



Addis Ababa University

College of Business and Economics

MBA Finance Program

Determinants of Bank Profitability in Selected Private Commercial  
Banks of Ethiopia

A Thesis Submitted to the Department of Business Administration in  
Partial Fulfillment of the Requirements for the Award of Degree of  
Master of Science in Business Administration

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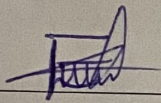
Submitted to Takele Fufa (PHD)

February 2024

## Statement of Declaration

I, Eftu Eshetu, here by declare that this thesis “Determinants of Bank Profitability in Selected Private Commercial Banks of Ethiopia” is my original work, prepared under the guidance of Dr. Takele Fufa. 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.

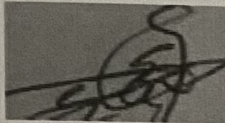
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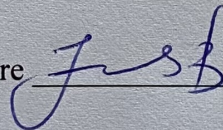
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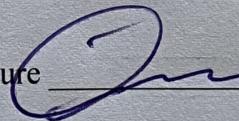
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## **Abstract**

*The banking industry plays a major role in the development of a country. For financial institutions profitability is a major objective. The performance of banks as compared to other banks in the industry is a crucial information for the bank itself, regulatory bodies such as National bank of Ethiopia, and other stakeholders. This study assessed the determinants of profitability for private commercial banks in Ethiopia using panel data of sixteen commercial banks covering a period of five years (2018-2022). Quantitative approach was applied since all the data used for the study was of secondary type. The target population for the study was the private commercial banks in Ethiopia yet a sample of sixteen banks were taken to implement the study using nonprobability purposive sampling method. Explanatory research design was used to explain the relationship the dependent variable has with the explanatory variables. Fixed effect model was applied to conduct a multiple regression analysis on the balanced panel data sets. The explanatory variables used in the study comprised of both internal and external factors which include revenue diversification, loan to deposit ratio, expense management, capital adequacy, bank size, nonperforming loan ratio, market share, inflation and GDP while the dependent variable chosen to measure profitability was the return on asset. The findings of the study indicate that revenue diversification, capital adequacy, and market share are statistically significant variables that have a positive effect on return on asset while expense management and nonperforming loan ratios have a negative but significant impact on profitability. On the other hand, loan to deposit ratio, size, inflation and GDP were statistically insignificant variables based on the results of the study.*

Key words: Profitability, private banks, panel data

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## **List of Abbreviations**

NBE – National Bank of Ethiopia

ROA- Return on Asset

NIM- Net Interest Margin

ROE - Return on Equity

Revdiv – Revenue Diversification

Loan2Dep – Loan to Deposit Ratio

Expmtg – Expense Management

Capadeq – Capital Adequacy

Lnsizel- Logarithm of Bank size

NPL – Non Performing Loan

Mkt – Market Share

GDP – Gross Domestic Product

OLS – Ordinary Least Square

CLRM – Classical Linear Regression Model

# CHAPTER ONE

## 1. INTRODUCTION

### 1.1. Background of the Study

A commercial bank is a financial institution that is owned by stockholders, operates for a profit, and engages in various lending activities (Gup, 2011). Commercial banks are the most important financial intermediaries as they play a key role in the financial system by taking in deposits from households and firms and investing most of those deposits, either by making loans to households and firms or by buying securities, such as government bonds or securitized loans (Hubbard & O'Brien, 2014). These commercial banks are key players in the economic growth of every country as they contribute to a country's development. While taking in resources from the surplus and providing to the deficient unit, they make sure these resources are being properly utilized so that all parties involved get benefited from the process. Banks must gain profit to continue operating which is why it is essential to study what factors are responsible for the profitability of these institutions.

Banks, as any other business organization, have the objective of generating a profit and maximizing their operations. If banks remain profitable, they will have loyal customers and they will attract potential investors. With the growing number of new and upcoming banks it is obvious that there is increased competition among these institutions and as a result some banks outperform the others. The banking industry is highly dynamic whereby banks that were once the leading financial intermediaries could lose the confidence of their investors and other stakeholders to eventually coming to their collapse. To put the number of failures in perspective, about 9,000 banks failed during the Great Depression of the early 1930s, and more than 1,600 banks failed during the 1980–1994 period (Gup, 2011). A lot of factors could be mentioned as to what really causes bank collapse and which factors determines the profitability of banks.

Moges (2017) stated that profitability is an important indicator of the financial status of banks because this variable impacts the growth of banks and the economy of the country in general. Banks with better performance as measured by their profitability will be able to have more funds

to deploy towards investment or towards saving. This is achieved because banks with surplus amount of profits will be cash flow positive and will be in a financial position that would enable them more flexibility towards allocating their profits into their retained earnings account or to venture in business opportunities which will eventually make them more secure, productive, and competitive in the industry.

A study made in Ghana identified the drivers of profitability as the endogenous (internal) and exogenous (external) factors. The internal factors are factors associated with the decisions and behaviors of bank management which influence how efficiently or poorly banks may operate. Researchers may not be able to evaluate how efficient a management is directly, so the quality of a management is presumed to be reflected on the performance of these institutions. The assumption here is the more quality there is in the management style, the more profitable banks get. Hence, the financial statement variables from the balance sheet and income statement will be used to make an assessment. The exogenous factors are variables considered to be out of the bank management control, but it is possible for banks to estimate how these factors could impact them and take precautionary measures to make gains/avoid losses/ on such types of external factors (Krasah and Ameyaw, 2010).

It is very much important to undertake this study as the profitability of banks is highly linked to the economic condition of a country. Banks are financial intermediaries responsible for the flow of funds with the various sectors of the economy moreover; the profit and stability of these institutions within the financial market is beneficial to all the stakeholders involved. There are previous studies conducted on this topic yet more can be achieved by looking deeper therefore the aim of this study is to investigate and better understand the determinants of bank profitability by using an econometric model. To do so various literatures have been reviewed and data from several private commercial banks of Ethiopia was taken to do a statistical analysis using the econometric model.

## **1.2. Statement of the Problem**

As there are various stakeholders in the banking industry who need these institutions to remain profitable in the long run, it is essential to study the determinants of a bank's profitability. Banks that are consistently making profits from their business operations can resist the negative shocks of the business environment and contribute to the stability of the financial system (Athanasoglou et al 2006). Accordingly, researchers and stakeholders should evaluate and identify elements behind the leading commercial banks with the aim of pushing bank management as well as the policy makers of National bank to formulate and implement strategies that would boost the profitability of these institutions within the industry in order to maintain a sustainable economic growth.

Private commercial banks of Ethiopia show varying levels of profitability. Studies have been conducted on this area in the past since researchers want to know what causes these varying levels of profitability among these private banks. As Krakah and Ameyaw (2010) mentioned the internal and external factors are responsible for the variance of profitability among banks, but some argue that external factors affect all banks of the country in the same manner and that greater emphasis should be given to the internal determinants of profitability. The researcher intends on investigating whether the factors have any impact on a bank's profitability and if they do have an impact then it should be shown to what extent they exert an influence on a bank's profitability.

Banks could either be involved in the core banking activities namely taking in deposits and giving out loans which are considered to be traditional banking, or they could be involved in other financial services such as asset management, stock brokering, managing mergers and acquisitions many more activities to diversify their sources of income (Heffernan, 2005). The status of financial institutions needs to be monitored as these institutions are the main players in the economy of the country. Knowledge on the well being of banks is essential in stabilizing the economy for all the stakeholders involved. Research has been conducted on this topic both in foreign countries and in Ethiopia as discussed in the literature review section of this paper. These studies have proposed their own perspective on the matter, yet the researcher is taking on this

topic as the finance world is very dynamic and the Ethiopian banking sector has not been adequately studied. The factors that have 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 five years to determine which factors are responsible for a bank's profitability.

### **1.3. Objectives of the Study**

#### **1.3.1. General Objective**

In this paper the general objective is to study the determinants of bank profitability in selected private Ethiopian banks.

#### **1.4.2. Specific Objectives**

For this thesis work, there are nine specific objectives as outlined below:

1. To investigate the effect of revenue diversification in a bank's profitability
2. To investigate the impact of loan to deposit ratio on bank's profitability
3. To analyze the effect of expense management on bank's profitability
4. To determine the effect of capital adequacy on bank's profitability
5. To investigate the effect of bank size on bank's profitability
6. To assess how non-performing loans affect bank profitability
7. To determine the impact of market share on bank's profitability
8. To assess the how inflation affects a bank's profitability
9. To investigate the impact of GDP on a bank's profitability

### **1.4. Hypothesis**

For this study nine research hypothesis are applied to conduct the study and they are based up on the problem statement and review of previous literatures on the subject:

Hypothesis 1– Revenue diversification positively and significantly affects bank profitability

Hypothesis 2 – Loan to deposit ratio positively and significantly affect bank profit

Hypothesis 3 – Expense management negatively and significantly affects bank profitability

Hypothesis 4 – Capital adequacy positively and significantly affects bank profit

Hypothesis 5 – Bank size positively and significantly affects bank profitability

Hypothesis 6 – Nonperforming loan ratio negatively and significantly affects bank profit

Hypothesis 7 – Market share positively and significantly affects bank profitability

Hypothesis 8 – Inflation is negatively and significantly related to profitability of banks

Hypothesis 9 – Real GDP growth rate positively and significantly related to bank profit

### **1.5. Significance of the Study**

This study serves as an additional perspective since it identified factors affecting private Ethiopian bank profitability and it has forwarded recommendations on how banks can be the best competitors when it comes to profit. It can give a direction to the bank's stakeholders and regulatory bodies such as the government and National bank of Ethiopia on the areas that need improvement. Banks could use the results of this study to adapt their business model to the competition in the market. In addition, this study can be used as a reference for those who would conduct further research in the area.

### **1.6. Scope of the Study**

The study is restricted to private Ethiopian commercial banks that have published data from the last five years (2018 to 2022 G.C). As a result, newly established banks that do not fulfil this criteria were excluded from the study. For this study secondary data sources from audited bank financial statements and National bank annual reports 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 researcher finds it challenging to generalize the findings of this study for all the private banks in Ethiopia for two reasons. The first reason being some newly established banks were not included in the study because they did not have data for the entire five year period. Secondly,

the determinants of bank profitability that were discussed in this study are not the only determinants that could possibly influence banks.

### **1.8. Organization of the Study**

The paper is organized into five chapters, and it is structured as follows: the first chapter presented the background of the study, the problem statement, and its approach, then the second chapter is about the literature review. The third chapter focused on the research methodology while the fourth chapter includes result and discussions. The fifth and final chapter is on summary of findings, conclusions, and recommendations.

## **CHAPTER TWO**

### **2. REVIEW OF RELATED LITERATURE**

#### **2.1. Chapter Introduction**

This chapter serves as a basis of the study by looking into what is already known about the topic and by going over prior research that can support this study in order to come up the 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**

One of the functions of banks that distinguish them from other financial institutions is the provision of deposits and loans. The deposits of customers is a liability for a bank since this money must be paid upon an immediate request or some notice made by the customer so it is important for the bank to manage this activity and maximize profits. Banks are also involved in a lending activity which is an asset for the bank. The main activity of these institutions is to act as intermediaries between the depositors and borrowers. There are other financial institutions that are engaged in similar activities as banks by acting as intermediaries such as stockholders, but the process of taking in deposits and lending the money to customers makes banks different from other financial institutions (Heffernan, 2005).

In this section theories on bank profitability determinants raised by other researchers have been discussed. Two theories namely the Market Power Theory and Efficiency Structure Theory are discussed in detail.

##### **I. The Market Power Theories**

In a Market Power paradigm, the direction of causality runs from the market structure of an industry to its behavior, which affects its performance. A concentrated structure is conducive to the use of market power in ways that may enhance banks' profitability (Tregenna, 2009). The theory explains the influence that market power has on financial institutions, and it examines

how the competition among the institutions exerts pressure within the market as it affects pricing (loan and deposit rates), product offerings, market outcomes and the performance of the firms. It also studies how barriers of entry impacts market power. Whenever there is a high barrier to entry, which may be imposed by regulatory bodies or due to capital requirements, it will be an obstacle for new entrants but the market power for the existing banks will be good. Whenever there is a high concentration within the market, the regulatory bodies can step in and balance the condition by creating more stability within the competition and protecting the customers. The customers should have a fair access to financial services, prices need to be fair, and they should have access to all the available products from these financial institution.

## **II. The Efficiency Theory**

An Efficiency theory paradigm would see causality as running from individual firms' efficiency to their market share and profitability. This theory has two different approaches which are the X-efficiency and scale efficiency hypotheses (Tregenna, 2009). The X efficiency approach states that firms get profitable by lowering their operational costs i.e optimizing their inputs such as labor, technology, and capital in order to get the required output by minimizing their costs. This theory shows how banks make day to day decisions on allocating their resources to maximize their productivity and operational efficiency. Even though these banks have a certain level of market power, it is not really resulting from their concentration, but because of their efficiency.

The second approach from the efficiency theory is the scale efficiency. This approach takes into account the role of economies of scale, which makes it different from the X efficiency approach. As banks grow, their average cost of production will decrease making them more efficient, more productive and highly profitable. A reduction in their average cost refers to the spreading of their fixed costs which include infrastructure, technology cost and centralizing activities. These big size banks have the opportunity to secure more capital than small scale firms and they can diversify their portfolio by investing in various business opportunities which can help them to overcome the risks involved with in the business world.

Tregenna (2009) further explains that these approaches have their own distinct policy implications. Banks with higher levels of profitability due to increased level of concentration

within the market need the involvement of regulatory bodies to stabilize the market through competition policy or other methods. On the other hand if banks are highly profitable because of how efficient they are then applying strong competition policy to reduce the concentration of large banks could reduce the efficiency of the banks.

The theoretical analysis discussed show that market power theory deals with the impact of external market factors on profitability and ensures a healthy competition, protects customers and tries to maintain financial stability while the efficiency theory is highly based on the effects of internal factors, such as the firm efficiency and managerial decisions on the performance of banks. Even though there are several models on the banking firm which have been developed to explain the behavior of banks and its impact on profitability, it would not be possible to generalize it for all banks. (Olweny & Shipho, 2011).

In almost all the research works the determinants of bank profitability are categorized into two as internal and external factors. These concepts are further discussed within this chapter.

#### **a. Internal**

Internal bank profit determinants are variables that can be controlled by the management of a bank. The variables are part of bank assets and liabilities. They include bank size, loan to deposit ratio, expense management, capital adequacy, non-performing loans, revenue diversification among others. These are further discussed as follows:

**Bank size** - This is one of the determinants of bank performance and it can be explained using the economies of scale concept. Larger banks are expected to gain higher profits compared to smaller banks because there is a reduced average cost per unit of output which would mean that providing banking services to their customers would be less costly as compared to smaller banks. These large banks can automate routine tasks and improve their services. It is possible to measure the size of banks by using information from the balance sheet. The logarithm of total assets is taken to measure the bank's size (Betray et al. 2013).

**Loan to deposit ratio** - Liquidity management plays an important role in measuring and ensuring the profitability of banks. Banks face a type of risk known as liquidity risk which occurs when banks are not able to meet their short-term obligations due to lack of liquid assets. Banks could be unable to meet the withdrawal needs of their customers and it will limit bank's

capacity to give out loans which will reduce their interest income and their profitability. On the other hand, banks which are more liquid are in more comfortable position to do business with their customers and increase their profitability. However, banks that hold too much of liquid assets will have an associated cost of liquidity which is the cost resulting from holding of these assets instead of investing them and getting returns. It is essential for banks to maintain adequate level of liquidity and strike a balance between holding liquid assets and investment (Amoah, 2015).

**Expense Management** - Belayneh (2011) mentions that expense management is measured by taking the ratio of non interest expenses to total assets. This variable affects the operational cost of the bank and it is the result of decision by bank management. Expense management can only be effective when the management properly controls operational costs such as utilities, salary, rent, and other administrative costs. This optimization of operational costs can be achieved by technological investments that would streamline processes, improve customer satisfaction and reduce future operational costs. A bank with a good level of expense management will have investor and customer confidence which in turn is in favor of profitability. As expense management is measured by taking ratio of operating expense to total assets, it is negatively related to profitability. If the operational cost of banks is very high, then profitability of banks will be reduced. However, if the management of a bank improves its methods to reduce these operational costs, then it is very likely for banks to be profitable and efficient.

**Capital Adequacy** - According to Moges (2017) capital adequacy measures what percentage of the total assets is financed with equity capital and it can be calculated by taking the ratio of capital to total assets. The more capital a bank has then it can be able to mitigate unforeseen investment risks and losses which could be due to economic downturn and other market risks. Capital can also affect the lending activities of banks. If banks have the required capital then they can extend loans to their customers and earn interest income from it which of course would make the bank profitable. On the contrary, a bank with capital constraints will find it difficult to engage in lending activities.

**Nonperforming loan** - According to Athanasoglou et al (2006) nonperforming loan has a significant effect on profitability as it would reduce the bank's interest income. Banks are required to set aside a provision for non-performing loans in order to cover potential losses. If

the amount of these provisions increases, then it would decrease the funds available for earning interest. As high levels of NPLs are considered a type of credit risk to banks, they implement different credit management and monitoring practices which are become additional expenses that need capital from the bank. This will ultimately reduce the profits of the banks. As the amount of NPL of a bank rises, the financial regulatory bodies will exert more strict regulations which would affect the operational flexibility/freedom/ of the bank and cause more costs to adhere to rules set by the regulatory bodies.

**Revenue Diversification** - Revenue diversification measures income generated by banks, and it is calculated by taking the ratio of non interest income to total assets (Moges, 2017). It is possible for banks to earn income from activities other than deposits and lending. As the finance world is dynamic, there may be times of low interest rates on deposits and loans which is why banks diversify their sources of income and provide other financial services such as wealth management, advisory services, securities trading, and others.

#### **b. External**

Amoah (2015) explains that external factors have an impact on a bank's performance and these factors are out of the bank's control. The external factors are of two categories which are the industry specific and the macroeconomic factors.

**Industry Specific** - The level of competition which is observed in the banking industry can influence the pricing of bank services and products, their service income, their ability to attract customers and retain the existing ones that would ultimately affect the banks level of profitability. The concentration of banks within the market can be observed with respect to their number and size of banks. Whenever there is high concentration of banks within the market, the smaller banks and the new entrants will be less profitable since the monopolistic banks set the prices.

Market share is a variable that can be an indicator the banks that are dominant within the industry. Banks having strong market share would have a competitive advantage over their rivals since they have more public trust, brand recognition and more pricing power. Bigger banks could easily approach the market whereas the smaller banks cannot. The concentration of

banks within an industry has been used as one of the ways to measure competition among banks. Concentration refers to how much the biggest institutions have influence over the market. This concentration ratio could be measured by taking the assets, deposits or number of branches. The market share variable could be measured by taking the ratio of individual bank assets to the assets of all banks in a country (Betray et al. 2013).

**Macroeconomic factors** - The economic growth of a country and the inflation can affect the bank deposits level and the demand for loans which would then affect the profitability of banks. These are further discussed below:

**GDP** - Gross domestic product measures the total value of economic activity within an economy over a period of time. GDP has a significant positive effect on the profitability of banks. When there is an increased level of economic growth, there will be a high demand for loans which will then lead to rise of interest income and profits for the bank. In a good economic condition, borrowers are likely to be more credit worthy, loan defaults would be reduced, banks can charge higher interest rates for the loans they offer and improve their asset quality (Krasah and Ameyaw, 2010).

**Inflation** – if the inflation rate is much higher than the bank anticipated at the time of giving out loans to its customers, the profit of the bank is expected to decrease because the monetary value of the loan repayments has lost its original value (Hubbard & O'Brien, 2014). When there is high inflation, the ability of borrowers to pay back their loans to the banks will be reduced which impacts the bank's assets. The value of collaterals for loans is also affected. The effect of inflation on bank profit is explained using the interest rates. The monetary policy of a country has a direct effect on the interest rates. As the inflation rises, the central/national banks will increase the interest rates to control inflation. One of the liabilities for banks is the saving deposit so when interest rates are raised because of the inflation, the cost of interest on these saving deposits will be high for the banks. Banks have to predict such scenarios and adjust their interest rates to increase their revenue and compensate for potential losses (Krasah and Ameyaw, 2010).

## **2.3. Empirical Review**

In this section various literatures on the topic of bank profitability determinants are reviewed starting from the studies conducted in foreign banks and then to the ones in Ethiopian private commercial banks.

### **2.3.1. Empirical Studies on Foreign Banks**

A study which was conducted in Bangladesh attempted to investigate the determinants of bank profitability by using the variables such as capital strength, credit risk, ownership structure, bank size, non-interest income, cost efficiency, off-balance sheet activities, liquidity, GDP and inflation by using data from commercial bank of Bangladesh. The study used three dependent variables to measure profit of banks which are namely return on assets, net interest margin over total assets and return on equity. The findings from the study suggested that capital and loan intensity had positive and significant impact on profitability. The results also show that there was a negative and significant relationship exerted by the variables cost efficiency and off balance sheet activities. Non-interest income, credit risk and GDP were found to be important determinant for the net interest margin. Bank size on the other hand had a positive and significant impact on return on asset while inflation showed a negative and significant impact on ROA and ROE (Rahman et al, 2015)

A central bank review investigated the determinants of bank profitability in twenty three countries using bank data from the period between 2002 to 2016. The findings from the study indicated that the number of ATM cards issued, the number of automated teller machines and the number of point of sale terminals are significant affecting bank profitability. In addition the level of competition among the banks has shown to improve bank profitability. Further, there was an indication of a positive relationship between capital market development and bank profitability. (Le et al., 2020)

A study by Amoah (2015) was carried out in an attempt to investigate the relationship that bank profitability has with the bank internal determinants and macroeconomic factors on foreign and local banks in Ghana between for the period ranging between 1999 to 2010. The findings

suggesting that cost management has an inverse relationship with profitability while the variables size and credit risk showed a positive relationship with profitability. The results further indicated that bank management was needed in areas such as cost maintenance, and credit risk management in order to ensure profitability status of banks.

In another study the main determinants of banks' profitability in twenty seven EU countries over the period 2004-2011 was conducted. The researchers classified the variables responsible for influencing bank profitability in two which are namely the bank specific internal factors and industry specific as well as the macroeconomic external factors. Return on average assets and return on average equity were used as the dependent variables to measure profitability. The study was able to show that the variables credit and liquidity risk, management efficiency, the diversification of business, the market concentration and GDP had significant influence on bank profitability. Furthermore, the result showed a positive relationship between bank concentration and the respective profitability (Petria et al., 2013).

A study which was conducted in Indonesia aimed to examine what factors responsible for the profitability of sharia banks by studying the data covering the period between 2010 to 2017. For the research the measure of profitability was the return on assets. Both the bank specific internal factors as well as external variables were applied for the study. The study did choose the fixed effect model and the data was of the balanced data set type. Findings from the study were indicative of the significant influence that the internal as well as the external factors had on bank profitability. From the internal determinants, the variables capital adequacy, credit risk, and bank size showed significant and negative effect on bank profitability whereas liquidity had positive and significant effect on profit. Contrary to this, the economic growth had a negative and significant effect on bank profitability while inflation has a significant and positive effect. The researchers, as per the results from the study, suggested that banks which increased their level of liquidity, reduced their credit risk and their size of assets were likely to be more profitable. While doing so the external determinants GDP and inflation need continuous monitoring as these factors also have an impact on the profitability of Sharia banks. (Supiyadi & Nugraha, 2018).

Another study that was carried out in Jordan tried to investigate the relationship between bank profit and the internal/external determinants of profitability by using data of ten banks which covered a ten year period, which meant that there were 100 observations considered for the study. A balanced data set was used. The dependent variables used to measure profit were the return on asset and the return on equity. The researchers were able to find that there was a strong positive relationship between a rise in profit and an increase in credit services, increase in credit services, optimal capitals levels and cost management. In addition, it was observed that size of Jordanian banks did not support the scale of economies. (Ramadan et al., 2011)

A paper from the Philippines tried to study the determinants of banks profitability using data that covered the period between 1990 to 2005. The findings from the study showed that the internal determinants of bank profit such as non interest income, capital have a statically significant positive effect. The variables credit risk, size, expense management were negatively associated to profit. Among the external determinants of bank profit, the variables inflation had a negative effect on profit while the remaining variables such as GDP, money supply and stock market capitalization were not able to have a significant effect on the profitability of the banks found in the Philippines (Sufian & Chong, 2008).

Among the many studies on the banks of Sub Saharan Africa, one study which investigated the determinants of commercial bank profitability applied unbalanced panel data set using data from forty two countries and by incorporating 216 commercial banks for the period 1999 to 2006. The researcher used the random effects model. The variables used to explain the variation of bank profit among the countries were bank asset, liquidity ratio, bank deposit, capital adequacy, operational efficiency, GDP and inflation. The findings showed that both the internal and the external factors influenced the level of profitability. (Francis, 2013).

Another study conducted in sub-Saharan Africa on what determines bank profitability used a panel data from ninety seven sub-Saharan African banks for the period from 2000 to 2012. The findings indicated that on average banks have a 40% return on equity. The study used the fixed effects model and the results showed that both internal and external factors were responsible for determining the profitability of the banks. Among the variables used in the study, capital ratio

and cost to income ratio had a negative and significant effect on the level of profitability in the chosen Sub Saharan countries. In addition, as the bank diversifies its revenue, the bank;s profitability is expected to increase with it (Oino, 2015).

Twenty three banks from Tanzania were chosen to carry out a panel data analysis using the fixed effects model for the period between 2009 to 2013. The findings from the study show that internal determinants which are mainly related to the management style of the bank significantly affected bank profits in Tanzania. The external macroeconomic factors did not show significant effect on bank profit. The researcher further added that sustainable profit making of Tanzanian banks mainly rested on the management style and the decision of managers rather than macroeconomic factors. (Ally, 2014).

A study by Athanasoglou (2006) aimed to examine the profitability pattern of banks in the South Eastern European credit institutions over the period between 1998 to 2002 using unbalanced data set. The study incorporated the bank specific, industry specific and macroeconomic determinants. The regression results showed that liquidity did not have a significant effect on profit while the remaining variables had a significant effect. The macroeconomic variables showed mixed results from the regression analysis.

A study using international banks as a sample was used to measure how bank size affects bank profit. For this purpose two measures of size which are absolute size and its systemic size defined as size relative to the national economy were considered. The findings from the research were able to show that bank profits increased with an increase in absolute size, but profits did decline with the systemic size, while neither the absolute size nor systemic size measure is associated with the level of risk in the bank. The results are indicative of growing the systemic size is not the interest of bank shareholders. Furthermore, systemically large banks are subject to greater market discipline as evidenced by a higher sensitivity of their funding costs to risk proxies, consistent with the view that they can become too large to save. (Betray et al. 2013).

## **2.3.2. Empirical Studies on Ethiopian Banks**

### **2.3.2.1. Banking in Ethiopia**

The start of modern banking in Ethiopia goes back to the year 1905 during the reign of Emperor Menelik II. The emperor made an agreement with Mr. Ma Gillivary, who at the time was a representative of the British owned National Bank of Egypt (Moges, 2017). It was during this period that Ethiopia's first bank, Bank of Abyssinia, was established. This bank was an affiliate of the National Bank of Egypt. Later, in the 1930's the Ethiopian government purchased Bank of Abyssinia and the State Bank of Ethiopia was established. As a result of a restructuring in 1963, the state bank was divided into two as the National Bank of Ethiopia and the Commercial Bank of Ethiopia (Borowski et al., 2017).

In the same year, a law known as the Ethiopian Monetary and Banking law was introduced mainly for separating the roles and responsibilities of the newly established National and Commercial banks. In 1964, Addis Ababa Share Company was established, this was the first private bank in the country, and it was established with a capital of two million (Moges, 2017). During this period more banks were being introduced such as the Agricultural Bank of Ethiopia, the Investment Bank of Ethiopia and private banks like Banco De Roma, and Banco De Napoli. When the socialist military regime took power (1974- 1991), all the private banks were nationalized with Commercial Bank of Ethiopia. It was during this period that capitalism system was abolished, and the socialist economic system was imposed (Borowski et al., 2017).

When the Ethiopian People's Revolutionary Democratic Front political system came to power in 1991, the Ethiopian financial system was restructured again according to the capitalist system and private banks were reestablished. As a result of this change many private banks began operating in the country. Currently the number of private banks amounts to thirty. The National Bank of Ethiopia is the main regulator and supervisor of all the financial institutions within the country; it sets the rules and regulations to regulate the operations of private banks (Borowski et al., 2017).

A study made by Addisu (2017) studied the effect bank regulation on profitability of banks using explanatory research method and quantitative data was collected from banks. The effect of equity investment, legal reserve requirement, capital requirement, capital adequacy and bank size on return on asset was studied. Fixed effect model and balanced panel data set was used to analyze data of eleven years from seven banks. The researcher's study showed that bank regulation did influence profitability. The variables capital requirement and bank size had a positive and significant effect on profitability while capital adequacy and reserve requirement had negative and significant impact. Equity investment had negative but insignificant effect. The research provides evidence of variables used to measure bank regulation has an effect on profitability of Ethiopian private commercial banks.

Belayneh (2011) studied the effect bank specific, industry specific and macroeconomic factors on bank profit using balanced panel data from a sample of seven banks. The researcher used secondary data which was collected from the balance sheet and income statements of banks to carryout regression analysis. The paper used the OLS method for analyzing the data and the findings indicate that bank specific factors such as size, loan and non interest income had a positive significant effect while saving deposit and non interest expense had a negative effect which held banks from making profit. Market concentration had a negative and significant association to profitability. The remaining macroeconomic variables were proved to be insignificant except for the GDP which showed significant association to profitability of banks.

Another study used quantitative secondary data and chose six private Ethiopian banks using the purposive sampling method to study the impacts of bank specific, industry specific and macroeconomic factors. The study used multiple regression analysis and employed explanatory research design to evaluate the cause and effect relationship between the variables. The researcher's analysis was able to affirm the significant relationship profitability has with capital, operational efficiency, income diversification, concentration, and money supply. The relationship between profitability and the variables GDP, liquidity and inflation was found to be an insignificant relationship (Dawit, 2017).

Dereje (2015) carried out a study on how the external variables have an impact on a bank's profitability. Ordinary least square estimation technique was applied, and profitability was measured using three dependent variables which are the return on asset, return on equity and net interest margin. Return on asset has a statistically significant positive relationship with GDP while market concentration had a negative association with ROA. Inflation, interest rate and exchange rate were all not statistically significant as per study. The findings from the data analysis indicated that the model was able to explain the variation on the return on asset, but it was not able to do so for the other two dependent variables as these two variables did not indicate statistically significant relationship with the external determinants of profitability considered by the researcher.

Feregenet (2020) investigated this subject matter by applying explanatory research design and studies a sample of banks by excluding the newly established ones. The researcher was able to determine that the variables liquidity, foreign currency generation, the number of bank branch and inflation have statistically significant and positive relationship with while operational efficiency had negative and statistically significant relationship with banks' profitability.

The findings of the study conducted by Feseha (2018) showed that bank profitability had a statistically significant relationship with bank size, capital adequacy and gross domestic product. On the other hand, there was a negative and statistically significant relationship between profitability and other variables such as liquidity risk, operational efficiency, funding cost and banking sector development. From the study, the variables management efficiency, employee efficiency, inflation and foreign exchange rate had a statistically insignificant relationship to profit.

According to a study by Gebre (2020), private bank profit was measured using the return on equity variable. The findings from the study indicated that return on equity had a positive and statistically significant relationship with management efficiency ratio, In addition the other variables such as the bank size, capital adequacy, interest rate spread, and foreign exchange rate showed a statistically significant but negative relationship with bank profit. Furthermore, return

on equity showed a statistically insignificant relationship with debt to equity ratio and real domestic product growth.

A research paper by Moges (2017) examines the determinants of commercial banks profitability in Ethiopia by using secondary panel data sets of thirteen commercial banks covering a period of five years. The researcher used financial statement elements as variables which are namely bank size, loan, expense management, revenue diversification, liquidity, capital adequacy and interest income and return on asset. As per the findings of the study all the variables with the exception of liquidity management, had a statistically significant and positive relationship with profitability. On the other hand, expense management has a negative but statistically significant impact on bank profit.

The result of the random effect model from a study conducted by Osman (2022) showed that non performing loan, loan to asset ratio and inflation had a statistically significant positive association with the profitability of private commercial banks in Ethiopia during the study period. On the other hand, equity to asset ratio and exchange rate indicated a statistically significant negative impact on the profitability of banks. However, the remaining variables loan to deposit ratio, interest rate and gross domestic product did not show a statistically significant association with profitability of selected private banks.

Samuel (2015) used mixed research approach whereby both quantitative and qualitative methods were applied. Secondary financial data was used to analyze the data by using return on asset as a proxy for profit. Fixed effect regression model was also used to test the hypothesis of the researcher. The study used secondary data to perform data analysis but after getting these results, primary data was also used to explain the results further. The findings of the study showed the presence of a statistically significant association between return on asset and bank size, capital adequacy and gross domestic product. On the other hand, variables like liquidity risk, operational efficiency, funding cost and banking sector development a statistically significant relationship but it was negative. However, return on asset did have statistically insignificant relationships with the remaining variables which are management efficiency, employee efficiency, inflation and foreign exchange rate.

Another study concluded that profitability has a statistically significant and positive relationship with the amount of loan and advance, current deposit, other liabilities and gross domestic product. On the other hand, variables like fixed deposit, market concentration have a negative and statistically significant relationship with banks' profitability. Inflation, saving deposit and deposit with other banks shows statistically insignificant impact. (Sori, 2014).

A study by Tilahun (2019) used secondary data sources and employed explanatory research design to study the factors influencing bank profit. showed that a bank's capitalization ratio had a positive and statically significant relation with a banks profit while debt to equity had negative insignificant relationship with profitability. Bank size had statistically significant effect on profitability.

Wondwossen (2018) investigated this subject matter using explanatory research design and fixed effect model was used to show how the variables influence profit. The variables such as liquidity risk, loan to deposit ratio, management efficiency and inflation had a positive and statistically significant relationship with return on asset. On the other hand, funding cost and GDP had a negative but statistically significant relationship. Capital adequacy and bank size were statistically insignificant.

In another study whose main objective was to analyze the determinants of profitability, panel data was used to study six private commercial banks from the period between 2001 to 2011. Fixed effect regression model was applied and the variables considered were the equity capital, saving deposit, fixed deposit, noninterest income, liquidity risk, nonperforming loan, bank size, market concentration, GDP growth and inflation. The profitability was measured using return on asset. The regression result suggested that, equity capital, bank size and gross domestic product have positive coefficient and statically significant impact while there is negative and significant relationship between fixed deposit, liquidity risk and nonperforming loan and private commercial banks profitability. The remaining variables such as saving deposit, noninterest income and market concentration had a positive relationship, but were statically insignificant. From the macroeconomic variables, inflation has shown a negative coefficient but it was statically insignificant (Abel et al, 2017).

A study was done by Rani et al (2017) to analyze the internal and external (industry specific and macroeconomic specific) determinants of profitability in Ethiopian commercial banks. The researcher used return on equity and net interest margin to measure profitability. Secondary data was collected and analyzed using descriptive method of analysis using multiple regression models. The findings showed that among the internal variables capital adequacy, management efficiency, earnings and liquidity ratios have affected return on equity significantly whereas the net interest margin was significantly affected only by capital adequacy and earnings ratios. Industry growth rate was used to measure the industry specific variable and this variable had a significant effect on net interest margin. The macroeconomic explanatory variables showed a positive but insignificant impact on return on equity and net interest margin.

#### **2.4. Research Gap**

Various literatures have been reviewed on the determinants of bank profitability to identify common variables affecting profitability. Literatures from Indonesia, Bangladesh, Philippines, Jordan, EU countries, Ghana, Tanzania, and some Sub-Saharan countries have been reviewed. The gap in these would be the fact that the variables affecting profitability in the mentioned countries may not have a significant effect in Ethiopia. Ethiopian banks have their own characteristics that distinguish them from banks in other countries. For instance, the banking industry is mostly dominated by a state owned bank plus there is an increased regulation and involvement of the government into the affairs of banks, but banks found in other countries are characterized by having more dominant private and foreign owned banks. Foreign ownership and investment in the Ethiopian banking industry is highly restricted.

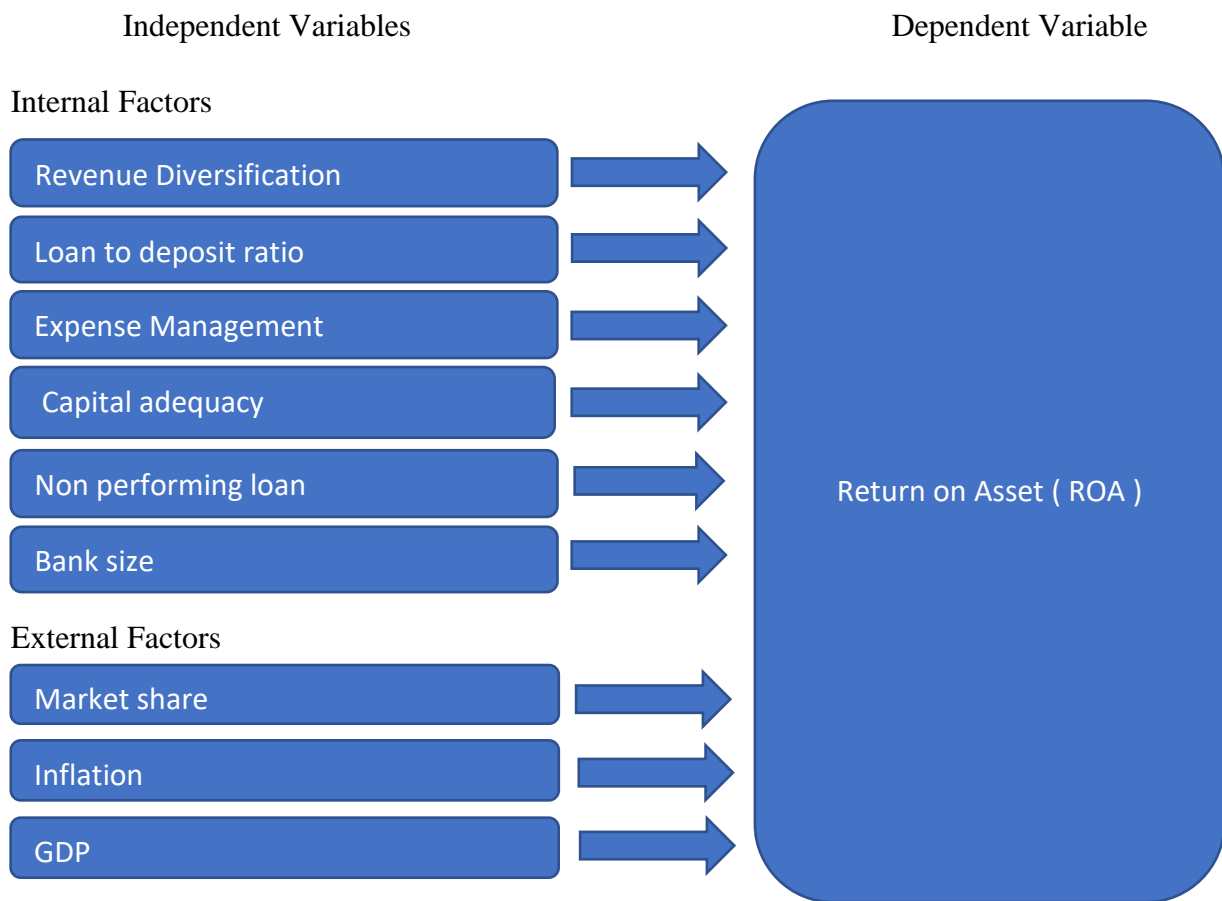
As to the studies carried out in Ethiopia, some of the studies have included the biggest commercial bank in Ethiopia which is government owned. As this government owned bank is compared to the rest of the private commercial banks, there is a huge gap on the measured variables. The problem with including Commercial Bank of Ethiopia is that it affects the descriptive statistics and the regression results by outliers which creates heteroscedasticity since they are sensitive to outliers. Due to this issue, this study focused on only selected private commercial banks of Ethiopia.

## 2.5. Conceptual Framework

The conceptual framework used existing theories and concepts from various literatures to build a clear picture on the relationship of variables with one another and it supported the researcher in getting well-structured research. This framework is expected to provide a visual representation of the concepts of the study.

Based on the literatures reviewed the following dependent and independent variables were considered for this study. The independent variables include revenue diversification, loan to deposit ratio, expense management, capital adequacy, bank size, nonperforming loan ratio, market share, inflation, and GDP. The independent variables are classified into two as internal and external factors. There is one dependent variable which is the return on asset.

**Figure 2.1 Conceptual Model**



Source – Designed by the researcher as per the reviewed literature.

## **CHAPTER THREE**

### **3. RESEARCH METHODOLOGY**

#### **3.1. Chapter Introduction**

This chapter deals with the methodology that is applied to investigate the factors responsible for private commercial bank's profitability 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**

A research design is a master plan of the research as it helps guide the research process in addressing the research objectives. It clearly identifies the methods and procedures to be applied in the collection and analysis of the data. The design will serve as a framework or plan of action in conducting the research (Zikmund et al., 2012). For this research explanatory research design was applied because this design explains the relationship the dependent variable has with the explanatory variables based on the secondary data that has been collected.

#### **3.3. Research Approach**

Quantitative research approach can be defined as research that addresses research objectives through empirical assessments that involve numerical measurements and analysis approaches. It directs a "considerable amount of activity toward measuring concepts with scales that either directly or indirectly provide numeric value. The numeric values can then be used in statistical computations and hypothesis testing. The process involves comparing numbers in some way" (Zikmund et al., 2012, P. 134). Since numerical data was collected from financial statements of selected banks, a quantitative approach is chosen to describe and explain the impact of the explanatory variables on bank profit.

### **3.4. Target Population**

All private commercial banks in Ethiopia are taken as a target population for this study. Currently there are thirty private commercial banks in Ethiopia including the recently established banks.

### **3.5. Sample Design**

From the target population, a sample of banks were selected by using a non-probability sampling method known as the purposive sampling method. Purposive or judgement sampling is a sampling technique applied when the researcher selects a sample based on his or her judgment about some appropriate characteristics required of the sample member. Researchers select samples that satisfy their specific purposes, even if they are not fully representative (Zikmund et al., 2012). Out of the thirty private commercial banks in Ethiopia, sixteen private banks have been chosen based on the fact that they have complete data for the period between 2018 to 2022. The remaining banks were excluded from the study because they are newly established, and they do not have published data for the entire five year period. Yamane formula was used to choose a sample from the sixteen private banks. However, the result from the Yamane formula was 15.8 which is very close to the 16. Therefore, the researcher has opted to include all sixteen banks in the study. The selected banks are listed as follows:

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

no	Name	Year of Establishment	Profit after tax in millions (birr)
1	Awash International Bank	1994	5,341.00
2	Dashen Bank	1995	2,904.00
3	Bank of Abyssinia	1996	3,235.00
4	Wegagen Bank	1997	551.00
5	Hibret Bank	1998	1,091.00
6	NIB International Bank	1999	1,338.00
7	Cooperative Bank of Oromia	2004	2,045.00
8	Lion International Bank	2006	268.00
9	Zemen Bank	2008	1,476.00
10	Oromia Bank	2008	1,201.00
11	Bunna International Bank	2009	881.00
12	Berhan International Bank	2009	478.00
13	Abay Bank	2010	933.00
14	Addis International Bank	2011	344.00
15	Debub Global Bank	2012	277.00
16	Enat Bank	2012	314.00

Source- Annual report of Ethiopian banks 2022 G.C

### **3.6. Data Sources**

The study used the latest secondary data to study determinants of private commercial bank profitability from the period between 2018 to 2022 using sixteen commercial banks. The data was obtained from the annual reports of the banks which was available on their websites and that of National bank of Ethiopia which was collected from their office. All the gathered data is of quantitative type using each bank's financial statements and that of NBE publications. Balanced panel data was used to make the analysis on determinants of bank profitability A panel data or a longitudinal data set consists of a time series for each cross-sectional member in the data set. 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 five years making a total of 80 observations.

### 3.7. Data Analysis and Presentation

Descriptive statistics such as mean, minimum, maximum, percentages and standard deviation have been applied. In addition, an econometric model was used for the data analysis whereby multiple regression model had been applied. This model has been used to show what effect the explanatory variables have on the dependent variable profitability.

### 3.8. Model Specification

Multiple regression model has been applied on this paper and the expectation here was that the variables considered for the paper should not violate 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 in order to show the per unit effect of the explanatory variable on the dependent variable or to explain what portion of the variation in the dependent variable can be explained by the model. This analysis has been made by using a computer software known as STATA 14.

The regression analysis was made by using the model below:

$$ROA_{it} = \beta_0 + \beta_1 (Revdiv)_{it} + \beta_2 (Loan2dep)_{it} + \beta_3 (Expmt)_{it} + \beta_4 (Capadeq)_{it} + \beta_5 (Lnsize)_{it} + \beta_6 (NPL)_{it} + \beta_7 (Mkt)_{it} + \beta_8 (INFL)_t + \beta_9 (GDP)_t + \mu$$

Where,

- $ROA_{it}$  is the return on asset of the 'i' bank in time 't'
- $Revdiv_{it}$  refers to the revenue diversification of 'i' bank at time 't'
- $Loan2dep_{it}$  refers to the loan to deposit ratio of 'i' bank at time 't'
- $Expmt_{it}$  refers to the expense management of 'i' bank at time 't'
- $Capadeq_{it}$  refers to the capital adequacy of 'i' bank at time 't'
- $Lnsize_{it}$  refers to the logarithm of total asset of 'i' bank at time 't'
- $NPL_{it}$  refers to the non performing loan ratio of 'i' bank at time 't'
- $Mkt_{it}$  refers to the market share of 'i' bank at time 't'

- $INFL_t$  refers to the inflation at time 't'
- $GDP_t$  refers to the GDP at time 't'
- $\mu$  is the error term
- $\beta_1$ -  $\beta_9$  are the Coefficients
- $i$  refers to the banks ranging from 1 to 16
- $t$  refers to the time periods from 1 to 5

### 3.9. Description of Variables

#### 3.9.1. Dependent Variable

**Return on Asset - ROA** is usually measured in terms of after-tax profit, or the profit that remains after the bank has paid its taxes. It measures how efficiently the company is utilizing its assets. This variable is measured by taking the ratio of the after tax profits to the bank's total assets which should indicate the overall bank performance. This ratio is used to measure bank's assets productivity ROA is calculated as:

$$ROA = \text{After tax profit} / \text{Bank assets}$$

#### 3.9.2. Independent Variables

**Revenue diversification** - Revenue diversification is the income generated from various services and products offered by banks, which generate fees and returns for the bank. It is calculated by taking the ratio of the bank's income other than interest income to the total assets of the bank (Moges, 2017).

$$Revdiv = \text{Non interest income} / \text{Total assets}$$

**Loan to deposit ratio** - Loan to deposit ratio is expressed as a percentage. It is used to assess a bank's liquidity by comparing a bank's total loans to its total deposits for the same period. When this ratio is extremely high, it would mean that the bank may have difficulty in covering unexpected fund requirements (White, 2014).

**Expense management** - The expenses of banks excluding the interest related expenses are classified into two as the operating expenses and the other expenses which are related to taxes,

depreciation and others. Operating expense is usually considered as an expense of bank management. The profitability of banks and the operating expense is expected to have a negative association, because management that is efficient with its costs minimization techniques and an improved management of these expenses will likely gain more profits from their operations. This expected negative correlation applies in particular to the Greek case, where personnel expenses are affected by relatively low productivity and the excess capacity of the larger publicly-owned banks. (Athanasoglou et al, 2006). According to Moges (2017) expense management is calculated using the formula stated below.

$$\text{Expmtgt} = \text{Operating expense} / \text{Total asset}$$

**Capital adequacy** - Capital adequacy measures how much of the assets is financed by equity capital. It refers to the amount of capital that banks are required to hold by the regulatory bodies (Benton, 2011). This variable can be calculated as follows:

$$\text{Capadeq} = \text{Total capital} / \text{Total assets}$$

**Bank Size** - According to Athanasoglou et al (2006) bank size is an important factor for bank profit optimization. The effect of a growing size on profitability has been proved to be positive to a certain extent. However, the relationship of bank size and profitability could be negative in some instances due to bureaucratic issues and other reasons. As a result, the relationship between bank size and profitability maybe linear. The logarithm of bank's assets is used to capture this non linear relationship.

**Non performing loan ratio** - The variable measures what percentage of loans are not payable to the bank because of the default on the borrower's side. This scenario is assumed to affect the profitability of banks directly as it will limit the bank's ability to extend more loans in the future. To measure this variable, the ratio of non performing loan to total loans is taken.

$$\text{NPL ratio} = \text{Non performing loan} / \text{total loan}$$

**Market share** - For this study the market share of each bank is computed by comparing each bank's total asset relative to the combined assets of all the private banks in Ethiopia. Banks that have a relatively higher percentage of market share may be able to attract additional deposits and loan products to the extent that the market power makes them safer.

**GDP** - Gross Domestic Product (GDP) is the monetary value, in local currency, of all final economic goods and services produced in a country during a specific period of time. One way to determine how well a country's economy is flourishing is by its GDP growth rate. This rate reflects the increase or decrease in the percentage of economic output in monthly, quarterly, or yearly periods. Gross Domestic Product enables economic policymakers to assess whether the economy is weakening or progressing, if it needs improvements or restrictions, and if threats of recession or inflation are imminent. From these assessments, government agencies can determine if expansionary, monetary policies are needed to address economic issues. Investors place importance on GDP growth rates to decide how the economy is changing so that they can make adjustments to their asset allocation. However, when there is an economic slump, businesses experience low profits, which means lower stock prices and consumers tend to cut spending. Investors are also on the lookout for potential investments, locally and abroad, basing their judgment on countries' growth rate comparisons (CFI, 2019)

GDP can be measured as follows

$$\text{GDP} = \frac{\text{Current GDP} - \text{Previous GDP}}{\text{Previous GDP}}$$

**Inflation** - Inflation refers to a broad rise in the prices of goods and services across the economy over time, eroding purchasing power for both consumers and businesses. Companies lose purchasing power, and risk seeing their margins decline. In response, companies typically raise the prices of their products or services to offset inflation, meaning consumers absorb these price increases. For many companies, the trick is to strike a balance between raising prices to make up for input cost increases while simultaneously ensuring that they do not rise so much that it suppresses demand (Mckinsey & Company, 2022).

### **3.10. Validity, Reliability and Ethical Issues**

#### **a) Validity**

An experiment's quality is judged by two types of validity. These are known as internal and external validity. Internal validity exists to the extent that an experimental variable is truly responsible for any variance in the dependent variable (Zikmund et al., 2012). For this study the

researcher has employed reliable methods of data collection, used multiple statistical tests and the research process has been properly documented. External validity is the accuracy with which experimental results can be generalized beyond the experimental subjects.

External validity is increased when the subjects comprising the sample truly represent the population of interest and when the results extend to other market segments or groups of people (Zikmund et al., 2012). This study comprises of diverse groups of banks and it covers a period of five years in order to observe how the variables change over time and across institutions. As a result the results of this study is applicable to a broader population and other time periods.

#### **b) Reliability**

Reliability is an indicator of a measure's internal consistency. Consistency is the key to understanding reliability. A measure is reliable when different attempts at measuring something converge on the same result (Zikmund et al., 2012). The values of the variables are collected from published annual reports and secondary data gathered from National bank of Ethiopia.

#### **c) Ethical Issue**

The ethical issues considered for this study are discussed here:

**Permission** - Permission to collect the research data was granted by NBE upon the request by the researcher. They were informed the information was going to be used for academic purposes before conducting the study.

**Confidentiality and privacy** - This study was entirely dependent on secondary data which means data already available through online platforms and other published information was used.

**Voluntary Participation and Informed Consent** - The researcher has gone to National Bank of Ethiopia to collect the necessary data from the organization. Accordingly, the responsible office was informed of the research area and what types of information was required to undertake the study. The data is partly collected from published annual reports of banks which is information that can be freely accessed by the public.

## **CHAPTER FOUR**

### **4. DATA PRESENTATION, ANALYSIS AND DISCUSSION**

#### **4.1. Chapter Introduction**

In this study nine research hypothesis and objectives have been raised and this chapter is used to discuss the data analysis and present the results. Different factors that were considered to affect private bank profitability have been incorporated in the study using data from selected sixteen Ethiopian private banks covering the period between 2018 to 2022. All data regarding the nine variables was gathered from the financial statements of the banks and these variables are the return on asset (ROA), revenue diversification (Revdev), loan to deposit ratio (Loan2dep), expense management (Expmtgt), capital adequacy (Capadeq), non performing loan (NPL), bank size, inflation and real GDP growth rate (GDP). This chapter further discuss on the model specification, descriptive statistics, correlation analysis, regression analysis and present the summary of findings.

#### **4.2. Descriptive Statistics**

Descriptive statistics is used to describe the features of a dependent and an independent variable, it can offer an insight into the characteristics and patterns that exist in the data set. For this study the dependent variable is the return on asset or profitability while the independent variables are revenue diversification, loan to deposit ratio, expense management, capital adequacy, non performing loan ratio, market share, asset, inflation, and real GDP growth rate. The study has included variables of sixteen private banks over a period of five years making the total number of observations eighty. The independent variables included bank specific, industry specific and macro economic factors.

Table 4.1 shows the descriptive statistics of the variables used in the model with respect to their mean, standard deviation, minimum and maximum values.

**Table 4.1 Descriptive Statistics**

Variable		Mean	Std. Dev.	Min	Max	Observations
roa	overall	0.023082	0.0072247	0.0031958	0.0420353	N = 80
	between		0.0053844	0.0173537	0.0349021	n = 16
	within		0.0049672	0.0087556	0.0348767	T = 5
revdiv	overall	0.031173	0.015665	0.0060658	0.1053682	N = 80
	between		0.013272	0.0139285	0.0645452	n = 16
	within		0.0088412	0.0021488	0.0719956	T = 5
loan2dep	overall	0.751012	0.0892885	0.4877453	0.9527749	N = 80
	between		0.0431673	0.6685683	0.817413	n = 16
	within		0.0787615	0.5701893	0.9023733	T = 5
expmgt	overall	0.043953	0.0101573	0.0260492	0.0787659	N = 80
	between		0.0090354	0.0291226	0.0611401	n = 16
	within		0.0050662	0.0286305	0.061579	T = 5
capadeq	overall	0.139154	0.0305717	0.078715	0.214108	N = 80
	between		0.0292648	0.0883057	0.201785	n = 16
	within		0.0110258	0.1150583	0.1751439	T = 5
lnsize	overall	10.24399	0.8497591	8.089693	12.11938	N = 80
	between		0.7790766	8.823386	11.48491	n = 16
	within		0.3819193	9.418178	11.0855	T = 5
npl	overall	0.038344	0.0319783	0.0050175	0.189512	N = 80
	between		0.0240494	0.0177832	0.0955305	n = 16
	within		0.0217605	-0.0213949	0.1323252	T = 5
mkt	overall	0.0625	0.0435308	0.0093522	0.1821708	N = 80
	between		0.0438098	0.0116391	0.1666629	n = 16
	within		0.0085331	0.0376393	0.0981893	T = 5
inflat~n	overall	0.224288	0.0671418	0.153	0.3404001	N = 80
	between		0	0.2242882	0.2242882	n = 16
	within		0.0671418	0.153	0.3404001	T = 5
gdp	overall	0.070855	0.0112492	0.0606085	0.09	N = 80
	between		0	0.0708545	0.0708545	n = 16
	within		0.0112492	0.0606085	0.09	T = 5

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

As shown on Table 4.1 the return on assets, which was computed using the after tax profits of the sample banks, showed a positive average value of 2.3% which indicates that the banks generate 2.3 cents from each birr investment on asset. The standard deviation is 0.7% which indicates the profitability variation among the banks is very narrow. The maximum value for the return on assets was found to be 4.2% while the minimum value is 0.3%. this implies that a profit of 4.2 cents for each birr investment in assets will be observed as the highest profit while 0.3 cents loss for each birr investment will be observed as the least return on assets.

The table also has a descriptive analysis on the nine explanatory variables. Revenue diversification which is calculated by taking the ration of non interest income to total assets had an average value of 3.1%. Its standard deviation was 1.6% while the maximum and minimum values are 10.5% and 0.6%. The next explanatory variable is loan to deposit ratio that had an average value of 75% with the standard deviation at 8.9%. The maximum value was calculated to be 95.3% while the minimum was 48.8%. The mean for expense management was 4.4% while its standard deviation is 1%. The maximum and minimum values are 7.9% and 2.6% respectively. On the other hand capital adequacy had an average value of 13.9% and a standard deviation of 3.1%. Its maximum and minimum values are 21.4% and 7.9%.

Non performing loan ratio was calculated by taking NPL to total asset ratio. The mean value is 3.8% and its standard deviation is 3.2%. The maximum and minimum values are 19% and 0.5%. The mean market share of the banks was found to be 6.3% with a standard deviation of 4.4%. The maximum and minimum values were 18.2% and 0.9%. The gross domestic product average is 7.1% while the standard deviation is 1.1%. The maximum and minimum values were 9% and 6.1% respectively. Inflation has an average value of 22.4% and a standard deviation of 6.7%. The maximum and minimum values are 34% and 1.3%. The last explanatory variable which is the natural logarithm of total asset has an average value of 10.24 and a standard deviation of 85%. The maximum and minimum values are 12.11 and 8.09 respectively.

### **4.3. Model Specification Test**

The Hausman test is a statistical test that is used to determine if fixed effect or random effect model should be applied. “It is often said that the random effects model is more appropriate

when the entities in the sample can be thought of as having been randomly selected from the population, but a fixed effect model is more plausible when the entities in the sample effectively constitute the entire population” (Brooks, 2008, P. 500). Therefore, since all the sixteen banks are chosen for this study, it is not considered as a random sample, which is why fixed effects model would be appropriate without conducting the Hausman test.

#### 4.4. Correlation Analysis

This is a statistical technique which is used to evaluate the strength and direction of relationship between variables. It shows how changes on one variable is associated with changes in another variable. “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. Thus, it is not implied that changes in x cause changes in y, or indeed that changes in y cause changes in x. Rather, it is simply stated that there is evidence for a linear relationship between the two variables, and that movements in the two are on average related to an extent given by the correlation coefficient” (Brooks, 2008, P. 28). Multicollinearity problem is said to exist when the explanatory variables are very highly correlated with each other (Brooks, 2008). When the coefficient’s value is either +1 or -1 there is a perfect collinearity. If however, the coefficient is zero then there is no correlation. The table below shows the correlation between ROA and the independent variables.

**Table 4.2 Pairwise Correlations**

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1) roa	1.000									
(2) revdiv	0.525	1.000								
(3) loan2dep	-0.275	-0.146	1.000							
(4) expmgt	-0.243	0.230	0.380	1.000						
(5) capadeq	0.570	0.650	-0.162	0.052	1.000					
(6) lnsiz	-0.318	-0.597	0.387	-0.084	-0.791	1.000				
(7) npl	-0.450	-0.171	0.198	0.103	-0.114	0.014	1.000			
(8) mkt	-0.138	-0.416	0.098	-0.182	-0.679	0.837	-0.165	1.000		
(9) inflation	-0.184	-0.137	0.735	0.244	-0.117	0.394	0.165	0.000	1.000	
(10) gdp	0.181	0.179	-0.600	-0.243	0.089	-0.287	-0.080	0.000	-0.695	1.000

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

Based on the correlation table, ROA has a positive correlation with revenue diversification, capital adequacy, and GDP which implies an increase or decrease in these variables will have a direct effect on the return on the return on asset. Contrary to this there is a negative correlation with loan to deposit ratio, expense management, bank size, market share and inflation. The indicates that there is an increase in these variables will result in a decrease of the return on asset and vice versa. It can be observed from the table that there is no perfect correlation among the variables, but for some there is a correlation that is close to perfect with values of 0.83 which is seen between the variables market share and bank size. According to Brooks, a 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 multicollinearity does not violate any of the CLRM assumptions. Therefore, it is possible to ignore near multicollinear variables.

#### 4.5. Auto Correlation Test

Autocorrelation occurs when the errors in a regression model are correlated with one another. 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 not have an autocorrelation problem because the F probability is more than 5%.

**Figure 4.1 Autocorrelation test**

```

Wooldridge test for autocorrelation in panel data
H0: no first order autocorrelation
      F( 1,      15) =      2.685
      Prob > F =      0.1221
  
```

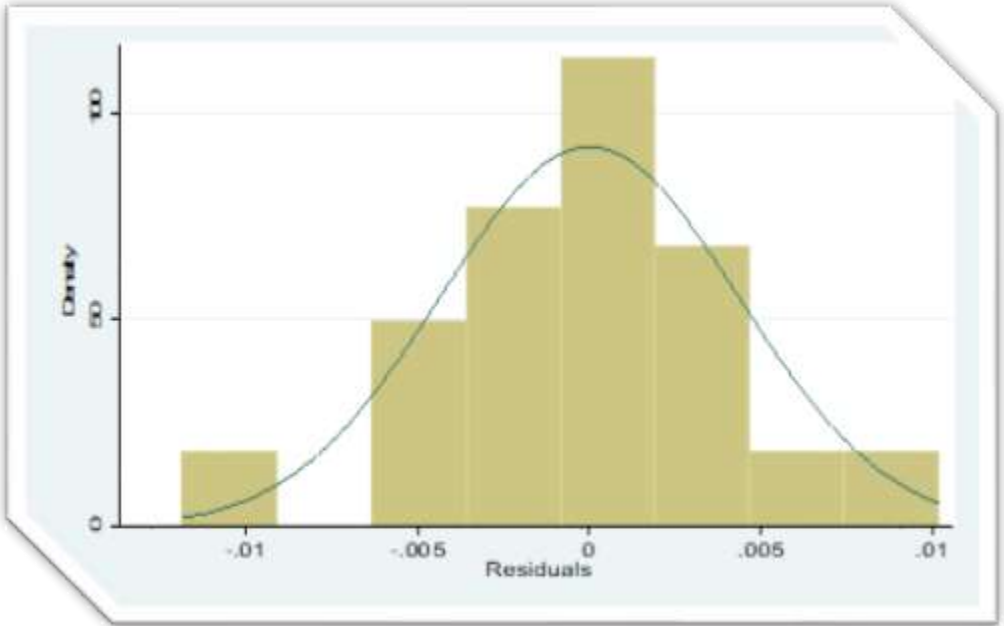
Source- own computation with STATA 14

#### 4.6. Normality Test

Normality test is used to examine whether a data or its residuals from a model have a normal distribution or not. In a normal distribution there is a symmetrical bell shaped curve. “Skewness measures the extent to which a distribution is not symmetric about its mean value and kurtosis measures how fat the tails of the distribution are” (Brooks, 2008, P.161). 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 bell shaped therefore the data does not have a normality problem.

**Figure 4.2. Histogram**



Source – own computation using STATA 14

**4.7. Heteroscedasticity Test**

This is a situation that develops when the variance of the error term in a regression model is not constant across observations. The Wald test was used to test for the presence of heteroscedasticity where the null hypothesis is that there is no heteroscedasticity problem. As per the test, the model has a heteroscedasticity problem since probability of chi squared is less than 5 %. One of the ways to solve this problem is by using heteroscedasticity consistent standard error estimates, this will allow the researcher to apply standard error estimates that have been modified to account for the heteroscedasticity (Brooks,2008). Therefore, to deal with this problem, robust standard errors will be used in the regression analysis.

### Figure 4.3 Heteroscedasticity Test

```

Modified Wald test for groupwise heteroskedasticity
in fixed effect regression model

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

chi2 (16) =      2863.14
Prob>chi2 =      0.0000

```

Source- own computation with STATA 14

### 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 Betas or the coefficients will show how much the dependent variable is affected by the explanatory variables. The R squared will show how much of the variation in the return of assets is caused by the explanatory variables while the p value will be used to determine the points where variables will be significant in order to reject or accept the null hypothesis. Since there was heteroscedasticity problem, robust standard errors were applied in the regression analysis.

### Figure 4.4 Regression Results

```

Fixed-effects (within) regression              Number of obs   =      80
Group variable: bank                          Number of groups =      16

R-sq:                                         Obs per group:
  within = 0.5494                             min =           5
  between = 0.5657                            avg =           5.0
  overall = 0.5051                             max =           5

corr(u_i, Xb) = -0.6790                       F(9,15)         =      49.73
                                              Prob > F         =      0.0000

```

(Std. Err. adjusted for 16 clusters in bank)

roa	Coef.	Robust Std. Err.	t	P> t	[95% Conf. Interval]	
revdiv	.1424586	.0455057	3.13	0.007	.0454654	.2394517
loan2dep	.026737	.0302785	0.88	0.391	-.0378001	.0912741
expmgt	-.3286786	.1714997	-1.92	0.075	-.6942215	.0368643
capadeq	.134121	.0553565	2.42	0.029	.0161314	.2521105
lnsize	-.0081085	.0066017	-1.23	0.238	-.0221797	.0059627
npl	-.1097592	.0309419	-3.55	0.003	-.1757103	-.0438081
mkt	.1581708	.0890688	1.78	0.096	-.0316748	.3480164
inflation	.0303013	.0126986	2.39	0.031	.0032348	.0573678
gdp	.0286538	.0511626	0.56	0.584	-.0803967	.1377043
_cons	.062904	.0483619	1.30	0.213	-.0401769	.165985
sigma_u	.00536246					
sigma_e	.00399603					
rho	.64296195	(fraction of variance due to u_i)				

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

As per the fixed effect regression analysis made using eighty observations, the F statistic is 49.73 with a probability of 0.000 which indicates the model is ok since the probability is below 5%. According to Brooks (2008), the F statistics tests the null hypothesis that all of the coefficients except the intercept coefficient are zero. If the null hypothesis cannot be rejected, it would imply that none of the independent variables in the model was able to explain the variation in the dependent variable. In other words, the test would enable us to know whether all the coefficients in the model are jointly different than zero.

The model has an R squared value of 54.9% which indicates that 54.9% of the variation in ROA can be explained by the changes in the predictor variables. Furthermore, the analysis of the model shows that six of the variables namely revenue diversification, expense management, capital adequacy, market share and inflation are significant at a P value of 10% 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:

$$ROA_{it} = 0.063 + 0.142 (RD)_{it} + 0.027 (LOAN2DEP)_{it} - 0.329 (EXP)_{it} + 0.134 (CAP)_{it} - 0.008 (lnsize)_{it} - 0.11 (NPL)_{it} + 0.158 (MKT)_{it} + 0.03 (INFL)_t + 0.029 (GDP)_t + \mu$$

The Beta coefficients indicate by how much the dependent variable (return on asset) would change if there is a change of explanatory variables by one unit. In this study, the asset variable has been transformed to its logarithmic form and the remaining variables are presented in percentage format. The constant coefficient ( $\beta_0$ ) tells us the value of the return on asset, when all other explanatory variables are assumed to be zero, as a result return on asset would be 6.3%.

Table 4.8 summarizes the actual and expected results of the regression analysis tested at 10% significance level. The results of this analysis are further discussed in the results sections of this chapter.

**Table 4.3 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
Loan to deposit ratio	Loan2dep	Positive and significant	Positive and insignificant	Rejected
Expense Management	Expmgmt	Negative and significant	Negative and significant	Failed to reject
Capital adequacy	Capadeq	Positive and significant	Positive and significant	Failed to reject
Bank size	Lsize	Positive and significant	Negative and insignificant	Rejected
Non performing loan ratio	Npl	Negative and significant	Negative and significant	Failed to reject
Market share	Mkt	Positive and significant	Positive and significant	Failed to reject
Inflation	Inflation	Negative and significant	Positive and significant	Rejected
GDP	GDP	Positive and significant	Positive and insignificant	Rejected

Source- own computation

#### **4.9. Result Discussion**

This section discusses 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 shows that an increase of revenue diversification by 1% would result in an increase of the ROA by 14.2%. The P value as per the results is 0.007 which indicates that it is significant at 10% significance level. As the noninterest income of the bank increase so does the bank's profitability. This is consistent with our first hypothesis which stated that revenue diversification is positively and significantly affects bank profit. Therefore, the researchers fails to reject the first hypothesis.

The studies made by Dawit (2017), Moges (2017) as well as Sufian & Chong (2008) support the findings from the regression analysis. The analysis implies that this variable plays a significant role in determining a bank's profitability as it is a way for the bank to diversify its operations into different revenue streams such as foreign currency exchange and guarantee services other than the usual lending activity and deposit services.

**Loan to deposit** - Holding other factors constant, a 1% increase of loan to deposit ratio would lead to a 2.7% increase of ROA. The P value is 0.391 which is more than the 10% significance level. This result is not in line with the second hypothesis where the assumption was loan to deposit ratio positively and significantly affects bank profitability. As a result, we reject the hypothesis.

There is an insignificant positive relationship between loan to deposit ratio and ROA affirming that liquidity of banks does not have a significant effect on the profitability of Ethiopian banks. This finding is consistent with that of the study made by Moges (2017) where he found a negative and statistically insignificant relationship between bank profits and liquidity. Contrary to this a study by Wondwossen (2018) showed loan to deposit ratio had a statically significant ratio.

From the analysis it can be understood that loan to deposit ratio by itself is not a significant variable affecting bank profitability. It is the quality and the performance of the loans that matter most. Therefore, the significant variable affecting profitability in this case would be the non performing loan ratio, irrespective of loan to deposit ratio of banks.

**Expense Management** - When there is a 1% addition to the expense management ratio, ROA will be reduced by 32.9% keeping other variables constant. Expense management has a P value

of 0.075 which makes it statistically significant at 10% significance level. The coefficient of this variable has a negative sign which was the assumption as per the third hypothesis. The results are consistent with the findings made by Amoah (2015). Therefore, we fail to reject this hypothesis.

These findings are in line with the studies made by Moges (2017) and Osman (2022). Banks that reduce their operational costs will gain more profit, this is consistent with the efficiency theory which stated that banks that are more efficient were likely to profit more. Expense management is one of the variables that significantly affects bank profit since it is a measure of the operational efficiency of banks and it influences how these institutions manage their cost structure. Therefore, a bank's financial well being can be shaped by its optimizing costs.

**Capital Adequacy** - The coefficient of the variable capital adequacy was 0.134 which mean that a 1% increase of this variable would increase the ROA by 13.4%. Its P value is 0.029 that implies it is statistically significant at 10% significance level and that it has a positive relationship with ROA. As a result the researcher fails to reject this hypothesis.

This finding is similar to the studies made by Moges (2017), Samuel (2015) and Rani et al, (2017). Banks that have more capital reserves are in a position to offer more loans and other financial products to their customers and earn profits.

This variable plays an important role in determining a bank's profitability because banks with adequate level of capital are able to be in a better competitive position, develop risk management techniques, provide new and innovative financial services/products to customers and have a diverse business portfolio which would enable them to generate more profit.

**Bank Size** - When bank size, which is measured as a natural logarithm of total assets, was increased by 1% it resulted in a decrease of ROA by 0.8%. Its P value is 0.23 which is more than the 10% significance level. The fifth hypothesis stated that bank size positively and significantly affects profitability but the regression analysis shows that this variable is not statistically significant and does not have a positive effect on profitability. Therefore, the researcher rejects this hypothesis.

Most of the empirical literature reviewed suggested that this variable had a statistically significant effect on bank profit except for the study made by Osman (2022) and Ramadan et al (2011). The regression analysis of this study supports the findings made by the later.

Even though there is the assumption that big banks are better, the analysis has indicated otherwise. Large banks can use economies of scale to their advantage as they can spread their fixed costs, gain a competitive advantage and diversify their portfolio as stated by the efficiency theory. However, there are instances where the size of a bank may not be the only factor to be considered. These banks may be affected by macroeconomic factors such as an economic downturn that may lead to credit risks, reduced demand for loans and investment losses. Regulatory bodies, with the aim of stabilizing the banking industry, may impose strict regulations on the big banks and this could bring about additional compliance cost for the banks and reduce their profits.

**NPL** - A rise of NPL ratio by 1% will bring about a fall of ROA by 11%. NPL has a P value of 0.003 affirming that it is significant at 10% significance level. As per the sixth hypothesis, NPL ratio has a negative and significant effect on ROA. The regression analysis results are consistent with the assumed hypothesis. As a result, the researcher fails to reject the hypothesis.

The findings are consistent with Osman (2022) and Moges (2017) who also found a statistically negative relationship between these two variables. Non performing loan directly affects the banks interest income since with NPLs there is an associated provision for NPLs to cover potential losses and that reduces the income of the bank. As the NPLs of banks increase, banks may change their loan policy and become more conservative. That is, they may prefer lending to low risk customers and become less flexible on the loan arrangements. This drives away potential income.

**Market Share** - A surge of market share by 1% will cause an increment of ROA by 15.8%. The seventh hypothesis stated that market share of banks positively and significantly impacted bank profitability. The regression analysis shows that the P value of market share is 0.096 making it statistically at 10% significance level. Therefore, we fail to reject this hypothesis.

Pertia et al.(2013) had similar results to the findings of this study. Furthermore, the market power theory did state banks that had more market concentration were likely to be more profitable which supports the findings from the study. The more market share a bank has, the more profitable it is. Banks with high percentage of market share have a competitive advantage, they are more efficient in customer acquisition, they have pricing power on the services offered in the industry and they are relatively stable making it a favorable environment to operate and gain more profits than their rivals.

**Inflation** - The rise of inflation by 1% will increase ROA by 3%. The P value for inflation is 0.031 indicating that it is statistically significant at 10%. However, the eighth hypothesis stated that inflation negatively and significantly affected ROA. Even if this variable is significant at 10% significant level, the coefficient of the variable is positive. As a result, we reject this hypothesis.

The results from Osman (2022) and Feregenet (2020) showed a statistically significant positive relationship between inflation and bank profit while Dawit (2017), found an insignificant relationship between the variables.

Inflation affects the interest income and interest expense of banks. How national bank and banks themselves respond to inflationary times will determine how profitable they may end up being. Banks can use inflation to their advantage since during these times National could increase the interest rates and banks can use this opportunity to give out more loans to their customers in order to earn high interest income.

**GDP** - A 1% growth of GDP will increase the ROA by 2.9%. As per the ninth hypothesis, GDP is expected to have a positive and significant effect on ROA. However, the researcher has rejected this hypothesis because the P value is 0.21 which is above 10% significance level.

Although GDP was expected to boost the profitability of banks, the results from the study revealed this variable is not statistically significant. This finding is consistent with that of the studies made by Osman (2022), Dawit (2017), and Gebre(2020) while Sori(2014) and Fisseha(2018) have an opposite result. Even if an improved economic condition are expected to favor bank profitability, there might be additional factors that inhibit banks from getting

profitable such as the regulatory restrictions within the country, the type of business sector the bank is focused on when it comes to investments, and other reasons.

## **CHAPTER FIVE**

### **5. SUMMARY OF FINDINGS, CONCLUSION, RECOMMENDATION**

#### **5.1. Chapter Introduction**

This chapter is categorized into four sections. The first section 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 forwards 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, external and industry specific factors to determine the most significant variables that have an effect and to what extent they influence private Ethiopian bank profitability. Accordingly, 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 management, capital adequacy, non performing loan ratio, and market share are significant variables in determining the profitability of private Ethiopian banks. From these variables revenue diversification, capital adequacy, and market share have a positive effect while expense management and non performing loan ratio have a negative effect on profitability. On the other hand, the variables loan to deposit ratio, bank size inflation and GDP do not have a significant effect on bank profitability. From a total of none variables, five variables had results consistent with the expectations while four of them deviated from it after being tested at 10% significance level.

The R-squared of the study is 54% which means the variables used in the study were able to explain 54% of the variation in the return on asset. Furthermore, the value of P value of the F statistic is 0.0000 which means the model is sufficient to interpret the coefficients and that the variables as well as the model is significant. The study showed that most of the explanatory

variables had results as per the expectation. Regression analysis showed statistically significant results for most of the variables.

### **5.3. Conclusion**

The main objective of this study was to investigate the determinants of profitability in Ethiopian private banks. To accomplish this objective, previous studies in the area, and other literature have been reviewed. Bank internal factors which are factors found in the bank financial statements and external factors which are related to the macro economic factors and industry specific factors were applied. A total of nine explanatory variables were used to conduct the study namely: revenue diversification, loan to deposit ratio, expense management, capital adequacy, bank size, non performing loan ratio, market share, inflation and GDP. The dependent variable used was the return on asset. For the purpose of testing the hypothesis, quantitative data from sixteen private Ethiopian banks covering the period between 2018 to 2022 was used. This data was mainly collected from National bank of Ethiopia and partly from annual bank reports of the banks. The data collected was analyzed using statistical software to test the proposed hypothesis.

The results of the study indicated that revenue diversification, expense management, capital adequacy, non performing loan ration and market share are significant factors in determining private bank profitability while loan to deposit ratio, bank size, inflation and GDP were found to be insignificant. The management of banks, investors, regulatory bodies such as NBE and all other concerned bodies should look into these factors as they play a key role in determining the success or failure of financial institutions.

### **5.4. Recommendation**

Based on the findings of the study the researcher forwards the following recommendations to the concerned party. Increasing bank profitability is the objective of all banks but while doing so regulatory measures and risks need to be considered.

Banks should diversify their sources of income. The study conducted shows that non interest income has a significant effect on a bank's profitability, so it is best if banks would consider diversifying their income by expanding their revenue sources, other than the interest income.

For instance, banks can look into giving fee based services, introducing new financial products such as asset management and insurance services. They could also partner with tech companies to come up with digital banking solutions. International banking and foreign exchange trading can boost the income of banks to a very high degree. A potential future involvement in securities trading can serve as additional sources of income.

Increasing the loan to deposit ratio of banks can improve the profitability of banks. Aggressively increasing this ratio would mean most of the deposits would be loaned to customers/projects that result in high return. Efficient management of bank loan portfolio and loan diversification can enhance the profits earned by banks. It is important for banks to consider the credit risks and the National bank regulations while setting the optimal amount of loan to deposit ratio.

Expense management is a crucial factor for maintain bank profitability. Staff should be properly remunerated, processes should be optimized, and new technologies should be implemented, however while doing so the overhead costs of the bank should be maintained. Banks should neither apply excessive cost cutting for the sake of profitability, not should they indulge in unnecessary expenses. They should maintain a balance.

Banks should consider increasing their capital by selling shares to the public because those that have increase capital reserves can more funds available for investment, more capable in dealing with risks and can offer more financial services and products to their customers.

It is possible for large banks to use economies of scale to their advantage. They can spread fixed costs and manage their costs, they can protect themselves from risks through diversification. It is to be noted that with size comes several challenges such as management issues, some level of bureaucracy, competition from new entrants, customer acquisition issues among other things. Therefore banks, no matter what size they are, should manage other factors to remain successful because big size does not always mean earning the highest return on asset.

Banks should maintain the level of non performing loan ratio as low as possible because high NPL ratio will affect a bank's reputation and drive away potential investors. It is essential for banks to have a strong credit risk management such as having proper credit evaluation systems, early warning on potential loan defaults, consistent customer assistance and follow ups as well as loan restructurings.

A high market share means an extensive customer base, increase of deposits and loans loan products, profits, more negotiating power, and more tech investment. However, banks should not compromise the quality of their services for the sake of dominating the market since it could limit innovation, create market entry barrier, and reduce service quality.

Inflation affects the interest income and loan requirements of customers as it affects interest rates. High inflation would mean high borrowing costs on customers and interest earned on these loans would in return lose purchasing power. Inflation can affect the asset quality of banks because the real value of the loans may decrease leading to a default on the borrower's side in repaying the loans which makes the non performing loan amount increase. Banks should have strategies in place to adapt to challenges of inflation.

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

There should always be a comparative financial performance analysis among all the banks in the country using the financial statement elements of these banks. The results from each year should be compared to get a trend analysis and prepare for the future. It would be recommended if there was some standard or benchmark to make a better comparison.

### **5.5. Suggestion for Further Research**

Various factors are responsible for affecting the profitability of banks, but this study could not include all these variables. Factors such as the level of political stability of a country, management efficiency, organization culture, regulatory provision changes, digitalization issues etc. This is mainly the result of limited time and resources allocated for this study. This study was based on quantitative data only. In addition, some data is considered to be confidential and access rights is not given to researchers up on request. Therefore, future studies on this topic should look into these gaps and provide additional perspective on the banking industry.

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## Annex – Data Set

name	roa	revdiv	loan2dep	expmgt	capadeq	size(in millions)	npl	mkt	gdp	inflation	year
Abay	0.02572	0.03594	0.61656	0.03813	0.14633	12,325.07	0.03360	0.03535	0.07705	0.16774	2018
Abay	0.03320	0.04852	0.65503	0.04084	0.12628	15,106.30	0.03035	0.03379	0.09000	0.15300	2019
Abay	0.02481	0.02648	0.72139	0.03925	0.15289	20,203.73	0.01946	0.03604	0.06061	0.21552	2020
Abay	0.02824	0.02724	0.83104	0.03970	0.14094	29,998.62	0.02020	0.03878	0.06261	0.24478	2021
Abay	0.02293	0.01939	0.83199	0.04394	0.14391	40,695.50	0.02845	0.04042	0.06400	0.34040	2022
Addis International	0.02678	0.04769	0.68620	0.04626	0.21411	4,215.97	0.02051	0.01209	0.07705	0.16774	2018
Addis International	0.02888	0.10537	0.67106	0.04407	0.20157	5,514.85	0.05142	0.01234	0.09000	0.15300	2019
Addis International	0.03283	0.04884	0.74412	0.04576	0.20900	6,490.44	0.03280	0.01158	0.06061	0.21552	2020
Addis International	0.03057	0.05613	0.71517	0.04553	0.18281	8,873.23	0.03898	0.01147	0.06261	0.24478	2021
Addis International	0.03197	0.06470	0.77765	0.05172	0.20144	10,788.31	0.03856	0.01072	0.06400	0.34040	2022
Awash International	0.02700	0.02177	0.68192	0.03535	0.11753	55,268.10	0.01877	0.15852	0.07705	0.16774	2018
Awash International	0.03269	0.02784	0.75663	0.03363	0.12915	74,635.40	0.01341	0.16697	0.09000	0.15300	2019
Awash International	0.02902	0.02616	0.81150	0.03770	0.13412	89,287.99	0.01828	0.15928	0.06061	0.21552	2020
Awash International	0.02639	0.02974	0.80999	0.03961	0.12550	128,695.74	0.01922	0.16637	0.06261	0.24478	2021
Awash International	0.02912	0.03535	0.85025	0.04336	0.11424	183,391.05	0.01923	0.18217	0.06400	0.34040	2022
Abysinia	0.01760	0.01726	0.68931	0.04168	0.13274	31,983.03	0.01319	0.09173	0.07705	0.16774	2018
Abysinia	0.01977	0.01995	0.72858	0.04092	0.12598	39,294.43	0.03528	0.08791	0.09000	0.15300	2019
Abysinia	0.01482	0.01754	0.78206	0.04660	0.09890	56,890.53	0.04560	0.10149	0.06061	0.21552	2020
Abysinia	0.01292	0.02479	0.84887	0.04614	0.08329	103,850.34	0.03358	0.13425	0.06261	0.24478	2021
Abysinia	0.02165	0.02100	0.91424	0.04808	0.09512	149,451.44	0.02270	0.14846	0.06400	0.34040	2022
Berhan International	0.02330	0.03085	0.65304	0.07877	0.15650	14,067.97	0.02813	0.04035	0.07705	0.16774	2018
Berhan International	0.02388	0.03495	0.67445	0.04934	0.14583	19,172.56	0.04121	0.04289	0.09000	0.15300	2019
Berhan International	0.02590	0.03742	0.75404	0.06027	0.16040	21,355.28	0.02810	0.03810	0.06061	0.21552	2020
Berhan International	0.00724	0.03317	0.78830	0.05617	0.13920	26,918.89	0.10143	0.03480	0.06261	0.24478	2021
Berhan International	0.01447	0.03094	0.82713	0.06115	0.13501	33,064.67	0.08602	0.03284	0.06400	0.34040	2022
Bunna International	0.02421	0.02757	0.68775	0.04093	0.15232	13,021.15	0.03912	0.03735	0.07705	0.16774	2018
Bunna International	0.03183	0.03808	0.76979	0.04940	0.17723	14,494.78	0.04248	0.03243	0.09000	0.15300	2019
Bunna International	0.02334	0.02661	0.81894	0.05173	0.16286	18,867.14	0.05146	0.03366	0.06061	0.21552	2020
Bunna International	0.02584	0.02713	0.87655	0.04991	0.14680	25,945.81	0.03426	0.03354	0.06261	0.24478	2021
Bunna International	0.02584	0.02542	0.93404	0.05636	0.14853	34,103.55	0.04546	0.03388	0.06400	0.34040	2022
Cooperative Bank of C	0.01470	0.02198	0.58682	0.04212	0.07949	29,888.03	0.03527	0.08572	0.07705	0.16774	2018
Cooperative Bank of C	0.01574	0.02154	0.65268	0.04503	0.07872	41,790.80	0.03186	0.09349	0.09000	0.15300	2019
Cooperative Bank of C	0.02253	0.03014	0.73133	0.04992	0.09737	52,488.49	0.03256	0.09364	0.06061	0.21552	2020
Cooperative Bank of C	0.01632	0.03211	0.75366	0.05012	0.08725	81,320.94	0.02259	0.10513	0.06261	0.24478	2021
Cooperative Bank of C	0.01785	0.03463	0.85459	0.05128	0.09870	114,605.81	0.02060	0.11384	0.06400	0.34040	2022
Dashen	0.02045	0.02611	0.64070	0.03703	0.12915	45,425.38	0.03451	0.13029	0.07705	0.16774	2018
Dashen	0.01809	0.02272	0.72372	0.04091	0.12179	56,218.41	0.03015	0.12577	0.09000	0.15300	2019
Dashen	0.02252	0.02215	0.79652	0.04320	0.12181	68,261.32	0.01666	0.12177	0.06061	0.21552	2020
Dashen	0.01823	0.02424	0.85711	0.03674	0.10692	94,696.95	0.02560	0.12242	0.06261	0.24478	2021
Dashen	0.02479	0.02604	0.86807	0.03934	0.12276	117,144.03	0.04931	0.11636	0.06400	0.34040	2022
Debub Global	0.03270	0.06319	0.72132	0.05736	0.20915	3,260.69	0.03473	0.00935	0.07705	0.16774	2018
Debub Global	0.03840	0.06798	0.68152	0.04538	0.18118	5,487.51	0.02124	0.01228	0.09000	0.15300	2019
Debub Global	0.02548	0.07437	0.84628	0.06196	0.16856	7,812.58	0.00502	0.01394	0.06061	0.21552	2020
Debub Global	0.01676	0.05289	0.95277	0.07620	0.15154	11,628.46	0.01710	0.01503	0.06261	0.24478	2021
Debub Global	0.01968	0.02833	0.85107	0.06262	0.15537	14,085.62	0.01517	0.01399	0.06400	0.34040	2022
Enat	0.02451	0.04027	0.65088	0.03348	0.18310	6,482.37	0.01722	0.01859	0.07705	0.16774	2018
Enat	0.02191	0.02598	0.68445	0.02837	0.16684	9,201.55	0.01976	0.02059	0.09000	0.15300	2019
Enat	0.01868	0.02508	0.76655	0.03538	0.16107	11,166.02	0.02803	0.01992	0.06061	0.21552	2020
Enat	0.01571	0.02530	0.79781	0.03084	0.14088	14,623.36	0.02727	0.01890	0.06261	0.24478	2021
Enat	0.01826	0.02917	0.85870	0.03533	0.15065	17,209.03	0.03915	0.01709	0.06400	0.34040	2022
Hibret	0.02046	0.02219	0.65323	0.03682	0.10538	28,030.93	0.02074	0.08040	0.07705	0.16774	2018
Hibret	0.01642	0.01852	0.72594	0.03716	0.10800	35,736.10	0.02263	0.07995	0.09000	0.15300	2019
Hibret	0.02068	0.01579	0.79005	0.05419	0.12450	42,998.49	0.02086	0.07671	0.06061	0.21552	2020
Hibret	0.01914	0.01956	0.81675	0.04232	0.11983	54,094.05	0.02653	0.06993	0.06261	0.24478	2021
Hibret	0.01619	0.02101	0.85374	0.04763	0.10751	67,409.29	0.02866	0.06696	0.06400	0.34040	2022
Lion International	0.02729	0.02333	0.63356	0.03855	0.12632	14,319.60	0.03579	0.04107	0.07705	0.16774	2018
Lion International	0.02643	0.04801	0.70883	0.03776	0.12552	20,391.56	0.03646	0.04562	0.09000	0.15300	2019
Lion International	0.02023	0.01362	0.73021	0.03439	0.10953	31,782.60	0.04722	0.05670	0.06061	0.21552	2020
Lion International	0.01039	0.01084	0.83980	0.03745	0.11302	32,204.19	0.16867	0.04163	0.06261	0.24478	2021
Lion International	0.00815	0.00607	0.91730	0.03527	0.11627	32,972.85	0.18951	0.03275	0.06400	0.34040	2022
NIB International	0.01929	0.01525	0.62436	0.03365	0.12666	26,688.92	0.04444	0.07655	0.07705	0.16774	2018
NIB International	0.02138	0.01427	0.69588	0.03340	0.13082	33,717.42	0.02416	0.07543	0.09000	0.15300	2019
NIB International	0.02458	0.01519	0.75989	0.03589	0.13628	42,463.75	0.01093	0.07575	0.06061	0.21552	2020
NIB International	0.02245	0.01089	0.78595	0.03880	0.13107	54,199.19	0.02672	0.07007	0.06261	0.24478	2021
NIB International	0.02177	0.01405	0.78249	0.04142	0.13198	61,491.32	0.02904	0.06108	0.06400	0.34040	2022
Oromia	0.03058	0.04043	0.58157	0.04022	0.10890	23,796.73	0.04028	0.06825	0.07705	0.16774	2018
Oromia	0.02347	0.03188	0.64741	0.03893	0.11682	31,779.31	0.03837	0.07109	0.09000	0.15300	2019
Oromia	0.02544	0.02601	0.70620	0.04487	0.13594	33,831.48	0.03857	0.06035	0.06061	0.21552	2020
Oromia	0.02091	0.02538	0.72628	0.04670	0.13120	41,691.05	0.02593	0.05390	0.06261	0.24478	2021
Oromia	0.02308	0.03228	0.71816	0.04840	0.13148	52,045.17	0.02035	0.05170	0.06400	0.34040	2022
Wegagen	0.02897	0.03545	0.72101	0.04367	0.13970	27,390.91	0.13218	0.07856	0.07705	0.16774	2018
Wegagen	0.02086	0.02331	0.68358	0.04578	0.14423	29,770.01	0.06035	0.06660	0.09000	0.15300	2019
Wegagen	0.02180	0.03063	0.77255	0.04950	0.13385	38,159.59	0.05480	0.06807	0.06061	0.21552	2020
Wegagen	0.00320	0.02721	0.82681	0.06224	0.12646	39,655.61	0.11347	0.05126	0.06261	0.24478	2021
Wegagen	0.01279	0.02437	0.85245	0.06071	0.13019	43,121.00	0.11240	0.04283	0.06400	0.34040	2022
Zemen	0.02170	0.03401	0.48775	0.02605	0.18677	12,489.15	0.03780	0.03582	0.07705	0.16774	2018
Zemen	0.03293	0.03860	0.65454	0.02832	0.15876	14,689.02	0.02837	0.03286	0.09000	0.15300	2019
Zemen	0.03996	0.03693	0.67608	0.02963	0.16879	18,495.87	0.02020	0.03300	0.06061	0.21552	2020
Zemen	0.03788	0.04294	0.73850	0.03058	0.17829	25,150.67	0.02288	0.03251	0.06261	0.24478	2021
Zemen	0.04204	0.04775	0.78599	0.03104	0.17816	35,119.78	0.01410	0.03489	0.06400	0.34040	2022