9%).

4.1.5. Trend of Liquidity in the Banking Sector

Maintaining the right liquidity balance enable banks to prevent both excessive and inadequate liquid asset. The liquidity of banks can be measured by various parameters. However, the NBE has set straightforward measurements for an appropriate balance of liquidity. That is the ratio of liquid assets to deposit ratio, which is a minimum of 15%. Out of this, banks are obliged to reserve 5% of it in NBE as reserve, as per NBE’s Directive No. SBB 55/2013.



Source: Researcher’s computation using banks’ annual report

Figure 4.1.5: Trend of the Average Liquidity Ratio of the Banking Sector

Figure 4.1.5 shows the overall course of the improvement in liquidity management of the banking sector. For instance, the banking sector had been maintaining as much as 69% of the deposit in the form of liquid assets as of 2010, which is much higher than the required standard set by NBE (15%). This figure has become about 20% in 2021. This hints at the fact that Ethiopian banks used to maintain most of their customers’ deposits within their own. They were

maintaining enormous idle cash balances. In other words, they were missing lending and investment opportunities. However, this trend is changing for good. There is obvious improvement in terms of reducing the practice of maintaining excess liquid assets. This improvement enables banks to augment their revenues and enhance their profitability. On average, the banking sector used to maintain about 37% of the deposit in the form of liquid asset.

Table 4.1.5: Trend in Liquidity Ratio of Banks (2010 to 2021)

Banks	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Average	Rank
CBE	0.3497	0.3555	0.2195	0.2380	0.2005	0.1443	0.1472	0.1925	0.1530	0.1583	0.1647	0.2164	0.2116	1
AB	0.6621	0.5228	0.3434	0.2847	0.3364	0.2954	0.2138	0.1661	0.2677	0.1991	0.1969	0.1994	0.3073	2
BOA	0.6184	0.6111	0.5884	0.5309	0.6000	0.5642	0.4977	0.4153	0.4189	0.2030	0.1335	0.1592	0.4451	11
DB	0.6558	0.5847	0.4673	0.4248	0.3700	0.2791	0.3019	0.2386	0.1760	0.1127	0.1710	0.1680	0.3292	5
HB	0.7401	0.6151	0.4472	0.2678	0.3799	0.2460	0.3035	0.2318	0.2291	0.1620	0.1732	0.1701	0.3305	6
WB	0.4033	0.7222	0.5141	0.3624	0.3745	0.1953	0.2253	0.2246	0.2018	0.1860	0.2175	0.1639	0.3159	3
NB	0.7434	0.7066	0.5106	0.3382	0.2418	0.1839	0.2397	0.1999	0.2154	0.1820	0.1626	0.2098	0.3278	4
CBO	0.6207	0.6146	0.7385	0.8080	0.3390	0.5391	0.4375	0.3949	0.5162	0.4312	0.3512	0.3276	0.5099	12
ZB	0.8883	0.6082	0.5020	0.3948	0.2517	0.3619	0.4364	0.4614	0.4213	0.2545	0.3051	0.3002	0.4321	10
BIB	0.8271	0.7619	0.6098	0.4644	0.4575	0.4002	0.2939	0.3161	0.2963	0.2570	0.2211	0.1919	0.4248	9
LB	0.7277	0.7035	0.8008	0.4228	0.4205	0.3445	0.2895	0.3044	0.2594	0.2201	0.2638	0.1500	0.4089	7
BUB	1.0471	0.7697	0.4467	0.3754	0.4153	0.3374	0.2328	0.2758	0.3194	0.2622	0.2438	0.1987	0.4104	8

Source: Researcher's computation using banks' annual report

Regarding the comparison among banks, Table 4.1.5 shows that the leading three banks in terms of turning their deposit into lending and investment opportunities than maintaining excess liquid assets are CBE (21.2%), AB (30.7), and WB (31.6%). In contrast, those banks with the highest excess liquid assets, on average, are CBO (51%), BOA (44.5%), and ZB (43.2).

4.1.6. The Trend of Bank Size (Total Asset) in the Banking Sector

In addition to the above five CAMEL model variables/ratios, bank size is also identified by some researchers to have an impact on the performance of banks. Accordingly, this paper also suggested the same as one of the hypotheses of the study to test it with empirical data. Banks' size is captured by total asset of banks.



Source: Researcher's computation using banks' annual report

Figure 4.1.6: Trend of the Average Total Asset of the Banking Sector (In million Birr)

It is apparent from Figure 4.1.6 that the size of banks, as represented by their total asset, has continually increased during the entire study period. For instance, the average total asset of a bank was about Birr 10 billion in 2010; Then, it arrived at an average total asset of Birr 138 billion after relentless improvements over the years. On average, the average total asset of the banking sector has been increasing by an average of 27% per annum during the twelve years covered by the study (2010-2021).

Table 4.1.6: Trend in Bank Size (Total Asset) of Banks (2010 to 2021)

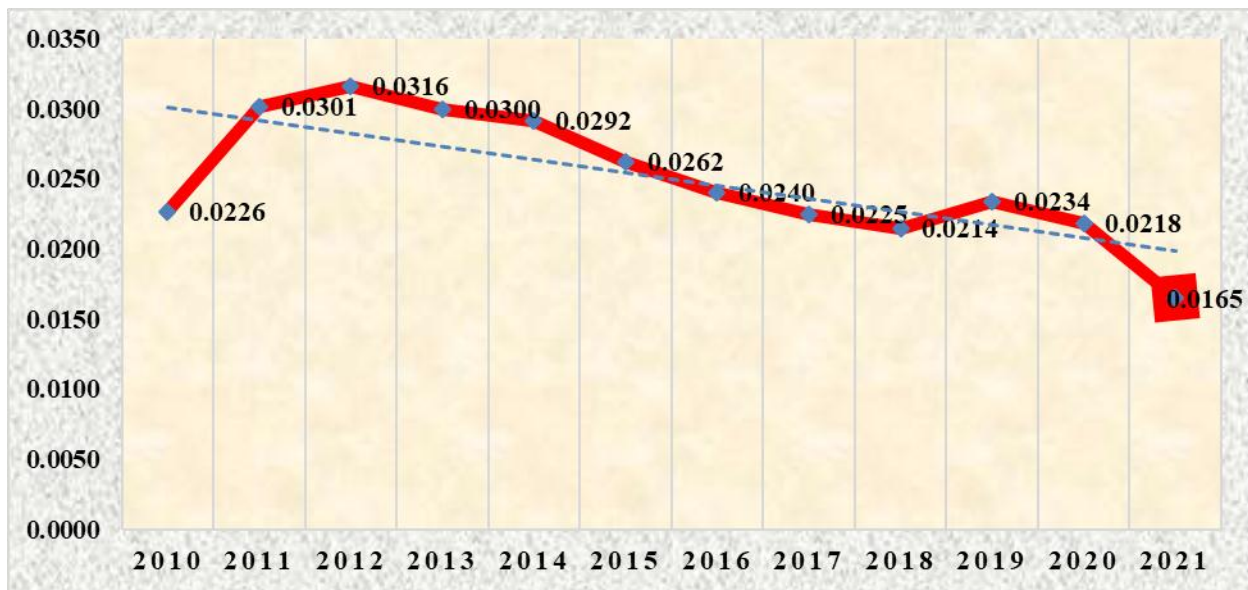
Banks	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Average	Rank
CBE	74,231	114,645	158,804	195,443	244,128	290,780	384,693	490,068	573,894	712,882	819,279	991,319	420,847	1
AB	9,023	11,089	13,125	17,784	22,106	25,211	31,148	41,975	55,268	74,635	89,280	128,695	43,278	2
BOA	6,280	7,278	8,240	10,160	11,276	13,668	16,828	25,882	31,983	39,294	56,891	103,850	27,636	4
DB	12,353	14,660	17,520	19,747	21,962	24,764	28,576	34,625	45,425	56,218	68,261	94,697	36,567	3
HB	5,896	7,725	8,787	9,986	11,876	14,361	17,270	21,903	28,031	35,736	42,998	54,094	21,555	6
WB	5,742	8,061	8,347	10,394	11,529	13,711	16,190	20,949	27,391	29,770	38,160	39,656	19,158	8
NB	5,971	7,112	8,276	9,145	10,747	13,256	15,830	21,020	26,689	33,717	42,464	54,199	20,702	7
CBO	1,769	2,500	3,671	6,537	7,350	11,462	10,687	17,724	29,888	41,791	52,488	81,321	22,266	5
ZB	1,056	1,614	2,394	3,248	3,925	4,874	7,374	9,669	12,439	14,689	18,496	25,150	8,744	11
BIB	380	914	1,285	2,197	2,814	4,172	7,196	10,489	14,068	19,173	21,355	26,919	9,247	10
LB	1,364	1,808	2,463	2,942	3,613	5,859	8,119	10,976	14,320	20,392	31,783	32,204	11,320	9
BUB	480	781	1,365	2,128	3,012	4,262	6,821	9,820	13,021	14,495	18,867	25,946	8,417	12

Source: Researcher's computation using banks' annual report

Regarding the comparison among banks, the state-owned commercial bank, CBE, is obviously the leading bank in the banking sector (With an average total asset of Birr 420.8 billion during the twelve years study period; its total asset has surpassed Birr 991 billion as of 2021). The second leading bank in terms of total assets is AB (average total asset of about Birr 43.3 billion), followed by DB (about Birr 36.6 billion). On the other hand, the smallest three banks in terms of total assets are BUB (Birr 8.4 billion), ZB (Birr 8.7 Billion), and BIB (Birr 9.2 billion).

4.1.7. The Trend of Profitability in the Banking Sector

The most common profitability indicators include Return on Asset (ROA), Return on Equity (ROE), and Net Interest Margin (NIM). Due to the reasons discussed in detail in the literature review part of this study, ROA is the preferred measure of profitability by almost all researchers. Accordingly, ROA is adopted by this study to capture the profitability of Ethiopian banks. ROA is the ratio of net income after tax to total assets of banks.



Source: Researcher's computation using banks' annual report

Figure 4.1.7: Trend of the profitability of the Banking Sector (In million Birr)

As depicted in Figure 4.1.7, the overall profitability of Ethiopian banks showed a generally declining trend during the study period, except in three years (2011, 2012, and 2019). The average ROA of the banking sector has been declining by an average of 2% per annum during the study period. This deteriorating trend of ROA might be associated with the declining trend of

earning ability and management efficiency while the total asset of banks is continuously enlarging as discussed above. Overall, the average ROA of the banking sector during the study period was about 2.5%. This is modest compared to the ROA benchmark of other well-performing African banking Industries. For instance, the ROA of the banking sector in Ghana, Malawi, Burundi, Kenya, Tanzania, and Uganda is 4.9%, 4.6%, 4.4%, 3.8%, 3.5%, and 2.9%, respectively. Still, the average ROA of the Ethiopian banking industry is better than the ROA of banks in some other African countries such as Egypt (2.3%), Ivory Cost (1.8%), Tunisia (1.62%), Nigeria (1.4%), and South Africa (1.3%) (The Global Economy, 2023).

Table 4.1.7: Trend in ROA of Banks (2010 to 2021)

Banks	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Average	Rank
CBE	0.0265	0.0250	0.0342	0.0299	0.0274	0.0302	0.0243	0.0195	0.0094	0.0161	0.0116	0.0134	0.0223	8
AB	0.0274	0.0325	0.0301	0.0328	0.0280	0.0256	0.0239	0.0239	0.0270	0.0326	0.0290	0.0264	0.0283	2
BOA	0.0224	0.0249	0.0263	0.0269	0.0244	0.0213	0.0226	0.0197	0.0176	0.0198	0.0150	0.0129	0.0212	11
DB	0.0262	0.0307	0.0372	0.0307	0.0324	0.0294	0.0254	0.0218	0.0205	0.0181	0.0225	0.0182	0.0261	5
HB	0.0296	0.0300	0.0339	0.0282	0.0234	0.0196	0.0196	0.0174	0.0205	0.0211	0.0208	0.0192	0.0236	7
WB	0.0389	0.0401	0.0402	0.0327	0.0276	0.0257	0.0232	0.0254	0.0290	0.0209	0.0218	0.0032	0.0274	3
NB	0.0336	0.0347	0.0346	0.0313	0.0292	0.0133	0.0225	0.0246	0.0193	0.0214	0.0246	0.0224	0.0260	6
CBO	0.0142	0.0189	0.0278	0.0290	0.0468	0.0273	0.0037	0.0117	0.0175	0.0157	0.0225	0.0163	0.0209	12
ZB	0.0396	0.0525	0.0361	0.0290	0.0326	0.0315	0.0275	0.0274	0.0218	0.0329	0.0400	0.0379	0.0341	1
BIB	0.0159	0.0232	0.0265	0.0238	0.0317	0.0251	0.0362	0.0332	0.0233	0.0239	0.0259	0.0072	0.0220	9
LB	0.0290	0.0242	0.0306	0.0378	0.0200	0.0343	0.0322	0.0245	0.0273	0.0264	0.0202	0.0104	0.0264	4
BUB	0.0001	0.0249	0.0220	0.0278	0.0265	0.0316	0.0274	0.0205	0.0242	0.0318	0.0075	0.0103	0.0212	10

Source: Researcher's computation using banks' annual report

Finally, a comparison of banks based on their average ROA score is made (Table 4.1.7). Accordingly, the highest score is registered by ZB (3.4%), followed by AB (2.8%) and WB (2.7%). On the other hand, the smallest average ROA is registered by CBE (2.1%), BOA (2.1%), and BUB (2.1%).

4.2. Factors Affecting the Financial Performance of Banks in Ethiopia

The performance of Ethiopian banks over the years is presented and analyzed above by making use of the CAMEL variables, which is the most common way of examining the financial performance of banks across the globe. Now, the impact of these variables along with other

sector-specific (banks' size) and macroeconomic variables (economic growth and inflation) on the performance of banks is assessed subsequently.

4.2.1. Correlation Test of Variables

Correlation analysis measures the degree of association between the variables included in a study. Therefore, this section identifies whether there exists a positive, negative, or no correlation between the variables included in this study without implying any causality. This is done using correlation coefficient statistics. The result is presented in Table 4.2.1.

Table 4.2.1: Result of Correlation among the Study Variables

Variables	ROA	CA	AQ	ME	EA	LB	lnBS	GDPGR	INFGR
ROA	1								
CA	0.2871	1							
AQ	0.0739	-0.0838	1						
ME	-0.8201	-0.0647	-0.1538	1					
EA	0.6738	0.3370	0.2063	-0.6486	1				
LB	0.3433	0.3026	0.0887	-0.4288	0.6862	1			
lnBS	-0.3867	-0.7224	-0.0120	0.2400	-0.6599	-0.6691	1		
RGDPGR	0.3980	0.1775	0.1140	-0.5305	0.5945	0.4968	-0.4558	1	
INFGR	0.1013	0.0079	0.1568	-0.1855	0.1070	0.2718	-0.0749	-0.3643	1

Table 4.2.1 exhibits that Return on Asset (ROA) has a positive correlation with Capital Adequacy, Asset Quality, Earning Ability, Liquidity Balance, economic growth, and inflation. On the other hand, ROA is negatively correlated with Management Efficiency and Bank Size, which is consistent with both the theoretical literature and empirical findings of other researchers discussed in part two of this paper.

Regarding the issue of multicollinearity (relationship between the independent variables), Cooper and Schindler (2009), as well as Masher (2007), showed that less than 0.8 coefficient of correlation among independent variables should not be considered a sign of multicollinearity. Accordingly, there is no multicollinearity between the independent variables of this study.

Overall, this correlation analysis cannot confirm any causality between the dependent and independent variables of the study. Therefore, the next section examines the causality of the 8 (eight) independent variables on the performance of banks.

4.2.2. Econometrics Model Result

4.2.2.1 Unit Root Test

Since the use of non-stationary data can lead to spurious regressions, a unit root test is carried out to check if the panel data have no unit root problem. A stationary panel data can be defined as one with a constant mean, constant variance, and constant autocovariances for each given lag (Brooks, 2008). Among a variety of powerful tools for testing a panel for the presence of a unit root, the most commonly used is the Augmented Dickey-Fuller (ADF) test. Thus, this paper adopted the ADF test to assess the stationarity of variables included in the study; and the result is presented as follows.

Table 4.2.2.1: Unit Root Test based on Augmented Dickey-Fuller (ADF) Test

Variables	ADF Test Statistic	
	At Level	At First Difference
ROA	0.5089 (0.6946)	-8.9346 (0.0000) ***
CA	-1.7378 (0.0411) **	-8.4247 (0.0000) ***
AQ	-1.3093 (0.0952) *	-7.7214 (0.0000) ***
ME	1.5459 (0.9389)	-10.1542 (0.0000) ***
EA	-1.1306 (0.1291)	-8.8959 (0.0000) ***
LB	-7.2321 (0.0000) ***	-7.5751 (0.0000) ***
lnBS	1.3818 (0.9165)	-5.1604 (0.0000) ***
GDPGR	-2.2759 (0.0114) **	-23.1389 (0.0000) ***
INFGR	-1.9680 (0.0245) **	-732536 (0.0000) ***

*** Rejection of the null hypothesis at 1% significance level

** Rejection of the null hypothesis at a 5% significance level

* Rejection of the null hypothesis at a 10% significance level

As it is clear from Table 4.2.2.1, the null hypothesis that the variables have unit root is not rejected at level as four out of nine variables are not stationary. Thus, performing a transformation of the data is found appropriate. Accordingly, differencing of the variables is made to perform the test once again at first difference. Consequently, and the null hypothesis of unit root is rejected for all the variables at a 1% significance level. Thus, carrying out the regression at this position is valid as all the variables have become stationary at their first difference.

4.2.2.2 Hausman Model Specification Test for Random Effects vs Fixed Effects

Since the type of data set used by this study is cross-sectional/panel in nature, it is customary and imperative to see whether random effects or fixed effects estimation should be used, which allows choosing a type of regression that has lesser variance and is more consistent and efficient. Accordingly, linear regression models with both fixed effects (*fe*) and random effects (*re*) are run, then, the Hausman test is performed. The result of the Hausman test shows that the more appropriate model is random effects than the fixed effects one, as the null hypothesis of random effects is not rejected (See Appendix C for the details of the Hausman test result).

4.2.2.3 Model Diagnosis

The regression estimation is performed based on the random effects model as suggested by the result of the Hausman test. Next, it is imperative to conduct various model diagnosis tests to ensure the fulfillment of basic assumptions and to avoid spurious regression and misleading interpretations. Hence, this sub-section serves this purpose.

Normality Test

While small departures from normality do not affect the model greatly, gross non-normality is potentially more serious, as T- or F-statistic, and confidence and prediction intervals depend on the normality assumption. For that reason, a normality test is conducted and the result is presented below. Firstly, the histogram on the residuals of the regression estimation, (as depicted in Appendix D), shows normal distribution as it is bell-shaped and largely fits into a normal density plot.

Secondly, a statistical normality test is conducted using the most common Anderson-Darling Normality Test. Accordingly, the probability of the Anderson-Darling Z Test for the estimation

is insignificant, which dictates accepting the null hypothesis of normal distribution (Appendix E). In addition, the histogram is bell-shaped. Therefore, these results suggest that the test statistics of the model are valid.

Autocorrelation Test

According to Gujarati (2003), if the original data are non-stationary and their first differences become stationary, then, first-difference transformation might serve a dual purpose in getting rid of autocorrelation and rendering stationary. Essentially, even many of the methods employed to avoid autocorrelation (e.g., Cochrane Transformation) make use of difference transformation as a remedy. In this regard, as demonstrated above, the regression of this study is estimated based on the differenced data as suggested by the ADF unit root test. Thus, it is presumed that autocorrelation may not be a serious problem in this estimation.

However, to make sure that the estimation is not vulnerable to a severe autocorrelation problem, this paper has employed the Wooldridge Test for autocorrelation in panel data. This test examines if residuals are correlated with their lagged values. The result obtained from the test shows that the null hypothesis of no autocorrelation is not rejected as the probability is not significant (Appendix G). Hence, the residuals exhibit no pattern, they are random, suggesting no correlation in the residuals of the regression estimation. As a result, there is no considerable problem that needs the re-specification of the regression model till now.

Heteroskedasticity Test

Another important issue is verifying whether the errors appearing in the regression function are homoscedastic; i.e., they all have constant variance (Gujarati, 2003). To do so, Wald Panel Data Heteroskedasticity Test is used to examine the variance of the errors. It is a test of the null hypothesis of no Heteroskedasticity.

The Wald Test statistic of the estimation is significant (Appendix H), which suggests rejecting the null hypothesis of Homoskedasticity in favor of the alternative hypothesis that there is panel heteroskedasticity. Therefore, the error variances of the above model estimation are not constant. Thus, the homoskedasticity assumption is not fulfilled.

Accordingly, the regression model should be re-specified and re-estimated with further consideration for the prevalence of panel heteroskedasticity. There are two major remedial regression model estimations given such panel-heteroskedasticity scenarios. These are by means of Cluster Robust Regression Model or by using Feasible Generalized Least Squares (FGLS). The best method/model for this study's data type is the first one. This is because, unlike FGLS, Robust regression uses more robust variance estimates that provide correct coverage rates to much more than panel-level heteroskedasticity; they are robust to any type of correlation within the observations of each panel/group since it uses the linearization/Huber/White/sandwich (robust) estimates of variance (and thus standard errors). On the other hand, if the covariances within the panel are different from simply being panel heteroskedastic, the FGLS estimates will be inefficient and the reported standard errors will be incorrect (Baum, Cox, and Wiggins, 2001).

In addition, while it needs many periods and few panels to analyze by FGLS, many clusters are needed when using Cluster Robust Regression, which is fulfilled by the data type of this study (12 groups and 11 observations per group). Therefore, this study applied cluster robust regression to provide correct coverage for both panel-level and within-panel heteroskedasticity and other model misspecifications, if any. The subsequent results of the cluster robust regression estimation are depicted in Table 4.2.2 and interpreted and analyzed sequentially.

Table 4.2.2: Regression Result

Independent Variables	Coefficient	Robust Standard error	Z-statistic	Probability
CA	.120	.026	4.69	0.000***
AQ	-.018	.004	-4.27	0.000***
ME	-.053	.009	-6.15	0.000***
EA	.023	.008	2.91	0.004***
LB	-.016	.004	-4.18	0.000***
lnBS	.001	.003	0.44	0.658
GPDGR	-.000	.000	-1.16	0.247
INFR	.000	.000	0.71	0.477
Constant	-.000	.001	-0.25	0.802

R-squared: Within = 0.7672

Prob > chi² = 0.0000

Between = 0.8733
Overall = 0.7658

*** Significant at 1% level

4.2.2.4 Model Results and Discussions

This subsection deals with the interpretation and discussion of the empirical findings of the study which are presented in table 4.2.2. The overall R-squared of the model is 0.7658, which implies that about 77% of the variation in the financial performance of banks in Ethiopia is explained by the explanatory variables included in the model. These are Capital Adequacy (CA), Asset Quality (AQ), Management Efficiency (ME), Earning Ability (EA), Liquidity Balance (LB), Bank Size (BS), Economic Growth (GDPGR), and Inflation Rate (INFR).

In addition, the probability value of the f-statistic ($\text{prob} > \chi^2$) is statistically significant at 1% level. This proves that the observed relationship of the variables in the model is unlikely to occur by chance. Thus, the independent variables have a statistically significant impact on the dependent variable (ROA).

Accordingly, the regression estimation result in Table 4.2.2 shows that among the eight explanatory variables, capital adequacy, asset quality, management efficiency, earning ability, and liquidity have a statistically significant impact on the performance of Ethiopian commercial banks. Next, testing of each of the hypotheses forwarded earlier in this paper is made as follows.

The Impact of Capital Adequacy on the Performance of Banks (H1)

The first proposed hypothesis of this study was regarding Capital Adequacy Ratio (CAR), as measured by the ratio of total capital to total assets of the respective banks, to have a positive impact on the performance of banks. As Table 4.2.2 shows, the coefficient of capital adequacy is significant at a 1% level. Hence, this result leads to the acceptance of the first hypothesis that capital adequacy has a statistically significant positive impact on the performance of banks.

The implication is that any increase or decrease in the capital adequacy ratio has a direct impact on the performance of banks. Maintaining adequate capital help banks absorb potential losses, if any, and it improves the confidence of stakeholders and customers. While banks with insufficient capital reduce their lending activities to minimize the risk of insolvency, banks with a better

capital adequacy ratio follow more risk-taking lending approaches that can bring more returns, which contributes to their overall competitiveness and profitability. The finding of this study is consistent with the findings of Ongore (2015) and Charles (2013).

The Impact of Asset Quality on the Performance of Banks (H2)

The negative impact of Asset Quality (AQ), as represented by the ratio of provision for doubtful loans to total loans, on the performance of banks (represented by ROA), was the second hypothesis of the study. As it is clear from the regression estimation in Table 4.2.2, the negative coefficient of AQ is statistically significant at the 1% level. This proves the strong negative causal relationship between the quality of assets and the performance of banks, which suggests accepting the second hypothesis of the study that asset quality has a negative impact on the financial performance of banks.

This result suggests that the capability of banks to effectively control and manage risk in their lending portfolio is obviously one of the key determinants of profitability in the banking sector. For instance, if banks have default loans, they cannot earn repayments, rather they are obliged to set aside provisions for it. This, in turn, reduces their revenue and affects their overall profitability. This concurs with the findings of Ashenafi (2022), Banerjee (2020), Anteneh (2018), Ongore (2015), and Tesfaye (2014).

The Impact of Management Efficiency on the Performance of Banks (H3)

The third hypothesis proposed by the study was that Management Efficiency (ME), measured by the ratio of total expenses to total income, negatively affects the profitability of banks. The outcome of the regression, estimation as depicted in Table 4.2.2, is consistent with this hypothesis. The negative coefficient of ME is statistically significant at a 1% level.

This evidence implies that the efficiency of banks' management has a strong impact on the performance of banks. This is because, better and more efficient managements enable banks to establish effective and efficient working systems, procedures, and practices that help monitor and control expenses and enhance income, which ultimately results in lower expenses per income and then, improved profit margin. Actually, as frequently marked by many scholars in the area, financial performance is the outcome of the choices and decisions of the management. The finding of this study regarding the impact of management efficiency on the performance of banks

corresponds to the findings of many authors such as Anteneh (2018), Ongore (2015), and Tesfaye (2014).

The Impact of Earning Ability on the Performance of Banks (H4)

The growth and sustainability of banks depend on earning quality. Since interest income is associated with a higher cost of funds (interest to depositors), special attention is being paid to non-interest income, which leads to a lower cost of funds, and so, a higher profit margin. This is why this study suggested its fourth hypothesis that Earning Quality (EQ) measured by the ratio of non-interest income to total income, has a positive impact on the profitability of banks.

The regression analysis (Table 4.2.2) has come up with a result that the impact of EQ on ROA is statistically significant at 1%. Therefore, the hypothesis that earning quality has a positive impact on banks' profitability is accepted. Accordingly, This hints at the fact that those banks which effectively manage their income sources are better able to improve their profitability and overall sustainability. This finding is similar to the one by Ashenafi (2022), Ongore (2015), and Tesfaye (2014).

The Impact of Liquidity Balance on the Performance of Banks (H5)

The fifth hypothesis of the study is that inability banks to maintain the right balance of liquidity has a detrimental impact their profitability. NBE's Directive No. SBB 55/2013 has established the measurement liquidity (ratio of liquid assets to deposit ratio) and set the minimum standard of appropriate liquidity balance (15%), out of which, 5% should be held by NBE as reserve.

As it is clear from the estimation on Table 4.2.2, the negative coefficient of Liquidity Balance (LB) is significant at 1%. This indicates its strong negative impact on banks' profitability (ROA), which suggests to accept the respective hypothesis of the study. The implication is that keeping a well-balanced liquidity position help avoid excessive or insufficient balances. However, as discussed in the liquidity trend analysis above, most Ethiopian banks have a tendency of maintaining much more than the standard 15% liquid asset position throughout the study period. This is assumed to have impacted their lending and interest-earning ability, which in turn, might have affected their profitability. For instance, if banks do not or cannot convert excess liquid

assets into loans, they end up having excess balance. This exposes them to incurring interest expenses without earning interest income on it, which reduces their profitability.

In addition to their discharging their obligation to maintain 15% of their deposit as a liquid asset and reserving 5% of it in NBE, as per NBE Directive number MFA/NBE BILLS/001/2011, commercial banks must also purchase NBE Bills to the equivalent of 27% of their disbursed loans. The Bills are interest-bearing at 3%, which is more than twice lower than the interest banks pay to depositors (7%). Moreover, almost all banks purchase treasury bills and government bonds (e.g., GERD bonds). Besides, banks maintain varied amounts of local and foreign currency-denominated cash at NBE as payment and settlement accounts; they also deposit cash with local and foreign banks for their day to day business transaction purposes. These all show apart from maintaining cash to withstand short-term obligations, there is a noteworthy portion of deposit/cash that banks did not or could not turn into loans, which hints at missed investment/lending opportunity by banks, which leads to lower interest income and profitability. Thus, the more excess cash balance that banks continue to maintain, the reduced their loanable/investable fund becomes, and the lesser their profitability becomes. This finding is consistent with the findings of Ashenafi (2022) and Anteneh (2018).

The Impact of Bank Size on their Performance (H6)

Some studies suggested that larger banks tend to have higher profitability due to economies of scale and many resources to invest in technology and innovation. This is why this study has proposed the hypothesis that Bank Size (BS) has a positive effect on the profitability of banks in Ethiopia. However, this hypothesis is rejected as the results of the regression estimation come with a statistically insignificant coefficient. Therefore, there is not enough evidence to suggest the impact of the size of banks on their Return on Assets (ROA). This finding is consistent with the findings of Tesfaye (2014).

The Impact of Real GDP Growth Rate on the Performance of Banks (H7)

The other hypothesis of the study was related to the positive impact of economic growth (Real GDP growth rate) on the Profitability of banks (ROA). Nevertheless, the results of the regression estimation (Table 4.2.2) do not confirm it. The impact of the GDP growth rate on ROA was statistically insignificant. Hence, as long as the data employed by this study is concerned, there is

not enough evidence to propose any kind of relationship between the two variables as the statistical test did not account for them. Further research may be necessary to fully understand the nature of the relationship between the two variables. Still, this finding is similar to the finding of Tesfaye (2014) and the one done on Kenyan banks by Ongore (2015), though different from the finding on Indian banks by Banerjee (2020).

The Impact of Inflation Rate on the Performance of Banks (H8)

Likewise, the results of the regression analysis as depicted in Table 4.2.2 show that there is no statistically significant causal relationship between the inflation rate of the country and banks' profitability. Therefore, the respective hypothesis of the study that inflation can positively affect the profitability of banks is rejected since there is no evidence to suggest so as per the statistical test of the study. This finding is similar to the findings of Ongore (2015), however, divergent from the finding of Tesfaye (2014).

CHAPTER FIVE

5. SUMMARY, CONCLUSION, AND RECOMMENDATION

5.1 Summary

Consistent with the objectives of the study, the findings regarding the trend of financial performance of banks and the associated determinants are presented, interpreted and analyzed in the previous part of the paper. Next, the major findings of the study are summarized based on the discussions made above.

Major Findings on the Financial Performance of Ethiopian Banks

- The average capital Adequacy ratio (CAR) of the banking sector showed a generally declining trend during the study period (2010-2021). The average CAR of banks during the same period was 0.1342 (13.42%), which is above the minimum standard set by NBE and international standards.
- Asset quality of the banking sector has improved over the years. The average asset quality ratio of Ethiopian banks is about 0.026 (2.6%).
- Management efficiency in the Ethiopian banking sector showed largely a deteriorating trend over the course of the study period. On average, Ethiopian commercial banks incur Birr 0.65 expenses to generate one Birr of income.
- The earning ability of the banks showed a weakening trend during the study period. The average share of non-interest income from the total income of banks is about 35%.
- Ethiopian banks have registered a huge improvement in terms of reducing the practice of holding excess/idle liquid asset balances. This has brought down the 69% share of liquid assets out of the total deposit of banks in 2010 to 20% in 2021. The average of this measurement has become 37% during the 12 years covered by the study, which is much higher than the standard set by NBE (15%).
- Size of banks, measured by their total asset, has persistently boosted throughout the study period and reached an average of Birr 138 billion total assets per bank.

- The trend in average ROA of banks exhibited a generally declining trend over the years. This might be associated with the decreasing trend of earning ability and management efficiency of banks while the total asset of the sector is continuously increasing. The average ROA of banks during 2010-2021 was 0.025%, which is modest compared to neighboring countries such as Kenya, Tanzania, and Uganda.

Major Findings on Factors Affecting Profitability of Ethiopian Banks

- The correlation test of the study variables shows that there is a varying degree of correlation between the dependent and independent variables. However, it does not imply any form of causal relationship between the variables. Regression analysis should be undertaken to determine such relationships, if any.
- The regression estimation of the econometric analysis of the study has found out that Capital Adequacy Ratio (CAR) and Earning Ability (EA) have statistically significant positive impact on the profitability (ROA) of the banks.
- Likewise, Asset Quality/AQ (measured by the ratio of provision to non-performing loans to total loans), Management Efficiency/ME (represented by total expenses to total income ratio), and maintaining the right Liquidity Balance/LB (captured by the ratio of total liquid assets to total deposit) are found to have a statistically significant negative impact on the profitability of banks.
- On the other hand, the impacts of the other sector-specific (Bank Size/BS) variables and macroeconomic variables (Annual Real GDP Growth Rate and Inflation Rate) are not statistically significant.

5.2 Conclusion of the Study

The following conclusions are made based on the summary of the major findings of the study stated above.

The Ethiopian banking sector has registered substantial improvement in terms of the accumulation of total assets. Thus, they are growing in size. In addition, they have improved their credit risk management practices, which is reflected by the shrinking share of non-performing loans from the total loan portfolio of banks. By doing so, they have managed to fulfill the regulatory requirements of NBE.

Most Ethiopian banks used to maintain excessive liquidity balance that is multiple times more than the regulatory requirement, which affects their lending and investment opportunities, and thereby, their interest-earning ability and overall profitability. This phenomenon has now improved enormously, as banks have enhanced their ability to maintain the right/better balance of liquid assets.

On the other hand, the Ethiopian banking sector has registered deteriorating performance in terms of capital adequacy ratio (CAR). Still, the CAR of commercial banks is well above the standard set by the regulatory authorities and international standards like Basil III. In addition, the sector suffered from the declining trend of management efficiency, earning ability, and overall profitability.

The financial performance of the Ethiopian banking sector is strongly and positively affected by the capital adequacy ratio and earning ability. Contrarily, the performance of banks is strongly and negatively affected by asset quality (share of non-performing loans from total loans), management efficiency (total expenses to total income ratio), and maintaining balanced liquidity (ratio of liquid assets to deposit).

Meanwhile, as far as this study is concerned, there is not enough evidence to determine the causal relationship or impact of bank size, Annual Real GDP Growth Rate, and Inflation Rate on the ROA of banks.

5.3 Recommendation of the Study

This part of the paper suggests recommendations drawn from the conclusions made above.

- Banks shall further work on the improvement of the quality of their loan portfolio. This can be achieved through establishing vigorous credit risk management policies and perform robust credit appraisal to ensure that they are lending only to trustworthy borrowers, can anticipate credit risk, develop and practice early warning signals, and are able to recover their fund in the case of default.
- The continually deteriorating efficiency of the management of banks is negatively affecting the performance of banks. Hence, the management of the respective banks should pay due attention to this detrimental trajectory and ought to make decisions of

taking pragmatic actions to enhance cost control and efficient utilization of resources to change this unfavorable course, as well as to move towards the maximization of banks' profitability.

- The earning ability of banks has declined over the years. This coupled with the persistently weakening management efficiency in the sector, threatens the profitability and sustainability of the Ethiopian banking sector. Therefore, commercial banks need to look for devising mechanisms to diversify their source of income, apart from interest income, to ensure their long-run viability and existence.
- Even if there are improvements in terms of maintaining an adequate balance of liquidity, many commercial banks still hold excess/idle liquid assets. This represents the missed lending and/or investment opportunity. Thus, banks should turn over the excess balance into income generating lending and/or investments after maintaining adequate amount required to meet the minimum standard and to withstand short-run obligations. By doing so, they can expand their revenues streams and enhance their overall profitability.
- Creating an enabling environment and overseeing banks' performance are imperative to maintain and nurture their growth. Thus, it is crucial for the NBE to strengthen its vigilance and supervisory role, and for banks to implement proactive risk management strategies at the corporate level. This will help further a healthier banking ecosystem in the country.
- Finally, this study has not found enough evidence to determine the impact of bank size, Annual Real GDP Growth Rate, and Inflation Rate on the ROA of banks. Hence, this can be a venue for future research by including both primary qualitative and secondary quantitative data to fully comprehend the nature of relationship between the profitability of banks and these sector-specific and macroeconomic variables.

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Appendices

Appendix – A

Descriptive Statistics of the Study Variables

Variable	Obs	Mean	Std. dev.	Min	Max
ROA	132	.025162	.0079789	.0031956	.0524868
CA	132	.1322184	.0382576	.0418656	.2974701
AQ	132	.0258499	.0398137	.0022139	.3316871
ME	132	.6438031	.1159358	.3146975	.96574
EA	132	.3359132	.1263113	.0419623	.7214287
LB	132	.3421029	.1660948	.1127438	.8079533
BS	132	5.81e+10	1.46e+11	7.81e+08	9.91e+11
GDP	132	8.9	1.652202	6.1	11.4
INF	132	15.08182	7.538095	7.4	34.1

Results of Regression Estimations

Random-effects GLS regression		Number of obs	=	132	
Group variable: banknum		Number of groups	=	12	
R-squared:		Obs per group:			
Within	= 0.7672	min	=	11	
Between	= 0.8733	avg	=	11.0	
Overall	= 0.7658	max	=	11	
corr(u_i, X) = 0 (assumed)		Wald chi2(8)	=	345.30	
		Prob > chi2	=	0.0000	
(Std. err. adjusted for 12 clusters in banknum)					
DROA	Coefficient	Robust std. err.	z	P> z	[95% conf. interval]
DCA	.1202115	.0256126	4.69	0.000	.0700117 .1704113
DAQ	-.018177	.0042609	-4.27	0.000	-.0265282 -.0098258
DME	-.0532852	.0086589	-6.15	0.000	-.0702563 -.0363142
DEA	.022658	.0077895	2.91	0.004	.0073907 .0379252
DLB	-.0160294	.0038312	-4.18	0.000	-.0235384 -.0085204
DlnBS	.0012838	.0028986	0.44	0.658	-.0043974 .0069651
DGDP	-.0003538	.0003054	-1.16	0.247	-.0009524 .0002448
DINF	.0000214	.0000302	0.71	0.477	-.0000377 .0000805
_cons	-.0002424	.0009648	-0.25	0.802	-.0021333 .0016486

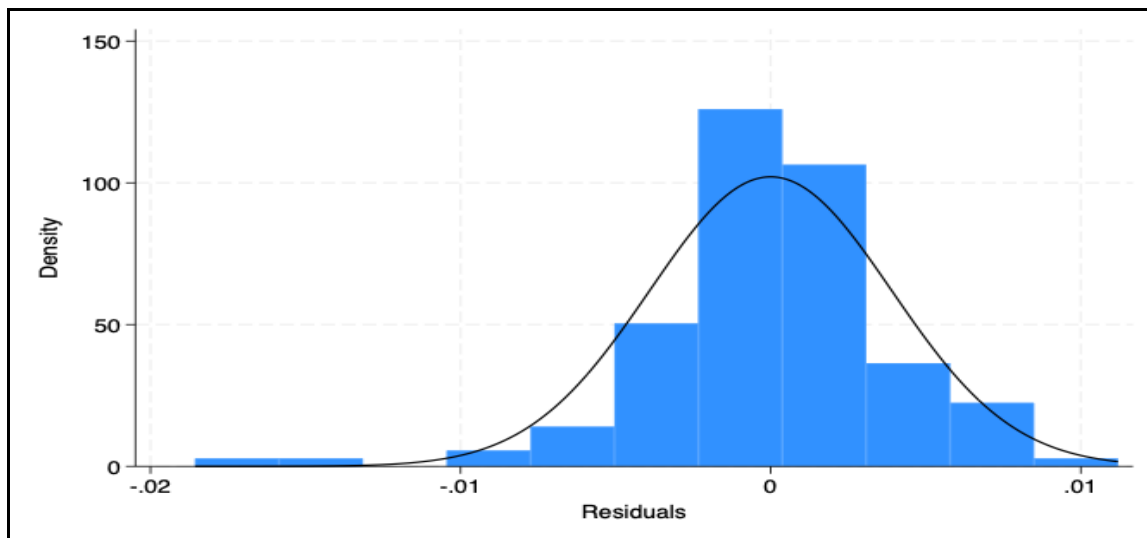
Hausman Test for Random Effects vs Fixed Effects Model

Test of H0: Difference in coefficients not systematic

$$\begin{aligned} \text{chi2}(8) &= (b-B)'[(V_b-V_B)^{-1}](b-B) \\ &= 1.29 \end{aligned}$$

Prob > chi2 = 0.9957

Normality Test using Histogram



Panel Data Normality Anderson-Darling Test

Ho: Normality – Ha: Non-Normality			
Anderson-Darling Z Test	=	1.9828 P > Z (3.868)	0.999

Wooldridge Test for Autocorrelation in Panel Data

Ho: No autocorrelation	
F (1, 11) =	0.030
Prob > F =	0.8652

Wald Panel Data Heteroskedasticity Test

Ho: Panel Homoscedasticity – Ha: Panel Heteroscedasticity			
Wald Test:	LogE2 = X	= 37.0375	P=value > Chi2(1) 0.000