Addis Ababa University
College of Business and Economics
Department of Accounting and Finance

Factors Affecting Bank Profitability: The Case of Selected Private Banks in Ethiopia

A Thesis Submitted to the Department of Accounting and Finance in Partial Fulfillment of the Requirements for the Award of Degree of Master of Science in Accounting and Finance

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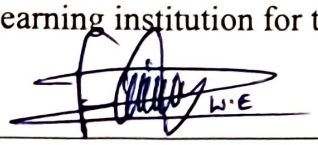
Statement of Declaration

I, Wongelawit Estifanos, hereby declare that this thesis "Factors Affecting Bank Profitability: The Case of Selected Private Banks in Ethiopia" is my original work, prepared under the guidance of Dr. Kelifa Srmolo. All sources of materials used for the thesis have been duly acknowledged, the researcher further confirms that the thesis has not been submitted either in part or in full to any other higher learning institution for the purpose of earning any degree.

Signature: 

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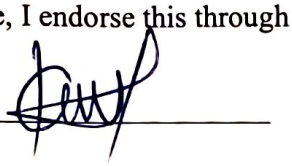
Kelifa Srmolo (PhD) – 

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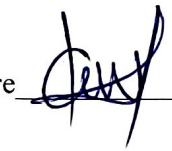
Advisor - Dr. Kelifa Semolo Signature  Date February 2025

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List of Abbreviations and Acronyms

NBE	National Bank of Ethiopia
ROA	Return on Asset
Revdiv	Revenue Diversification
Exp	Expense
GDP	Gross Domestic Product
OLS	Ordinary Least Square
CLRM	Classical Linear Regression Model

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Abstract

Banks play a major role in the development of an economy by channeling resources. Hence, a bank's performance is of high interest to the bank itself, regulatory bodies and other stakeholders. This study assessed factors that affect bank profitability by considering sixteen private banks' panel data spanning 10 years, from 2014 – 2023. As secondary data was used for the study, a quantitative approach was implemented. A nonprobability purposive sampling method was used to select the sixteen banks from the research's target population, all private commercial banks in Ethiopia. The relationship between the dependent variable and the explanatory/independent variables was explained using an explanatory research design. Fixed effect model was applied to perform a multiple regression analysis on the balanced panel data sets. The explanatory variables used in the study consist of both internal and external factors which include revenue diversification, expense, inflation, GDP and peace and security whereas return on asset was selected as the dependent variable to measure profitability. The findings of the study indicate that revenue diversification, expense, inflation and GDP are statistically significant variables with revenue diversification and inflation having a positive effect on return on asset. GDP and expense have a negative but significant impact on profitability. On the other hand, peace and security was a statistically insignificant variable based on the results of the study. It is recommended that banks diversify their income-generating activities to hedge against risk and manage their expenses efficiently to increase their profit. Additionally, better inflation management policies should be in place to take advantage of opportunities presented while mitigating potential risks.

Keywords: Profitability, private banks, panel data

CHAPTER ONE

1. Introduction

1.1 Background of the study

Commercial banks are financial institutions whose main purpose is to accept deposits from individuals and organizations and invest these deposits by either providing them as loans or buying governmental and non-governmental securities. They offer basic banking services to their customers and play a vital role in the economy by taking resources from areas of surplus and channeling them to areas of deficit, creating liquidity within the economy (Hubbard & O'Brien, 2014). Their roles are significant and irreplaceable in the growth of financial services, which ultimately leads to the overall success of the economy of a country (Yonas, 2022). This makes them the most important financial intermediaries.

Due to the effects of globalization, liberalization, and technology advancements, the banking sector has seen significant changes globally over the past 20 years. In many nations, the banking industry's performance and structure have been influenced by both internal and external causes. The banking sector in a nation continues to play a vital role in funding economic activity generally and various market segments specifically, even in the face of the growing trend toward bank disintermediation seen in many nations worldwide. An effective and lucrative banking sector helps maintain the stability of a nation's financial sector and is more resilient to adverse shocks (Ally, 2014)

According to Hifza (2011) performance (profitability) is one of the most important objectives of financial management since its main goal is to maximize the owners' wealth, and profitability is a very important measure of performance. A highly profitable business will result in an increased return on investment for its owners, whereas a business that fails to perform cannot survive. Hence, as profit making institutions, banks' existence depends on their performance which makes it important to study which factors are responsible for their profitability.

Banks play a significant part within the economy by mobilizing, distributing, and contributing a critical parcel of financial agents' reserve funds. Their execution has far-reaching suggestions for capital allocation, commerce extension, mechanical development, and in general financial improvement. In creating nations like Ethiopia, where monetary markets are immature, banks fill the gap between borrowers and savers, giving productive and secure channels for stores. Given that reserve funds and ventures are basic determinants of financial development, the

wellbeing of a country's common economy essentially depends on a well-functioning money related framework. Bank productivity reflects the quality of a bank's administration, shareholder behavior, competitive procedures, proficiency, and administration capabilities. Healthy and maintainable bank productivity is basic for financial steadiness and development (Samuel, 2015)

In Ethiopia, modern banking was introduced in 1906 with the establishment of the Bank of Abyssinia, based on an agreement with the British owned National Bank of Egypt. Following the banking system reforms implemented by Emperor Haile Selassie, the Ethiopian government purchased the Bank of Abyssinia, renaming it the Bank of Ethiopia—the first nationally owned bank on the African continent. The Bank of Ethiopia provided central and commercial banking services to the country. (NBE)

In 1943, the State Bank of Ethiopia became the Central Bank and was later split into the National Bank of Ethiopia and Commercial Bank of Ethiopia in 1963. During the military rule of Derg, banks that were in operation were nationalized. Following the regime change in 1991 and Monetary and Banking Proclamation No. 83 of 1994, the National Bank of Ethiopia was established as a judicial entity separate from the government. (NBE)

Recently, the Ethiopian government is considering allowing foreign investment in the banking sector. In addition, a market based (floating) exchange rate determination along with easing of regulations was announced by the National Bank of Ethiopia (NBE) There are around 30 banks currently operating in Ethiopia, out of which 12 were established in the past four years indicating even though the market is saturated, investors are willing to take risks in creating new banks that cater to the needs of a specific group. Zemen Bank, established in 2009 G.C., with minimum deposit requirement of ETB 5,000 and ZamZam and Hijra Banks, established in 2021 G.C., mainly focused on the Muslim community providing interest free banking, adhering to religious restrictions, are good examples of this. Considering how important banks are in the economy, it is essential to study what factors affect their profitability.

Research on bank profitability have identified internal (endogenous) and external (exogenous) factors that drive the profitability of banks. Internal factors are factors that are influenced by management’s decision and affect how well a bank operates. The bank’s performance is considered as an indicator of the management’s quality. It’s assumed high quality management

results in higher profitability. External or industry-specific factors are variables out of the bank management's control. They are variables that reflect the economic and legal environment that affect the operation and performance of financial institutions (Athanasoglou et al., 2006).

According to Tobias and Themba (2011), bank specific determinants of profitability include capital adequacy, asset quality, liquidity, operational cost efficiency and income diversification. In addition, Aladwan (2015) concluded that bank size also affects profitability, with small and medium sized banks performing better than large banks. Bank profitability is also sensitive to macroeconomic conditions such as GDP, interest rate and inflation which are outside of the bank's management's control (Athanasoglou et al., 2006).

Banks play a crucial intermediary role in economic development, channeling funds to productive uses and contributing to economic growth. A sound and efficient banking system is essential for a well-functioning economy, as bank failures can jeopardize the entire payment system. Bank performance is influenced by both internal (bank-specific) and external (macroeconomic) factors. While Ethiopian commercial banks have shown high profitability, the contributing factors to this success, whether internal or external, have not been well analyzed. This study aims to determine the extent to which endogenous and exogenous factors impact the financial performance of commercial banks in Ethiopia, which will help identify the key determinants for better performance in the Ethiopian banking sector (Tesfaye, 2014)

Banks are financial institutions that largely determine the flow of financial resources within the country. It is important to undertake this study as the performance of the economy is directly connected and affected by the performance of banks. Clearly identifying and understanding the factors affecting bank profitability will enable policymakers and stakeholder to take advantage of opportunities while hedging against the ever-present risks. Though there have been previous studies conducted on this topic, more can be accomplished by considering factors such as peace and security that have not been extensively studied, therefore, this paper will aim to better understand bank profitability determinants by using an econometric model, reviewing various literatures and considering data from several private banks for data analysis.

1.2 Statement of the problem

How well a bank performs affects not only those directly involved with the bank, but it will also indirectly impact the economy. A strong banking sector can confront negative shocks and

contribute to the stability of the financial system (Almazari, 2014). On the other hand, a single bank's failure could lead to others following suit; hence, it is important to assess the factors that affect bank performance. Once these determinants have been identified, measures can be put in place to formulate and implement strategies that would improve the profitability of these institutions in order to maintain a sustainable economic growth.

Commercial banks in Ethiopia have had varying performance over the years, with some reporting significantly lower profits. Studies have been conducted on this area in the past as researchers want to know what causes these differing levels of profitability among private banks. There are several reasons for the decline in recent years including the effects of Covid 19 within the country and the world. As mentioned above, with how important banks are to the economy, it's essential to closely monitor their performance and health. This will go a long way in stabilizing the economy. Several researchers have concluded that both internal and external factors are responsible for their performance.

Banks have the option to engage in traditional core banking activities, such as accepting deposits and providing loans, or expand their services to include asset management, stock brokering, and facilitating mergers and acquisitions to diversify revenue streams (Heffernan, 2005). It is crucial to monitor the status of financial institutions as they play a significant role in the country's economy. Understanding the financial well-being of banks is vital for ensuring economic stability for all stakeholders. Research on this topic has been conducted internationally and in Ethiopia, as detailed in the literature review section of this paper, with various studies presenting their perspectives on the subject; however, the researcher believes further study on this topic will yield great benefits as the finance world is constantly changing and the factors that had an influence in the past may not have an impact today. As a result, this study adds value by using the latest data from the past ten years and considering the effect of peace and security which has not been thoroughly studied, to determine which factors are responsible for a bank's profitability and to what extent.

1.3 Objective of the study

1.3.1 General Objectives

The general objective of this paper is to study determinants of bank profitability in selected private banks in Ethiopia.

1.3.2 Specific Objectives

The five specific objectives for this thesis work are outlined below:

1. To examine the effects of revenue diversification on banks' profitability
2. To determine the effect of a bank's expense on its profitability
3. To investigate the effect of GDP on banks' profitability
4. To examine if bank's profitability is affected by inflation.
5. To analyze the effect of peace and security on banks' profitability

1.4 Hypothesis

Five research hypotheses are applied to conduct the study, and they are based on the problem statement and review of previous literatures on the subject.

Hypothesis 1– Revenue diversification positively and significantly affects bank profitability.

Hypothesis 2– Expense negatively and significantly affects profitability of banks.

Hypothesis 3 – Real GDP growth rate is positively and significantly related to profitability of banks.

Hypothesis 4 – Inflation is negatively and significantly related to bank profitability.

Hypothesis 5 – Peace and security positively and significantly affect profitability of banks.

1.5 Significance of the study

How banks perform highly influences and is an indicator of the performance of the overall economy as banks are financial intermediaries that are involved in facilitating the flow of funds from areas of surplus to areas of deficit. The findings of this research can be employed by banks to reshape their focus to become strong competitors in the industry, especially with new competition entering the market and the government considering allowing foreign banks with extensive banking expertise to enter the industry. In addition, with its attempt to identify and better understand the factors affecting banks performance specifically peace and security which has not been extensively studied in the Ethiopian context, this study assists policymakers such as the government and the National Bank of Ethiopia, pinpoint areas in need of improvement. It can also be used as a reference for future studies.

1.6 Scope of the study

The study will focus on selected private commercial banks in Ethiopia that have been in operation for the past 10 years (2014 – 2023 G.C). Newly established banks, i.e., founded after 2014, have been excluded from the study as they do not fulfil the requirement. Secondary data sources - financial statements of the banks - were used. Therefore, the data analysis and the conclusion drawn are based on data collected from these sources.

1.7 Limitations of the study

The findings of this paper cannot be generalized to all commercial banks as the study only considers private banks that were founded 10 or more years ago. In addition, while only five determinants were examined in this study, there could be other factors that affect banks' profitability. Furthermore, as the study is conducted in Ethiopia, it cannot be used to assess factors in other countries or regions.

1.8 Organization of the study

This paper is organized into five chapters. Chapter one presents the background, objective and significance of the study. Chapter two covers previous studies conducted on the topic while chapter three is about the methodology of the research such as data collection and analysis methods. Chapter four is for result research result and discussions. The final chapter is on summary of findings, conclusions and recommendations.

CHAPTER TWO

2. Review of Related Literature

2.1 Introduction

This chapter serves as a basis of the study by looking into previous theoretical and empirical studies conducted on the topic and their conclusions to identify factors that affect bank profit. The chapter has sections on theoretical review, an empirical review of previous works done by other researchers, identification of research gaps and the conceptual framework.

2.2 Theoretical Review

Banks are important institutions in an economy as they help move resources from areas of surplus to areas of deficit by accepting deposits (surplus) and giving out loans (deficit). They also contribute to economic growth by investing in profitable businesses (Erer & Erer, 2024). As more people are becoming aware of the advantages of owning stakes in financial institutions such as banks, they are investing their hard-earned income in these organizations and their performance is highly scrutinized as it affects not only those employed, but also the shareholders, creditors, government, and the economy.

Bank failures occur when customers no longer trust their deposits are safe with the bank and hence demand their money back which is termed “run on the bank” as large number of customers line up to withdraw their money at the same time. The largest failure in history was recorded in 2008 when the American Washington Mutual Bank went under, and customers withdrew $17 billion in less than 10 days. Its heavy reliance on loans given out to real estates was the cause for its failure as the real estate market crashed with many unable to make their home payments. In Africa, the major causes for bank failures are unfavorable economic conditions, regulatory failure, poor corporate governance practices, non-performing loans, poor management practices, fraudulent and corrupt dealings, and poor risk management (Abor, et al., 2022). Gall et al. (2004) also concluded that the crisis in sub-Saharan banking in 1980s and 1990s was a result of poor supervision and incompetent management.

For businesses to continue operation they must be profitable, or able to breakeven at the very least. How well a company turns its costs into profits for its owners is a key indicator of its

profitability. A profitable business generates tax income for the government and increases investors' income. It will also positively impact the economy through job creation.

This section covers bank profitability theories considered by other researchers. The two main theories namely the Market Power Theory and Efficiency Structure Theory are discussed in detail.

I. The Market Power Theory

According to Market Power paradigm, an industry's market structure determines a business' behavior, which in turn influences its performance. A concentrated structure makes it easier to employ market power in ways that could increase bank profits (Tregenna, 2009). Meaning the more highly concentrated a market is, the less competitive it is, allowing firms to dictate what products to provide and at what price (loan, deposit and interest rates). Such concentrated markets have a great barrier to entry imposed either by the firms, government regulations or the economic situation. To avoid illegal or unethical practices, governments usually study the market and act against anti-competitive environments, which can lead to unfair prices for consumers and other undesirable outcomes.

II. The Efficiency Theory

The Efficiency theory states that firms earn more profit not due to collusive behaviors but because they're more efficient in using resources than others. This efficiency is what leads to higher market share and profitability (Tregenna, 2009). According to Athanasoglou et al. (2006), the two efficiency approaches are: X-efficiency and Scale-efficiency hypothesis. X – efficiency indicates that more efficient firms earn high profit because of lower costs. This may lead to larger market share with high levels of market concentration. However, there is no causal relationship between market concentration and profitability. The implies that as market concentration increases, bank profitability does not directly increase, or the market power and profitability is not because of market concentration but rather due to their efficiency.

Economies of scale are the cost advantages that enterprises obtain due to their scale of operation. Measured by the amount of output produced per unit of time, a decrease in cost per unit results in an increase in scale, that is, increased production with lowered cost. Hence, the scale approach emphasizes that as bank size increases, they become more efficient and productive due to the lower cost of production. Their fixed costs are distributed, and they have

access to more capital enabling them to diversify their portfolio and hedge against risks (Tregenna, 2009).

The policy implications of these approaches are further discussed by Tregenna (2009). If banks' high profits can be credited to high levels of concentration, this might indicate that a stronger competition policy and other forms of regulation is needed from the governing body to stabilize the market. However, if efficiency is the reason behind the banks' profitability, regulatory interventions and competition policies might have a negative impact and could reduce their efficiency.

Studies categorize the determinants of bank profitability into two as internal and external factors. These concepts are further discussed within this chapter.

a) Internal

Internal determinants of bank profitability are those that are under the management's control. They are bank specific elements that affect the bank's performance based on the management's decision. They include revenue diversification, expense, bank size and non-performing loans among others.

Revenue Diversification – revenue diversification is when a company offers new products, new services, or expands into new markets to reduce risk and increase market share. It is banks entering into new revenue generating activities known as fee income such as premium banking service fee, loan fee, penalties etc. other than core banking services. It measures income generated by banks and is calculated by dividing non-interest income by total asset (Moges, 2017).

Expense – Expense management is how efficiently a bank is able to manage its expenses. It's reducing cost while maintaining profitability. Expense is measured by taking the ratio of non-interest expenses to total assets Belayneh (2011). Management must control operational or ongoing costs such as salary, rent, utilities and other administrative costs. Expense is negatively related to profitability, that is, when the expense increases, the profitability decreases as the income generated will go to cover the expenses incurred reducing the final profit of the bank.

b) External

Staikouras, C., & Wood, G. (2004) described external determinants of bank profitability as those factors which are not influenced by specific bank's decisions and policies, but by events outside the influence of the bank. They are common to the industry or the overall economy.

GDP - Gross domestic product (GDP) is the total monetary or market value of all the finished goods and services produced within a country's borders in a specific time. It offers a quick look into a nation's economy whether its weakening or flourishing. It can be used to estimate the economy's size and growth rate. GDP is expected to have a positive impact on profitability as a healthy environment will lead to increased investment and demand for loans as investors will feel secure and be willing to take risks. Banks can charge higher interest rates for the loans they offer and improve their asset quality (Krakah and Ameyaw, 2010).

Inflation – inflation is the gradual loss of purchasing power of money reflected in rising price of goods and services. Rising operating costs, driven by inflationary pressures on resources like labor and infrastructure, strain bank budgets. According to Hubbard & O'Brien (2014), the gain obtained from loans is expected to decline during inflations as the money received by the bank as loan repayment has lost its value. Not only that, the value of collaterals held banks is also affected. Those that have taken loans will also likely face difficulty repaying leading to defaulting on their loans.

Peace and Security – it is assumed that a peaceful and secure environment is conducive for a healthy economy. In a country where conflict is prevalent, businesses will be unable to perform their day-to-day activities which will push the economy into recession, that is, investment will be stalled leading to reduced demand for loans and asset management. In addition, with the limited cash in circulation, customers will opt to spend it rather than deposit in banks resulting in decreased cash flow.

2.3 Empirical Review

In this section a number of studies conducted on determinants of bank profitability are reviewed starting from those conducted on foreign banks and the then the ones covering Ethiopian banks.

2.3.1 Studies on Foreign Banks

A study by Rahman et al. (2015) attempted to investigate capital strength, bank size, cost efficiency, and liquidity among others as potential bank specific determinants of profitability. Growth in GDP and inflation were also considered as macroeconomic determinants of bank profitability. 25 commercial banks from Bangladesh for the period 2006 to 2013 were considered with Return on Asset (ROA), Net Interest Margin Over Total Assets (NIM) and Return on Equity (ROE) taken as measures of profitability. The findings suggest that capital strength, loan intensity and bank size have positive and significant impact on profitability whereas cost efficiency and inflation have negative and significant impact.

Another study in Ghana attempted to investigate the relationship between profitability and several bank and industry specific and macroeconomic factors on foreign and local banks from 1999 and 2010. The results show that bank size and liquidity contribute to bank profitability as they allow the bank to be flexible and increase its risk bearing capacity (Gyamerah & Amoah, 2015).

A paper with an aim to examine the internal and external factors determining sharia banks' profitability in Indonesia used balanced panel data set of 34 Sharia banks over the period 2010 – 2017. Profitability was measured by Return on Asset (ROA) and it concluded that capital adequacy, credit risk, and asset size have a significant and negative effect on bank profitability, while liquidity has a positive and significant impact. However, from the external factors only inflation was found to have a significant and positive effect while GDP had a negative and significant effect (Supiyadi et al., 2019).

In a case study focusing on Ghana Commercial Bank Ltd. and Merchant Bank Ltd, Krakah & Ameyaw (2010) used regression analysis to investigate factors that influence commercial banks' profitability. They study found that non-interest revenue, bank capital strength, money supply growth, and annual inflation rate are important factors that influence banks' profitability. Loan loss or bad debt provisions, however, had no significant impact on the banks' profitability.

Francis (2013) investigated the determinants of commercial bank profitability by applying unbalanced panel data set using data from forty-two countries and 216 commercial banks for the period 1999 to 2006. The model used for the research was random effects model with bank asset, liquidity ratio, bank deposit, capital adequacy, operational efficiency, GDP and inflation

selected as the explanatory variables. The results indicated that profitability was influenced by both internal and external factors.

Using a balanced panel data set of 10 Jordanian banks over the period of 2001 – 2010 and 100 observations, a study was conducted to investigate the relationship between profitability of banks and internal and external factors. Results showed that profitability was due to well-capitalization, high lending activities, low credit risk, and the efficiency of cost management. It also showed that size has a negatively insignificant effect on profitability (Ramadan et al., 2011).

For the years 2009–2013, 23 Tanzanian banks were selected to perform a panel data analysis utilizing the fixed effects model. The study found that internal factors, mostly associated with the bank's management style, had a major impact on bank earnings in Tanzania. Bank earnings was not significantly impacted by external macroeconomic forces. The researcher concluded that managerial choices and management styles, were primarily responsible for maintaining profitability rather than macroeconomic variables (Ally, 2014).

In a study of the effect of portfolio diversification on commercial banks financial performance in Kenya, mixed method of research design was used, and data was collected using questionnaires and interviews. From the target population of 43 commercial banks, 133 managers were randomly selected, and the data collected was analyzed using descriptive and inferential statistics. The study recognized a positive statistically significant relationship between portfolio diversification and financial performance (Makokha et al., 2016).

Chinoda (2014) conducted a study into the underlying factors that influence the profitability of commercial banks in Zimbabwe, analyzing data from 2009 to 2012. The findings demonstrated that liquidity, size, inflation, and GDP growth rate positively correlate with profitability, highlighting the importance of macroeconomic and monetary conditions in shaping the financial performance of commercial banks. The findings also showed that inefficient management of expenses had a negative impact on bank profitability.

The drivers of Philippine banks' profitability from 1990 to 2005 were identified by Sufian and Chong (2008). Bank profitability was significantly impacted by all bank specific variables. Furthermore, it was shown that banks' profitability was positively correlated with capitalization

and non-interest revenue, but negatively correlated with size, credit risk, and expense preference behavior. The data also indicated that inflation had a negative effect on bank profitability, while the effects of money supply, stock market capitalization, and economic growth were not significant.

Pasiouras and Kosmidou (2007) investigated the effects of bank-specific factors and the general banking environment on the profitability of global and domestic commercial banks that operated in the 15 EU member states between 1995 and 2001, 584 banks and 4,088 observations overall. GDP and inflation as external factors and short-term funding and bank size as internal factors were the factors considered. The research found that both internal and external factors were statistically significant.

Swarnapali (2014) conducted a detailed examination of how specific characteristics of banks, namely operational expenditures, credit risk, liquidity risk, capital strength, and bank size, affect the financial performance of Sri Lankan Licensed Commercial Banks based on secondary data. The results indicated that only operational expenditures and bank size significantly influenced bank performance in Sri Lanka. Credit ratio, liquidity ratio, and capital strength ratio were found to be statistically insignificant, suggesting that they do not meaningfully influence the financial performance of the banks. The study found that operational expenditures and bank size have a significant impact on performance.

Nisar et al. (2018) focused on evaluating the effects of revenue diversification on the profitability and stability of commercial banks in South Asian countries between the years 2000 and 2014. The analysis revealed that overall, revenue diversification exerts a significantly positive effect on profitability. However, the study also found that income from fees and commissions negatively impacted the profitability of commercial banks, while other sources of non-interest income enhanced it. This confirms other studies conducted that concluded revenue diversification is important for improved financial outcomes.

Guru (2002) explored the determinants of bank profitability in Malaysia by analyzing a sample of 17 commercial banks over a decade-long period from 1986 to 1995. Factors influencing profitability were categorized into two distinct types: internal determinants—including liquidity, capital adequacy, and expense management—and external determinants, which encompassed ownership, firm size, and prevailing economic conditions. The result indicated

that effective management of expenses was a key factor in achieving high levels of bank profitability. In addition, among the macroeconomic factors examined, a high-interest rate ratio was linked to reduced bank profitability, while inflation was shown to have a positive effect on overall bank performance.

Mlachila et al. (2020) examined impact of conflicts on the probability of banking crises in developing countries by considering 92 countries in the period from 1970–2016. The research found conflicts and political instability are linked to higher probability of systemic banking failure, with the odds of a banking crisis being 2.5 times greater when a country is affected by a conflict. It also found that there is an increased likelihood of banking crises in a country when there is conflicts and political instability in neighboring countries. The study also concluded that the duration of a conflict positively associates with rising probability of a banking crisis.

2.3.2 Studies on Ethiopian Banks

In its recent financial stability report, the National Bank of Ethiopia grouped the countries commercial banks into three: large, medium sized and small banks. The government owned Commercial Bank of Ethiopia is the only large bank in the country with its total assets and deposits accounting for almost half of the whole banking sector's assets at the end of June 2023. Out of the remaining banks, 24 are considered as small banks with none being systematically important (NBE, 2024).

Yigermal (2017) examined the impact of internal and external factors on bank profitability by taking selected private banks as sample from 2005 – 2014. Return on asset (ROA) and return on equity (ROE) were used to measure bank profitability while bank size, GDP, interest rate, loan to deposit ratio and inflation were considered as independent variables. The result showed that profitability is significantly and positively influenced by bank size and GDP while interest rate and loan to deposit ratio spread have a negative and significant impact.

With an aim to investigate profit determinants of Commercial Bank of Ethiopia Belay (2024) used time series data for 12 years from 2003 to 2015 and bank profitability was measured by return on asset. Bank size, managerial efficiency, liquidity, credit risk, real GDP growth rate, and inflation were considered as explanatory variables. The bank specific factors considered in the study, bank size, managerial efficiency and credit risk along with macro-economic factors, GDP and inflation were found to have a positive and significant influence on the profitability

of banks. The study recommended that the CBE management should work on efficient expense management, improving asset quality and bank size to be able to compete with industry rivals.

The study conducted by Alemu (2015) aimed to explore the factors that influence the profitability of commercial banks in Ethiopia. This research utilized panel data from eight commercial banks covering a period from 2002 to 2013, employing a mixed-methods approach. Secondary financial data was analyzed through multiple linear regression and the fixed effects regression model was utilized to evaluate how various factors such as bank size, capital adequacy, liquidity risk, operational efficiency, management efficiency, employee efficiency, funding costs, development of the banking sector, real GDP, inflation rates, and foreign exchange rates impacted ROA. The findings revealed that bank size, capital adequacy, and real GDP had a positive and statistically significant correlation with ROA. Factors such as liquidity risk, operational efficiency, funding costs, and the overall development of the banking sector exhibited a negative and statistically significant relationship with profitability. The analysis showed that management and employee efficiency, inflation rates, and foreign exchange rates did not have a statistically significant impact on bank profitability.

Samuel (2015) in research conducted to study bank-specific, industry-specific, and macro-economic factors affecting Ethiopian commercial banks profitability concluded that while GDP has a positive and significant relationship with profitability; expense management, inflation and foreign exchange rate have negligible effect.

In a separate investigation, Turi (2015) focused on the influence of external determinants on the profitability of Ethiopian commercial banks during the period from 1985 to 2013. Turi categorized these external determinants into two groups: industry-specific factors and macroeconomic factors. Profitability was evaluated using three distinct indicators: Average Return on Assets, Average Return on Equity, and Net Interest Margin. The results indicated that growth in real GDP positively affected the profitability of Ethiopian commercial banks as measured by ROA. Factors such as the inflation rate, real interest rate, and exchange rate were determined to be statistically insignificant in their influence on the profitability of these banks.

In his study of exogenous determinants of commercial banks profitability, Dereje (2015), employed trend analysis, correlation analysis and multiple linear regression for data analysis. Bank concentration, among others, was considered as a potential factor affecting profitability.

GDP was shown to have a positive effect on profitability, whereas concentration had a negative impact with inflation, real interest rate and exchange rate having little to no impact.

Birhanu (2012) conducted a study to investigate the influence of various determinants on the profitability of the Ethiopian commercial banking sector, focusing on data from 2000 to 2011. The research employed the Ordinary Least Squares (OLS) estimation method to analyze both internal and external factors affecting profitability. The findings indicate that, except for bank size and expense management, all bank-specific determinants positively and significantly influence profitability. On the contrary, both bank size and expense management were found to have a significant negative impact on the profitability of commercial banks. Among the macroeconomic factors assessed, Gross Domestic Product (GDP) was identified as having a positive and significant effect on bank performance.

According to Abera (2012), banks' profitability is positively and significantly correlated with capital strength, income diversification, bank size, and gross domestic product. However, factors like asset quality and operational efficiency had a negative and statistically significant influence. It was found that inflation, concentration, and liquidity risk had no significance on banks' performance.

Parallel to the above studies, Sori (2014) concluded that while GDP has a significant relationship with profitability, inflation was found to have no impact even at 10% significance level. The research, studying factors that affect private banks' profitability, covered the period from 2001 – 2011 with 6 private commercial banks analyzed using descriptive statistics.

In the research conducted by Demena (2011), the primary focus was on identifying the determinants that influence the profitability of commercial banks in Ethiopia. Utilizing balanced panel data from seven Ethiopian commercial banks over a ten-year period from 2001 to 2010, the study employed the Ordinary Least Squares (OLS) estimation method to analyze the effects of both internal and external variables Return on Assets (ROA). The findings revealed that nearly all bank-specific factors had a significant and positive impact on the profitability apart from savings deposits, which did not exhibit a similar positive influence. This suggests that while other internal variables are contributing to profitability, savings deposits may not positively impact the financial performance of commercial banks in Ethiopia.

Belayneh (2011) used balanced panel data from a sample of seven banks to examine the impact of macroeconomic, industry-specific, and bank-specific factors on bank profit. Secondary data gathered from bank income and balance sheets was utilized and the results show that while saving deposit and non-interest expense had a negative effect, bank-specific variables including size, loan, and non-interest revenue had a positive and significant effect. Profitability was significantly and negatively correlated with market concentration. Except GDP, which had a strong correlation with bank profitability, the other macroeconomic factors were found to be unimportant.

Amdemikael (2012) examined the factors influencing the profitability of commercial banks in Ethiopia considering data from eight commercial banks over a decade, spanning from 2001 to 2011. The research combined documentary analysis with in-depth interviews to explore how both internal and external variables impact Return on Assets (ROA). The results revealed that capital strength, income diversification, bank size, and Gross Domestic Product (GDP) have a statistically significant positive relationship with the profitability while operational efficiency and asset quality negatively impacted ROA. The study also noted statistically insignificant relationship between ROA and liquidity risk, market concentration, and inflation.

By using an explanatory research design and eliminating recently founded banks from the sample, Feregenet (2020) examined factors influencing profitability. Operational efficiency was found to have a negative and statistically significant relationship with banks' profitability, while liquidity, foreign exchange generation, the number of bank branches, and inflation had a statistically significant and positive relationship.

In a research undertaken to analyze the impact of political instability on bank profitability from 2012 - 2016, Mengistu (2020), considered GDP, inflation, bank size, credit risk ratio, political instability, liquidity ratio and non-interest income to total asset ratio as independent variables. Using descriptive statistical analysis method, his findings show political instability, inflation and GDP have a significantly positive effect on profitability while bank size and liquidity ratio positively correlate with Bank profitability but are not statistically significant.

Ayele (2012) examined the factors affecting the profitability of private commercial banks in Ethiopia, utilizing panel data from seven from 2002 to 2011. The study adopted a quantitative research approach, employing a fixed effects regression model to analyze the effects of various

determinants, including capital sufficiency, asset quality, management efficiency, liquidity, bank size, and the real GDP growth rate, on profitability. The empirical findings highlighted that bank-specific factors such as capital adequacy, managerial efficiency, and bank size, alongside macroeconomic factors like GDP levels and regulatory environments, significantly impacted the profitability of private commercial banks in Ethiopia. This supports the conclusion made by other studies that both internal and external factors influence banks profitability.

The impact of bank regulation on bank profitability was examined by Addisu (2017) utilizing an explanatory research approach and quantitative data gathered from banks. It considered the impact of equity investment, capital requirements, capital sufficiency, legal reserve requirements, and bank size on return on assets. Data for eleven years from 7 banks was analyzed using a balanced panel data set and fixed effect model. The results demonstrated that bank regulation has an impact on profitability. Profitability was positively and significantly impacted by capital requirement and bank size, but negatively and significantly affected by capital adequacy and reserve requirement. Equity investment had negative but insignificant effect. The study demonstrates how factors used to gauge bank regulation impact the profitability of Ethiopian private commercial banks.

A study was conducted to investigate determinants of private commercial banks profitability in Ethiopia using panel data of 3 private commercial banks for 9 years from 2007 to 2016. Quantitative research approach was used with secondary financial data analyzed. Return on Asset (ROA) and Return on Equity (ROE) were used to measure profitability. The explanatory variables considered adequacy, deposit mobilization, interest rate, liquidly, bank size, and real GDP growth rate. The empirical results showed capital adequacy, interest rate, bank size, GDP significantly influence bank profitability in Ethiopia. It is recommended that regulatory bodies examine tight polices imposed on banks (Zelalem, 2019).

In a study conducted on six private Ethiopian banks selected using purposive sampling method, the effects of macroeconomic, industry-specific, and bank-specific factors were examined using quantitative secondary data. The result shows a strong correlation between profitability and capital, money supply, income diversity, operational efficiency, and concentration. GDP, liquidity, and inflation were found to be statistically insignificant (Dawit, 2017).

In a research with the main objective of examining determinants of private commercial bank profitability in Ethiopia, panel data of 13 private commercial banks from year 2010 to 2021 was used. The study employed random effect multiple linear regressions models and data was collected from the annual audited financial statement of banks. The findings revealed that expense management efficiency and loan to deposit ratio have significant and positive relationship with profitability. On the other hand, GDP and inflation were found to be positive and statistically insignificant. (Tekalign, 2023)

Elshaday et al. (2018) examined the determinants of profitability of private commercial banks in Ethiopia. The study used secondary data for eight private banks from 2007 – 2016 using their annual financial statements, minutes and national bank report. The analysis was done using E-Views 9 software and Return on Asset and Return on Equity were selected as the dependent variables while non-performing loan, capital adequacy ratio, bank size, leverage ratio, credit interest income ratio, loan loss provision ratio and expense efficiency were the independent variables. The results of the study showed that capital adequacy ratio, credit interest income and bank size have positive and statistically significant effect on performance. Nonperforming loans, leverage ratio and expense had negative and statistically significant effect on profitability. The research recommended that banks manage their loans, efficiently manage their expense and fix their leverage ratio in order to maximize their profitability.

Lakew (2021) examined the effect of political instability and other internal and external factors on bank performance using empirical evidence from Ethiopian commercial Banks. Political instability was measured by political instability index which is the average value of other indexes, and the result showed political instability and revenue diversification influence bank profitability positively while GDP and Inflation also have significant influence.

Ademe (2023) analyzed the effect of political instability, specifically political violence and ethnic conflict, on the performance of the Ethiopian banking sector using a sample of 16 banks and considered various factors that can affect bank performance, including bank-specific variables such as volume of deposits, operational efficiency, liquidity, financial risk, non-performing loans and GDP, inflation rate and political violence and ethnic conflict as external factors. The study found that political violence and ethnic conflict have a significantly negative effect on both return on assets (ROA) and return on equity (ROE) of the banks, while

operational efficiency, GDP, and financial risk have positive and significant effects. Inflation and Nonperforming loans were found to have negative and significant effect on ROA.

2.4 Research Gap

Various literatures have been reviewed on the determinants of bank profitability to identify common variables affecting profitability. The gap in literatures reviewed from other countries is that the variables affecting profitability in the mentioned countries may not have a significant effect in Ethiopia. For instance, the banking industry in Ethiopia is mostly dominated by a state-owned bank. In addition, there is an increased government or regulatory body involvement into the affairs of banks, which is different to the situation in other countries where banks are characterized by private and foreign ownership. Foreign ownership and investment in the Ethiopian banking industry is highly restricted.

On top of this, some researches conducted on the determinants of bank profitability in Ethiopia included the biggest commercial bank in the country which is state owned. The problem with considering CBE is that it is significantly bigger in size and performance which result in outliners if included in the research. Therefore, this research will only take into consideration selected private banks.

2.5 Conceptual Framework

Conceptual framework is the representation of the relationship between the dependent and independent variables. Based on the literatures reviewed the following dependent and independent variables were considered for this study. The independent variables grouped into two include revenue diversification, expense, GDP, Inflation and Peace and Security. The return on asset is the dependent variable.

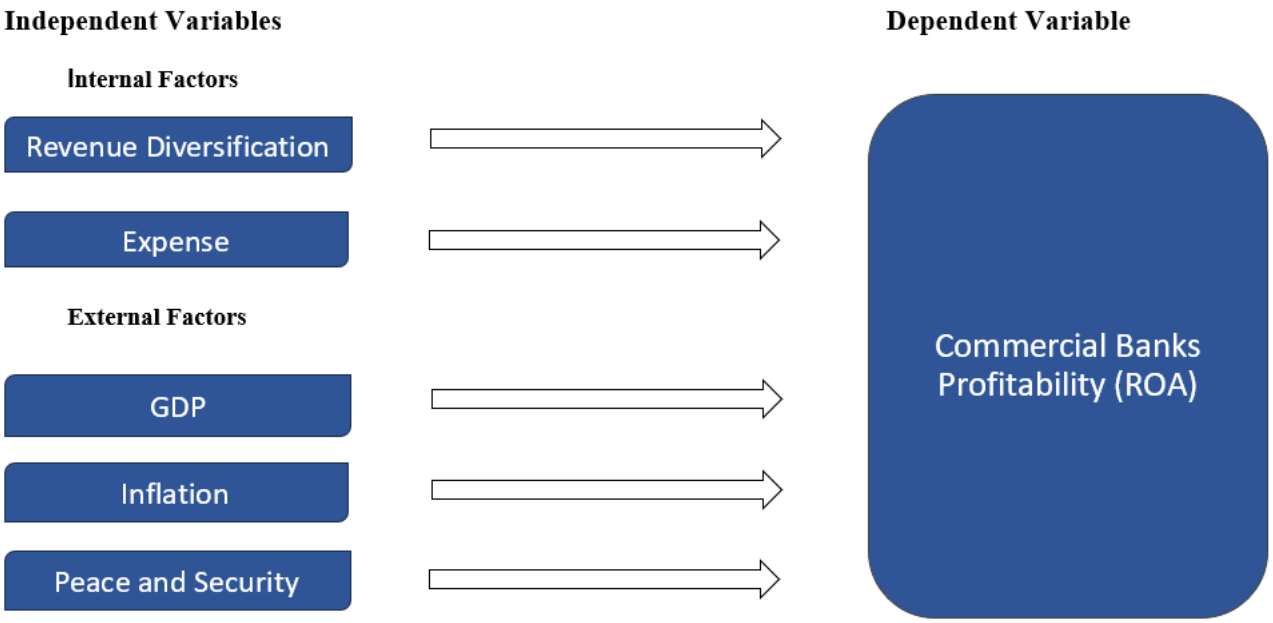


Figure 2.1 Conceptual Model

Source: Designed by the researcher based on literature review

CHAPTER THREE

3. Research Methodology

3.1 Chapter Introduction

This chapter deals with the methodology applied to investigate the factors affecting profitability of private commercial banks in Ethiopia. It includes the research approaches used for the study, the research design, the sampling techniques, data sources and collection methods, model specification, and description of the dependent and independent variables included in the study.

3.2 Research Design

Research design can be considered the structure of research as it holds all the elements in a research project together. In short, it is a plan of the proposed research work. It details the methods and procedures implemented in data collection and analysis. Explanatory research design was used for this research to show the cause-and-effect relationship between the dependent and independent/explanatory variables.

3.3 Research Approach

Quantitative research is the process of collecting and analyzing numerical data to find patterns, test causal relationships, and generalize results to wider populations. Since numerical data was collected for the research, a quantitative approach is chosen to analyze and explain the impact of the explanatory variables on bank profit.

3.4 Target Population

A target population (or the sampling frame) is a group with some common defining characteristic that the researcher can identify and study. Within this target population, researchers then select a sample for study (Creswell, 2012). All 28 private banks currently operating in Ethiopia, including the recently established ones, are the target population for this study.

3.5 Sample Design

From the target population of, a judgmental or purposive sampling technique was used to select the sample banks to be examined in the research. Judgmental or purposive sampling is a non-probability sampling technique where the sample members are chosen based on the researcher's knowledge and judgment about a specific condition/characteristic required of the sample

members. Purposive sampling procedures are used because they help in ensuring that quality sample is located without biases to increase the reliability and trustworthiness of the findings (Nyimbili F. and Nyimbili L., 2024).

Out of the 28 banks, 12 will be excluded as they were established less than 10 years ago and they do not have published data for the entire 10 year period.

Solvin's formula of sample selection with the below formula will be used for this study.

n=N/((1+N(e^2)))

n: is the sample size

N: is the population size

1: is the constant

e: is the desired level of precision/margin of error

n =16/(1+16×〖0.05〗^2)=15.38

As the result is close to 16, all banks in the population study will be considered.

Table 3.1 List of banks, year of establishment, and profit after tax

No.	Name	Year of Establishment
1	Awash International Bank	1994
2	Dashen Bank	1995
3	Bank of Abyssinia	1996
4	Wegagen Bank	1997
5	Hibret Bank	1998
6	Nib International Bank	1999
7	Cooperative Bank of Oromia	2004
8	Lion International Bank	2006
9	Oromia International Bank	2008
10	Bunna International Bank	2009
11	Zemen Bank	2008
12	Abay Bank	2010
13	Berhan International Bank	2009
14	Addis International Bank	2011
15	Debub Global Bank	2012
16	Enat Bank	2012

3.6 Data Source

The study used the latest secondary data to study determinants of private commercial bank profitability from the period between 2014 to 2023 using sixteen commercial banks. The data was obtained from the National Bank of Ethiopia which has the financial statements for all banks. Balanced panel data was used to make the analysis on determinants of bank profitability. A balanced panel is a type of panel data set where all years or periods of data are available for all cross-sectional units (Wooldridge, 2012). For this study there were cross sections of sixteen banks for ten years making a total of 160 observations.

3.7 Data Analysis

Mean, minimum, maximum and standard deviation of descriptive statistics have been applied. In addition, the multiple regression model has been implemented for the data analysis. This model has been used to show what effect the explanatory variables have on the dependent variable, profitability.

3.8 Model Specification

A multiple regression model has been applied to the study without violating the OLS assumptions. The panel data from the secondary data sources consists of a time series for each cross-sectional member in the data set. This balanced panel data was regressed to show the per unit effect of the independent variable on the dependent variable or to explain what portion of the variation in the dependent variable can be explained by the model. STATA 14 software was used for data analysis with the below regression model:

$$ROA\ it = \beta 0 + \beta 1\ (Revdiv)it + \beta 2\ (Exp)it + \beta 3\ (GDP)t + \beta 4(INFL)t + \beta 5\ (PS)t + \mu$$

Where:

ROA it is the return on asset of the ‘I’ bank in time ‘t’

Revdivit refers to the revenue diversification of ‘i’ bank at time ‘t’

Expit refers to the expense of ‘i’ bank at time ‘t’

GDPt refers to the GDP at time ‘t’

INFLt refers to the inflation at time ‘t’

PSt refers to the Peace and Security at time ‘t’

μ is the error term

β1- β9 are the Coefficients

i refers to the banks ranging from 1 to 16

t refers to the time periods from 1 to 10

3.9 Description of Variables

3.9.1 Dependent Variable

Return on Asset (ROA): shows how profitable a company's assets are in generating revenue or how efficiently the company is utilizing its assets. It's calculated by dividing the income after income tax by its total assets to measure a bank's overall performance. A higher ROA indicates the bank's assets are being used efficiently to generate income.

Return on Assets= Net Income /Total Assets

3.9.2 Independent Variable

Revenue Diversification: Banks can diversify their revenue by expanding beyond traditional lending activities into a variety of noninterest revenue sources such as service charges, financial advisory fees, commissions for providing guarantees, custody fees for banks licensed to provide custody services for pension funds, trusts, and endowments, etc. (Addai et al., 2022)

Revdiv = non-interest income / Total Assets

Expense: Expense management offers a major and consistent opportunity for profitability improvement. The cost to income ratio measures the overheads or costs of running the bank, including staff salaries and benefits, and other expenses such as office supplies, as percentage of income. It is typically used as an indicator of management's ability to control costs. Since higher expenses mean lower profits, it is expected to have a negative effect on bank profits (Tanna et al., 2005).

Exp = Operating expense/ Total asset

GDP: Gross Domestic Product (GDP) is the total monetary or market value of all the finished goods and services produced within a country's borders in a specific time period. It's used as an overall indicator of a country's economic health. GDP growth rate is one way to evaluate how well a country's economy is performing. The rate reflects the increase or decrease in the percentage of economic output in monthly, quarterly, or yearly periods. GDP enables

policymakers to assess the economy, whether it's weakening or flourishing, if it needs improvements or restrictions, and if there are threats of recession or inflation. (Hall, 2023)

GDP can be measured as below:

GDP = Current GDP – Previous GDP/Previous GDP

Inflation: Inflation is the loss of purchasing power of a country's currency over time reflected in a rise in the prices of goods and services. Inflation is unwanted by any country and high inflation is one of the main macroeconomic challenges faced by a country and money supply is thought to be its main cause (Adu et al., 2016). Usually, regulatory bodies will try to control inflation through their monetary policies, i.e., increasing interest rates, to encourage savings which will decrease the amount of money in circulation, or halt new money printings, also to limit money circulation. According to Sergeeva (2021) inflation has a negative impact on the banks' performance by reducing lending and interest income and increasing interest expenses.

Peace and Security: It is vital for a country to have stability and peace for business to be productive which results in a growing economy. The poorest countries in the world are those that are in constant war and turmoil which shows how important peace and security is. Thies and Baum (2020), in their study on the effect of war on economic growth, stated that political instability and wars significantly weaken the economy. This leads to a decline in profitability. The economies of neighbouring countries could also suffer due to conflicts in a country. Political instability can cause severe economic recession due to rising inflation, deteriorated fiscal and financial conditions, and lower institutional quality, in addition to the lives lost, relocation of people, and material destruction they cause. Trade disruption and a drop in consumer and investor confidence are further consequences of internal instability (Mlachila, et al. 2020).

As per Alemu (2023) in Ethiopia, where banks are essential for directing financial resources toward investment, industry, and trade, the stability of the banking sector is crucial for promoting economic progress. However, the sustainability of improvements in bank performance is threatened by political instability, both directly and indirectly.

According to the World Bank's World Development Indicator, Political Stability and Absence of Violence/Terrorism measures perceptions of the likelihood of political instability and/or politically motivated violence, including terrorism. The three major factors it measures are:

i) Political Stability: The degree to which a government can maintain power without the risk of being overthrown or facing significant unrest, including the effectiveness of political institutions and the rule of law.
ii) Absence of Violence: The extent to which violence, including civil disorder and political violence, is present within a country. Protests, riots, and other forms of civil disobedience are included.
iii) Terrorism: The level of threat posed by terrorist activities, which can destabilize governments and contribute to a climate of fear and insecurity.

Reported on a scale from -2.5 to +2.5, a negative value indicates political instability, and positive values represent good governance.

3.10 Data quality assurance

Ethical considerations

The ethical issues considered for this study are discussed here:

Permission – The researcher obtained permission to collect the research data from the National Bank of Ethiopia. Before conducting the study, they were informed the information was going to be used for academic purposes only.

Confidentiality and privacy - This study only utilized secondary data which means data already available through online platforms and other published information was used.

Voluntary Participation and Informed Consent - The researcher went to National Bank of Ethiopia to collect the necessary data. Accordingly, the responsible office was informed of the research area and what types of information were required to undertake the study.

CHAPTER FOUR

4. Data Presentation, Analysis and Discussion

4.1 Chapter Introduction

Five research hypothesis and objectives have been raised in this study. Data analysis and results presentation will be handled in this chapter. The five factors that were initially mentioned as influencing bank's profitability have been incorporated in the study using data from selected sixteen Ethiopian private banks covering the period between 2014 to 2023. All data regarding the five variables was gathered from the financial statements of the banks and these variables are the return on asset (ROA), revenue diversification (Revdev), expense (Exp), real GDP growth rate (GDP), inflation, and peace and security. This chapter further discuss on the model specification, descriptive statistics, correlation analysis, regression analysis and present the summary of findings.

4.2 Descriptive Analysis

Through descriptive statistics the main features of a dependent and an independent variable are summarized to gain a clear insight into the characteristics and patterns that exist in the data set. The dependent variable for this research is the return on asset or profitability while the independent variables are revenue diversification, expense, real GDP growth rate, inflation and peace and security. The study has included variables of sixteen private banks over a period of ten years making the total number of observations one hundred and sixty. The independent variables included both internal and external factors.

The descriptive statistics of the model's variables, including their mean, standard deviation, minimum, and maximum values, are displayed in Table 4.1.

Table 4.1 Descriptive Statistics

Variable		Mean	Std. Dev.	Min	Max	Observations
roa	overall	0.0238515	0.0071919	0.0031958	0.046852	N = 160
	between		0.0042053	0.0195013	0.0344042	n = 16
	within		0.0059195	0.0065532	0.0510365	T = 10
revdiv	overall	0.0329354	0.0143192	0.0007347	0.0795541	N = 160
	between		0.0111523	0.0171199	0.0569012	n = 16
	within		0.0093651	0.0044205	0.0623411	T = 10
exp	overall	0.0466746	0.0116225	0.0256404	0.0844362	N = 160
	between		0.0082745	0.031879	0.0643121	n = 16
	within		0.0083958	0.0298654	0.0774798	T = 10
gdp	overall	8.146589	1.633302	6.128933	10.40617	N = 160
	between		0	8.146589	8.146589	n = 16
	within		1.633302	6.128933	10.40617	T = 10
inflat~n	overall	15.32531	8.040359	7.539101	33.85568	N = 160
	between		0	15.32531	15.32531	n = 16
	within		8.040359	7.539101	33.85568	T = 10
Peasec	overall	-1.668689	0.3098046	-2.183831	-1.274609	N = 160
	between		0	-1.668689	-1.668689	n = 16
	within		0.3098046	-2.183831	-1.274609	T = 10

Source – Financial statements of commercial banks and computation with STATA 14

The three components of variation—overall, between, and within—describe how a variable's variation is spread throughout the dataset (overall), between entities (between), and throughout time within entities (within), as seen in Table 4.1. The positive average value of 2.3% for return on assets indicates for each birr investment on asset, the banks generate an average profit of 2.39 cents. The overall standard variation shows the total variability in ROA across all observations. The 0.7% deviation observed in the table indicates that there is a very low profit variation among the banks. The maximum value of 4.67% ROA indicates that the highest profit that could be earned from each birr investment is 4.67 cents while the return could be as low as a 0.3 cents loss as observed from the minimum value of 0.32%.

Revenue diversification (RevDiv) is measured as a ratio of noninterest income to total asset. It indicates the profit the bank has managed to gain from services rendered other than interest generating activities. A high ratio indicates the bank is generating more profit from noninterest activities. Table 4.1 shows that on average 3.2% of the total assets were generated through noninterest income. The maximum value of 7.96% means that the most diversified bank generated 7.96% of its total asset from noninterest income activities, while for the least diversified only 0.07% of its assets was due to noninterest income.

Expense (Exp) calculated as a ratio of operating expense to total asset depicts how efficiently the bank is managing its operating expenses with lower ratio showing the bank is incurring lower operating expenses for every unit of assets it holds. The overall mean indicates that the banks incurred the equivalent of 4.67% of their total asset as operating expenses over the 10 years period. The maximum expense incurred was 8.44% of the total asset with the least being 2.56%.

As can be seen from Table 4.1 the overall average for Peace and Security is -1.67 indicating the banks operated in a relatively low political stability. The maximum values of -1.27% shows that what was observed as the most stable period was still politically unstable as the value is negative. The most unstable and volatile environment or period had a value of -2.18% which is close to the limit -2.5%.

4.3 Correlation Analysis

This is a statistical method used to determine if there is a relationship between variables and how strong that relationship may be. The correlation between two variables measures the degree of linear association between them. If it is stated that y and x are correlated, it means that y and x are being treated in a completely symmetrical way. In other words, it treats both variables the same way, with no assumption about which might influence the other. It does not explain the cause, only shows if there is any association (Brooks, 2008, P. 148). The correlation coefficient ranges from -1 to +1, indicating a perfect negative and positive association, respectively. 0 indicates there is no relationship. The below table shows the correlation between ROA and the independent variables.

Table 4.2 Pairwise Correlations

Variables	ROA	revdiv	exp	gdp	inflation	Peasec
ROA	1.0000					
revdiv	0.5868	1.0000				
exp	-0.3627	0.1276	1.0000			
gdp	0.1894	0.3358	-0.3656	1.0000		
inflation	-0.1327	-0.2952	0.4305	-0.6363	1.0000	
Peasec	0.2562	0.2414	-0.4261	0.6702	-0.5788	1.0000

Source – Financial statements of private commercial banks and own computation with STATA 14

Based on the correlation table, ROA has a positive correlation with revenue diversification, GDP and peace and security which implies whenever there is a change in these variables, either an increase or decrease, ROA shows a corresponding movement. Contrary to this, expense, and inflation have a negative association indicating when they increase, ROA decreases and vice versa. Revenue diversification shows a large positive correlation (0.5868) with ROA, while expense demonstrates a negative correlation (-0.3627). The correlation test shows the initial association between variables, without considering causation, but as we will see later, the regression analysis reveals more complex relationships as it controls for other factors while testing the relationship between the dependent and independent variables.

It can be observed from the table that there is no perfect correlation among the variables, however, there is a correlation that is above 0.5 between inflation and GDP and Peace and Security and GDP. The presence of near multicollinearity does not affect the BLUE properties of the OLS estimator – i.e., it will still be consistent, unbiased and efficient since the presence of near multicollinearity does not violate any of the CLRM assumptions. (Brooks, 2008, P. 295). Hence, it is possible to ignore the near multicollinear variables.

Multicollinearity for panel data can be further tested by using Variance Inflation Factor (VIF). A VIF > 10 indicates serious multicollinearity concerns while VIF > 5 indicates possible

multicollinearity and mean VIF > 2 may be an indication of overall multicollinearity in the model. As shown in the table 4.3, the VIF is below two which confirms there is no multicollinearity concern for our model.

Table 4.3 Variance Inflation Factor (VIF) Results

Variable	VIF
revdiv	1.0557
exp	1.0418
gdp	1.0617
inflation	1.1149
Peasec	1.0597

4.4 Autocorrelation Test

Autocorrelation is the degree of similarity of a variable between two successive time intervals. Or it shows how much of the current value of the error term has lingering effects from its previous value still present. It measures the relationship between a variable's current value and its past values. If autocorrelation is present it can lead to biased standard errors and inefficient coefficient estimates. The assumption here is that the errors are not correlated with one another, which is the null hypothesis. As per the Woolridge test for autocorrelation shown below, the model does have an autocorrelation problem because the F probability is less than 5%.

Figure 4.1 Wooldridge Test for autocorrelation

```
Wooldridge test for autocorrelation in panel data
H0: no first-order autocorrelation
    F(  1,      15) =      6.543
           Prob > F =      0.0219
```

Source- own computation with STATA 14

When autocorrelation is present, this can be corrected using the Cochrane–Orcutt procedure or the Prais-Winsten estimation, which are econometric techniques that adjust linear models for serial correlation in error terms (Brooks, 2008). The adjustment will display a transformed Durbin-Watson statistics. The acceptable range is 1.5 to 2.5, indicating minimal autocorrelation (Turner, 2020). For the adjustment, the Prais-Winsten estimation is preferred due to its ability

to retain the first observation and provide more comprehensive autocorrelation correction. In their research, Hossain, M., & Golder, S. (2023) used the Prais-Winsten estimation to adjust for autocorrelation which the researcher has implemented in this paper.

As can be seen from the below figure, after the adjustment was made using the Prais-Winsten estimation, the transformed Durbin-Watson statistics shows a value of 1.856005 from the previous 0.859223, which falls within the acceptable range. This shows that the autocorrelation has been properly addressed.

Figure 4.2 The Prais-Winsten estimation

Prais-Winsten AR(1) regression -- iterated estimates

Source	SS	df	MS	Number of obs	=	160
				F(5, 154)	=	86.31
Model	.005882967	5	.001176593	Prob > F	=	0.0000
Residual	.002099398	154	.000013632	R-squared	=	0.7370
				Adj R-squared	=	0.7285
Total	.007982366	159	.000050204	Root MSE	=	.00369

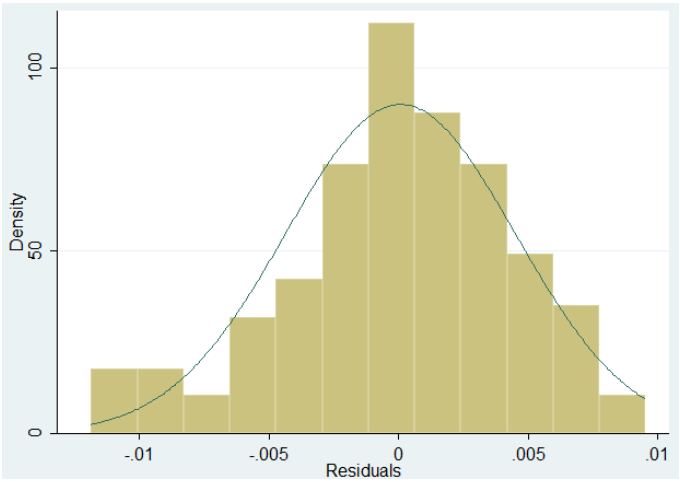
ROA	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
revdiv	.4734985	.0345706	13.70	0.000	.4052048	.5417923
exp	-.4314671	.0424859	-10.16	0.000	-.5153975	-.3475367
gdp	-.0005865	.0002316	-2.53	0.012	-.001044	-.0001289
inflation	.0003252	.0000599	5.43	0.000	.0002069	.0004435
Peasec	.0012612	.0013662	0.92	0.357	-.0014377	.00396
_cons	.0302278	.0038778	7.80	0.000	.0225672	.0378884
rho	.5836341					

Durbin-Watson statistic (original) 0.859223
Durbin-Watson statistic (transformed) 1.856005

4.5 Normality Test

Normality test is used to test whether a data or its residuals from a model have a normal distribution. A bell-shaped curve, W statistic (closeness to 1 in a range from 0-1), P-value > 0.05 and visual symmetry are indicators of a normal distribution. One of the methods used to test for normality was plotting a histogram graph. In a normal distribution the skewness will be zero while the kurtosis will be three. Using the data from the Ethiopians private banks, normality was tested by plotting a histogram graph. The histogram is relatively bell shaped; therefore, the data does not have a normality problem.

Figure 4.3 Histogram



Source – own computation using STATA 14

4.6 Heteroscedasticity Test

Heteroscedasticity occurs when error term variance is not constant across observations. The test determines if error variance depends on independent variables. The Wald test was used to test for the presence of heteroscedasticity where no heteroscedasticity problem is the null hypothesis. As per the test, the model is heteroscedastic since probability of chi squared is less than 5 %. Using heteroscedasticity consistent standard error estimates is one of the ways to solve the problem as this will apply standard error estimates that have been modified to account for the heteroscedasticity (Brooks, 2008). Accordingly, robust standard errors was used in the regression analysis to deal with heteroscedasticity.

Figure 4.4 Heteroscedasticity Test

```
Modified Wald test for groupwise heteroskedasticity
in fixed effect regression model

H0: sigma(i)^2 = sigma^2 for all i

chi2 (16)   =          71.30
Prob > chi2 =           0.0000
```

Source – own computation using STATA 14

4.7 Model Specification Test

The Hausman test is a statistical test used to determine whether to use fixed effect model or random effect model. The fixed effect model assumes that the unobserved, time-invariant (unchanging over time) bank specific variables are correlated with both the dependent and independent variables. The model accounts for this by removing the influence of these unobserved variables by subtracting the mean of each variable (both dependent and independent) for each bank over time, focusing on changes within each bank over time and making sure the results are not affected by factors that stay the same. Opposite to this, the random effect model assumes the unobserved variables are not correlated with the independent variables and they do not bias their effects on the dependent variable.

The null hypothesis for the Hausman test is that there is no correlation between the unobserved bank specific variables and the independent variables. Once we have ran our test, if the result for If Prob > chi2 is < 0.05, we reject the hypothesis and use the fixed effects model. As seen in Figure 4.1, our Prob>chi2 is 0.0235, which is less than 0.05. Hence, we use the fixed effect model.

Figure 4.5 Model Specification test

```
hausman fixed random, sigmamore
```

	——— Coefficients ———			
	(b) fixed	(B) random	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
revdiv	.5148746	.4676826	.047192	.0197778
exp	-.4875456	-.44942	-.0381256	.0237086
gdp	-.0010021	-.0008907	-.0001114	.0000446
inflation	.0003541	.0003277	.0000264	.0000109
Peasec	.0012701	.0016153	-.0003452	.0002259

```
                b = consistent under Ho and Ha; obtained from xtreg
     B = inconsistent under Ha, efficient under Ho; obtained from xtreg

 Test:  Ho:  difference in coefficients not systematic

              chi2(2) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                      =         7.50
            Prob>chi2 =       0.0235
```

4.8 Regression Analysis

Regression analysis is a statistical technique that is used to determine and evaluate the relationship between a dependent variable and independent variables. The findings from the regression analysis will be discussed here. The R squared is a statistical measure that shows how much of the variance in the dependent variable is caused by the independent variables. The p value is used to determine which explanatory variables are statistically significant, to reject or accept the null hypothesis that all regression coefficients are simultaneously zero. The F-statistic is used to determine whether the independent variables, collectively, have a statistically significant influence on the dependent variable. To account for heteroscedasticity and autocorrelation, the Prais-Winsten regression was applied in the regression analysis.

Figure 4.6 Regression Results

Prais-Winsten AR(1) regression -- iterated estimates

Source	SS	df	MS	Number of obs	=	160
				F(5, 154)	=	86.31
Model	.005882967	5	.001176593	Prob > F	=	0.0000
Residual	.002099398	154	.000013632	R-squared	=	0.7370
				Adj R-squared	=	0.7285
Total	.007982366	159	.000050204	Root MSE	=	.00369

ROA	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
revdiv	.4734985	.0345706	13.70	0.000	.4052048	.5417923
exp	-.4314671	.0424859	-10.16	0.000	-.5153975	-.3475367
gdp	-.0005865	.0002316	-2.53	0.012	-.001044	-.0001289
inflation	.0003252	.0000599	5.43	0.000	.0002069	.0004435
Peasec	.0012612	.0013662	0.92	0.357	-.0014377	.00396
_cons	.0302278	.0038778	7.80	0.000	.0225672	.0378884
rho	.5836341					

Durbin-Watson statistic (original) 0.859223
Durbin-Watson statistic (transformed) 1.856005

Source – Financial statements of private commercial banks and own computation with STATA 14

According to Brooks (2008), the F statistics tests the null hypothesis that all the coefficients except the intercept coefficient are zero or the independent variables cannot explain the variance in the dependent variable. As per the Prais-Winsten regression analysis made using one hundred and sixty observations, the F statistic is 86.31% with a probability of 0.000 which confirms the

null hypothesis that there is no significant relationship between the explanatory variables and the dependent variables can be rejected.

The model has an R squared value of 73.70 % which indicates that 73.70% of the variation in ROA can be explained by the changes in the predictor/explanatory variables. Furthermore, the analysis of the model shows that revenue diversification, expense, GDP and inflation are significant at a P value of 5% significant level. P value indicates the minimum significance value where we reject the null hypothesis in favor of the alternative hypothesis.

The regression equation for the model is as follows:

$ROA_{it} = 0.03023 + 0.4735(revdiv)_{it} - 0.4315(exp)_{it} - 0.0006(gdp)_{t} + 0.0003(inflation)_{t} + 0.0013(Peasec)_{t} + \mu$

The Beta coefficients show by how much the dependent variable (return on asset) would change if there is a one-unit change in the explanatory variables. The constant coefficient (β0) indicates the value of the dependent variable, when all explanatory variables are assumed to be zero, with our analysis showing a result of 3.08%.

Table 4.3 summarizes the actual and expected results of the regression analysis tested at 5% significance level. The results of this analysis are further discussed in the results sections of this chapter.

Table 4.4 A summary for the actual and expected results from the regression analysis

Explanatory variable	Abbreviation	Expected result	Actual result	Hypothesis status
Revenue Diversification	RevDiv	Positive and significant	Positive and significant	Failed to reject
Expense	Exp	Negative and significant	Negative and significant	Failed to reject
GDP	GDP	Positive and significant	Negative and significant	Rejected
Inflation	inflation	Negative and significant	Positive and significant	Rejected
Pease and security	Peasec	Positive and significant	Positive and insignificant	Rejected

4.9 Result Discussion

This section considers the results from the tests conducted and compares the findings to the theories and empirical research paper findings raised in chapter two.

Revenue diversification – The regression analysis indicates that an increase of revenue diversification by 1% would result in an increase of the ROA by 47.34%. The P value as per the results is 0.000 which indicates that it is significant at 5% significance level. The bank profit increases as the noninterest income increases. The more diversified the source of revenue is for banks, the more income they generate. These could be from loan fees or service fees charged to customers. This is consistent with our first hypothesis that revenue diversification positively and significantly affects bank profit. Hence, the researcher fails to reject the first hypothesis.

The studies made by Dessalegn (2024), Dawit (2017) and Moges (2017) support the findings from the regression analysis that there is statistically significant positive correlation between revenue diversification and return on assets. The analysis shows that revenue diversification plays a vital role in determining a bank's profitability as it is a way for the bank to generate income through different channels other than the usual lending activity and deposit services.

Expense – Keeping other factors constant, when there is a 1% increase in the expense ratio, return on asset will be reduced by 43.14%. Expense has a P value of 0.000 which makes it statistically significant at 5% significance level. The coefficient has a negative sign indicating the negative relationship between the variables which was the assumptions as per the second hypothesis.

Expense is one of the variables that significantly affects bank profit as it is a measure of the operational efficiency of banks, and it influences how these institutions manage their costs. Therefore, cost management will shape a bank's financial well-being. These findings confirm the findings of studies made by Moges (2017) and Osman (2022) that banks will gain more profit when they reduce their operational costs which is consistent with the efficiency theory that banks that are more efficient are likely to profit more. If banks are unable to efficiently manage their expenses, the income they generate will be used to cover theses expenses, which will result in reduced profitability, which is contrary to the objectives of a profit-making business.

The result also supports the Efficiency Theory, which holds that banks will be more profitable the more efficiently they can use their resources, hence cutting expenses. This emphasizes how crucial it is for banking institutions to implement efficient cost management techniques. Banks can directly improve their financial performance by reducing operating costs and optimizing resource allocation. Cost control enables banks to devote more funds towards revenue-generating activities, which eventually improves their financial performance.

GDP - A 1% growth of GDP will decrease the ROA by 0.05%. As per the hypothesis, GDP is expected to have a positive and significant effect on ROA. However, the researcher has rejected this hypothesis because the relationship as shown in the regression analysis is negative. Although GDP was expected to boost the profitability of banks, the results from the study revealed this variable is statistically significant but has a negative influence. The initial simple correlation showed GDP positively affecting bank profitability (0.1894). After controlling for other factors using Prais-Winsten regression, GDP showed a negative effect (-0.0005865, p = 0.012). This is because the lingering effects of the previous value or error term has now been removed displaying the real underlying relationship between GDP and profitability. Increased competition during economic growth due to new market entrants resulting in reduced profit margins and banks giving out more loans during economic booms causing a decline in profitability in the future could be reasons for the negative relationship. This is known as the financial accelerator theory.

Both Dawit (2017) and Tesfaye, B. (2014) concluded that there is a positive relationship between GDP and ROA. Contrary to that Mulugeta, A. & Zewudu, Y. (2019) found significant negative relationship between GDP and bank profitability, that may arise due to an increased competition faced by banks during economic booms. This shows that even though it is expected that improved economic conditions result in bank profitability, there may be additional factors that hinder banks' performance such as the regulatory restrictions within the country and the political situation.

Inflation - The rise of inflation by 1% will increase ROA by 0.03%. The P value for inflation is 0.000 indicating that it is statistically significant at 5%. However, the initial hypothesis stated that inflation negatively and significantly affected ROA. Even if this variable is significant at

5% significance level, the coefficient of the variable is positive. As a result, we reject this hypothesis.

The initial negative association of inflation with ROA (-0.1327) has changed to positive after controlling for other factors (0.0012612, p = 0.000). This change is attributed to the fact that the data has now been adjusted for autocorrelation, revealing the true association between inflation and ROA. The positive and significant influence can be the result of the highly regulated nature of the banking sector in Ethiopia which helps banks manage inflation effectively. An example of this could be the directive passed by the National Bank of Ethiopia in October 2020, capping the daily withdrawal limit per person to 50,000 Birr and 75,000 Birr for institutions. This helped limit the amount of money in circulation, which is of major importance when a country is experiencing inflation, while also giving banks breathing room to retain some liquid cash in order to address their liquidity issues. In addition, the National Bank has also prohibited banks giving out personal loans to their employees and most of their customers which has allowed them to invest the money in assets/securities that could generate the same or better income.

The Delayed Pass-Through Effect could also explain this positive relationship. It states that the effect of inflation on bank's performance might not be felt immediately. It could be identified down the years when borrowers are unable to repay their loans, meaning the positive relationship between inflation and ROA seen today might not be their true association. In addition, inflation affects the interest income and interest expense of banks. How banks including the National Bank react to inflationary times will influence how profitable they may be. Inflation could be seen as an advantage since during these times the National Bank usually increases the interest rates; to promote saving and reduce money in circulation, they can use this opportunity to give out more loans earning high interest income.

Research done by Feregenet (2020) showed a statistically significant and positive relationship between inflation and bank profit while Dawit (2017), found an insignificant relationship between the variables. The findings of this research agree with the first findings.

Peace and Security – Due to a positive relationship between peace and security and return on asset, a 1% increase in peace and security, will result in a 0.12% increase in return on asset.

However, with a p-value greater than 0.05, this variable is not statistically significant, contrary to our hypothesis which has led the researcher to reject it.

Lakew, M. (2021) found that political instability and bank profitability are positively and significantly correlated, while the research by Alemu, A. (2023) concluded that political violence has a significant negative effect on ROA. While this research found that in the case of the 16 banks considered over the 10 years' period, political stability has had a positive impact similar to the findings by Ademe, A. (2023), the conclusion is that it is not statistically significant.

In the Ethiopian context, several factors may explain the lack of statistical significance observed in this study. First, the highly regulated nature of the Ethiopian banking industry may diminish the effect of peace and security on bank performance. During both periods of relative stability and instability, regulatory oversight may lead to similar financial outcomes, irrespective of the prevailing security conditions.

In addition, the recent civil war in Ethiopia was mainly in the Tigray region with the rest of the country experiencing relatively peaceful times, especially Addis Ababa which is the commercial center of the nation. Hence, even though there were financial losses experienced in Tigray, showing the positive relationship between peace and profitability, these losses were offset by income generated in other parts of the country, making its effect insignificant.

The high R^2 value of 73.70% and the Durbin-Watson statistic of 1.856005 suggest that our model effectively captures the determinants of bank profitability while successfully addressing autocorrelation concerns. These statistics prove the model's ability to explain the relationships between macroeconomic factors and bank performance in Ethiopia.

CHAPTER FIVE

5. Summary of Findings, Conclusion and Recommendation

5.1 Chapter Introduction

This chapter is grouped into four sections. The first part deals with the summary of the findings based on the data analysis of chapter IV. The second section draws conclusion using the research objectives as a basis while the third section includes recommendations based on the findings of the study. The last section addresses suggestions for further research.

5.2 Summary of Findings

This study used internal and external factors to determine the most significant variables that have influence and to what extent they affect private Ethiopian banks' profitability. The summary of findings of this study is presented as follows: As per the data analysis conducted for this study, the variables revenue diversification, expense, inflation and GDP are significant variables in determining profitability. From these variables, revenue diversification and inflation have a positive effect while expense and GDP have a negative impact on profitability. From a total of five variables, two had results consistent with the expectations while three deviated from the initial hypothesis after being tested at 5% significance level.

The R-squared of the study is 73.70% which shows the variables considered in the study were able to explain 73.70% of the variation in the return on asset. In addition, the P value of the F statistic had a value of 0.0000 which indicates that the variables are significant. Regression analysis showed statistically significant results for most of the variables.

5.3 Conclusion

The main objective of this study was to examine the determinants of profitability in Ethiopian private banks. To accomplish this, previous studies on the topic have been reviewed. Internal bank factors, which are factors influenced by management's decisions, and external factors that are outside management's control were applied. A total of five explanatory variables were used to conduct the study namely: revenue diversification, expense, GDP, inflation and Peace and security. The dependent variable used was the return on asset. To test the hypothesis, quantitative data from sixteen private Ethiopian banks covering the period between 2014 to 2023 was used. This data was mainly collected from the National bank of Ethiopia which

included the financial statements of the banks over the years. The data collected was analyzed using statistical software to test the proposed hypothesis.

The findings of the study indicated that revenue diversification, expense, GDP and inflation are significant factors in determining private bank profitability while peace and security was found to be insignificant. Concerned stakeholder, bank management, investors, and regulatory bodies such as NBE should examine these factors as they play a key role in determining the success or failure of financial institutions.

5.4 Recommendation

Based on the results of the study the researcher forwards the following recommendations to the concerned party. While the main objective of all financial institutions is to maximize profitability, the associated risks need to be considered.

In Ethiopia, most banks provide similar services to their customers. This means customers choose banks due to accessibility or personal preference. If banks are able to diversify their source of income or engage in more revenue generating activities, this will help them gain competitive advantage over their industry rivals as they will be able to attract more customers, hence, generating more income. This is important because as the study shows, non-interest income has a significant impact on a bank's profitability. International banking and foreign exchange trading can also boost the bank income to a very high degree. A potential future involvement in securities trading can serve as additional sources of income.

Expense is an essential factor for maintaining bank profitability. While staff should be properly compensated, processes optimized, and new technologies implemented, at the same time, careful consideration should be given to maintaining the overhead costs of the bank. This is important as these overhead costs do not directly contribute to revenue generation. Less cost means more capital to invest in revenue generating activities. However, banks should neither apply extreme cost cutting for the sake of profitability, not should they incur unnecessary expenses. A balance should be maintained. Digitalization of operations is also a good way of managing expenses. Banks should incentivize the use of these digitalized services which could help reduce costs as the need for manpower/labor at branches could be reduced. This means, as less expense is incurred the profit margin increases as most of the income generated will not go to cover expenses.

Inflation affects the interest income and loan requirements of customers as it affects interest rates. High inflation could mean high borrowing costs for customers and as the money loses its purchasing power, interest earned on these loans would have lower value. To combat this, banks could give out more loans which could result in higher interest income. However, with the inflation, it is likely some customers will have a harder time paying back loans and could default. Hence, banks should have strategies in place to take advantage of the opportunities while hedging again the risk. One way to do this is to be more selective in choosing borrowers with lower credit risk to mitigate potential losses.

GDP affects the demand for credit and competition among banks. Therefore, banks should diversify their loans as per the GDP level of industries/sectors.

With the potential of foreign banks' entry into the industry, banks should give due attention to analyzing their performance and taking corrective measures. Otherwise, it is likely that they will lose their customer base and competitive advantage when foreign banks with better offers enter the market. In addition, it is recommended to have a comparative financial performance analysis among all the banks in the country with a standard or benchmark set by the National Bank of Ethiopia to evaluate the banks' financial wellbeing.

5.5 Suggestion for Further Research

Several factors affect the profitability of banks, but this study could not include all these variables. Due to confidentiality, data for Nonperforming loans could not be obtained and hence, the variable couldn't be included in the research. Additional factors such as organization culture, interest rate, capital adequacy, digitalization issues etc. were not considered. This is mainly the result of limited time and resources allocated for this study.

There have not been that many studies conducted on the impact of peace and security or political stability on bank profitability. Therefore, further study on this area especially from Ethiopian context could be beneficial.

The impact of digitalization on performance and how well employees and customers are adapting to it is also another area of study needing attention. In addition, future studies could also be conducted on the effect the different organizational cultures in different banks have on performance.

A continuous analysis of banks' performance is also needed to see how financially healthy they are as their performance also significantly affects the economy. Especially with the government considering opening the banking industry to foreign banks that have extensive expertise. Therefore, future studies on this topic should investigate these gaps and provide additional perspective on the banking industry.

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Annex – Data Set

Bank	ROA	revdiv	exp	gdp	inflation	Peasec	year
Awash International Bank	0.030856	0.041544	0.030808	10.29939	10.6009	-1.33939	2014
Dashen Bank	0.032441	0.045723	0.027968	10.29939	10.6009	-1.33939	2014
Bank of Abyssinia	0.024007	0.024715	0.030622	10.29939	10.6009	-1.33939	2014
Wegagen Bank	0.027621	0.035457	0.036822	10.29939	10.6009	-1.33939	2014
Hibret Bank	0.023422	0.027393	0.033866	10.29939	10.6009	-1.33939	2014
NIB International Bank	0.027669	0.026115	0.02564	10.29939	10.6009	-1.33939	2014
Cooperative Bank of Oromia	0.046686	0.062531	0.04163	10.29939	10.6009	-1.33939	2014
Lion International Bank	0.026729	0.036788	0.038994	10.29939	10.6009	-1.33939	2014
Oromia Bank	0.025013	0.035576	0.038784	10.29939	10.6009	-1.33939	2014
Bunna International Bank	0.026546	0.038372	0.044198	10.29939	10.6009	-1.33939	2014
Zemen Bank	0.046852	0.063653	0.030654	10.29939	10.6009	-1.33939	2014
Abay Bank	0.018017	0.040802	0.048338	10.29939	10.6009	-1.33939	2014
Berhan International Bank	0.016	0.030698	0.041288	10.29939	10.6009	-1.33939	2014
Addis International Bank	0.035364	0.067487	0.047657	10.29939	10.6009	-1.33939	2014
Debub Global Bank	0.0211	0.045988	0.054081	10.29939	10.6009	-1.33939	2014
Enat Bank	0.018327	0.054867	0.052251	10.29939	10.6009	-1.33939	2014
Awash International Bank	0.027036	0.03517	0.033553	10.40617	7.969545	-1.49694	2015
Dashen Bank	0.029443	0.044462	0.035704	10.40617	7.969545	-1.49694	2015
Bank of Abyssinia	0.021346	0.025874	0.033826	10.40617	7.969545	-1.49694	2015
Wegagen Bank	0.025705	0.03447	0.042483	10.40617	7.969545	-1.49694	2015
Hibret Bank	0.019589	0.026868	0.041073	10.40617	7.969545	-1.49694	2015
NIB International Bank	0.025428	0.024191	0.035264	10.40617	7.969545	-1.49694	2015
Cooperative Bank of Oromia	0.027259	0.04575	0.053013	10.40617	7.969545	-1.49694	2015
Lion International Bank	0.025698	0.053262	0.052384	10.40617	7.969545	-1.49694	2015
Oromia Bank	0.02326	0.034606	0.041583	10.40617	7.969545	-1.49694	2015
Bunna International Bank	0.029892	0.038628	0.046731	10.40617	7.969545	-1.49694	2015
Zemen Bank	0.031445	0.049115	0.033801	10.40617	7.969545	-1.49694	2015
Abay Bank	0.027378	0.046527	0.048537	10.40617	7.969545	-1.49694	2015
Berhan International Bank	0.024856	0.038923	0.038824	10.40617	7.969545	-1.49694	2015
Addis International Bank	0.033943	0.065146	0.051262	10.40617	7.969545	-1.49694	2015
Debub Global Bank	0.015025	0.054676	0.058247	10.40617	7.969545	-1.49694	2015
Enat Bank	0.023835	0.032497	0.031783	10.40617	7.969545	-1.49694	2015
Awash International Bank	0.025119	0.030444	0.035672	7.958071	8.105961	-1.61725	2016

Dashen Bank	0.025442	0.0424	0.036458	7.958071	8.105961	-1.61725	2016
Bank of Abyssinia	0.021427	0.03182	0.04237	7.958071	8.105961	-1.61725	2016
Wegagen Bank	0.023201	0.031431	0.043976	7.958071	8.105961	-1.61725	2016
Hibret Bank	0.01963	0.02592	0.041648	7.958071	8.105961	-1.61725	2016
NIB International Bank	0.024623	0.018318	0.034545	7.958071	8.105961	-1.61725	2016
Cooperative Bank of Oromia	0.003652	0.023829	0.076025	7.958071	8.105961	-1.61725	2016
Lion International Bank	0.024159	0.045275	0.054304	7.958071	8.105961	-1.61725	2016
Oromia Bank	0.013755	0.024256	0.051282	7.958071	8.105961	-1.61725	2016
Bunna International Bank	0.027483	0.035742	0.045417	7.958071	8.105961	-1.61725	2016
Zemen Bank	0.027498	0.045606	0.030726	7.958071	8.105961	-1.61725	2016
Abay Bank	0.023762	0.034864	0.047417	7.958071	8.105961	-1.61725	2016
Berhan International Bank	0.036934	0.045278	0.041535	7.958071	8.105961	-1.61725	2016
Addis International Bank	0.033471	0.057673	0.048238	7.958071	8.105961	-1.61725	2016
Debub Global Bank	0.04001	0.079554	0.07261	7.958071	8.105961	-1.61725	2016
Enat Bank	0.024384	0.040589	0.033497	7.958071	8.105961	-1.61725	2016
Awash International Bank	0.023904	0.028021	0.035715	10.14795	7.539101	-1.67723	2017
Dashen Bank	0.021837	0.038837	0.043728	10.14795	7.539101	-1.67723	2017
Bank of Abyssinia	0.02252	0.031243	0.041719	10.14795	7.539101	-1.67723	2017
Wegagen Bank	0.025403	0.038103	0.04623	10.14795	7.539101	-1.67723	2017
Hibret Bank	0.017428	0.021082	0.040511	10.14795	7.539101	-1.67723	2017
NIB International Bank	0.021095	0.021322	0.035	10.14795	7.539101	-1.67723	2017
Cooperative Bank of Oromia	0.011725	0.02306	0.053571	10.14795	7.539101	-1.67723	2017
Lion International Bank	0.024459	0.025425	0.041093	10.14795	7.539101	-1.67723	2017
Oromia Bank	0.0177	0.035802	0.04828	10.14795	7.539101	-1.67723	2017
Bunna International Bank	0.020507	0.029871	0.041326	10.14795	7.539101	-1.67723	2017
Zemen Bank	0.025792	0.052023	0.032606	10.14795	7.539101	-1.67723	2017
Abay Bank	0.020035	0.034363	0.043738	10.14795	7.539101	-1.67723	2017
Berhan International Bank	0.031461	0.04546	0.044417	10.14795	7.539101	-1.67723	2017
Addis International Bank	0.027017	0.051998	0.050075	10.14795	7.539101	-1.67723	2017
Debub Global Bank	0.024652	0.061909	0.060612	10.14795	7.539101	-1.67723	2017
Enat Bank	0.019451	0.041446	0.035113	10.14795	7.539101	-1.67723	2017
Awash International Bank	0.027003	0.021769	0.035544	7.705049	15.7964	-1.27461	2018
Dashen Bank	0.02045	0.026124	0.040823	7.705049	15.7964	-1.27461	2018
Bank of Abyssinia	0.017597	0.017281	0.045404	7.705049	15.7964	-1.27461	2018
Wegagen Bank	0.028971	0.035483	0.04693	7.705049	15.7964	-1.27461	2018

Hibret Bank	0.020464	0.021565	0.04062	7.705049	15.7964	-1.27461	2018
NIB International Bank	0.019158	0.015158	0.035462	7.705049	15.7964	-1.27461	2018
Cooperative Bank of Oromia	0.014695	0.022015	0.043564	7.705049	15.7964	-1.27461	2018
Lion International Bank	0.027289	0.023348	0.042102	7.705049	15.7964	-1.27461	2018
Oromia Bank	0.03058	0.034711	0.041467	7.705049	15.7964	-1.27461	2018
Bunna International Bank	0.024212	0.027637	0.044219	7.705049	15.7964	-1.27461	2018
Zemen Bank	0.021701	0.033894	0.028158	7.705049	15.7964	-1.27461	2018
Abay Bank	0.025719	0.035385	0.043235	7.705049	15.7964	-1.27461	2018
Berhan International Bank	0.023304	0.030919	0.051143	7.705049	15.7964	-1.27461	2018
Addis International Bank	0.026778	0.046997	0.048401	7.705049	15.7964	-1.27461	2018
Debub Global Bank	0.032703	0.063475	0.060784	7.705049	15.7964	-1.27461	2018
Enat Bank	0.024509	0.040364	0.034338	7.705049	15.7964	-1.27461	2018
Awash International Bank	0.032689	0.027857	0.034889	9.025807	11.92971	-1.30376	2019
Dashen Bank	0.018086	0.01874	0.038211	9.025807	11.92971	-1.30376	2019
Bank of Abyssinia	0.019774	0.019961	0.044716	9.025807	11.92971	-1.30376	2019
Wegagen Bank	0.020859	0.023182	0.048603	9.025807	11.92971	-1.30376	2019
Hibret Bank	0.016418	0.015501	0.03972	9.025807	11.92971	-1.30376	2019
NIB International Bank	0.021482	0.014145	0.03534	9.025807	11.92971	-1.30376	2019
Cooperative Bank of Oromia	0.01574	0.021537	0.045735	9.025807	11.92971	-1.30376	2019
Lion International Bank	0.026435	0.026753	0.044752	9.025807	11.92971	-1.30376	2019
Oromia Bank	0.02347	0.026176	0.043838	9.025807	11.92971	-1.30376	2019
Bunna International Bank	0.03183	0.037975	0.052954	9.025807	11.92971	-1.30376	2019
Zemen Bank	0.032934	0.038663	0.028312	9.025807	11.92971	-1.30376	2019
Abay Bank	0.033204	0.047484	0.044324	9.025807	11.92971	-1.30376	2019
Berhan International Bank	0.023885	0.034576	0.052868	9.025807	11.92971	-1.30376	2019
Addis International Bank	0.028876	0.047345	0.046354	9.025807	11.92971	-1.30376	2019
Debub Global Bank	0.038399	0.068082	0.048697	9.025807	11.92971	-1.30376	2019
Enat Bank	0.021912	0.026064	0.029105	9.025807	11.92971	-1.30376	2019
Awash International Bank	0.02902	0.026165	0.044281	6.128933	15.85375	-1.7537	2020
Dashen Bank	0.022518	0.02024	0.043313	6.128933	15.85375	-1.7537	2020
Bank of Abyssinia	0.014825	0.014469	0.049053	6.128933	15.85375	-1.7537	2020
Wegagen Bank	0.021796	0.030708	0.055176	6.128933	15.85375	-1.7537	2020
Hibret Bank	0.020683	0.015135	0.044647	6.128933	15.85375	-1.7537	2020
NIB International Bank	0.024525	0.015073	0.035861	6.128933	15.85375	-1.7537	2020
Cooperative Bank of Oromia	0.022531	0.03014	0.052855	6.128933	15.85375	-1.7537	2020

Lion International Bank	0.020235	0.013646	0.042152	6.128933	15.85375	-1.7537	2020
Oromia Bank	0.025436	0.020143	0.045019	6.128933	15.85375	-1.7537	2020
Bunna International Bank	0.023337	0.026657	0.055639	6.128933	15.85375	-1.7537	2020
Zemen Bank	0.039962	0.036946	0.029934	6.128933	15.85375	-1.7537	2020
Abay Bank	0.024807	0.02585	0.040669	6.128933	15.85375	-1.7537	2020
Berhan International Bank	0.025904	0.036739	0.061981	6.128933	15.85375	-1.7537	2020
Addis International Bank	0.032834	0.048249	0.045959	6.128933	15.85375	-1.7537	2020
Debub Global Bank	0.025478	0.074441	0.078467	6.128933	15.85375	-1.7537	2020
Enat Bank	0.018679	0.02516	0.038724	6.128933	15.85375	-1.7537	2020
Awash International Bank	0.026386	0.029749	0.04362	6.265145	16.44854	-2.18383	2021
Dashen Bank	0.018229	0.009586	0.036803	6.265145	16.44854	-2.18383	2021
Bank of Abyssinia	0.012922	0.022609	0.052558	6.265145	16.44854	-2.18383	2021
Wegagen Bank	0.003196	0.027222	0.084436	6.265145	16.44854	-2.18383	2021
Hibret Bank	0.019139	0.01879	0.045899	6.265145	16.44854	-2.18383	2021
NIB International Bank	0.022343	0.010795	0.040045	6.265145	16.44854	-2.18383	2021
Cooperative Bank of Oromia	0.01632	0.032118	0.05293	6.265145	16.44854	-2.18383	2021
Lion International Bank	0.010388	0.005456	0.058888	6.265145	16.44854	-2.18383	2021
Oromia Bank	0.020915	0.017564	0.047823	6.265145	16.44854	-2.18383	2021
Bunna International Bank	0.025844	0.027157	0.056214	6.265145	16.44854	-2.18383	2021
Zemen Bank	0.037879	0.042947	0.032859	6.265145	16.44854	-2.18383	2021
Abay Bank	0.028239	0.026682	0.043418	6.265145	16.44854	-2.18383	2021
Berhan International Bank	0.007241	0.032693	0.077851	6.265145	16.44854	-2.18383	2021
Addis International Bank	0.030566	0.055412	0.047541	6.265145	16.44854	-2.18383	2021
Debub Global Bank	0.016762	0.052955	0.080241	6.265145	16.44854	-2.18383	2021
Enat Bank	0.015707	0.025365	0.034329	6.265145	16.44854	-2.18383	2021
Awash International Bank	0.029125	0.035308	0.048011	6.358059	25.15354	-2.07061	2022
Dashen Bank	0.024795	0.017194	0.039805	6.358059	25.15354	-2.07061	2022
Bank of Abyssinia	0.021651	0.015819	0.052386	6.358059	25.15354	-2.07061	2022
Wegagen Bank	0.012787	0.021753	0.060571	6.358059	25.15354	-2.07061	2022
Hibret Bank	0.016187	0.02039	0.057293	6.358059	25.15354	-2.07061	2022
NIB International Bank	0.021622	0.013863	0.044112	6.358059	25.15354	-2.07061	2022
Cooperative Bank of Oromia	0.017847	0.034637	0.056797	6.358059	25.15354	-2.07061	2022
Lion International Bank	0.008153	0.000735	0.052772	6.358059	25.15354	-2.07061	2022
Oromia Bank	0.023077	0.025407	0.049698	6.358059	25.15354	-2.07061	2022
Bunna International Bank	0.025844	0.025433	0.060014	6.358059	25.15354	-2.07061	2022

Zemen Bank	0.042035	0.047772	0.03284	6.358059	25.15354	-2.07061	2022
Abay Bank	0.022933	0.01896	0.046383	6.358059	25.15354	-2.07061	2022
Berhan International Bank	0.014472	0.030476	0.071361	6.358059	25.15354	-2.07061	2022
Addis International Bank	0.031966	0.064215	0.057549	6.358059	25.15354	-2.07061	2022
Debub Global Bank	0.019677	0.028386	0.066353	6.358059	25.15354	-2.07061	2022
Enat Bank	0.018257	0.029226	0.036646	6.358059	25.15354	-2.07061	2022
Awash International Bank	0.031218	0.030595	0.057924	7.17131	33.85568	-1.96957	2023
Dashen Bank	0.02462	0.027425	0.057363	7.17131	33.85568	-1.96957	2023
Bank of Abyssinia	0.020436	0.009306	0.059932	7.17131	33.85568	-1.96957	2023
Wegagen Bank	0.015403	0.028793	0.071083	7.17131	33.85568	-1.96957	2023
Hibret Bank	0.027829	0.019884	0.049881	7.17131	33.85568	-1.96957	2023
NIB International Bank	0.019562	0.012218	0.047808	7.17131	33.85568	-1.96957	2023
Cooperative Bank of Oromia	0.018558	0.039138	0.073412	7.17131	33.85568	-1.96957	2023
Lion International Bank	0.013757	0.007871	0.048642	7.17131	33.85568	-1.96957	2023
Oromia Bank	0.024148	0.027716	0.059605	7.17131	33.85568	-1.96957	2023
Bunna International Bank	0.020459	0.022885	0.073194	7.17131	33.85568	-1.96957	2023
Zemen Bank	0.037944	0.036186	0.038901	7.17131	33.85568	-1.96957	2023
Abay Bank	0.028179	0.025426	0.059098	7.17131	33.85568	-1.96957	2023
Berhan International Bank	0.011291	0.014726	0.06318	7.17131	33.85568	-1.96957	2023
Addis International Bank	0.01773	0.045246	0.06725	7.17131	33.85568	-1.96957	2023
Debub Global Bank	0.027743	0.039546	0.063028	7.17131	33.85568	-1.96957	2023
Enat Bank	0.023846	0.045265	0.054129	7.17131	33.85568	-1.96957	2023