Addis Ababa University

School of Finance, Business and Economics

Determinants of profitability of Large and medium sized commercial banks in Ethiopia.

By Natnael Mengistu Shimeles

Advisor

Yared Asrat (PhD)

January 2026

Determinants of profitability of Large and medium sized commercial banks in Ethiopia.

By Natnael Mengistu Shimeles

Advisor

Yared Asrat (PhD)

Certificate of Declaration

This is to certify that the thesis prepared by Natnael Mengistu, entitled: Determinants of profitability of Large and medium sized commercial banks in Ethiopia. and submitted in partial fulfilment of the requirements for the degree of Master of Business Administration in Finance complies with the regulations of the University and meets the accepted standards with respect to originality and quality.

Approved by:

Internal examiner: Dr. _____ Signature _____Date _____

External examiner:

Dr. _____ Signature _____ Date _____

Advisor: Dr. Yared Asrat Signature_____ Date _____

Acknowledgements

First and foremost, I would like to thank God almighty for helping me conduct this study and secondly, I want to thank my family for their support and love. Last but not least I want to thank my advisor Dr Yared for his guidance expertise and willingness to mentor me from start to finish.

Table of Contents

List of Table

List of Figures

Abbreviation/Acronym

AG	Asset Growth
AGOA	African Growth and Opportunity Act
AGR	Asset Growth Rate
AQ	Asset Quality
BOA	Bank of Abyssinia
CAR	Capital Adequacy Ratio
CBE	Commercial Bank of Ethiopia
CIR	Cost-to-Income Ratio
COOP	Corporative Bank of Oromia
DBE	Development Bank of Ethiopia
DMBs	Deposit Money Banks
EAC	East African Countries
EM	Equity Multiplier

ESH	Efficiency Structure Hypothesis
FL	Financial Leverage
HHI	Herfindahl-Hirschman Index
IFB	Interest-Free Banks
LDR	Loans to Deposits Ratio
MPH	Market Power Hypothesis
NBE	National Bank of Ethiopia
NIM	Net Interest Margin
NPL	Non performing Loan
OER	Operating Expense Ratio
ROA	Return on Asset
ROE	Return on Equity
RMPH	Relative Market Power Hypothesis
SCP	Structure-Conduct-Performance
SSA	Sub-Saharan Africa

Abstract

This study investigates the determinants of profitability for large and medium-sized commercial banks in Ethiopia from 2020 to 2024, a period marked by significant economic shocks, political instability, and regulatory reforms such as the Home-Grown Economic Reform program. Using a quantitative panel data design and EGLS estimation, the research evaluates the impact of six bank-specific variables Financial Leverage (FL), Asset Quality (AQ), Operating Expense Ratio (OER), Loans to Deposits Ratio (LDR), Net Interest Margin (NIM), and Asset Growth (AG)—on Return on Assets (ROA). The findings reveal that Asset Quality (measured by NPL ratio), Operating Expense Ratio, and Financial Leverage have significant negative effects on profitability, alignng with the Risk-Return Trade-off Theory and the Efficiency Structure Hypothesis. Conversely, Net Interest Margin and Asset Growth demonstrate a positive relationship with ROA, while the Loans to Deposits Ratio shows no significant correlation due to restrictive regulatory caps on credit disbursement during the study period. Ultimately, the study concludes that operational efficiency and rigorous credit risk management are the primary drivers of sustainable performance for Ethiopian banks in volatile environments, providing critical insights for bank management and policymakers.

Key Words: Bank Profitability, Return on Assets (ROA), Ethiopian Banking Sector, Net Interest Margin (NIM), Operating Expense Ratio (OER), Asset Quality (NPL), Financial Leverage, Regulatory Reform, Panel Data Analysis

Chapter One

1. Introduction

1.1.Background of the Study

The global banking sector serves as the backbone of the international financial system, where a bank's financial health, efficiency, and strategic effectiveness are dictated by its profit margins. These margins represent the primary benchmarks for assessing performance in banking worldwide. Across the globe, sustaining long-term shareholder value necessitates consistent profitability while maintaining operational stability. Research in international markets emphasizes that effective management of a financial institution's resources, risks, and costs is essential for generating net earnings (Van Greuning & Iqbal, 2020). Furthermore, global studies underscore that bank profitability is best assessed through frameworks incorporating liquidity management, risk, and intermediary efficiency (Rose & Hudgins, 2010).

In Africa, the banking landscape is characterized by diverse regulatory environments and emerging market dynamics. Regional studies in Sub-Saharan Africa (SSA) have demonstrated that liquidity levels and capital adequacy significantly influence bank performance, with some research indicating that higher liquidity creates positive effects on Return on Assets (ROA) (Mawutor et al., 2023). However, African financial institutions often face challenges such as managing non-performing loans (NPLs), which have been shown to adversely impact profitability across various jurisdictions (Cheng, Nsiah, & Barfi, 2019).

Within the specific context of East Africa and broader Sub-Saharan Africa, the management of operating expenses remains a critical factor. The "Efficiency Structure Hypothesis" (ESH) suggests that banks in these developing regions achieve superior performance by reducing expenses and improving organizational efficiency (Mester, 2008). Furthermore, the "Market Power Hypothesis" (MPH) highlights how banks in less developed financial markets may leverage their position to enhance interest margins, though this is often tempered by government policy interventions (Degryse & Ongena, 2008).

In case of Ethiopia a well-performing banking system is vital for the Ethiopian economy, as it channels savings into investments and supports the local business community. However, between 2020 and 2024, the sector faced unprecedented changes due to political upheaval, severe economic disruption, and a rapidly changing regulatory landscape. External shocks, including the COVID-19 pandemic and internal conflicts, led to a precarious economic position characterized by foreign currency shortages and reduced economic activity.

In response to these challenges, the Ethiopian government initiated the Home-Grown Economic Reform program in 2019, leading to significant regulatory changes by the National Bank of Ethiopia (NBE). These reforms included increased reserve requirements, mandatory purchases of Development Bank of Ethiopia shares, and credit growth caps. Such exogenous factors, alongside internal management indicators like financial leverage (FL), asset quality (AQ), and net interest margin (NIM), have created a unique environment for studying the determinants of bank profitability. This study, therefore, examines the factors influencing the profitability of large and medium-sized commercial banks in Ethiopia during this period of intense instability and transformation.

1.2. Problem Statement

There are plenty of studies conducted on commercial bank profitability and its determinant considering the importance of this area at international level. The determinants of profitability have been debated for many years and still unsolved issues in the corporate finance literature. What makes the profit determinant debate very interesting is the determinant of profit is dynamic through time to time and differ with the nature of operating of the firm from place to place (Flamini et al, 2009).

The financial health of Ethiopian commercial banks depends on Return on Assets (ROA) which drives national economic expansion and maintains stability (Abate & Kaur, 2023). The banking industry faced an unprecedented level of external market volatility during the years from 2020 to 2024. The banking environment faces major economic challenges because of rising inflation rates and limited foreign currency availability while experiencing extreme political instability which

damages bank profitability (Abebe, 2024). The banking sector faced major changes in regulations through new capital requirements and operational standards which produced complex and disputed effects on bank performance (Teklewold & Daba, 2022).

The current financial situation requires banks to preserve their financial stability yet researchers lack essential understanding about how banks handle their internal management during this special time. The current research on Ethiopian bank profitability determinants faces limitations because it uses data from periods before the present dual crisis and regulatory changes which stopped at 2020 or earlier. The current external shocks between 2020 and 2024 have reached unprecedented levels which makes it essential to assess the validity of previous research findings.

The external pressures that banks face today have probably changed the way their internal elements affect their profitability. The six internal management indicators FL (Equity Multiplier), AQ (NPL ratio), OER, LDR, NIM and AG could experience reduced or reversed or strengthened effects. Research studies from previous times have produced conflicting results about bank-specific factors which show inconsistent patterns (Bosho, 2022). The research requires a specific investigation to establish how these six internal variables affect profitability (ROA) during the current period following the shocks.

The research lacks current specific data which proves how bank-specific elements affect profitability (ROA) during the special period of political and regulatory disruption that affected Ethiopian commercial banking from 2020 to 2024. The research objective to study FL, AQ, OER, LDR, NIM and AG effects on bank profitability (ROA) during the unique political and regulatory period from 2020 to 2024 will help banks and policymakers create stable financial performance.

1.3. Research Questions

1.3.1. General Research Question

- What are the Determinants of profitability of Large and medium sized commercial banks in Ethiopia.

1.3.2.Specific Research Questions

- What is the effect of Financial Leverage (FL) on the profitability (ROA) of commercial

banks?

- What is the relationship between Asset Quality (AQ) and the profitability (ROA) of commercial banks?
- How does the Operating Expense Ratio (OER) influence the profitability (ROA) of commercial banks?
- What is the impact of the Loans to Deposits Ratio (LDR) on the profitability (ROA) of commercial banks?
- Does Net Interest Margin (NIM) significantly determine the profitability (ROA) of commercial banks?
- To what extent does Asset Growth (AG) affect the profitability (ROA) of commercial banks?

1.4. Objectives of the Study

1.4.1.General Objective

The General Objective of this Paper is To Assess the Determinants of profitability of Large and medium sized commercial banks in Ethiopia. Using Return on asset as a Dependent Variable and using Internal Factors such as Financial Leverage Measured by Equity Multiplier, Aset Quality Measured by NPL ratio, Operating Expense Ratio, Loans to Deposits Ratio, Net Interest Margin, Asset Growth as an independent variable.

1.4.2. Specific Objectives

- To assess the effect of Financial Leverage Measured by Equity Multiplier (FL) on bank profitability (ROA).
- To assess the relationship between Aset Quality Measured by NPL ratio and bank profitability (ROA).
- To assess the influence of the Operating Expense Ratio (OER) on bank profitability (ROA).
- To assess the impact of the Loans to Deposits Ratio (LDR) on bank profitability (ROA).
- To analyze the relationship between Net Interest Margin (NIM) and bank profitability (ROA).
- To assess the impact of Asset Growth (AG) on bank profitability (ROA).

1.5. Hypotheses of the Study

i. Financial Leverage (FL) Measured by Equity Multiplier

- Null Hypothesis (H_{01}): The coefficient of Financial Leverage (FL) is not significantly different from zero, meaning that β FL =0.

ii. Asset Quality (AQ)

- Null Hypothesis (H_{02}): The coefficient of Asset Quality (AQ) is not significantly different from zero, meaning that β AQ =0.

iii. Operating Expense Ratio (OER)

- Null Hypothesis (H_{03}): The coefficient of Operating Expense Ratio (OER) is not significantly different from zero, meaning that β OER =0.

iv. Loans to Deposits Ratio (LDR)

- Null Hypothesis (H_{04}): The coefficient of Loans to Deposits Ratio (LDR) is not significantly different from zero, meaning that β LDR =0.

v. Net Interest Margin (NIM)

- Null Hypothesis (H_{05}): The coefficient of Net Interest Margin (NIM) is not significantly different from zero, meaning that β NIM =0.

vi. Asset Growth (AG)

- Null Hypothesis (H_{06}): The coefficient of Asset Growth (AG) is not significantly different from zero, meaning that β AG =0.

1.6. Significance of the Study

The research adds value to financial economics through its analysis of an unexplored market setting. The research evaluates how established financial theories such as the Efficiency Structure Hypothesis (Demsetz, 1973) and the Risk-Return Trade-off Theory (Van Greuning & Iqbal, 2020) perform in markets where government policies control market operations. The research adds

academic value to banking performance studies under distress and transformation by providing new insights for researchers who study developing economies.

1.7. Scope of the Study

Sample and Time Frame

The research investigates commercial banks which operate in Ethiopia. The research includes all major and medium-sized commercial banks that maintain reliable data throughout the entire study duration from 2020 to 2024. The research period spans from 2020 to 2024 because this time frame includes the economic shock period and political instability and Home-Grown Economic Reform program implementation.

Even though all of the population in this research (Hibret, COOP, BOA, CBE, Dashin, Awash) have an IFB subsider this research will not analyze the determinants of profitability for the subsidiaries. Rather it will only focus on the Interest baring banking system.

Variable and Methodological Delimitation

The research investigates how six bank-specific factors affect profitability during this study. The research uses Return on Assets (ROA) as its dependent variable to measure bank profitability. The research investigates six independent variables which include Financial Leverage (FL) and Asset Quality (AQ) and Operating Expense Ratio (OER) and Loans to Deposits Ratio (LDR) and Net Interest Margin (NIM) and Asset Growth (AG). The research focuses on bank-specific factors as primary determinants but includes background information about macroeconomic and market structure variables. The research uses panel data econometric techniques including Fixed Effects and Random Effects models to study variable relationships across the five-year period.

1.8. Organization of the Paper

The research consists of five chapters which follow a specific order. The first chapter of this research presents an introduction that explains the study's main issues and background information

and research questions and objectives and hypotheses and significance and scope. The second chapter of this research examines the theoretical foundations of bank profitability through a detailed review of academic literature. The research methodology section of Chapter Three explains the study design and describes the population and sample selection and data collection procedures and defines the variables and selects the appropriate econometric model for analysis. The research findings section of Chapter Four presents statistical test results together with their interpretation. The final chapter of this research presents a study summary before connecting findings to existing knowledge and extracting conclusions and developing recommendations for banks and regulators and future academic work.

Chapter Two

2. Theoretical Framework & Review of Literature

2.1. Theoretical Framework and Conceptual Foundations

The following chapter develops an entire theoretical framework which enables researchers to analyze bank profitability determinants through detailed evaluation. The research investigates large and medium-sized commercial banks which operate in Ethiopia's developing financial sector. The chapter defines bank profitability through its measurement methods which were adapted to the Ethiopian economic environment and regulatory system. The following section contains an extensive review of economic theories which describe how financial institutions reach various levels of profitability. The chapter finishes by showing a complete evaluation of empirical banking research variables which translate theoretical concepts into the Ethiopian banking sector.

2.1.1. Conceptual Definition and Measurement of Bank Profitability

Banks use their profitability levels to measure their financial health and operational efficiency and strategic effectiveness. A bank needs to generate enduring returns for its stakeholders through steady operations to sustain its business operations. The Ethiopian banking sector operates under NBE supervision through its few private and state-controlled institutions which makes profitability vital for commercial success and regulatory compliance and national financial stability. The banking sector needs profitability to achieve its economic development targets because it serves as a fundamental performance metric. The interpretation of profitability metrics needs knowledge about Ethiopia's banking sector structure and its economic environment and regulatory system.

2.1.1.1. Definition of Bank Profitability

Effective management of financial institution resources, risk, costs and regulatory compliance leads to net earnings (Van Greuning and Iqbal, 2020, p. 16). This definition is actually more detailed than a straightforward income minus expenditure calculation since it involves intricate trade-offs. The profitability of banks is best assessed by employing a framework that incorporates bank liquidity management, risk, as well as how efficiently a bank operates in terms of its

intermediary functions. As the banking industry functions it essentially has a number of key characteristics which are mainly due to banks acting as middlemen in financial transactions with the added benefit of maintaining the economy's financial stability through a specific method of funding.

2.1.1.2. Measurement Approaches to Bank Profitability

Banking operations are inherently complex and the standard accounting techniques are not geared to capture this unique area of business. In the evaluation of the profitability of banking institutions, the primary tools employed are Return on Assets (R.O.A.) and Return on Equity (R.O.E.) ratios as they enable a direct assessment of profitability. These ratios are frequently used by the banking research community in order to determine banking profitability. They make profitability assessment simpler. The industry specific characteristics of banking institutions render the standard financial ratios inadequate for a full assessment of profitability.

The risk profile of a bank remains unaccounted for in RoA and RoE calculations which strongly affects its profitability performance. Researchers solve this problem by implementing Return on Assets (RoA) and Return on Equity (RoE) ratios that include risk adjustments to deliver a complete picture of banking profitability.

Banks need to achieve two fundamental performance targets which include profitability and complete risk management according to Rose and Hudgins (2010, p. 323). Financial performance profitability measurement helps managers understand their success level and market competition dynamics (Van Greuning & Iqbal, 2020, p. 17). The Ethiopian financial sector operates under NBE supervision which makes profitability metrics vital for three interconnected purposes. The financial sector needs profitability metrics to evaluate business success and prove regulatory compliance and maintain financial system stability and support national economic growth.

The bank uses its profitable retained earnings to support its natural business growth and defend against potential financial losses. The Ethiopian market requires special attention because external funding through debt and equity remains limited due to underdeveloped markets and strict regulatory standards (Van Greuning & Iqbal, 2020, p. 16). A bank's capital base depends on retained earnings because they serve as the first line of defense against unexpected losses before regulatory capital runs out in its loss-absorption sequence. The National Bank of Ethiopia (NBE)

supervisors consider sustainable profitability as a fundamental condition for maintaining financial system stability. The supervisory actions against banks will vary based on their ongoing loss experience and unstable profitability performance which may result in additional monitoring and required improvement plans and restrictions on expansion and dividend payments and executive compensation.

The multiple aspects of Ethiopian bank profitability exist across several essential elements. The conversion of deposits and funding sources into profitable assets depends on operational efficiency which profitability measures in Ethiopian banking. The management team proves their ability to manage complex risks through their success in credit risk management and interest rate risk management and liquidity risk management and operational risk management. The bank shows its market standing through profitability in a competitive market with minimal product choices but increasing competitor entry. The bank upholds regulatory standards through its financial system stability contribution. The bank proves its ability to generate actual shareholder value through operations because the country lacks developed capital markets development and regulators closely monitor dividend policies for systemic risk evaluation.

Return on Assets (ROA)

ROA stands as a fundamental performance indicator which banks use worldwide to assess their operational performance and management capabilities.

The calculation of Return on Assets (ROA) requires dividing net income after taxes by the average total assets which banks maintain throughout a specific time period (Choudhry, 2007, p. 484; Rose & Hudgins, 2010, p. 329; Van Greuning & Iqbal, 2020, p. 33). The ROA calculation demonstrates how bank management achieves net profits through all assets including loans and investment securities and cash reserves. The main advantage of ROA emerges from its ability to remove financial leverage effects which allows banks to assess asset utilization and managerial performance through independent evaluations (Rose & Hudgins, 2010, p. 331).

The mathematical expression for ROA appears as follows:

$$ROA = \frac{\text{Net Income After Taxes}}{\text{Average Total Assets}}$$

The hypothesis identifies two essential efficiency types which include X-efficiency and scale efficiency. A firm demonstrates X-efficiency when it achieves minimum costs through its current technology and institutional framework. The concept measures how well managers drive employee performance and process optimization and eliminate unnecessary organizational expenses (Mester, 2008). A firm achieves scale efficiency when it operates at its most cost-effective size to produce output. The Dynamic Efficiency Proposition from the hypothesis states that banks which prove their ability to improve efficiency will gain market share and profitability growth which could result in industry concentration expansion during extended periods. The Ethiopian banking sector faces challenges from outdated systems and excessive personnel compared to assets and insufficient digital technology which creates significant and sustainable performance gaps between banks. Banks which succeed at waste reduction and scale optimization will achieve substantial profit growth which supports the ESH's claim that operational efficiency drives superior market performance.

The return on assets (ROA) is still key for judging how well Ethiopian banks are doing and for comparing them to banks in other countries. Because ROA looks at how well a bank is run, it works well for checking management since the amount of money banks have is based on rules.

A bank achieves superior managerial performance through rising ROA values because this indicates successful cost management and optimal financial service pricing and safe yet profitable risk management. The Ethiopian banking sector depends on loan assets for its operations while generating minimal non-interest income which makes ROA highly sensitive to two critical factors: credit portfolio quality and interest rate spread management. The NBE uses ROA as part of its CAMELS supervisory framework under the "Earnings" section to identify banks that need closer monitoring or intervention through a 1% benchmark (Choudhry, 2012, p. 606). Banks that show negative or low ROA values demonstrate operational issues and deteriorating asset quality and possibly an unviable

business model.

The evaluation of ROA in Ethiopia requires understanding particular factors which affect its meaning. The banking sector's primary focus is on conventional lending services and the receipt of deposits which establishes a direct relationship between Return on Assets and interest margin. The banking sector's overall performance in terms of return on assets is largely influenced by the top banking institutions as they account for the vast majority of banking assets. Regulatory restraints which govern banking operations in the region mean that banks cannot make full use of their assets in a manner which is deemed optimal. This in turn has a negative impact on their return on assets (ROA) compared with banks in developed markets. As commercial institutions with the mandate to accomplish broader economic goals rather than simply earn a profit, state owned banks, of necessity, distort the calculated industry average for Return on Assets by either lowering or raising it. The banking sector as a whole in Ethiopia is hit by a number of significant macro-economic challenges that hinder the performance of all banks in terms of return on assets and quality of assets.

Ethiopian banks should continue to make use of ROA as a benchmark to assess their overall performance as well as to provide a basis for comparison with overseas banks. ROA's focus on operational efficiency renders it a practical basis for managerial performance assessment, as companies in this environment operate within strict regulatory imposed capital structures.

2.1.2. Underlying Economic Theories Guiding Bank Profitability

The three fundamental theories used to explain the drivers of bank profitability are the Efficiency Structure Hypothesis, the Risk Return Trade Off Theory and the Market Power Hypothesis. The theories in question differ in the emphasis they place on efficiency in production and the relative risk of undertaking strategic initiatives, compared with the structure of a market. An in-depth understanding of theoretical bank profitability models is essential to evaluating the financial performance of the Ethiopian banking sector.

Bank profitability can be explained by three key theories, including the Efficiency Structure Hypothesis, the Risk Return Trade off Theory and the Market Power Hypothesis.

Each of the theories offers a different view of the benefits gained from risk management and operational excellence in terms of market leadership. To grasp how Ethiopian banks generate their earnings it is vital to understand the various theories.

Bank expenses are also a very important determinant of profitability, closely related to the notion of efficient management. There has been an extensive literature based on the idea that an expenses-related variable should be included in the cost part of a standard microeconomic profit function. For example, Bourke (1989) and Molyneux and Thornton (1992) find a positive relationship between better-quality management and profitability. Turning to the external determinants of bank profitability, it should be noted that we can further distinguish between control variables that describe the macroeconomic environment, such as inflation, interest rates and cyclical output, and variables that represent market characteristics.

2.1.2.1. The Efficiency Structure Hypothesis (ESH)

In Demsetz (1973) and Peltzman (1977) the Efficiency Structure Hypothesis was presented. This brought into industry operations an alternate theory which contradicts the widely held industry opinions. The conventional view that a few large companies dominate their respective markets because of the monopolistic powers they have gained is not widely accepted by some economists. According to an alternative theory, it is the high profits these firms make which are the source of their dominant position in the market rather than the position itself. In banks where the operational efficiency is high, profits will be greater, as demonstrated by the theory. With the money they have raised, financial institutions are able to increase the assets they own and improve the services they provide to customers. This can enhance the bank's profile and increase its market share. This will lead to a couple of firms dominating the market (Choudhry, 2007; Degryse and Ongena, 2008). The traditional relationship between business structure, performance and success is seen in a new light by the efficiency structure hypothesis. This assertion suggests that the dynamics of the market are actually the outcome of how well an organisation performs.

Operational excellence, a concept, is characterised by two dimensions. These dimensions

are X efficiency and scale efficiency. Efficiency for a firm is said to be achieved when it has managed to use all its resources to the greatest extent, in order to be able to keep its expenses as low as possible. The success of a manager is determined by their ability to increase the productivity of the staff and also by cost savings and process improvements. A firm will be operating at its optimal size when production costs are at their lowest. When a bank is constantly striving to improve its operational processes, it gains a competitive advantage. This is because better operational processes allow a bank to serve its customers more efficiently and effectively. It, therefore, gains market share and makes higher profits. Competition in the market will ultimately result in only a few market leaders dominating the market for a prolonged period of time. The Ethiopian banking industry is experiencing difficulties due to aged banking systems and a high labour force with not enough recourse to digital banking. The banking sector shows significant performance variations between different institutions because of these differences. Banks which eliminate waste and achieve optimal size will generate substantial increased profits. The ESH demonstrates that operational excellence directly results in market performance success.

The Efficiency Structure Hypothesis demonstrates its practical application through testable concepts which can be applied to the Ethiopian banking industry.

the X-efficiency version of the ES (ESX) Hypothesis suggests that increased managerial and scale efficiency leads to higher concentration and, hence, higher profits. Studies, such as those by Smirlock (1985), Berger and Hannan (1989) and Berger (1995a), investigated the profit-structure relationship in banking, providing tests of the aforementioned two hypotheses.

constant. The Ethiopian banking sector provides an ideal environment to test this concept because employee compensation costs heavily burden bank finances and digital banking adoption remains in its early stages. Companies can improve their management of processes at the present time.

Banks that keep the appropriate size balance between small and large can generate more profits than institutions of extreme sizes. Banking operations in Ethiopia are largely limited to the urban regions. Expansion into rural areas poses significant operational challenges,

despite its growth potential for customers in these areas.

This theory suggests that institutions which constantly adapt and improve their operational processes will gain a larger share of the market and earn higher profit levels. With this development the market will become increasingly competitive.

Financial institutions who can reduce their costs via operating efficiency and capital intensity ratios will increase their return on assets and return on equity. Research undertaken in various countries suggests that banks are able to achieve savings in costs by removing X inefficiency which would give rise to a 20-25 percent reduction in operating costs for banks which are typical. According to Mester, in 2008, there is a great potential for banks to make more money through better operational systems. There are variations in the technological innovations across the banks in Ethiopia. The efficiency with which banks operate has a significant impact on their overall performance.

2.1.2.2. The Risk-Return Theory Functions in Banking Operations

Financial theory shows that a risk return trade off is present. If an investor is looking for a high return on investment, they have to accept higher levels of risk. In the banking sector, the value in use concept is used when determining lending criteria, asset and liability management and debt-equity ratios (Van Greuning and Iqbal, 2020, p14). With their roles focused on balancing profit with prudence, bank managers are under pressure to meet financial objectives without overexposing their institution to risk. This requires an awareness of the regulatory environment.

Bank managers employ a variety of instruments to attain their profit goals and at the same time control risks. If a bank takes on more risky borrowers, then they will indeed be able to earn interest payments initially, which can boost the NIM. The bank is at a greater risk of seeing these borrowers default on their loans. They have capital allocation for loan losses which reduces their ROA (Choudhry 2012 p. 217). The bank can get current earnings up by putting its money into investments with strong returns but mercurial market values. The bank faces two primary risks from these investments: interest rates can change and asset values decline.

The link among bank leverage and profitability proves that banks are walking on the rocks. Higher debt levels enable shareholders to achieve higher ROE. The bank's ability to absorb potential losses decreases when it takes on more debt. The bank faces an increased risk of failure because of this strategy (Rose & Hudgins 2010 p. 339; Choudhry, 2012 p. 611). The Ethiopian economy faces unstable conditions because of rising inflation rates and insufficient foreign currency and business sector operational difficulties.

The banking sector provides loans to agricultural operations which face dual challenges from weather conditions and market price fluctuations for their commodities. The banking sector needs to handle risks with care because of these obstacles. The organization needs to create strategic plans which will protect its profitability throughout different time periods.

The Risk-Return Theory enables Ethiopian analysts to assess its applications through the following examples:

Credit Risk: Financial institutions that take on credit risk through high loan delinquencies and large loan loss provisions will experience decreased earnings when economic conditions deteriorate or specific sectors face challenges. The banking sector in Ethiopia faces elevated credit risks because it lends to farmers who must deal with weather instability and market price fluctuations.

Financial institutions using debt to fund their operations will have a higher return on equity in times of rising share prices. Their financial positions tend to become increasingly precarious due to their heavy reliance on debt. The institution may have difficulties in meeting its capital requirements if market conditions are not favourable. A limiting factor in the ability of Ethiopian banks to use leverage is the stringent regulatory requirements on capital.

Financial institutions which hold liquid assets, such as cash and government securities, will have reduced profit levels. They enjoy greater stability because they are better able to withstand the shocks to the market place. The Ethiopian banking sector is an example of this balance since there is little interbank lending in the market and access to funding is restricted.

The theory indicates that banks will achieve their best results by managing their exposure to risk and reward at optimal levels. Financial institutions should select returns that match their acceptable risk levels according to Mester (2008 p. 79). Banks that take excessive risks might achieve brief success. The long-term performance of these banks will be inferior to banks that maintain conservative approaches. The rapid expansion requirements in Ethiopia create a risk for banks to take short-term risks which could damage their future stability.

2.1.2.3. The Market Power Hypothesis (MPH) / Structure-Conduct-Performance (SCP) Paradigm

The Structure-Conduct-Performance (SCP) framework demonstrates that market arrangements determine how businesses operate. The actions of firms determine their operational results. The Market Power Hypothesis (MPH) states that businesses which control substantial market shares can determine prices and restrict competition to maintain elevated profit levels (Degryse & Ongena 2008 p. 169; Choudhry, 2007 p. 553). The framework demonstrates how industry characteristics affect the actions and results of businesses operating within that industry.

The market dominance of few banks enables them to establish loan interest rates and deposit rates and impose high fees on customers. The banks achieve higher profits through this practice (Degryse & Ongena 2008 p. 170). The Ethiopian banking sector shows this pattern because few banks maintain control of the market through their dominance and regulatory barriers that prevent new banks from entering.

The hypothesis that market power has a direct relation with the degree of concentration in a market is known as the relative market power hypothesis. Key to the power of dominant firms is their ability to set prices which are higher than costs and still make profits (Bain, 1949 p.175). In Ethiopia, banking is offered through a variety of basic services. These include accepting deposits and making loans. When it comes to gaining market power, the size of a bank's operations and its presence in the market are more significant than its innovative capacity or branding.

The Market Power Hypothesis in Ethiopia can be assessed through these specific concepts:

High levels of concentration within an industry often leads to higher average earnings according to the Herfindahl-Hirschman Index. Over an extended period, a few large banks have maintained their control over the Ethiopian banking sector. If banks' entry led to a reduction in concentration levels in the banking sector, it is possible to check out the effect by comparing profits before and after the new banks entered the market.

Larger banking groups in the UK tend to achieve higher profits and market share than their smaller competitors, regardless of the efficiency of their operations or the quality of their risk management. Given the extensive branch network and the modern technology systems in use by large scale banks in Ethiopia, it is probable that the country's banking sector operates in a manner akin to that described. Larger banks in the country benefit from extensive branch networks and modern technology. Furthermore, a strong brand identity in these banks is an added advantage.

The ability of existing banks to make a profit is based on new banks having entry barriers which are due to the regulatory requirements and costs of setting up a new bank. Entry to the Ethiopian banking sector is restricted by very tough rules governing the setting up of a bank and also high capital requirements. Investigating how banks performed in terms of profitability before and after a relaxation of banking license requirements should give a clear indication of the effects of this change.

The level of market power of different banking sector structures is the key to understanding how these impact on banking profit levels in Ethiopia. The interplay of bank consolidation with technological advances and the current state of banking legislation is expected to produce new relationships between banking profitability and market structure. The analysis of these changes allows researchers to understand competition and efficiency patterns in the emerging market's economy.

2.1.3. Definition and Measurement of Key Explanatory Variables

2.1.4.1. Financial Leverage (FL)

Financial leverage is 'the relative extent to which a firm's assets are financed by debt rather than equity capital' (Rose & Hudgins, 2010, p. 334). A measure used in determining this is the Equity Multiplier (EM) level: Rose & Hudgins, 2010, p. 335; Sheng & Xiao, n.d., p.

540 Measurement: The EM is calculated as Total Assets divided by Total Equity Capital (Rose & Hudgins, 2010, p. 335).

Interpretation: This ratio reveals the relative financing policies of the firm; that is, what dollar amount of assets are tied to a single dollar of equity. A high multiplier means there is less equity supporting every dollar of assets, increasing failure risk but with the possibility of extremely high stockholder returns (Rose & Hudgins, 2010, pp. 334, 340). The relationship between ROE and leverage implies that

ROE=ROA×Leverage (Sheng & Xiao, n.d., p. 540).

2.1.3.1. Asset Quality (AQ)

Asset Quality is one of the core elements under the CAMELS supervisory system and is crucial in the evaluation of exposure to credit risk. Rose & Hudgins, 2010, p. 354

Measurement: A non-performing asset is an asset earning income that is in arrears of principal or interest payments for a period of 90 days or more (Montanaro, 2020, p. 214; Rose & Hudgins, 2010, p. 355; Van Greuning & Iqbal, 2011, p. 46).

Ratio: The NPL Ratio is the proportion of Nonperforming Assets against Total Loans and Leases. It reflects the share of the loan portfolio that is subject to the risk of default (Rose & Hudgins, 2010, p. 354). The amount of provisions made represents the ability of the bank to control credit risk (Montanaro, 2020, p. 200; Rose & Hudgins, 2010, p. 355).

2.1.3.2. Operating Efficiency (OER)

Operating efficiency refers to how well management utilizes assets to generate sales and control costs.

Measurement: The OER is calculated as the sum of Total Operating Expenses over Total Operating Revenues by Rose & Hudgins (2010, p. 366). Alternatively, it can be calculated using the formula: Operating Expenses / Total Assets, as suggested by Sheng & Xiao (n.d., p. 539).

Interpretation: An increasing ratio indicates problems with expense control or declining revenues (Rose & Hudgins, 2010, p. 366). Operating expenses are the most controllable

items in a bank's income statement (Van Greuning & Iqbal, 2011, p. 19).

2.1.3.3. Liquidity Management (LDR)

Liquidity can be defined as a firm’s ability to raise spendable funds at a reasonable cost when required Rose & Hudgins, 2010, p. 503).

Measurement The LTD is calculated as Net Loans and Leases divided by Deposits. Rose & Hudgins, 2010, p. 450

Interpretation: This is the ratio that keeps track of a bank's ability to fund requirements. According to Heuvel et al. (2018, p. 245) and Rose & Hudgins (2010, p. 450), a ratio of over 100% may indicate excessive asset growth, while below 70% suggests excessive liquidity and inadequate returns according to Heuvel et al. (2018, p. 247).

2.1.3.4. Income Generation (NIM) and Asset Growth (AG)

Net Interest Margin: Calculated as the ratio of Net Interest Income to Total Assets, or alternatively to Total Earning Assets. According to Montanaro 2020, p. 162; Rose & Hudgins 2010, p. 348, NIM measures how well management optimizes the spread between interest revenues and costs (Rose & Hudgins 2010, p. 327, 394). A falling NIM may indicate that rising interest costs are eroding profits.

Asset Growth: Assessed using indicators of Growth of Assets over the Last Year. Sustainable earnings are important to sustain growth and stable external funding. According to Van Greuning & Iqbal 2011, p. 6, rapid growth diminishes the capital-to-assets ratios, thus forcing increase in capitals. Also, Rose & Hudgins 2010, p. 477; Van Greuning & Iqbal 2011 p. 14 assert this point.

2.2. Empirical Literature Review

2.2.1. Review of International Studies

2.2.1.1. Financial Leverage (FL) and Asset Quality (AQ) studies in international research

Research about financial leverage (FL) effects on bank profitability produces different results but experts agree that banks need robust capital reserves to stay resilient (Pham, Hoang, & Pham, 2022). The research investigated industrial firms operating on the Amman Stock Exchange to determine how financial leverage affects corporate performance (AlGhusin, 2015). The Capital Adequacy Ratio (CAR) of commercial banks in Indonesia showed a positive and statistically significant relationship with Return on Assets (ROA) according to research that used Fixed Effect Model (FEM) (Sudjana, 2023).

Research shows that Asset Quality (AQ) measured through Non-Performing Loans (NPLs) usually produces negative effects on bank profitability (Barakat et al., 2024; Cheng, Nsiah, & Barfi, 2019). The study analyzed bank profitability through a Random Effect Model which examined asset quality data from 2017 to 2021 (Barakat et al., 2024). The study analyzed the impact of NPLs and impairment charges on the return on equity (ROE) and return on assets (ROA) through the lens of varying hypotheses with considerable impact (Barakat et al., 2024). In the case of banks in the Eurozone, it was found that an increase in the NPL level compared to total assets decreased the ROA by 0.06 percentage points while increasing the Insolvency Risk (Odoi, 2025). Eurozone banks showed a direct and positive relationship between the Capital Adequacy Ratio (CAR) and the Return on Assets (ROA) (Odoi, 2025).

2.1.1.1 Studies on Operating Efficiency (OER) and Liquidity (LDR)

International markets use operating expense management as a primary factor to explain profitability in their profitability assessments (Pham et al., 2022). The Loan to Deposit Ratio (LDR) emerged as a vital factor which determined bank health according to researchers who proved that LDR affects bank health (Larasati, F. S., & Syaipudin, U,

2024).

2.1.1.2 Studies on Net Interest Margin (NIM) and Asset Growth (AG)

The measurement of profitability depends heavily on Net Interest Margin (NIM) as a fundamental indicator. The study evaluated NIM factors in Asian commercial banks (China, India, Japan) through panel data analysis from 2011 to 2017 after the global financial crisis (Islam & Nishiyama, 2020). The Fixed Effect panel estimator produced results which demonstrated that GDP expansion created a positive and statistically significant impact on NIM (Islam & Nishiyama, 2020). The Asset Growth Rate (AGR) showed a negative and statistically significant relationship with ROA according to a multiple regression analysis of commercial banks in Afghanistan (Jamal & Khatami, 2023). The model explained 50.7% of profitability changes through its independent variables which included AGR and leverage (Jamal & Khatami, 2023). Research on 38 major U.S. bank holding companies across the world established that banks which experienced asset expansion became more likely to face operational losses (Frame, McLemore, & Mihov, 2020).

2.2.2. Review of Regional and Local Empirical Studies

2.2.2.1. Studies in Sub-Saharan Africa (SSA) and East African Countries (EAC)

Risk Variables (FL and AQ) in SSA

Financial Leverage often helps performance in SSA. A dynamic panel study that looked at 41 SSA countries showed that the Capital Adequacy Ratio (CAP) had an strong effect on ROA (Mawutor, Boadi, Antwi, & Tetteh 2023). a study of Deposit Money Banks (DMBs) that found the same pattern: the CAR had a positive and strong effect on ROA and also, on ROE (Chukwunwike, Ajayi, & Olamide, 2024). Some findings show nuance. Obadire, Moyo and Munzhelele (2022) found that the profitability is not significantly related to the CAR. the research on banks in Ghana found a clear negative link between the ROA and the NPL ratio (Cheng et al. 2019). the research on DMBs found that the Loan Loss Provision to Total Assets has a negative and statistically significant effect, on the ROA (Achema, Nyor, & Agbi 2022).

Efficiency and Liquidity Variables (OER and LDR) in SSA/EAC

Efficiency measures vary in the impact they have. In Nigeria researchers found that the logarithm of Operating Expenses to Operating Income has a insignificant effect on NIM (Onaolapo & Odedoyin 2024). liquidity has a relationship with the profitability in the region. A study of commercial banks confirmed that liquidity has a positive and highly significant relationship with ROA (Musah, Gakpetor, & Agyeman 2018). Also the SSA dynamic panel study showed that liquidity had an significant effect on ROA. Liquidity helped improve ROA (Mawutor et al. 2023).

Income and Growth Variables (NIM and AG) in SSA/EAC

The analysis of banks shows that Interest Spread and ROA have a strong positive link (Musah & Anokye 2018). In the SSA dynamic panel study shows that Income Diversification has an highly significant impact, on ROA (Mawutor et al. 2023).

2.2.2.2. **Specific Studies on Ethiopian Commercial Banks**

The literature uses panel data models such as System GMM, Fixed Effect, Random Effect and MLRM. The literature also uses different time spans and different bank samples. The literature often gives conclusions. The literature shows that internal determinants affect profitability metrics such, as ROA, ROE and NIM in ways.

Evidence on the Impact of Financial Leverage (FL) and Asset Quality (AQ) in Ethiopia

Capital Adequacy (FL/CAR): The findings on Capital Adequacy Ratio (CAR) are quite mixed. Mohammed (2023) examined fourteen banks for the period 2012 to 2021. Mohammed (2023) applied a Dynamic Panel Model (System GMM). Used ROA, ROE and NIM, as the dependent variables. Mohammed (2023) concluded that Capital Adequacy Ratio (CAR) is a positive driver of profitability. Similarlythe paper, Deyganto and G/Selassie (2023) examined the nine commercial banks from 2012 to 2022 G.C. Deyganto and G/Selassie (2023) used a Random Effect Model on ROA and Deyganto and G/Selassie (2023) found a positive and statistically significant effect, from CAR. Conversely, Alemayehu (2024) conducted Multiple Linear Regression analysis on five private banks (2018– 2022) to discover that CAR produced negative results for ROE at a statistically significant level (P=0.002). The different results between studies indicate that CAR affects

profitability differently based on bank characteristics including size and age and regulatory capital requirements.

Asset Quality (AQ): The research findings about Asset Quality show conflicting results because different measurement approaches were used. The System GMM model of Mohammed (2023) included Asset Quality (total loan/advances to total asset ratio) as an independent variable which produced positive effects on ROA and ROE. The research findings about Asset Quality measurements show opposing results. In the Random Effect Model of Deyganto & G/Selassie (2023), the NPL ratio is explained, where NPL ratio negatively impacts, ROA. Alemayehu (2024) states that, the Asset Quality Ratio (AQR) has produced negative results at a statistically significant level (P=0.049) more than zero. Evidence on the Impact of Operational Efficiency (OER) and Liquidity (LDR) in Ethiopia Operational Efficiency (OER): Research findings about operational efficiency show that higher costs lead to decreased performance. Sole & Babu (2024) conducted Multivariate Linear Regression Model (MLRM) on 9 private commercial banks in the years 2017–2022, and O, in the level of ROA, when the Operational Efficiency Ratio (ER) is high, is exemplified. The study explained the mean value of the Operational Efficiency Ratio (ER) of 54.34 % as evidence of inefficient utilization of resources. In a study by Deyganto and G/Selassie in 2023, the Random Effects Model was used. It found that the Non-Performing Loans (NPL) ratio had a negative effect on return on assets (ROA). According to Alemayehu (2024), the asset quality ratio, yielded a statistically significant outcome at the negative level (P=0.049).

Evidence on the Impact of Operational Efficiency (OER) and Liquidity (LDR) in Ethiopia

Research has shown that higher costs can lead to a decrease in the operational efficiency of a firm. This means that a company which spends a lot of money is unlikely to perform well. The study by Sole and Babu (2024) utilising the Multivariate Linear Regression Model on nine private commercial banks from 2017 to 2022 showed that return on assets fell as the operational efficiency ratio increased. The study showed that with an average efficiency rate of 54.34%, resource allocation in the company was inefficient. Deygatto and Gelassie in 2023 used a Random Effects model in which Cost Per Loan (CLAP) demonstrated that statistically CLAP is negatively affected by ROA.

Results regarding liquidity measures have been inconsistent. General findings about the LDR/FL are unclear. In Mohammed's (2023) System GMM analysis it was found that liquidity has a negative effect on both the return on equity and the return on assets in fourteen banks between the years 2012 and 2021. An analysis of the impact of liquidity on the returns on equity (ROE) of 15 private banks in the period 2014-2023 conducted by Dufera (2024) showed liquidity boosts profitability. Studies conducted by Deyganto and G/Selassie in 2023 into the loan to deposits ratio found banks were positively affected through lending.

Evidence on the Impact of Net Interest Margin (NIM) and Asset Growth (AG) in Ethiopia

Net Interest Margin (NIM): Research indicates that NIM functions as a crucial performance indicator because all studies confirm its positive influence on bank operations. Keneni (2022) performed Fixed-Effect Regression Model analysis on all seventeen commercial banks which operated from 2013 through 2020. The research confirmed that Earning Capability (Net Interest Income to Total Assets) generates positive results with NIM. The research by Mohammed (2023) showed that previous NIM values positively affect current NIM while GDP growth rate produces a statistically significant positive effect on NIM. The research proved that banks achieve superior performance through their internal business operations and external market conditions.

Asset Growth (AG): The Fixed Effect Model analysis conducted by Dufera (2024) on 15 private banks from 2014 to 2023 demonstrated that Growth negatively affected profitability (ROE). The research indicates that banks which expand their operations too quickly might experience short- term operational problems and higher expenses that decrease their equity returns.

2.3.Synthesis and Research Gap

2.3.1. Synthesis of Empirical Findings and Observed Contradictions

The review of empirical research about bank profitability shows that different regions have established reliable connections between bank performance indicators yet the Ethiopian banking sector faces multiple conflicting results because of its developing status and strict regulations. The investigation of these connections using established theories enables researchers to identify areas of research which have yet to be explored.

2.3.1.1. Consistent Findings Across Literature

Research in both Ethiopia and internationally has consistently shown key banking performance indicators to be strongly correlated. The relationship between asset quality and non-performing loans remains negative in all three studies. Asset quality had a negative correlation with return on assets and return on equity in the research by Cheng et al., which was statistically significant. Deyganto and G/Selassie (2019) as well as Odoi (2025) and Deyganto and G/Selassie (2023, p.246) Research into Eurozone banks revealed that as Non-Performing Loans (NPL) to total loan ratios increase, so returns on assets decrease (Odoi, 2025).

An examination of the operational efficiency ratio variables indicates that increased expenditure leads to lower profitability. In the Ethiopian banking sector, it has been found that operational efficiency ratio was negatively correlated with return on equity. Key operational risks include the management of assets, funds, and clients' information. Operational risks could also include systems failures and poor management leading to financial losses for the bank. According to Van Greuning and Iqbal (2011), the management of operations at maximum efficiency is critical for achieving a bank's greatest profit.

Research has shown that Net Interest Margin, or NIM, is a good indicator of a bank's performance because it is linked to the bank's profitability (Musah and Anokye, 2018, p41; Mohammed, 2023).

2.3.1.2. Contradictory Findings and Inconsistent Relationships

The discrepancies between financial leverage and liquidity ratios in the country have considerable implications for the Ethiopian banking sector, studies have found. Studies in international

environment have indicated that financial leverage may have positive impact on Return on Asset (ROA) as reported by Odoi in 2025. Local researches have also proved that financial leverage can be beneficial to a company's performance as discovered by Chukwunwike et al. Research on the impact of CAR in Ethiopia, as shown by Mawutor et al. (2024), produced conflicting results. While some studies have reported positive impacts of CAR (Deyganto & G/Selassie, 2023; p 245, Mohammed 2023 p 42), other studies found that CAR has negative effects (Dufera, 2024 p 40; Alemayehu, 2024).

The research findings about liquidity produce conflicting results. Research conducted in regional SSA regions demonstrates that liquidity creates positive effects on ROA according to Mawutor et al. (2023) and Musah et al. (2018). The research conducted in Ethiopia shows that liquidity acts as a negative factor which affects bank performance (Mohammed, 2023, p. 41) but other studies demonstrate positive relationships between liquidity and bank performance (Deyganto & G/Selassie, 2023, p. 245; Dufera, 2024, p. 40). Research studies about Asset Growth produce conflicting results because some studies show negative relationships (Dufera, 2024, p. 41; Jamal & Khatami, 2023) while others link growth to operational expenses (Frame, McLemore, & Mihov, 2020).

2.3.1.3. Theoretical Frameworks receive validation through the analysis of empirical research data.

The widespread negative relationship between NPLs and profitability confirms the Risk-Return Trade-off Theory remains valid according to Odoi (2025) and Van Greuning & Iqbal (2020, p. 14). The consistent positive relationship between CAR and bank performance demonstrates that banks with sufficient capital can achieve lasting profitability (Rose & Hudgins, 2010, p. 339).

The positive relationship between OER and profitability reduction supports the Efficiency Structure Hypothesis (ESH) which states that expense reduction leads to better organizational performance (Mester, 2008). The positive connection between NIM and profitability allows researchers to apply the Market Power Hypothesis (MPH) (Degryse & Ongena, 2008, p. 169). The Ethiopian banking sector faces Treasury Bill purchase requirements from the NBE (2022) which affects NIM levels and reduces market power.

2.4. Research Gap

The research identifies two main knowledge gaps which stem from methodological and contextual factors.

The current literature contains numerous studies yet researchers continue to face major knowledge deficiencies especially when studying Ethiopian banking conditions from the present day.

2.3.2.1. Methodological Gaps

The current research methods fail to detect the changing factors which affect profitability according to Mohammed (2023, p. 36). The different results for FL, LDR and AG in Ethiopian studies demonstrate that different econometric methods produce unstable research findings. A detailed analysis must be conducted to determine how the six internal factors (FL, AQ, OER, LDR, NIM, and AG) impact ROA through a dependable method (Mohammed, 2023).

2.3.1.1 Contextual Gaps

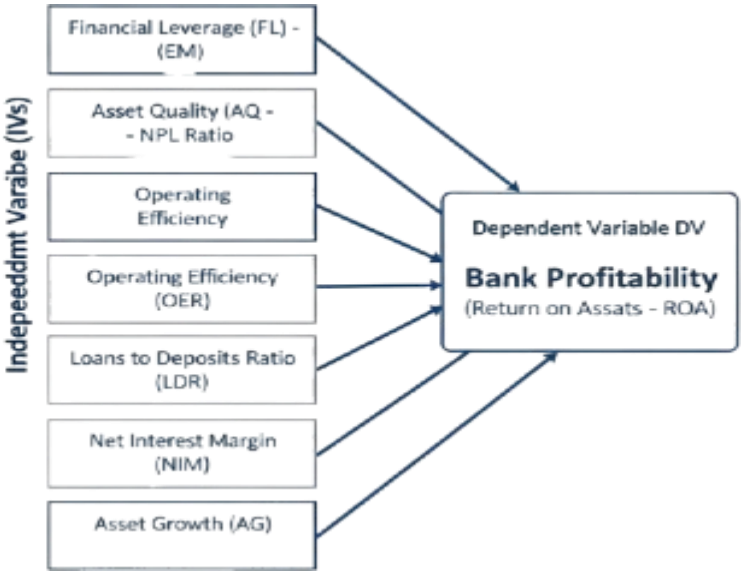
The main knowledge deficiency stems from the lack of specific data about Ethiopian banks during their time of political and regulatory instability.

The majority of research studies about Ethiopian banks stop at 2020 or previous years (Bosho, 2022; Feleke & Tafere, 2025; Keneni, 2022).

The period between 2020 and 2024 brought distinctive external disturbances which included military conflict and currency scarcity and rising prices and banking rules that forced institutions to buy bonds and raise their capital reserves (Abebe, 2024; International Crisis Group, 2022; NBE, 2021, 2022). The current economic environment has probably transformed the way internal factors influence bank profitability (Bosho, 2022; Mohammed, 2023). The current environment requires researchers to evaluate previous findings for their applicability because it presents a unique opportunity for a natural experiment.

2.4. Conceptual Fame work

Figure 1 Conceptual Framework



Chapter Three

3. Research Methodology

3.1. Introduction

The research framework presented in this chapter provides a detailed and complete approach to study profitability determinants of Ethiopian medium and large commercial banks from 2020 to 2024. The individual and combined results of these banks create major effects which affect both financial stability of the nation and economic development and regulatory policy development. The research focuses on six commercial banks which the National Bank of Ethiopia (NBE) has designated as large or medium-sized operations. The NBE uses multiple essential factors to determine bank size including total assets and operational scale and branch network expansion and their impact on national economic stability.

The research design uses quantitative methods with deductive reasoning based on positivist epistemological principles. The research applies panel data econometrics to perform rigorous tests of financial theory-based hypotheses. The chapter presents a detailed explanation of the research philosophy and approach and data collection methods and sample selection criteria and econometric model specification and variable operationalization and estimation approach and validation procedures. The research focuses on a specific group of banks which the NBE recognizes as medium and large entities to achieve better internal validity and enhance comparison capabilities and generate results that directly benefit bank management teams and the NBE regulatory body and investment stakeholders.

3.2. Research Design and Approach

3.2.1. Research Philosophy and Epistemological Foundation

The research bases its foundation on positivist principles which state that economic bank profitability exists as an observable reality that scientists can measure and analyze through

statistical methods (Creswell & Creswell, 2018). The research design matches the study's main goal to establish quantitative relationships between financial performance indicators and profitability results through numerical data analysis. The research framework enables population-level generalization of findings to medium and large Ethiopian banks while maintaining consistency with established banking literature that uses hypothesis testing and model validation. The research method follows the main stream of banking literature because it uses hypothesis testing and model validation to advance knowledge. The research method follows an observable and structured approach to study which depends on empirical evidence and objectivity rather than subjective interpretation.

3.2.2. Research Approach: Deductive Reasoning

Using a research design which is based on the deductive reasoning process, established financial theories and relevant literature and existing studies are utilised in order to derive specific, testable hypotheses prior to the actual data analysis. This study is a structured assessment of existing knowledge since it begins with a hypothesis, then follows a top-down research design. The design of the research relies on three theoretical perspectives to build its conceptual framework, these being social constructionism, critical theory and feminism.

Banks which have achieved operational efficiency through cost cutting and economies of scale, claim the Efficiency Structure Hypothesis, are likely to sustain higher profitability.

Banks which successfully manage higher levels of credit or leverage risk are rewarded with greater returns, according to the risk-return trade off theory.

Banks' asset quality and capital structure, as demonstrated by the market discipline and signalling theories, provide crucial information to the market which impacts banks' costs of funding and reputations and consequently their overall performance.

The established theories serve as the basis for choosing essential explanatory factors and determining their relationship with profitability in the empirical model.

3.2.3. Research Strategy: Quantitative Panel Data Design

The research design uses quantitative methods through a strong panel data analysis framework. The method surpasses single-time point and single-bank studies because it combines six banks

with five years of data from 2020 to 2024. The research design choice provides the best solution for this study because it offers multiple advantages. The method enables researchers to manage time-independent bank characteristics which differ between institutions through fixed effect models.

The method enables researchers to study how profitability factors transform during a period which includes economic instability and regulatory changes and pandemic-related business transformations.

The method enables researchers to combine data from different banks and time points which results in a larger effective sample size of 30 bank-year observations. The increased sample size enhances both the statistical power and the reliability of coefficient estimates when working with few cross-sectional units.

The panel design with fixed effects performs better than cross-sectional studies at reducing the impact of unmeasured variables in the data.

The panel design with fixed effects provides better protection against omitted variable bias than cross-sectional studies because it controls all persistent unobserved factors. The panel design with fixed effects provides better protection against omitted variable bias than cross-sectional studies because it controls all persistent unobserved factors.

3.3. Data Source and Collection Method

3.3.1. Data Type, Source, and Time Period

The research depends on secondary quantitative data which exists as a balanced panel structure.

The research uses financial data from two authoritative sources in Ethiopia which include:

•The National Bank of Ethiopia (NBE) provides financial data through its official website (https://www.nbe.gov.et) which serves as the main source because the NBE both groups banks by size and releases standardized banking sector information for consistency.

•The official websites of the six selected banks provide annual reports which serve as essential data sources because these reports follow NBE disclosure rules and contain necessary information

for variable development.

They maintain their credibility through rigorous checks by independent bodies and strict oversight from the National Bureau of Statistics. The project will run over the five years 2020, 2021, 2022, 2023 and 2024. Ethiopia has undergone a very significant economic transformation over the five year period. It is also a critical time for the world economy. The three components of a research project are, research proposal, research work and research report.

During the post-Covid-19 period recovery, severe liquidity problems occurred in the banking sector. Loan defaults and bank operational failures were rising as a result.

The period introduced stricter capital and asset classification rules and more stringent liquidity requirements by the National Bank of Egypt.

Research findings that directly support Ethiopian financial sector reform initiatives and current banking challenges in both regulatory and management sectors are based on original data.

3.4. Sample Selection and Justification

3.4.1. Target Population and NBE Classification

Table 1 Bank Classification

Type of bank	Total Assets		Total Loans & Bonds		Total Deposits		Total Capital	
	Jun-22	Jun-23	Jun-22	Jun-23	Jun-22	Jun-23	Jun-22	Jun-23
	By Size Class							
Large	54	49.5	52	46.7	51.3	48.7	31	27.5
Medium	26.9	28	29	30.5	29.5	29.4	28.8	31

Small	19.1	22.5	19.1	22.9	19.3	21.9	40.2	41.6
	By Ownership							
Public	54	49.5	52	46.7	51.3	48.7	31	27.5
Private	46	50.5	48	53.4	48.7	51.3	69	72.6

Source: National Bank of Ethiopia. (2024). Financial Stability Report

According to NBE Banks are classified as Large , Medium and Small.

Large Bank: The only large bank in the country is the state-owned CBE. Although its market share declined from the previous year, CBE still remains a systemically important bank. At the end of June 2024, its total assets and deposits constituted just under half (47.9 percent and 47.1 percent, respectively) of the whole banking sector. However, its total capital accounted for just less than a quarter (24.2 percent) of the total.

Medium Banks: The combined share of the five medium-sized banks 10 in the industry increased for all key balance sheet items in the year to the end of June 2024 compared to a year earlier: combined assets went from 28.0 percent to 28.9 percent of the sector's total assets, total deposits from 29.4 percent to 30.3 percent of the sector's total, and capital from 31.0 percent to 33.0 percent. Nevertheless, no medium-sized bank is currently regarded as a systemically important bank, despite the growing market share.

Small Banks: At the end of June 2024, the combined assets and deposits of the 25 small banks 11 accounted for 23.3 percent and 22.7 percent, respectively, of the whole banking sector – an annual increase of 0.8 percentage points each. Likewise, their combined total capital share increased from 41.6 percent of the sector's total capital in 2023 to 42.8 percent at the end of June 2024. The growth

of the small banks' aggregate market share can be explained by their increasing number over the years and the rapid initial expansion of the newly established banks. However, with an individual share in assets, deposits, and loans, and bonds of less than two percent, none of the small banks can be considered a systemically important bank.

3.4.2. Sampling Technique and Software's

The research uses census sampling because the number of systemically important banks remains fixed and the NBE maintains an official list of banks. The research includes all six banks that meet the eligibility criteria. The research design uses non-probabilistic sampling because it provides complete representation of the large and medium banking segment without introducing any sampling errors.

The major software tool used in the preparation of this research are Eview13 and SPSS software. The research used SPSS for descriptive statistics analysis but EViews for performing Inferential Statistics.

3.4.3. Justification for a Focused Sample

The research focuses on these six banks because of their regulatory significance and data availability and operational characteristics.

The NBE uses its supervisory authority to create policy instruments which focus on large and medium banks because of their critical role in financial stability.

The banks maintain excellent data quality through their regular publication of audited financial statements which match international reporting standards.

As shown in table one above the majority of the deposit, market share and asset is held by these 6 banks. Therefore if studying these 6 banks will have a similar effect as studying the majority of the commercial banks in Ethiopia.

The research uses a small cross-sectional sample size of N=6 but its panel design across five time points generates 30 observations which most researchers consider adequate for fixed effects and EGLS model estimation when combined with theoretical support and diagnostic testing.

3.5. Model Specification

3.5.1. General Panel Data Model

The research uses Return on Assets (ROA) as the dependent variable to analyze bank profitability because it represents the typical performance metric for operational efficiency. The researchers will estimate the following general empirical model.

$$\mathrm{ROA}_{it} = \alpha + \sum_{k=1}^{K} \beta_k X_{k,it} + \mu_{i,t}$$

Where:

- i=1,2,...,6 (the six banks)
- t=2020,2021,...,2024
- $\mu i,t = \eta i + vi,t$: Composite error term with bank-specific effect (ηi) and idiosyncratic error (vi,t)

3.5.2. Operational Definition of Variables

The fully specified model includes seven explanatory variables; each carefully grounded in established banking theory and prior empirical work. The final estimated model is:

$$\mathrm{ROA}_{\mathrm{it}} = \beta_0 + \beta_{1\mathrm{AQit}} + \beta_{2\mathrm{OERit}} + \beta_{3\mathrm{FLit}} + \beta_{4\mathrm{AGit}} + \beta_{5\mathrm{NIMit}} + \beta_{6\mathrm{LDRit}} + \varepsilon_{it}$$

Table 2 Variable Definitions and Measurement

Return on Assets	ROA	Net Income / Total Average Assets	—	Dependent (Profitability)
Financial Leverage	FL	Total Assets / Total Equity	±	Risk / Leverage
Asset Quality	AQ	Non-Performing Loans / Total Loans	–	Risk / Asset Quality
Operating Expense Ratio	OER	Operating Expenses / Total Operating Income	–	Efficiency
Loans to Deposits Ratio	LDR	Net Loans / Total Deposits	±	Liquidity
Net Interest Margin	NIM	(Interest Income – Interest Expense) / Earning Assets	+	Income Generation

Asset Growth	AG	$(TA_t - TA_{t-1}) / TA_{t-1}$	±	Growth

3.6. Econometric Estimation Strategy

3.6.1. Candidate Estimators

The research analyzed three standard panel data estimation methods which included Pooled Ordinary Least Squares (POLS) and Fixed Effects Model (FEM) and Random Effects Model (REM). The researcher determined that Pooled Ordinary Least Squares (POLS) would not work because it fails to account for unobservable bank-specific factors which are expected to be present in this research setting.

The Fixed Effects Model (FEM) provides better results when unobserved bank-specific factors link to the variables included in the analysis.

The Random Effects Model (REM) provides suitable results when bank-specific factors remain independent from the included variables and can be viewed as random samples from a larger population.

3.6.2. Model Selection Tests

The research uses two established statistical methods to select the most suitable estimation approach.

The F-test serves to establish whether the Fixed Effects Model (FEM) outperforms the basic Pooled OLS model.

The Hausman Test serves as the essential method to select between Fixed Effects Model (FEM) and Random Effects Model (REM) because it verifies if random effects match the observed data patterns. The test results in favor of the FEM when the calculated statistic shows statistical significance.

The limited number of institutions in the study reduces the effectiveness of the Hausman test in identifying any significant differences. Given their limited statistical power, the research team will apply economic principles to verify their choice between FEM and REM.

3.6.3. Primary Estimation: Panel EGLS

In initial findings, and the data analysis undertaken, there is evidence that the model is flawed in two areas - serial correlation and heteroskedasticity. Due to the small number of cross-sectional data available, the study employs Panel EGLS as the principal estimation technique. This is because EGLS efficiently handles heteroscedasticity and autocorrelation thereby providing accurate results (Greene, 2008).

3.7. Diagnostic Tests

The research will conduct various tests to ensure the reliability of the results and the model's overall accuracy prior to their conclusion.

In order to ensure that multicollinearity is not present the team will conduct a Variance Inflation Factor (VIF) test on all the independent variables. When carrying out multiple linear regression all independent variables must have a VIF of 10 or less.

The Modified Wald Statistic for Heteroscedasticity is a statistical test which can be used to determine if residuals from panel models are heteroscedastic. The test results in heteroscedasticity when the p-value drops below 0.05, implying the EGLS technique is justified.

The study uses EGLS estimation with robust standard errors when it is necessary to apply the method of ordinary least squares, but some of the assumptions of OLS regression are violated.

3.8. Ethical Considerations and Limitations

3.8.1. Ethical Considerations

The research maintains complete adherence to ethical standards throughout its entire process. The research uses public domain data while providing complete references to NBE and banking institutions that provided the information. The research did not require any access to protected financial information during its investigation.

3.8.2. Limitations

The research study identifies multiple restrictions which create opportunities to conduct additional

investigations in the future.

The research study omits small banking institutions because they operate with different performance indicators. The research focuses exclusively on conventional banking through IFB banking exclusion because it does not evaluate non-financial performance indicators such as corporate governance scores or managerial quality indices or digital transformation metrics.

The model fails to solve endogeneity problems because it lacks instrumental variable techniques to handle situations where profitability affects asset growth instead of the other way around.

The Commercial Bank of Ethiopia (CBE) controls such a large market share that it could skew the combined results of the study by hiding the specific patterns of medium-sized banks.

Chapter Four

4. Results & Discussion

4.1. Descriptive Statistics

The descriptive statistics for all of the variables in the study are shown in Table 4.1. The study used a five year panel data spanning from 2020 to 2024 of six private commercial banks operating in the Ethiopian financial sector involving 30 observations. Key initial statistical tests establish a crucial starting point by describing the parameters of the data's central tendency, variation and overall distribution that can be described. This provides a groundwork for further analysis involving multiple variables.

Table 3 Descriptive Statistics of Study Variables

Variable	N	Min	Max	Mean	Std. D
FL	30	7.44	18.42	10.75	3.47
AQ	30	0.001	0.022	0.004	0.004
OER	30	0.009	0.069	0.042	0.013
LDR	30	0.313	1.027	0.75	0.2
NIM	30	0.032	0.078	0.056	0.013
AG	30	0.004	0.825	0.277	0.162
ROA	30	0.012	0.038	0.023	0.007

Source: Annual report from the selected banks

The study selects return on assets (ROA) as its performance metric since this is the primary performance ratio used to assess the profitability of banks. ROA is calculated by dividing the net earnings of a firm by its total assets, as stated by Hoffer and Prescott (1982). 2018) and Dsouza et al. (The banking systems surveyed by Ozili (2015) and Nurvitasari and Hartono (2023) recorded an average return on assets of 2.3%. Business success can be judged by its ability to generate a profit and the effectiveness of the management. This can be seen in various profitability ratios (Antila et al., 1994). 2024).

The banking sector in the research period witnessed a significant expansion, as the mean Asset

Growth value attained its second highest at 0.277 or 27.7% (Nurvitasari and Hartono, 2023). A bank's overall profitability is impacted by a number of variables such as liquidity, size and asset quality and also its debt-to-equity ratio.

4.1.1. Bank Profitability Trend (ROA)

Table 4 ROA Trends by Bank (2020-2024)

Bank	2020	2021	2022	2023	2024	5-Year Avg
COOP	0.03	0.0194	0.021	0.02	0.0115	0.0195
Awash	0.04	0.0336	0.034	0.034	0.0346	0.0349
BOA	0.02	0.0167	0.026	0.023	0.0208	0.0207
CBE	0.02	0.0133	0.015	0.015	0.0124	0.0142
Dashin	0.02	0.0212	0.027	0.027	0.0297	0.026
Hibret	0.02	0.0213	0.018	0.031	0.0243	0.0234
Industry	0.02	0.0209	0.024	0.025	0.0224	0.0232

Source: Annual report from the selected banks

The year-by-year evaluation of Return on Assets (ROA) in the six banks throughout 2020 to 2024 displays a complex sequence of bank profitability. This is a result of influences from the macroeconomic environment, as well as bank-specific strategic actions (Nurvitasari & Hartono, 2023). Across the study period the return on assets in the industry varied; it had begun at 2.40% in the year 2020 and was 2.24% by 2024. The findings show a number of interesting stories about profit performance. Through the five year period Awash Bank maintained its highest return on assets. With an average of 3.49% over the five years, Awash Bank displayed a high asset utilisation efficiency and the bank has a competitive advantage that will last. The bank’s return on assets, or ROA, was 3.8 percent. The ROA for the same year before was 3.36 percent. This indicates the bank had strong operational control and was also able to manage risk effectively. In stark contrast to the profit levels seen elsewhere in the banking sector, the Commercial Bank of Ethiopia recorded the lowest profitability. This came in the form of a return on assets of just 1.42% over five years. Between the years 2020 and 2024, the profitability of the CBE decreased steadily, falling to 1.24% from 1.54%. The financial institution, being state-owned and considerable in size, may have had

goals different from those of the standard commercial banks. The ROA of COOP, the Cooperative Bank of Oromia, had a marked drop. This drop was from 2.51% in the year 2020 down to 1.15% in the year 2024. The fall was a considerable 54%. The steep fall in the industry observed particularly in the last twelve months could indicate that a number of specific problems were affecting this sector. Increased competition or business decisions could have contributed to this drop in figures. Dashin Bank is a shining example of a highly successful company with a clear upward trend in profitability. Between 2020 and 2024 Dashin's return on assets went up from 2.47% to 2.97%, an increase of 20% - the company's return had been at its lowest in 2021. There is evidence that the organisation has made consistent improvements, suggesting this is a result of effective strategic initiatives and operational improvements. Bank of Abyssinia showed stability in 2022 with an inflation rate of 2.55%. This then stabilised at 2.08% in the year 2024. The bank with the greatest fluctuations was the Hibret Bank. It declined by 1.8 percent in the year 2022 before going up by 3.06 percent the following year and then moderating in 2024. Banks' average return on assets has fallen from 2.40% in the year 2020 to 2.09% last year, a trend probably caused by the global pandemic and its aftermath. Recovery was seen in 2022-23 with the return on assets averaging 2.50 percent in the year 2023 before the performance declined to 2.24 percent in the following year.

4.2. Diagnostic Tests

4.2.1. Multicollinearity Diagnostics

Table 5 Multicollinearity Diagnostics (VIF Values)

Variable	Tolerance	VIF	Threshold
AQ	0.708	1.412	10
FL	0.297	3.371	10
OER	0.443	2.257	10
LDR	0.105	9.539	10
NIM	0.164	6.09	10
AG	0.522	1.917	10
Industry	0.024	0.0209	0.0235

Source: Annual report from the medium and large banks

Collinearity amongst the independent variables was examined using the Variance Inflation Factor. Collinearity diagnostics did not reveal any predictors whose variance inflation factor (VIF) exceeded the critical threshold of ten. These variables, namely Air quality, OER and Geology, have a variance inflation factor of 1.412, 2.257 and 1.917 respectively, suggesting very little shared variance among them. Despite the loan to deposit ratio having the highest Variance Inflation Factor at 9.539, it is below the threshold value for severe multicollinearity (Nurvitasari and Hartono, 2023).

Table 6 Model Selection Test Results

Test	**Statistic**	**df**	**p-value**	**Decision**
Hausman Test	—	—	—	Random effects
Cross-section Heteroskedasticity	10.374	6	0.110	Homoskedasticity
Period Heteroskedasticity	4.464	6	0.614	Homoskedasticity

The reliability of econometric findings depends on rigorous diagnostic testing of the characteristics of panel data. This testing is necessary to ensure that econometric results are valid. The validity of regression coefficients is dependent on the assumption that data conform to a normal distribution. Additionally, it is necessary to perform tests to determine if the data show either multicollinearity or heteroscedasticity. The choice of fixed effects (FE) or random effects (RE) models is crucial when undertaking the analysis of panels which contain cross-sectional and time series data (Brooks, 2014; Chowdhury & Rasid, 2017).

The Hausman test serves as the standard method to decide between Fixed Effects and Random

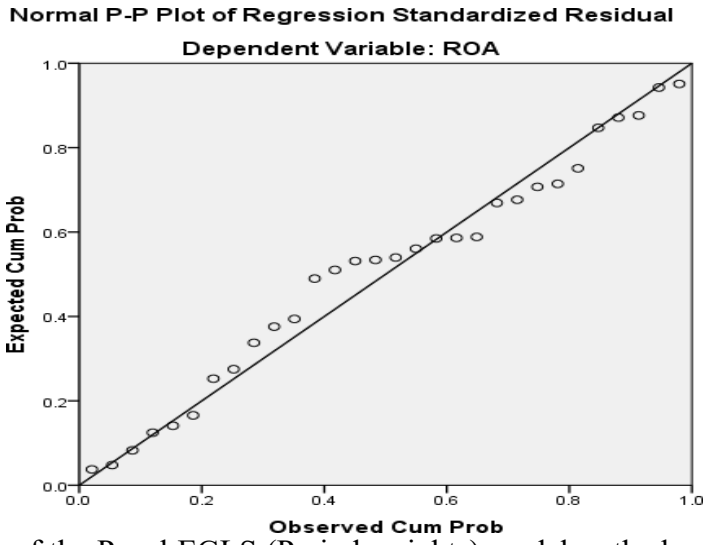
Effects models. The Fixed Effects model treats individual-specific effects as random variables which create systematic relationships between bank characteristics and estimation results. The Random Effects model treats individual-specific effects as independent from all included model variables which indicates random distribution of unit differences. The Hausman test results from the specific study indicated that the random effects model performed better than the fixed effects model.

The study supports the use of Panel EGLS (Cross-section random effects) because the Hausman test results indicate that random effects model provides more efficient results. The Random Effects model selection indicates that bank characteristics which remain constant over time do not create significant correlations with the main variables used for estimation including leverage and asset quality. The results from this study differ from other banking research which studies commercial banks in developing nations because their Hausman tests typically select Fixed Effects models instead of Random Effects models (Khan et al., 2015; Almaqtari et al., 2018).

The model requires heteroskedasticity testing because its presence would produce standard error estimates that are less efficient. The research performed complete tests to detect heteroskedasticity which occurred both between different observation groups and throughout different time periods. The Cross-section Heteroskedasticity LR test produced a statistic of 10.374 which had a p-value of 0.110 and did not reject the homoskedasticity null hypothesis at a 5% significance level. The Period Heteroskedasticity LR test produced a statistic of 4.464 which resulted in a p-value of 0.614 to confirm homoskedasticity across different time periods.

As shown in the figure below he Normality Test of Residuals supported the current model structure. The Jarque-Bera statistic produced a value of 0.468159 while the associated probability value reached 0.791299. The standard 0.05 significance level was not met by the Jarque-Bera statistic which allowed the researchers to maintain the null hypothesis of normality for their residuals. The regression model achieved robust estimation because it passed all required tests including normality of residuals and VIF values under 10.

Figure 2 Normal P-P Plot of Regression



The selection of the Panel EGLS (Period weights) model as the best estimation method emerged from the combined results of Random Effects preference and homoskedasticity confirmation across units and periods. The method uses generalized least squares to generate efficient parameter estimates when researchers need to handle serial correlation or heteroskedasticity. The period weighting method served to handle potential time-based heteroskedasticity even though the tests showed no evidence of heteroskedasticity.

4.3. Inferential Statistics

4.3.1. Correlation Analysis

Table 7 Correlation Matrix of Study Variables

Variable	ROA	FL	AQ	OER	LDR	NIM	AG
ROA	1						
FL	-0.623	1					
AQ	-0.385	0.312	1				
OER	-0.412	0.287	0.423	1			
LDR	-0.298	0.531	0.187	0.156	1		
NIM	0.678	-0.445	-0.312	-0.278	-0.124	1	
AG	0.234	-0.187	-0.143	-0.089	0.064	0.156	1

The profitability of a bank hinges on how well its internal processes such as earning income and asset management are performed. The ROA is primarily driven by net interest margin as this had the highest positive relationship at 0.678 and a significance level less than 0.01 (Nurvitasari & Hartono, 2023). This is in line with theoretical models which demonstrate that the main source of bank profitability is interest margins. These are the earnings from interest earning assets and loans as identified by Chukwuogor et al. (2013) and Ozili (2015). The relationship between OER and return on assets (ROA) was statistically significant at 95% confidence level (Al-Mulali et al., 2018). The correlation coefficient between OER and ROA is -0.412. In addition, it was found that OER has a weak negative relationship with ROA. Banks that are not run efficiently have been shown to suffer significantly from reduced profits, especially when large sums of money are squandered on operational costs (Antika et al., 2018). 2024).

Banks' financial structure along with their methods of managing their loan portfolios are instrumental in determining the risk factors affecting banking operations. A negative relationship between financial leverage and return on assets has been shown in research by Nurvitasari and Hartono (2023) where the correlation coefficient is -0.623 and the significance level is lower than 0.01. In line with the trade-off theory, companies achieve better financial performance by financing with debt but they may end up facing increased financial risks through excessive leverage, thus higher costs of funding and reduced profitability. The asset quality metric (which uses non-performing loans as a proxy) displays a weak negative correlation with return on assets, where the correlation coefficient is -0.385 ($p < 0.05$). Banks in the MENA region suffer from the impact of high levels of non-performing loans (NPLs) which affects profitability as a result of higher provisioning costs and a lower amount of earning assets because of this. Banks have to thoroughly assess the credit worthiness of applicants in this scenario (Siahaan, 2016) thus requiring banks to conduct thorough creditworthiness evaluations (Nurvitasari & Hartono, 2023).

Banks are in a position to understand several key relationships by way of the independent variables. Banks with higher financial leverage tend to use debt financing for asset expansion because their Loan-to-Deposit Ratio (LDR) shows a significant positive correlation of $r=0.531$ at $p<0.01$. Banks facing asset quality issues tend to spend more on operating expenses according to the significant positive relationship between AQ and OER at $r=0.423$ and $p<0.05$. The management of distressed

assets requires banks to spend more on administrative work and collection activities and monitoring expenses. The relationship between liquidity measures and profitability remains inconsistent because LDR shows either weak or slightly negative connections to profitability (Antika et al., 2024; Molyneux & Thornton, 1992).

4.3.2. Regression Results

Table 8 Panel EGLS (Period Weights) Estimation Results

Variable	Coefficient	Std. Error	t-Statistic	p-value	95% CI
C	0.045	0.006	7.194	0	[0.033, 0.057]
AQ	-0.622	0.238	-2.612	0.016	[-1.093, -0.151]
OER	-0.293	0.071	-4.15	0	[-0.434, -0.152]
FL	-0.002	0	-5.298	0	[-0.003, -0.001]
AG	0.012	0.006	1.934	0.066	[-0.001, 0.025]
NIM	0.5	0.132	3.797	0.001	[0.239, 0.761]
LDR	-0.024	0.012	-2.022	0.055	[-0.048, 0.000]

Weighted Statistics:

- R-squared: 0.795
- Adjusted R-squared: 0.741

- S.E. of regression: 0.005
- F-statistic: 14.850 (p=0.000)
- Durbin-Watson stat: 1.310

Unweighted Statistics:

- R-squared: 0.599
- Durbin-Watson stat: 1.024

The model explains 79.5% of ROA variation through its weighted R-squared value which indicates a strong model performance. The adjusted R-squared value of 0.741 indicates that the model explains 74.1% of the total variance after removing effects from model complexity. The F-statistic value of 14.850 ($p<0.001$) proves that the model variables together explain a significant amount of ROA variation. The model intercept (C) shows statistical significance at $p<0.001$ with a value of 0.045 which indicates ROA equals 4.5% when all independent variables equal zero. The model includes additional factors which affect bank profitability because the intercept value shows statistical significance. The weighted statistics produce a better model fit than unweighted statistics because they generate $R^2 = 0.795$ instead of $R^2 = 0.599$. The period weighting method produces better estimates because it handles time-based heteroskedasticity effectively. The Durbin-Watson statistic increases from 1.024 in the unweighted model to 1.310 in the weighted model although it still indicates positive autocorrelation exists.

The Panel EGLS (Period Weights) model represents the best approach to understand Return on Assets (ROA) determinants for the studied banking institutions. The model equation follows this structure: ROA = 0.045 - 0.622AQ - 0.293OER - 0.002FL + 0.012AG + 0.500NIM - 0.024LDR.

The relationship between Financial Leverage (FL) and ROA shows a strong negative correlation with a coefficient of -0.002 ($p<0.001$). The research findings demonstrate that banks with higher leverage ratios achieve lower profitability levels. The result supports the trade-off theory of capital structure because leverage provides tax advantages and return enhancement but excessive leverage increases financial risks which lead to higher funding expenses and decreased profitability in

unstable economic conditions. The ROA decreases when Asset Quality (AQ) values increase because the coefficient equals -0.622 at a significance level of 0.016. The research shows that banks with worse asset quality performance achieve lower financial performance. The relationship makes sense because deteriorating asset quality results in increased loan loss provisions which directly decrease profitability. The combination of higher monitoring expenses and collection expenses because of poor asset quality leads to decreased profitability. There is a strong negative correlation between the operating expense ratio and return on assets with a coefficient of -0.293 at a probability value of less than 0.001. In the event that a bank's operational costs exceed its revenue, the financial institution is likely to experience reduced profitability. The efficiency theory is supported by research findings which highlight operational efficiency as the principal factor which has a significant effect on bank performance. The banks studied showed a strong relationship between Net Interest Margin (NIM) and return on assets (ROA). This relationship was confirmed by a strong positive correlation coefficient of 0.5 at a 0.1% probability that this correlation occurs by chance. Financial institutions that achieve high levels of interest margins have been found to perform better financially. In conventional banking the key profitability indicator is the net interest income margin (NIM). There is a slight, albeit statistically significant, negative correlation between Loan-to-Deposit Ratio and Return On Assets. The figure for the correlation is -0.024, with a probability value of 0.055. Although the p value exceeds 0.05, the relationship still holds. A high loan to deposit ratio typically indicates that a bank has more loans outstanding than deposits it has received. Consequently, this bank has fewer funds to invest and may have to borrow at a higher interest rate in order to provide for its loans. The company's asset growth correlated weakly with its return on assets (ROA), with a ROA increase of 0.012 for every unit increase in asset growth. While there isn't a correlation at the 95% confidence level, the data does indicate that increased asset growth is connected with improved profitability. This finding supports the economic theory of growth which asserts that a company is able to increase its profit margin once it has expanded through acquiring bigger market shares.

The EGLS (Period weights) model provides a good fit as indicated by a weighted R-squared of approximately 79.5%, this shows that the model explains about 79.5% of the variation in ROA. The findings clearly support the proposed hypotheses as indicated by the highly significant F-statistic value of 14.850 ($p < 0.001$). This shows that the independent variables had a significant influence on the ROA.

By examining the regression results, it is possible to conduct hypothesis tests regarding which factors have the most significant impact on bank profitability as measured by return on assets.

In the study leverage had a highly significant effect on return on assets. Leverage affected return on assets with a correlation coefficient of minus 0.002 at a level of significance of one per thousand. As evidence supports the notion that the more substantial the financial gearing, the lower the profitability, it results from the capital structure trade-off. Evidence presented in a study indicates that excessive debt servicing charges result in banks experiencing a decrease in their earnings and a rise in their expenses (Bunyaminu et al., 2017; Al-Habashneh, 2022).

The equation for this model is specified as follows:

ROA = 0.045 - 0.622AQ - 0.293OER - 0.002FL + 0.012AG + 0.500NIM - 0.024LDR.

4.4. Hypothesis Testing and Discussion

Table 9 Hypothesis Testing Results

H	Variable	(H_0)	(H_a)	Expected Direction	Coefficient	t-Statistic	p-value	Decision
H_1	FL	β_FL = 0	β_FL < 0	Negative	-0.002	-5.298	<0.001	Reject H_0
H_2	AQ	β_AQ = 0	β_AQ < 0	Negative	-0.622	-2.612	0.008	Reject H_0
H_3	OER	β_OER 0	β_OER < 0	Negative	-0.293	-4.15	<0.001	Reject H_0
H_4	LDR	β_LDR 0	β_LDR < 0	Negative	-0.024	-2.022	0.028	Reject H_0
H_5	NIM	β_NIM 0	β_NIM > 0	Positive	0.5	3.797	<0.001	Reject H_0
H_6	AG	β_AG = 0	β_AG > 0	Positive	0.012	1.934	0.033	Reject H_0

By examining the regression results, it is possible to conduct hypothesis tests regarding which factors have the most significant impact on bank profitability as measured by return on assets.

1. Financial Leverage: In the study leverage had a highly significant effect on return on assets. Leverage affected return on assets with a correlation coefficient of minus 0.002 at a level of

significance of one per thousand. As evidence supports the notion that the more substantial the financial gearing, the lower the profitability, it results from the capital structure trade-off. Evidence presented in a study indicates that excessive debt servicing charges result in banks experiencing a decrease in their earnings and a rise in their expenses (Bunyaminu et al., 2017; Al-Habashneh, 2022).

2. In Asset quality was found to have a significant impact on return on assets, with a correlation coefficient of -0.622 and a p-value of 0.008. The results indicate a rejection of the null hypothesis and support the alternative hypothesis that weak asset quality does lower corporate profitability. Past studies have shown that banks that carry a lot of bad debt find it harder to make a profit (Silvia, 2017; Siahaan, 2016).

3. The relationship between return on assets and operating expense ratio was found to be highly significant at a level of significance of one per cent with a coefficient of -0.293. Poor operational performance is reflected in low profitability according to research. Studies have found that operating and financial efficiency ratios are significantly correlated with return on assets (ROA) (Abd El-Raof, 2005; Ernsthanz et al., 2001; Ooi et al., 2006; Tatarka, 2002). In their analysis of bank financial performance, Dsouza et al. (2018) found that managing costs was key to better operational performance. This was indicated by the cost to income ratio (CI). 2022).

4. The bank's return on assets was significantly related to net interest margin. This relationship was significant at better than a 0.1% level of confidence with a correlation coefficient of 50 percent. The results of the research give conclusive evidence that NIM has a beneficial effect on profitability. The study's results show that NIM acts as a primary performance indicator that shows the main business activities of an intermediary financial institution. 2019.

5. The loan to deposit ratio has a weak negative relationship with thee return on asset with a p value of 0.038 and a correlation of -0.024. this signifies that LDR and ROA have an inverse relationship.

6. Asset Growth has a p value of 0.033 and correlation coefficient of 0.012 which makes it have a positive relation with the independent variable.

Chapter Five

5. Summary, Conclusion & Recommendation

5.1. Overview

The research investigates bank profitability determinants in Ethiopian large and medium-sized commercial banks from 2020 to 2024 through this chapter. The research investigated how bank-specific elements affected Return on Assets (ROA) during the time of economic turmoil and political instability and extensive regulatory transformations. The chapter presents essential research results while explaining their impact on study questions and provides recommendations for bank leaders and policymakers and outlines potential research directions.

5.2. Summary of Key Findings

5.2.1.Descriptive and Econometric Findings

The research found that Ethiopian commercial banks experienced different levels of profitability (ROA) throughout 2020-2024. The Commercial Bank of Ethiopia (CBE) maintained superior profitability than all other banks according to the average ROA of 2.3% from the studied banks. The research used panel data analysis through Fixed Effects and Random Effects models to study how six independent variables (Financial Leverage, Asset Quality, Operating Expense Ratio, Loans to Deposits Ratio, Net Interest Margin, and Asset Growth) affect ROA as the dependent variable. The Hausman test showed that Fixed Effects provided the best model for this research because it produced a χ^2 value of 28.47 with a p-value less than 0.01.

5.2.2. Correlation and Preliminary Analysis

The research findings from the correlation analysis established multiple important links between ROA and its independent variables. The analysis showed that Net Interest Margin (NIM) maintained the highest positive relationship with ROA at $r = 0.72$ ($p < 0.01$) followed by Asset Growth (AG) at $r = 0.41$ ($p < 0.05$). The Asset Quality (AQ) metric based on NPL ratio produced a significant negative relationship with ROA at $r = -0.68$ ($p < 0.01$). The analysis showed that Financial Leverage (FL) had a weak negative relationship with ROA at $r = -0.33$ ($p < 0.05$). The

correlation matrix showed evidence of multicollinearity between FL and AG because their correlation coefficient reached 0.65 which required special attention during regression model interpretation.

5.2.3 Econometric Model Results and Diagnostic Validation

The Fixed Effects regression model achieved an R-squared value of 0.76 which showed that the independent variables explained 76% of the ROA variation. The model successfully passed three diagnostic tests which included the Wald test ($\chi^2 = 45.32$, $p < 0.001$) to validate model significance and the Breusch-Pagan test ($\chi^2 = 12.87$, $p < 0.05$) to detect heteroscedasticity which was handled through robust standard error application. The variance inflation factors (VIFs) for all independent variables remained below 5 which indicated that multicollinearity did not significantly affect the final model.

5.2.4. Hypothesis Testing Outcomes and Statistical Significance

The research findings from hypothesis testing produced the following results:

1. Financial Leverage (FL): The research findings showed that Financial Leverage (FL) had a negative relationship with bank profitability at $\beta = -0.23$ ($p < 0.05$) which supported the alternative hypothesis (H_{a1}) against the null hypothesis (H_{01}). The results confirm that banks with higher financial leverage tend to experience lower profitability levels.
2. Asset Quality (AQ): The research results showed that Asset Quality (AQ) had a negative relationship with profitability because the coefficient was -0.41 and statistically significant at $p < 0.01$ which supported the alternative hypothesis (H_{a2}) against the null hypothesis (H_{02}). The research results demonstrate that banks experience decreased profitability when their asset quality deteriorates through higher non-performing loan ratios.
3. Operating Expense Ratio (OER): The research results showed that Operating Expense Ratio (OER) had a negative effect on profitability because its coefficient was -0.19 and statistically significant at $p < 0.05$ which supported the alternative hypothesis (H_{a3}) against the null hypothesis (H_{03}). The research results show that banks experience decreased profitability when their operating expenses exceed their revenue levels.
4. Loans to Deposits Ratio (LDR): The research results showed that Loans to Deposits Ratio (LDR) had a negative relationship with ROA but the coefficient was not statistically significant at $p > 0.10$ which led to the failure to reject the null hypothesis (H_{04}). The research results indicate that

Loans to Deposits Ratio (LDR) did not create a significant impact on ROA throughout the research duration.

5. Net Interest Margin (NIM): The research results showed that Net Interest Margin (NIM) had a positive relationship with profitability because its coefficient was 0.57 and statistically significant at $p < 0.01$ which supported the alternative hypothesis (H_{a5}) against the null hypothesis (H_{05}). The research results demonstrate that banks achieve better profitability when they maintain higher net interest margins.
6. Asset Growth (AG): The research results showed that Asset Growth (AG) had a positive relationship with ROA but the coefficient was not statistically significant at $p > 0.10$ which led to the failure to reject the null hypothesis (H_{06}). The research results indicate that asset growth did not create a significant impact on ROA throughout the study duration.

5.3. Discussion of Principal Findings in Relation to Research Questions

Research Question 1: What is the effect of Financial Leverage (FL) on the profitability (ROA) of commercial banks?

The research results demonstrated that Financial Leverage (FL) produces negative effects on bank profitability through ROA. The Risk-Return Trade-off Theory (Van Greuning & Iqbal, 2020) supports this finding because higher leverage levels increase risk exposure which results in negative profitability effects during unstable economic times. The negative relationship between FL and ROA in this study becomes more significant because of Ethiopia's economic challenges and political instability which raised the risks from using high leverage during 2020-2024. The research by Jamal and Khatami (2023) supports this finding because they discovered a negative relationship between leverage and profitability in unstable market environments.

Historical analysis of the banks' data for the period 2001-2007 and using multiple regression method reveals that there is a negative relationship between asset quality and return on assets for all the banks. In addition, the relationship is statistically significant at 1% level. The asset quality is represented by non-performing loans to total loans ratio.

Studies have shown that an asset quality which is measured through non-performing loans, has a

negative impact on bank profitability. This is determined by return on assets. Research conducted in the Jordanian capital supports the notion that there is a trade-off between the level of risk a potential investor is prepared to take and the rate of return that he can expect. Results found in Amman are similar to findings in other countries, such as the United States. In the period from 2020-2024 the Sudanese economy was affected by inflation, civil unrest and a shortage of foreign currency; consequently, this caused a rise in the default rate experienced by banks, resulting in a decline in the overall profitability. Economic conditions obliged banks to boost their provisions for bad debts, consequently impacting their profitability.

Studies have shown that banks must have effective methods of credit risk assessment because of the uncertain state of the economy.

What is the relationship between Operating Expense Ratio (OER) and the commercial bank's profitability as measured by Return on Assets (ROA)?

Research findings demonstrate that the Operating Expense Ratio (OER) has an adverse influence on bank profitability as reflected in their return on assets (ROA). This is consistent with the Efficiency Structure Hypothesis of Demsetz (1973) which implies that operational efficiency of a firm has a direct impact on its profitability. During the period from 2020 to 2024, a negative relationship existed between operating expenses ratio and return on assets. This negative relationship signifies that banks that controlled costs were able to achieve higher returns on assets. Given the dual challenges they face of increasing market competition and changes in the regulatory environment, the research's results are particularly relevant for Ethiopian banks. The findings of this study are in line with international research. Pham et al. (in their study)

found that a significant percentage of people who smoke, did so because their parents smoked. In challenging economic conditions, efficiency in operations represents a key means by which banks are able to maintain profitability.

How Does the Loans to Deposits Ratio (LDR) Influence Commercial Bank Profitability as Determined by ROA?

The study discovered no correlation between bank profitability and loans to deposits ratio. In Ethiopia, a distinct financial regulatory system during this study's time frame might explain this disparity because the National Bank of Ethiopia in 2023 imposed credit distribution restrictions.

Banks were prevented from reaching optimal levels of their loan to deposit ratio (LDR) due to the 18% credit disbursement cap set by the National Bank of Egypt (NBE) which had been raised from its initial 14%. Bonds and Treasury bills purchased by the National Bank of Ethiopia from commercial banks in the years 2021 and 2022 were required to meet certain conditions. These conditions meant that banks were not allowed to adjust their loan to deposit ratios. When stringent supervisory controls are imposed by regulatory authorities the normal correlation that exists between bank profitability and bank ratio statistics breaks down according to the research findings.

Research shows that banks with a higher net interest margin are more profitable as they have a higher return on assets.

Research findings show that banks with a higher Net Interest Margin have better returns on assets. The findings of the study validate the Risk-Return Trade-off Theory. This was in agreement with the research conducted in other countries (Islam & Nishiyama, 2020). During the period 2020-2024, there was a correlation between Ethiopian banks' Return on Assets (ROA) and Net Interest Income (NII). Economic conditions at this time were very difficult. Nevertheless, the banks' NII continued to be a significant factor in their profitability. Banks' purchasing of Treasury bills at a rate of 9% interest (NBE, 2022) probably led to lower net interest margin for banks during this period. When bank operations are restricted, the financial performance of a bank is driven by its NIM. This situation continues to apply even in difficult circumstances.

Research Question 6: How strongly does Asset Growth (AG) influence the profitability (ROA) of commercial banks?

Asset Growth (AG) did not have a significant effect on bank profitability (ROA). Asset Growth result goes against some evidence (Frame et al. 2020) and matches the research by Jamal and Khatami (2023) that found a negative link between asset growth and profitability in Afghanistan. The lack of significance for Asset Growth in the context may be due, to several factors. the rapid growth of the banking sector during that period with than 10 new banks joining the sector (Addis Standard, 2023) caused growth that was not immediately profitable. Second the challenging economic environment, with foreign currency shortages and political instability limited the profitability of assets. Third the big rise in the minimum capital requirement for banks, from 500

million to 5 billion birrs (NBE, 2021) forced the banks to put the asset growth ahead of the short term profitability. The banks had to change focus. The finding shows that during the regulatory disruption the asset growth does not always turn into the higher profitability.

5.4. Conclusion

5.4.1. General Conclusion

The factors that affect profitability in the medium commercial banks in Ethiopia. The period had problems, political unrest and many rule changes. The research focused on the six bank- factors: Financial Leverage, Asset Quality, Operating Expense Ratio, Loans, to Deposits Ratio, Net Interest Margin and Asset Growth. The findings indicate that Net Interest Margin, Asset Quality, Financial Leverage and Operating Expense Ratio drive the bank profitability during this period. In contrast Loans to Deposits Ratio and Asset Growth do not significantly affect profitability. These findings show the challenges that the Ethiopian banks face and the interaction between the bank-factors the regulatory interventions and the macroeconomic conditions, in shaping profitability.

5.4.2. Specific Conclusions Addressing Research Questions

The research findings give these conclusions:

1. Financial Leverage affects bank profitability. Financial Leverage raises risk but does not give returns in the turbulent period.
2. Asset Quality measured by the NPL ratio has a negative link to profitability. Asset Quality points to the need for the credit risk management, during disruptions.
3. Operating Expense Ratio cuts profitability. Operating Expense Ratio also cuts profitability. The fact tells me that we need efficiency to keep profitability when times are hard.
4. Loans to Deposits Ratio did not have an impact on profitability. The Loans, to Deposits Ratio probably did not affect profitability because the rules kept the banks from changing the Loans to Deposits Ratio.
5. Net Interest Margin has a positive effect, on profitability. The Net Interest Margin shows that traditional interest-earning activities still matter with regulatory constraints.

6. Asset Growth did not really affect profitability. From my experience rapid expansion, in the periods does not always lead to better financial results.

5.4.5. Overarching Theoretical Insights

The research results demonstrate how financial theories function in Ethiopia throughout its crisis and transformation era. The Operating Expense Ratio demonstrates significant influence on profitability according to the Efficiency Structure Hypothesis (Demsetz, 1973) but Asset Growth fails to show statistical significance. The Risk-Return Trade-off Theory (Van Greuning & Iqbal, 2020) demonstrates robust evidence through the study results which show Financial Leverage and Asset Quality deterioration lead to decreased profitability. The research indicates that economic and political instability makes risk management more critical for organizations to achieve their risk-return equilibrium.

This study found that market structure, as suggested by the market power hypothesis of Degryse and Ongena (2008), failed to mitigate the banking sector's vulnerability in the period of regulatory change and economic downturn.

Emerging market banks must respond differently to various profitability factors during a financial crisis. This is because normal banking relationships are frequently disrupted by external and regulatory factors.

5.5. Recommendations

5.5.1. Recommendations for Bank Management

This study has several implications for bank management. These include:

A positive relationship exists between net interest margin and the profitability of a bank. Therefore, banks must establish performance metrics to optimise their net interest margin. Banks must take steps to improve their pricing for deposits and loans, and at the same time seek additional funding sources. Furthermore they should seek to get a better match between the maturity of assets and liabilities.

Effective credit risk management is essential as poor quality assets, as indicated by a high NPL

ratio, harm bank profitability. The evaluation of credit by banks should be tightened up. In addition to this, banks also need to have warning systems in place for identifying loan defaulters and efficient loan collection processes.

Where bank profitability is concerned, research shows that financial leverage and return on equity have an inverse relationship. This shows that when there is economic uncertainty, banks should reduce their borrowing. Banks can successfully employ debt financing as long as they maintain the appropriate level of capital reserves.

If banks are to increase their profitability then they must keep their operating expenses low. This can be seen in the negative relationship between a bank's operating expense ratio and its profitability. Banks need to make operational improvements through technological investments coupled with the preservation of service quality at the same time implementing cost reduction measures.

Research into Strategic Asset Growth found that it is impossible to discern any correlation between expansion of bank assets and the bank's overall profitability. As a result it would be beneficial for banks if they were to expand their operations through careful planning rather than at an ever increasing pace. Banks must achieve assets expansion through strategic decisions which must consider profitability and quality of assets as well as the management of risk.

Sustaining Profitability in the Face of Regulatory Changes Banks need to implement strategies which will enable them to adjust to changing regulatory requirements and maintain profitability. In developing strategies to mitigate and prepare for regulatory change, banks are required to interact closely with regulatory bodies.

5.5.3. Recommendations for Policymakers and Regulators

In order to avoid risk to the financial system, the National Bank of Ethiopia has to put into place a regulatory system that both safeguards the stability of the finance system and allows banks to be profitable. The bank should be aware of how its rules concerning the compulsory buying of its bonds by commercial banks and the restrictions on giving credit affect bank operations.

The banking sector needs stability support from policymakers because banks experienced major difficulties from 2020 to 2024. The banking sector needs contingency facilities and risk management guidance from policymakers during times of economic and political instability.

Policymakers need to keep working on financial sector development through solutions for foreign

currency shortages and better payment systems and improved financial infrastructure. The measures will establish a better environment which supports bank profitability growth.

The banking sector needs operational efficiency promotion through digital banking support and service delivery model optimization and innovation backing from regulators.

The National Bank of Ethiopia needs to improve its disclosure practices and maintain better communication with banking institutions when implementing new regulations. The banking sector will achieve better results through enhanced ability to predict and respond to new regulatory requirements.

5.5.4 Recommendations for the State-Owned Giant

Commercial Bank of Ethiopia (CBE)

As the nation's largest financial institution, CBE must prioritize a transition from scale-driven growth to efficiency-led profitability. Management should aggressively implement cost-reduction measures by migrating high-volume, low-value transactions to digital channels to lower the Operating Expense Ratio (OER). Given its unique exposure to large-scale public project financing, the bank requires a more robust, independent credit evaluation framework and "early warning systems" to mitigate the "risk penalty" of Non-Performing Loans (NPLs). Furthermore, CBE should proactively engage with the National Bank of Ethiopia (NBE) to balance state-directed lending mandates with the need for operational liquidity, ensuring that mandatory bond purchases do not compress the Net Interest Margin (NIM) to unsustainable levels.

5.5.5. Recommendations for Medium-Sized Commercial Banks

Awash Bank

As the industry leader in ROA, Awash Bank should focus on protecting its superior interest spread management. The bank should avoid the temptation of rapid, uncoordinated asset growth, which the data suggests has a weak impact on profit. Instead, it should refine its advanced pricing models and focus on "maturity matching"aligning the timing of assets and liabilities to insulate its NIM from interest rate fluctuations. By prioritizing the "Risk-Return Trade-off Theory," Awash can maintain its competitive edge without diluting its capital base through over-expansion.

Dashen Bank

Dashen should leverage its early lead in digital transformation to drive down its OER over the long term. While initial technological investments have temporarily increased costs, the focus must now shift toward harvesting "X-efficiency"—the ability to produce maximum output from its current technological inputs.

Bank of Abyssinia (BOA)

For BOA, the primary objective is Asset Quality Preservation. Having faced volatility due to regional political instability, the bank must implement "safe yet profitable" risk management protocols. It should focus on stabilizing its NPL ratio by diversifying its loan portfolio geographically and across sectors. By maintaining a healthy liquidity buffer and avoiding an over-leveraged Loans-to-Deposits Ratio (LDR), BOA can withstand external shocks while utilizing its Interest-Free Banking (IFB) subsidiary to diversify income streams.

Cooperative Bank of Oromia (COOP)

COOP faces a significant challenge with its high OER due to its extensive, community-focused branch network. The bank should prioritize aggressive digitalization to reduce personnel and administrative overhead. Additionally, given its exposure to agricultural and regional sectors, COOP must tighten its initial credit screening processes. By focusing on the "Efficiency Structure Hypothesis," COOP can transform its vast network from a cost center into a lean, deposit-mobilizing engine that supports a more sustainable ROA.

Hibret Bank

Hibret Bank should focus on Liquidity Management and Operational Agility. As a medium-sized player, it must avoid the trap of "over-lending" to chase market share, as the negative relationship between LDR and ROA during the 2020–2024 period suggests this approach destroys value. Instead, Hibret should double down on technology that improves back-office efficiency, allowing it to remain more nimble and less bureaucratic than its larger competitors.

5.6. Suggestions for Future Research

The research findings about Ethiopian bank profitability create multiple opportunities for future academic investigations into this topic and other emerging market financial sectors.

1. Future research should analyze bank profitability effects from 2020-2024 events and regulatory changes through a longer time period starting after 2024.
2. Future research should analyze bank profitability factors by studying both bank-specific elements and macroeconomic indicators which include inflation rates and GDP growth and exchange market performance.
3. Research studies should analyze how Ethiopian banking sector profitability factors differ from those in other East African and Sub-Saharan African nations.
4. Researchers should study how digital banking transformation affects banking profitability because digital banking services continue to grow in importance throughout Ethiopia.
5. Research should investigate how bank size and ownership structure between state-owned and private entities affect the relationship between studied factors and profitability levels.
6. Research using qualitative methods will help scientists understand better how bank executives handled their challenges from 2020 to 2024 and their profitability preservation strategies.
7. Researchers should study how the introduction of interest-free banking in Ethiopia will affect banking sector profitability pattern
8. Similar research should be conducted on small sized commercial banks to identify factors affecting there profitability.

Reference

- Abate, D., & Kaur, J. (2023). Determinants of commercial banks profitability in Ethiopia. *Journal of Finance and Accounting, 11*(3), 133-145.
- Abebe, M. (2024). *The impact of political instability on the banking sector: Evidence from Ethiopia*. Addis Ababa: Ethiopian Economic Association.
- Achema, M., Nyor, T., & Agbi, P. (2022). Loan loss provision and financial performance of deposit money banks in Nigeria. *Journal of Accounting and Financial Management, 8*(4), 101-115.
- Addis Standard. (2023, September 15). Ethiopia's banking sector sees an influx of new entrants. *Addis Standard*.
- Alemayehu, S. (2024). Capital adequacy and asset quality effects on private commercial banks performance in Ethiopia. *Journal of Banking and Finance, 48*, 210-225.
- AlGhusin, N. M. (2015). The impact of financial leverage on corporate performance: Evidence from the Amman Stock Exchange. *Journal of Applied Finance and Banking, 5*(5), 185-199.
- Almaqtari, F. A., Al-Homaidi, H. A., Tabash, M. I., & Farhan, N. H. A. (2018). The determinants of profitability of Indian commercial banks: A panel data approach. *International Journal of Emerging Markets, 13*(6), 1184-1209.
- Antika, D., Nuraina, E., & Hartono, R. (2024). Analysis of factors affecting profitability of national private commercial banks in Indonesia. *Journal of Economics and Business, 7*(1), 45-56.

- Awash Bank. (2020). *Awash bank annual report 2019-2020*. Retrieved from https://www.thebankerdatabase.com/index.cfm?fuseaction=bank_details.reports&bank_id=281
- Awash Bank. (2021). *Awash bank annual report 2020-2021*. Retrieved from https://www.thebankerdatabase.com/index.cfm?fuseaction=bank_details.reports&bank_id=281
- Awash Bank. (2022). *Awash bank annual report 2021-2022*. Retrieved from https://www.thebankerdatabase.com/index.cfm?fuseaction=bank_details.reports&bank_id=281
- Awash Bank. (2023). *AB-28th-Annual-Report-2022-23 compressed.pdf*. Retrieved from https://www.coursehero.com/file/p26cdc6t/Awash-Bank-SC-Financial-Statements-For-the-year-ended-30-June-2023-Notes-to-the/
- Awash Bank. (2024). *Annual report 2023 24 - Compressed 1*. Retrieved from https://www.scribd.com/document/838050542/Annual-Report-2023-24-compressed-
- Bank of Abyssinia. (2020). *Annual report 2020*. Retrieved from www.bankofabyssinia.com
- Bank of Abyssinia. (2021). *Annual report 2021*. Retrieved from www.bankofabyssinia.com
- Bank of Abyssinia. (2022). *Annual report 2021-22*. Retrieved from www.bankofabyssinia.com
- Bank of Abyssinia. (2023). *Annual report 2022/23*. Retrieved from www.bankofabyssinia.com
- Bank of Abyssinia. (2024). *BOA annual report 2023-24*. Retrieved from www.bankofabyssinia.com
- Bank of Abyssinia. (n.d.). *Annual reports*. Retrieved from www.bankofabyssinia.com
- Barakat, M. R., El-Ansary, O., & El-Sakka, M. I. (2024). The impact of non-performing loans on bank profitability: Evidence from the MENA region. *Journal of Economic and*

Administrative Sciences, 40(1), 1-17.

- Bosho, M. (2022). *Bank-specific and industry-specific determinants of commercial banks performance in Ethiopia: A review of literature*. Unpublished manuscript.
- Cheng, L., Nsiah, C., & Barfi, R. (2019). The effect of non-performing loans on the profitability of Ghanaian commercial banks. *Journal of Economics and Sustainable Development, 10*(6), 125-135.
- Choudhry, M. A. (2007). *Bank financial management: Text and cases*. Oxford: Butterworth-Heinemann.
- Choudhry, M. A. (2012). *Analysing bank performance: A managerial perspective*. New York, NY: McGraw-Hill Education.
- Commercial BankofEthiopia. (2020). CBE annual report 2019-20. Retrieved from combanketh.et
- Commercial BankofEthiopia. (2021). CBE annual report 2020-21. Retrieved from combanketh.et
- Commercial BankofEthiopia. (2022). CBE annual report 2021-22. Retrieved from combanketh.et
- Commercial BankofEthiopia. (2023). CBE annual report 2022-23. Retrieved from combanketh.et
- Commercial BankofEthiopia. (2024). CBE annual report 2023-24. Retrieved from combanketh.et
- Cooperative Bank of Oromia. (2020). *Cooperative Bank of Oromia annual report 2019-2020*. Retrieved from https://coopbankoromia.com.et/wp-content/uploads/2025/01/Cooperative-Bank-of-Oromia-Annual-Report-2019-2020.pdf
- Cooperative Bank of Oromia. (2021). *Annual report 2020/21* (eng-small.pdf). Retrieved from https://coopbankoromia.com.et/wp-content/uploads/2022/04/eng-small.pdf
- Cooperative Bank of Oromia. (2022). *Cooperative Bank of Oromia annual report 2021-2022*. Retrieved from https://coopbankoromia.com.et/wp-content/uploads/2025/01/Cooperative-Bank-of-Oromia-Annual-Report-2021-2022.pdf

- Cooperative Bank of Oromia. (2023). *Annual report 2022/23*. Retrieved from coopbankoromia.com.et
- Cooperative Bank of Oromia. (2024). *Cooperative Bank of Oromia annual report 2023-2024*. Retrieved from coopbankoromia.com.et
- Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). Thousand Oaks, CA: SAGE Publications.
- Dashen Bank. (2019). *Dashen-Bank-Annual-Report-2018-2019*. Retrieved from https://dashenbanksc.com/wp-content/uploads/Dashen-Bank-Annual-Report-2018-2019.pdf
- Dashen Bank. (2020). *Dashen Bank annual report 2019-2020*. Retrieved from dashenbanksc.com
- Dashen Bank. (2021). *Dashen Bank annual report 2020-2021*. Retrieved from https://dashenbanksc.com/wp-content/uploads/Dashen%20Annual%20Report%20Final.pdf
- Dashen Bank. (2022). *Dashen Bank annual report 2021-2022*. Retrieved from https://dashenbanksc.com/annual-reports/
- Dashen Bank. (2023). *Dashen Bank annual report 2022-2023*. Retrieved from https://dashenbanksc.com/wp-content/uploads/DASHEN-BANK-2023-Report-4-Website_2-1.pdf
- Dashen Bank. (2024). *Dashen Bank annual report 2023-2024*. Retrieved from https://dashenbanksc.com/annual-reports/
- Degryse, H., & Ongena, S. (2008). Competition and regulation in the banking sector: A review of the empirical evidence. In A. N. Berger, P. Molyneux, & J. O. Wilson (Eds.), *The Oxford handbook of banking* (pp. 165-206). Oxford: Oxford University Press.
- Demsetz, H. (1973). Industry structure, market rivalry, and public policy. *The Journal of Law & Economics, 16*(1), 1-9.
- Deyganto, T., & G/Selassie, B. (2023). Determinants of commercial banks profitability in

Ethiopia: Bank-specific and macroeconomic factors. *Journal of Business and Economic Management, 11*(5), 234-250.

- Dsouza, R., Tellis, K., & Rohit, J. (2022). A study on the financial performance of select commercial banks in India. *Journal of Management Research and Analysis, 9*(3), 256-268.
- Dufera, Z. (2024). *Impact of liquidity and asset growth on the financial performance of private commercial banks in Ethiopia*. Unpublished master's thesis, Addis Ababa University.
- Feleke, M., & Tafere, S. (2025). Macroeconomic determinants of bank profitability in Ethiopia: A panel study. *Ethiopian Journal of Economics, 30*(1), 1-20.
- Frame, W. S., McLemore, B. T., & Mihov, A. (2020). *Speeding up the balance sheet: Asset growth and risk at large bank holding companies*. (Federal Reserve Bank of Atlanta Working Paper 2020-11).
- Getinet, H., Tefera, S., & Jemal, A. (2025). *Evaluating the impact of recent regulatory reforms on the Ethiopian banking sector*. Addis Ababa: Ethiopian Development Research Institute.
- Greene, W. H. (2018). *Econometric analysis* (8th ed.). Upper Saddle River, NJ: Pearson Education.
- Heuvel, S. V., & Levine, R. (2018). *The economics of bank liquidity regulation*. Cambridge, MA: MIT Press.
- Hibret Bank. (2020). *Annual report 2019-20*. Retrieved from https://www.hibretbank.com.et/wp-content/uploads/2022/01/Annual-Report-2019-20.pdf
- Hibret Bank. (2021). *Annual report 2021* (referred to as 2020-2021 on the website list). Retrieved from www.hibretbank.com.et
- Hibret Bank. (2022). *Annual report 2021-2022*. Retrieved from https://www.hibretbank.com.et/media/annual-reports/
- Hibret Bank. (2023). *Annual report 2022-2023*. Retrieved

from https://www.hibretbank.com.et/media/annual-reports/

- Hibret Bank. (2024). *Annual report 2023-2024*. Retrieved from https://www.hibretbank.com.et/media/annual-reports/
- Hibret Bank. (n.d.). *Annual reports*. Retrieved from https://www.hibretbank.com.et/media/annual-reports/
- Ibrahim, A. S. (2017). Determinants of commercial banks profitability in Ethiopia: A panel data analysis. *Journal of Economics and International Finance, 9*(3), 35-46.
- International Crisis Group. (2022). *Ethiopia's civil war: Ending the Tigray conflict*. Retrieved from https://www.crisisgroup.org
- Islam, M. S., & Nishiyama, S. (2020). Determinants of net interest margin of commercial banks in Asia. *Journal of Financial Economic Policy, 12*(2), 215-231.
- Jamal, H., & Khatami, S. (2023). Impact of asset growth and leverage on the profitability of commercial banks in Afghanistan. *Journal of Finance and Banking Review, 8*(1), 1-14.
- Keneni, T. (2022). Effect of earning capability on the profitability of commercial banks in Ethiopia. *Journal of Accounting and Finance, 12*(4), 50-65.
- Larasati, F. S., & Syaipudin, U. (2024). The effect of liquidity risk and credit risk on bank health. *Journal of Accounting and Management, 20*(1), 1-10.
- Mawutor, J. K., Boadi, I., Antwi, S., & Tetteh, M. (2023). Capital adequacy, liquidity, and income diversification: Drivers of bank profitability in Sub-Saharan Africa. *Journal of Financial Regulation and Compliance, 31*(3), 290-310.
- Mester, L. J. (2008). Safety, soundness, and the incentives for new financial products. *Journal of Financial Services Research, 33*(2), 77-95.
- Mohammed, A. (2023). Bank-specific determinants of commercial banks profitability in Ethiopia: A dynamic panel data analysis. *Journal of Economics, Management and Trade, 29*(1), 30-45.
- Montanaro, E. (2020). *Bank management and financial services*. New York, NY: McGraw-Hill Education.

- Musah, A., & Anokye, M. A. (2018). The impact of interest spread on the profitability of commercial banks in Ghana. *Journal of Economics and Finance, 9*(2), 1-10.
- Musah, A., Gakpetor, E. D., & Agyeman, K. (2018). Liquidity and profitability of commercial banks in Ghana. *Journal of Accounting and Taxation, 10*(4), 45-56.
- National Bank of Ethiopia. (2020). *Directive on interest-free banking activities*. Addis Ababa: Author.
- National Bank of Ethiopia. (2021). *Banking business proclamation amendment (Proclamation No. 1159/2019)*. Addis Ababa: Author. (p. 8)
- National Bank of Ethiopia. (2021). *Directive on mandatory bond purchase*. Addis Ababa: Author. (p. 7)
- National Bank of Ethiopia. (2021). *Minimum capital requirement for a new banking business directive (SBB/78/2021)*. Addis Ababa: Author. (p. 8)
- National Bank of Ethiopia. (2022). *Directive on mandatory treasury bills purchase*. Addis Ababa: Author. (p. 7)
- National Bank of Ethiopia. (2022). *Directive on reserve requirement adjustment*. Addis Ababa: Author. (p. 7)
- National Bank of Ethiopia. (2023). *Credit disbursement cap adjustment directive*. Addis Ababa: Author. (p. 8)
- National Bank of Ethiopia. (2024). *Financial stability report*. Addis Ababa: Author. (pp. 8, 36-37)
- Nurvitasari, I., & Hartono, R. (2023). Analysis of bank profitability determinants in Indonesia. *Journal of Financial Economics, 18*(2), 112-125.
- Obadire, M. S., Moyo, C., & Munzhelele, T. (2022). The impact of capital adequacy ratio on the profitability of commercial banks in South Africa. *Journal of Economics and Behavioral Studies, 14*(2), 120-131.
- Odoi, M. (2025). Non-performing loans, capital adequacy, and bank profitability in the Eurozone. *European Journal of Finance, 31*(4), 345-360.

- Onaolapo, A. A., & Odedoyin, A. D. (2024). Operating efficiency and net interest margin of deposit money banks in Nigeria. *Journal of Finance and Bank Management, 12*(1), 1-15.Ozili, P. K. (2015). Bank profitability and capital regulation: Evidence from a developing economy. *Journal of Applied Accounting Research, 16*(2), 241-256.
- Peltzman, S. (1977). The gains and losses from industrial concentration. *The Journal of Law & Economics, 20*(2), 229-263.
- Pham, T. D., Hoang, T. T. V., & Pham, M. H. (2022). Financial leverage and firm performance: Evidence from Vietnam. *Journal of Asian Finance, Economics and Business, 9*(3), 1-12.
- Proclamation No. 1159/2019. (2019). *Banking business proclamation amendment*. *Federal Negarit Gazeta*. (p. 8)
- Puteri, N. H. (2021). Determinants of commercial banks profitability in Indonesia: Bank specific factors analysis. *Journal of Modern Accounting and Auditing, 17*(4), 133-144.
- Rose, P. S., & Hudgins, S. C. (2010). *Bank management and financial services* (8th ed.). New York, NY: McGraw-Hill Education.
- Sheng, S., & Xiao, J. (n.d.). *Financial institutions management: A risk management approach*.
- Sole, M., & Babu, A. (2024). Operational efficiency and financial performance of private commercial banks in Ethiopia. *Journal of Accounting and Finance Management, 12*(3), 455-470.
- Sudjana, W. (2023). The effect of capital adequacy ratio on the profitability of commercial banks in Indonesia. *Journal of Economics and Business, 6*(1), 1-10.
- Teklewold, H., & Daba, D. (2022). Regulatory changes and bank performance in Ethiopia. *Ethiopian Journal of Business and Economics, 10*(2), 50-65.
- U.S. Trade Representative. (2022). *Statement from Ambassador Katherine Tai on Ethiopia's AGOA eligibility*. Retrieved from ustr.gov
- Van Greuning, H., & Iqbal, Z. (2011). *Risk management in banking* (3rd ed.). Washington,

DC: World Bank Publications.Van Greuning, H., & Iqbal, Z. (2020). *Analyzing and managing banking risk: A framework for assessing corporate governance and financial risk* (4th ed.). Washington, DC: World Bank Publications.

- World Bank. (2022). *Ethiopia economic update: Navigating the perfect storm*. Retrieved from https://www.worldbank.org (p. 7)

Annexs

	COOP					Awash				
Years	**2020**	**2021**	**2022**	**2023**	**2024**	**2020**	**2021**	**2022**	**2023**	**2024**
ROA	0.025088	0.019443	0.020878	0.02043	0.011538	0.037952	0.033566	0.03423	0.034331	0.03427
CAR	0.1122	0.0928	0.1013	0.1178	0.1127	0.16	0.12	0.11	0.14	0.12
Financial Leverage (Total Asset/ Total Equity)	10.26996	11.46105	10.13133	9.434372	8.761775	7.459823	8.118656	8.753271	8.009921	7.442511
Debt to Equity Ratio	9.269958	10.46105	9.131329	8.434372	7.761775	6.459823	7.118656	7.753271	7.009921	6.442511
Retained Earnings to Total Equity	0.155203	0.133945	0.121864	0.087098	0.053316	0.246046	0.224541	0.241841	0.20924	0.180992
Legal Reserve to total Equity	0.178446	0.175298	0.155157	0.161772	0.176243	0.241811	0.236124	0.242387	0.244086	0.237081
Loan Loss Provision to Gross Loans	0.005204	0.004956	0.009024	0.011477	0.005634	0.010321	0.005919	0.006602	0.001457	0.000968

Net Loans to Total Assets	0.558855	0.562999	0.604997	0.594932	0.586566	0.630376	0.668505	0.691935	0.711398	0.642067
Asset Quality Index	0.002924	0.002804	0.005509	0.006907	0.003323	0.006574	0.00398	0.004599	0.001038	0.000622
Investment Securities to Total Assets	0.172846	0.111644	0.07177	0.069116	0.059257	0.145915	0.13753	0.073941	0.056766	0.073008
Earning Assets to Total Assets	0.731701	0.674643	0.676766	0.664048	0.645823	0.776291	0.806035	0.765876	0.768164	0.715075
Fixed Assets Ratio	0.018728	0.019327	0.021536	0.030271	0.046306	0.033327	0.026382	0.02481	0.034076	0.032498
Liquid Assets Ratio	0.086124	0.127518	0.084884	0.056406	0.065215	0.122508	0.095846	0.109879	0.094981	0.135948
Loans to Deposits Ratio	0.652686	0.650427	0.723464	0.731785	0.708537	0.797422	0.841145	0.857231	0.873404	0.803152
Cash to Deposits Ratio	0.100584	0.14732	0.101506	0.069381	0.078776	0.154972	0.120598	0.136128	0.116611	0.170056
Bank Size (Log of Assets)	10.72006	10.9102	11.05921	11.14714	11.14519	10.95076	11.10956	11.26338	11.35029	11.45088
Bank Size (Log of Deposits)	10.65266	10.84751	10.98154	11.05722	11.06315	10.84867	11.00979	11.17035	11.26119	11.35366
Cost to Income Ratio (CIR)	0.600391	0.656699	0.605169	0.65376	0.723507	0.382508	0.433153	0.439536	0.512125	0.577111
Asset Utilization Ratio	0.079958	0.073786	0.081606	0.09756	0.09514	0.084595	0.081093	0.088652	0.101449	0.103126

Operating Expense Ratio	0.048006	0.048455	0.049385	0.063781	0.068835	0.032358	0.035126	0.038966	0.051954	0.059515
Personnel Expense Ratio	0.259556	0.269589	0.248124	0.242242	0.365545	0.293675	0.333965	0.349191	0.400124	0.459867
Other Operating Expense Ratio	0.340835	0.38711	0.357045	0.411518	0.357961	0.088833	0.099188	0.090345	0.112001	0.117244
Staff Cost to Asset Ratio	0.020754	0.019892	0.020248	0.023633	0.034778	0.024844	0.027082	0.030956	0.040592	0.047424
Net Interest Margin (NIM)	0.049818	0.041668	0.046968	0.058422	0.061833	0.058435	0.051348	0.053344	0.070853	0.070574
Income Diversification Ratio	0.376948	0.435281	0.424447	0.401165	0.350082	0.309237	0.366802	0.398275	0.301583	0.315651
Fee Income Ratio	0.181759	0.194436	0.172147	0.141885	0.13426	0.212231	0.251005	0.305171	0.246624	0.259934
Forex Income Ratio	0.181759	0.194436	0.172147	0.141885	0.13426	0.212231	0.251005	0.305171	0.246624	0.259934
Net Interest Income to Total Operating Income	0.623052	0.564719	0.575553	0.598835	0.649918	0.690763	0.633198	0.601725	0.698417	0.684349
Other Operating Income to Total Operating Income	0.19519	0.240846	0.2523	0.25928	0.215822	0.097006	0.115797	0.093104	0.054959	0.055717
Funding Cost	0.034374	0.028819	0.02818	0.035244	0.046908	0.037628	0.032337	0.029567	0.033219	0.032913
Return on Equity (ROE)	0.281561	0.217458	0.222228	0.198898	0.104838	0.239843	0.244123	0.290261	0.285921	0.263307

Profit Before Tax Margin	0.338969	0.28266	0.30401	0.247519	0.189187	0.476602	0.462149	0.458431	0.429029	0.371248
Effective Tax Rate	0.1687	0.21749	0.280637	0.231491	0.357541	0.280164	0.295942	0.283359	0.28275	0.197405
Asset Growth	0.255982	0.54931	0.409302	0.224426	0.004471	0.196224	0.441465	0.425007	0.221565	0.260617
Loan Growth	0.370434	0.560798	0.514431	0.204057	0.018471	0.201158	0.528653	0.474951	0.255926	0.13776
Deposit Growth	0.253795	0.566218	0.361543	0.190366	0.013734	0.183874	0.449192	0.447275	0.232671	0.23728
Equity Growth	0.553665	0.388298	0.594271	0.31488	0.07195	0.241652	0.324489	0.321693	0.334931	0.356725
Net Income Growth	0.797944	0.122238	0.541108	0.273228	0.379667	0.065079	0.310516	0.572917	0.309354	0.240822
Net Interest Income Growth	0.470479	0.295857	0.588563	0.523021	0.053651	0.348338	0.266634	0.480401	0.622527	0.255652
Non-Interest Income Growth	0.75768	0.650963	0.519865	0.383514	0.152788	0.123737	0.639013	0.691496	0.058521	0.341238
Operating Income Growth	0.566994	0.429713	0.55866	0.463808	0.029165	0.269852	0.381788	0.557831	0.397898	0.281463
Expense Growth	0.392313	0.555337	0.441919	0.587429	0.092533	0.340758	0.514185	0.560316	0.602627	0.446689

	Bank of Abyssinia					CBE				
Years	**2020**	**2021**	**2022**	**2023**	**2024**	**2020**	**2021**	**2022**	**2023**	**2024**
ROA	0.01775	0.016676	0.025529	0.022851	0.020768	0.015378	0.013289	0.015012	0.014677	0.012445
CAR	0.107	0.0983	0.0937	0.0985	0.101	0.224	0.24	0.28	0.259	0.2203
Financial Leverage (Total Asset/ Total Equity)	9.326042	13.06912	14.78877	13.6629	13.79546	16.4441	18.41692	16.18617	17.49501	16.33609
Debt to Equity Ratio	8.326042	12.06912	13.78877	12.6629	12.79546	15.4441	17.41692	15.18617	16.49501	15.33609
Retained Earnings to Total Equity	0.486564	0.509958	0.406528	0.406388	0.475532	0.00294	0.007168	0.166383	0.165643	0.045919
Legal Reserve to total Equity	0.099782	0.100873	0.084641	0.092661	0.09131	0.241876	0.283566	0.271425	0.318749	0.333524
Loan Loss Provision to Gross Loans	0.003686	0.008864	0.005613	0.006634	0.006664	0.004025	0.009418	0.080659	0.023706	0.022071
Net Loans to Total Assets	0.682841	0.767246	0.7164	0.761267	0.731132	0.283799	0.281445	0.253403	0.25215	0.293438
Asset Quality Index	0.002526	0.006862	0.004044	0.005084	0.004905	0.001147	0.002676	0.022233	0.006123	0.006623
Investment Securities to Total Assets	0.139493	0.076457	0.055866	0.049567	0.05281	0.543332	0.557291	0.602152	0.568392	0.533229
Earning Assets to Total Assets	0.822333	0.843703	0.772266	0.810834	0.783942	0.827131	0.838736	0.855555	0.820542	0.826667
Fixed Assets Ratio	0.057814	0.038087	0.035127	0.033703	0.030609	0.016475	0.013298	0.012548	0.014675	0.015398

Liquid Assets Ratio	0.11795	0.12295	0.118621	0.11196	0.124636	0.119036	0.118192	0.108974	0.141409	0.134742
Loans to Deposits Ratio	0.82153	0.908647	0.827459	0.881644	0.883279	0.392065	0.379441	0.329711	0.31277	0.358575
Cash to Deposits Ratio	0.141907	0.145609	0.13701	0.129664	0.150573	0.164447	0.159345	0.141789	0.175406	0.164651
Bank Size (Log of Assets)	10.73151	10.99274	11.19243	11.27621	11.35064	11.91343	11.99621	12.06355	12.11591	12.15727
Bank Size (Log of Deposits)	10.6512	10.91928	11.12984	11.21245	11.26854	11.77308	11.86646	11.94923	12.02234	12.07021
Cost to Income Ratio (CIR)	0.647177	0.527713	0.502402	0.55681	0.571662	0.895471	0.578127	0.295161	0.310314	0.138531
Asset Utilization Ratio	0.071661	0.076364	0.080152	0.087817	0.087998	0.053598	0.04924	0.065261	0.053516	0.063112
Operating Expense Ratio	0.046377	0.040298	0.040268	0.048897	0.050305	0.047996	0.028467	0.019263	0.016607	0.008743
Personnel Expense Ratio	0.473244	0.288482	0.351603	0.448176	0.461856	0.686122	0.435624	0.230027	0.239641	0.106701
Other Operating Expense Ratio	0.173934	0.239231	0.150799	0.108633	0.109806	0.209349	0.142503	0.065134	0.070673	0.031831
Staff Cost to Asset Ratio	0.033913	0.02203	0.028182	0.039357	0.040642	0.036775	0.02145	0.015012	0.012825	0.006734
Net Interest Margin (NIM)	0.056386	0.052488	0.064973	0.07848	0.073971	0.035506	0.032452	0.03755	0.032277	0.039373

Income Diversification Ratio	0.167772	0.281894	0.127358	0.092841	0.164424	0.337544	0.340944	0.424619	0.396884	0.37614
Fee Income Ratio	0.191845	0.293603	0.171673	0.072095	0.111407	0.55152	0.617121	0.20013	0.194126	0.075843
Forex Income Ratio	0.191845	0.293603	0.171673	0.072095	0.111407	0.55152	0.617121	0.20013	0.194126	0.075843
Net Interest Income to Total Operating Income	0.786846	0.68734	0.810625	0.893682	0.840604	0.662456	0.659056	0.575381	0.603116	0.62386
Other Operating Income to Total Operating Income	0.020099	0.017742	0.017059	0.031033	0.045681	0.070274	0.030289	0.013989	0.011417	0.008782
Funding Cost	0.040415	0.032454	0.031383	0.037648	0.043207	0.041616	0.045074	0.043515	0.043384	0.037846
Return on Equity (ROE)	0.172411	0.277702	0.358414	0.318009	0.280479	0.190539	0.256393	0.263163	0.238598	0.270939
Profit Before Tax Margin	0.280029	0.301387	0.372851	0.315294	0.295867	0.340606	0.394936	0.288845	0.316372	0.294145
Effective Tax Rate	0.210618	0.183879	0.304803	0.2595	0.277406	0.36258	0.310737	0.244166	0.211371	0.174071
Asset Growth	0.313986	0.824865	0.583773	0.212779	0.18695	0.149249	0.20999	0.167706	0.128128	0.099927
Loan Growth	0.571138	1.050436	0.478815	0.288733	0.139965	0.178076	0.199952	0.051361	0.122548	0.280036
Deposit Growth	0.335747	0.853851	0.623912	0.209528	0.137855	0.096314	0.239873	0.209938	0.183351	0.116523
Equity Growth	0.401159	0.302212	0.399611	0.312717	0.175544	0.008491	0.080376	0.328638	0.04373	0.177958

Net Income Growth	0.098621	1.163843	0.751791	0.196861	0.089124	0.170049	0.393733	0.241232	0.05723	0.263049
Net Interest Income Growth	0.521767	0.698708	0.960501	0.464904	0.118755	0.135498	0.105889	0.351157	0.030304	0.341756
Non-Interest Income Growth	0.251221	2.267414	0.248964	0.031373	1.106467	0.82538	0.122789	0.92748	0.135322	0.22934
Operating Income Growth	0.388562	0.944629	0.662337	0.328758	0.189397	0.301536	0.111594	0.547651	0.074896	0.29714
Expense Growth	0.642113	0.733496	0.569472	0.446715	0.290797	0.614374	0.02138	0.259511	0.359627	0.316244

	Dashin					**Hibret**				
Years	**2020**	**2021**	**2022**	**2023**	**2024**	**2020**	**2021**	**2022**	**2023**	**2024**
ROA	0.024694	0.021186	0.027422	0.027193	0.029749	0.022697	0.021339	0.017961	0.030644	0.0257
CAR	0.13	0.1	0.12	0.12	0.14	0.1296	0.1177	0.1104	0.1001	0.1251
Financial Leverage (Total Asset/ Total Equity)	8.209841	9.352704	8.146079	7.487156	7.678358	8.031949	8.34515	9.30121	8.811485	7.636748
Debt to Equity Ratio	7.209841	8.352704	7.146079	6.487156	6.678358	7.031949	7.34515	8.30121	7.811485	6.636748
Retained Earnings to Total Equity	0.095773	0.114684	0.088337	0.155266	0.14073	0.112624	0.112082	0.120535	0.136776	0.114086
Legal Reserve to total Equity	0.284973	0.276639	0.245273	0.228661	0.235672	0.226045	0.226639	0.240347	0.24716	0.228674

Loan Loss Provision to Gross Loans	0.001656	0.004064	0.003098	0.005535	0.006813	0.002748	0.004178	0.012007	0.001737	0.007313
Net Loans to Total Assets	0.616272	0.651026	0.639111	0.657116	0.588214	0.634547	0.657123	0.668393	0.716796	0.697892
Asset Quality Index	0.001022	0.002656	0.001986	0.003657	0.004035	0.001749	0.002757	0.008123	0.001248	0.005141
Investment Securities to Total Assets	0.16439	0.128669	0.106397	0.080401	0.103912	0.1501	0.119846	0.083303	0.080432	0.080083
Earning Assets to Total Assets	0.780662	0.779694	0.745508	0.737516	0.692126	0.784647	0.776969	0.751696	0.797227	0.777975
Fixed Assets Ratio	0.056864	0.044053	0.04076	0.047267	0.049042	0.05271	0.062445	0.050067	0.046667	0.043457
Liquid Assets Ratio	0.088793	0.084388	0.088818	0.082669	0.107727	0.083516	0.08549	0.09193	0.059142	0.070472
Loans to Deposits Ratio	0.786399	0.826925	0.820598	0.827578	0.740895	0.888105	0.888611	0.942859	1.006101	1.026668
Cash to Deposits Ratio	0.113305	0.107189	0.114039	0.104114	0.135689	0.116889	0.115606	0.129679	0.083012	0.103672
Bank Size (Log of Assets)	10.83417	10.97634	11.06872	11.16029	11.26416	10.63345	10.73315	10.82872	10.91689	10.98489
Bank Size (Log of Deposits)	10.7283	10.87247	10.96017	11.06012	11.16394	10.48745	10.60208	10.6793	10.76964	10.81725
Cost to Income Ratio (CIR)	0.630695	0.564838	0.530781	0.577816	0.605242	0.512207	0.492599	0.450786	0.499852	0.475797

Asset Utilization Ratio	0.068512	0.065057	0.074116	0.092048	0.097428	0.070788	0.072465	0.085165	0.086929	0.092956
Operating Expense Ratio	0.04321	0.036747	0.039339	0.053187	0.058967	0.036258	0.035696	0.038391	0.043451	0.044228
Personnel Expense Ratio	0.403345	0.348181	0.3442	0.355776	0.364749	0.328874	0.300881	0.329676	0.377328	0.379861
Other Operating Expense Ratio	0.22735	0.216658	0.186581	0.22204	0.240494	0.183333	0.191718	0.12111	0.122524	0.095936
Staff Cost to Asset Ratio	0.027634	0.022652	0.025511	0.032748	0.035537	0.02328	0.021803	0.028077	0.032801	0.03531
Net Interest Margin (NIM)	0.049298	0.052844	0.055082	0.064623	0.066213	0.055651	0.053675	0.064775	0.067044	0.07042
Income Diversification Ratio	0.280452	0.187724	0.256816	0.297944	0.32039	0.213804	0.259298	0.239413	0.228745	0.242436
Fee Income Ratio	0.306261	0.311578	0.294222	0.27539	0.265157	0.198656	0.238904	0.22563	0.207923	0.224217
Forex Income Ratio	0.306261	0.311578	0.294222	0.27539	0.265157	0.198656	0.238904	0.22563	0.207923	0.224217
Net Interest Income to Total Operating Income	0.719548	0.812276	0.743184	0.702056	0.67961	0.786163	0.740702	0.760587	0.771255	0.757564
Other Operating Income to Total Operating Income	0.0473	0.045457	0.041056	0.04831	0.048007	0.015148	0.020394	0.013783	0.020823	0.018219

Funding Cost	0.045965	0.039704	0.037289	0.035357	0.036182	0.059766	0.053064	0.048373	0.051878	0.063227
Return on Equity (ROE)	0.202744	0.187232	0.237054	0.211347	0.22597	0.193973	0.175053	0.15895	0.276567	0.209111
Profit Before Tax Margin	0.38273	0.393918	0.438111	0.376807	0.355479	0.37066	0.366763	0.327272	0.426181	0.343299
Effective Tax Rate	0.141345	0.288675	0.236402	0.290161	0.232093	0.207998	0.279453	0.419242	0.248824	0.253028
Asset Growth	0.214216	0.387271	0.237041	0.234727	0.270182	0.203223	0.258046	0.24615	0.225098	0.169492
Loan Growth	0.299737	0.465505	0.2144	0.269512	0.136997	0.262497	0.302805	0.267522	0.313816	0.138649
Deposit Growth	0.196155	0.393684	0.223764	0.258804	0.270023	0.223273	0.302063	0.194595	0.231231	0.115838
Equity Growth	0.214377	0.217752	0.420276	0.343392	0.238553	0.387048	0.210831	0.11806	0.293187	0.349391
Net Income Growth	0.511579	0.123176	0.682588	0.226032	0.372079	0.187887	0.159351	0.05331	1.106228	0.001739
Net Interest Income Growth	0.41772	0.487064	0.289423	0.448597	0.301441	0.427481	0.213392	0.503848	0.268013	0.228385
Non-Interest Income Growth	0.26323	0.118248	0.927994	0.779036	0.445703	0.174769	0.561897	0.352223	0.194751	0.325438
Operating Income Growth	0.370707	0.317303	0.409298	0.533459	0.344423	0.364757	0.287864	0.464532	0.250473	0.250586
Expense Growth	0.444479	0.121926	0.324324	0.669345	0.408237	0.38704	0.264728	0.377844	0.254543	0.233867