ADDIS ABABA UNIVERSITY COLLEGE OF BUSINESS AND ECONOMICS

DEPARTMENT OF MBA IN FINANCIAL

DETERMINANTS OF PROFITABLITY AT NIB INTERNATIONAL BANK S.C: AN ANALYSIS OF BANK SPECIFIC FACTORS (2012-2022)

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JUNE, 2025

ADDIS ABABA, ETHIOPIA

MBA PROGRAM

"DETERMINANT OF PROFITABLITY AT NIB INTERNATIONAL BANK S.C"

BY

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DECLARATION

I, the undersigned, declare that this thesis is my original work, prepared under the guidance of **DR.TEMESGEN WORKU.** All sources of materials used for the thesis have been duly acknowledged. I further confirm 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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ADDIS ABABA UNIVERSITY JUNE, 2025

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Abstract

This study examines determinants of bank profitability in Nib International Bank using secondary data. Data was extracted from audited financial statements selected in the area of study during 2012–2022. Analyses of these variables were novel as some of these factors of the bank profitability are overlooked by other researcher; some common factors that influenced bank profitability of the banking system such as asset size; customer deposit size; non-performing loan; operating income; capital adequacy. The study used bank profitability as dependent variable. Moreover, the study used both bank specific and external variables as explanatory variables. Both descriptive statistics and econometrics model specifically OLS regression on audited financial statements(2012-2022) was used to analyze the relationships of dependent variable with explanatory variables. The major findings of the study show that bank specific determinants were very important in explaining profitability than external variables. The Asset size, customer deposit size, operating income and capital adequacy were positively and significantly related to bank's profitability, while non-performing loan have a negative impact on profitability of bank specific drivers.

Keywords: *bank asset size, customer deposit size, non-performing loan, operating income, capital adequacy and Nib International bank.*

Chapter One

Introduction

1.1 Background of the Study

Profit is money that is earned in trade or business after paying the costs of producing and selling goods and services.

During the last decade the banking sector has knowledgeable of worldwide major transformation regarding its operating environment. Both internal and external factors have affected its structure and performance. A stable and profitable banking operation has the ability to withstand negative shocks from the economic conditions and the contribution to the stability of the financial system. Therefore, the determinants of bank profitability have brought the interest of investigation by the academic research as well as of bank management team and financial markets (Christine et al, 2011).

The banking environment in Ethiopia has, for the past decades, undergone many regulatory and financial reforms like other African countries and the rest of developing world. These reforms have brought about many structural changes in the banking sector of the country and have also encouraged private banks to enter and expand their operations in the industry (Lelissa, 2007). Despite these changes, currently, the banking industry in Ethiopia is characterized by operational inefficiency, little and insufficient competition and perhaps can be distinguished by its market concentration towards the big government owned commercial bank and having undiversified ownership structure (Lelissa, 2007). The existence of less efficiency and little & insufficient competition in the country's banking industry is a clear indicator of relatively poor performance of the sector compared to the developed world financial institutions. Thus, it is important to know the determinants of banks profitability for an efficient management of banking operations aimed at ensuring growth in profits and efficiency.

1.2. Statement of the Problem

Accurately evaluating and measuring the performance of commercial banks is not an easy task. Banks differ in their sizes and this could have an effect on responsibilities of management, liquidity, debt level and profitability. A bank's assets and liabilities can affect its valuation in the market, its ability to acquire other banks or to be acquired at a good price. Therefore, a complete picture of the bank, in the form of its financial position, i.e. its balance sheet, should be studied and evaluated to be able to acceptably prediction of its future performance. The main source of profits generated by a bank is the balance sheet portfolio: the assets, liabilities and capital which are considered important components in determining profitability.

As noted in (Amdemikeal, 2012)Ethiopian banking industry is characterized by a quite high liquidity, which is well above the statutory requirement of 20 percent, high level of non-performing loans, and failure to adopt new technologies to improve the efficiency of their services; among others which are the direct indicators of low performance when measured in terms of profitability as far as all of the above mentioned factors affect profitability negatively. Moreover, fear of risky investments by Ethiopian banks which may result in greater amount of profit for them and lack of active secondary stock market in the country which may reduce their investment options and their profitability as well are also clear indicators as Ethiopian banks are still not operating at their full capacity. Moreover, as noted in NBE (2009/10) annual report low contribution of the sector to Gross Domestic Product (GDP) despite the increasing contribution of the service sector to GDP is also another indicator of low performance of the sector. In general, even if Ethiopian banks looks like profitable, lack of competition, limited number of branches, poor asset quality, low efficiency, higher levels of liquidity and others clearly indicate as they are still not performing well and attaining the maximum profit that they can achieve.

All the above discussed problems in the banking industry of Ethiopia in relation to performance in general and profitability in particular along with the gap respect to profitability and the link between profitability and internal determinant factors call for detailed investigation. Therefore, this study seeks to fill the gap by providing full information about the internal factors that affects profitability by examining Nib International Bank. And also the researcher decided to add and omit some variables accordingly into the analysis and make further regressions. In this paper the researcher was try to identify the main factors that affected profitability of the bank over the

period from 2012 to 2022. The contribution of this paper was to investigate the main determinants of Nib International Bank profitability in Ethiopia along ten years' period. If the results of the studies differ significantly upon sample, regression model and data included in the analysis, the researcher was identifying some common factors influencing bank profitability, namely bank size, customer deposit size, non-performing loan, operating income, capital adequacy on banking system.

The following two research questions are try to be answered which factors affect nib international bank profitability and how do these factors affect the profitability of bank. A time series data regression model including OLS was employed.

1.3 Objectives of the study

1.3.1 General objective

The main objective of this study is to assess the determinants of profitability at Nib International Bank.

1.3.2 Specific objectives

To achieve the general objective, the following specific objectives are addressed

- Assess the impact of Asset Size on ROA.
- Assess the impact of Deposit Size on ROA.
- Assess the impact of Capital Adequacy on ROA.
- Assess the impact of Profit/Loss on ROA.
- Assess the impact of non-performing loans (NPLs) on ROA.

Definition

ROA = net income/total assets

Asset Size – the total value of a bank's assets, which includes everything from cash and loans to investments and property.

Deposit Size – refer money added to a bank account from customer for safekeeping or to earn interest.

Capital Adequacy- is a measure of a bank's financial strength, Determine by ratio that compares a bank's capital to its risk-weighted assets.

Profit/Loss- profit is money that earned in business after paying cost of producing and selling services.

Non-performing loans (NPLs) - is a loan where the borrower has failed to make scheduled payments of interest or principal for a specified period, typically 90 days.

1.4 Scope of the study

The study is conducted on the determinants of profitability at Nib International Bank. The study would have restricted to analyze the determinants of bank profitability of Nib International Bank by analyzing the ten years (2012-2022) financial statement of the bank.

The researcher select Nib International Bank based on three requirement which is cost, trust and experience and reason for using ten years data is also for ensure applicability and validity of the research.

1.5 Significance of the Study

The study will have a great significance to Nib international bank. And the banking industry in Ethiopia as a whole. Major benefits that will be obtained from the study are:

- It also helps to similar companies to identify profit determinants so as to device proper strategy.
- This study is capable of providing specific insight and allows policymaker particularly insurance, to gain better understanding of challenge and problems of the study area.
- The study provides theoretical contribution; the study fills the research gap on the determinant of bank profitability. Another contribution is that this research supplies the foundation for other research who wishes to dig into further study of such area.

Chapter Two

Review of Related Literature

2.1 Theoretical Review

2.2.1. Concept of profitability

The term profit can take either its economic meaning or accounting concept, which shows the excess of income over expenditure incurred during a specified period. Profitability is the most important and reliable indicator as it gives a broad view of the ability of an institution to raise its income level. The existence, growth, and survival of a business organization mostly depend upon the profit, which an organization can earn. There are different ways to measure profitabilities such as return on asset and return on equity. Return on asset is an indicator of how profitable a company is relative to its total assets, whereas the return on equity measures a company's profitability, which reveals how much profit a company generates with the money shareholders have invested (Yonas, 2022).

2.2.2. Theories of bank profitability

Studies on the performance of banks started in the late 1970s/early 1980s with the application of two industrial organizations models: the Market Power and Efficiency Structure theories. The balanced portfolio theory has also added greater insight into the study of bank profitability (Kanbiro Orkaido, 2019). Thus, each of the aforementioned theories and others related to bank profitability and its determinants are discussed in detail in this particular section as follows

The market power theories

The market power hypothesis posits that the performance of bank is influenced by the market structure of the industry. There are two distinct approaches within the market power theory; the Structure-Conduct-Performance (SCP) and the Relative Market Power (RMP) hypotheses. According to the SCP approach, the level of concentration in the banking market gives rise to potential market power by banks, which may raise their profitability. Banks in more concentrated markets are most likely to make „abnormal profits " by their ability to lower deposits rates and to charge higher loan rates as a results of collusive (explicit or tacit) or monopolistic reasons, than firms operating in less concentrated markets, irrespective of their efficiency Unlike the SCP, the

RMP hypothesis posits that bank profitability is influenced by market share. It assumes that only large banks with differentiated products can influence prices and increase profits. They are able to exercise market power and earn noncompetitive profits. (Kanbiro Orkaido, 2019).

The efficiency theory

The efficiency hypothesis, on the other hand posits that banks earn high profits because they are more efficient than others. There are also two distinct approaches within the 16 efficiency; the X-efficiency and Scale–efficiency hypothesis. According to the X-efficiency approach, more efficient firms are more profitable because of their lower costs. Such firms tend to gain larger market shares, which may manifest in higher levels on market concentration, but without any causal relationship from concentration to profitability. The scale approach emphasizes economies of scale rather than differences in management or production technology. Larger firms can obtain lower unit cost and higher profits through economies of scale. This enables large firms to acquire market shares, which may manifest in higher concentration and then profitability (Kanbiro Orkaido, 2019).

The balanced portfolio theory

The portfolio theory approach is the most relevant and plays an important role in bank performance. According to the Portfolio balance model of asset diversification, the optimum holding of each asset in a wealth holder "s portfolio is a function of policy decisions determined by a number of factors such as the vector of rates of return on all assets held in the portfolio, a vector of risks associated with the ownership of each financial assets and the size of the portfolio. It implies portfolio diversification and the desired portfolio composition of commercial banks are results of decisions taken by the bank management. Further, the ability to obtain maximum profits depends on the feasible set of assets and liabilities determined by the management and the unit costs incurred by the bank for producing each component of assets (Kanbiro Orkaido, 2019).

Risk-return trade off theory, the signaling and bankruptcy cost hypotheses

The balance sheet structure could also influence banks' profitability; in this context, the equity-to-asset ratio is an important balance sheet ratio that received much attention. For 17 this ratio, theoretical explanations assume different signs of the relationship with profitability. According

to the Modigliani & Miller theorem there exists no relationship between the capital structure (debt or equity financing) and the market value of a bank. In this context, there is no relationship that exists between the equity-to-asset ratio and funding costs or profitability. Nevertheless, as this chapter already mentioned the agency problem, information asymmetry and transaction costs distort Modigliani & Miller's perfect market. Thus, when the perfect market does not hold there could be a possible explanations for a negative relationship. Financing theory suggest that increasing risks, by increasing leverage and thus lowering the equity-to-asset ratio (increasing leverage), leads to a higher expected return as entities will only take on more risks when expected returns will increase; otherwise, increasing risks have no benefits. This theoretical explanation is known as the risk-return trade off. There are also theoretical explanations for the opposite relationship that a higher equity-toasset ratio has a positive effect on profitability. These explanations are based on the signaling and bankruptcy cost hypotheses. The first hypothesis states that a higher equity ratio is a positive signal to the market of the value of a bank. Less profitable banks cannot achieve such a signal since this will further deteriorate their earnings. In this way a lower leverage, indicates that banks perform better than their competitors who cannot raise their equity without further deteriorating the profitability. The latter hypothesis suggests that in a case where bankruptcy cost are unexpected high a bank hold more equity to avoid period of distress (Kanbiro Orkaido, 2019).

2.2.3 Determinants of banks profitability

The literature divides the determinants of conventional bank profitability into two categories, namely internal and external. Internal determinants of profitability, which are within the control of bank management, can be broadly classified into two categories, i.e. financial statement variables and non-financial statement variables. While financial statement variables relate to the decisions which directly involve items in the balance sheet and income statement; non-financial statement variables involve factors that have no direct relation to the financial statements. The examples of non-financial variables within the this category are number of branches, status of the branch (e.g. limited or full service branch, unit branch or multiple branches), location and size of the bank. Number of branches, status of branches and location are considered controllable variables since decision on those matters are within the discretion of management. In the case of a decision to establish new branches or services available where the locality is restricted by

regulations, these variables are considered external to the bank. Similarly, the size of the bank is considered an internal determinant on the assumption that management of the bank is responsible for expanding their organization by acquiring additional assets and liabilities. Some researchers considered size as an external variable. External variables are those factors that are considered to be beyond the control of the management of a bank. Among the widely discussed external variables are competition, regulation, concentration, market share, ownership, scarcity of capital, money supply, inflation and size. A number of explanatory variables have been proposed for both categories, according to the nature and purpose of each study the research undertaken has focused on profitability analysis of either cross country or individual countries' banking systems (Birhanu, 2018)

Internal determinants employ variables such as size, capital, risk management and expenses management. Size is introduced to account for existing economies or diseconomies of scale in the market.

The fact that the more financial institutions are exposed to high-risk loans, the higher is the accumulation of unpaid loans, implying that these loan losses have produced lower returns to many commercial banks. Bank expenses are also a very important determinant of profitability, closely related to the notion of efficient management. There has been an extensive literature based on the idea that an expenses-related variable should be included in the cost part of a standard microeconomic profit function. Turning to the external determinants of bank profitability, it should be noted that we can further distinguish between control variables that describe the macroeconomic environment, such as inflation, interest rates and cyclical output, and variables that represent market characteristics. The latter refer to market concentration, industry size and ownership status. A whole new trend about structural effects on bank profitability started with the application of the Market-Power (MP) and the Efficient-Structure (ES) hypotheses. The MP hypothesis, which is sometimes also referred to as the Structure-Conduct-Performance (SCP) hypothesis, asserts that increased market power yields monopoly profits. A special case of the MP hypothesis is the Relative-Market-Power (RMP) hypothesis, which suggests that only firms with large market shares and well differentiated products are able to exercise market power and earn non-competitive profits. Likewise, the X-efficiency version of the ES (ESX) Hypothesis suggests that increased managerial and scale efficiency leads to higher

concentration and, hence, higher profits. Profit -structure relationship in banking, providing tests of the aforementioned two hypotheses. To some extent the RMP hypothesis is verified, since there is evidence that superior management and increased market share (especially in the case of small-to medium-sized banks) raise profits. In contrast, weak evidence is found for the ESX hypothesis. Managerial efficiency not only raises profits, but may lead to market share gains and, hence, increased concentration, so that the finding of a positive relationship between concentration and profits may be a spurious result due to correlations with other variables. Thus, controlling for the other factors, the role of concentration should be negligible. Other researchers argue instead that increased concentration is not the result of managerial efficiency, but rather reflects increasing deviations from competitive market structures, which lead to monopolistic profits. Consequently, concentration should be positively (and significantly) related to bank profitability. A rather interesting issue is whether the ownership status of a bank is related to its profitability. (Birhanu, 2018)

The last group of profitability determinants deals with macroeconomic control variables. The variables normally used are the inflation rate, the long-term interest rate and/or the growth rate of money supply. The effect of inflation on bank profitability depends on whether banks' wages and other operating expenses increase at a faster rate than inflation. The question is how mature an economy is so that future inflation can be accurately forecasted and thus banks can accordingly manage their operating costs. The extent to which inflation affects bank profitability depends on whether inflation expectations are fully anticipated. An inflation rate fully anticipated by the bank's management implies that banks can appropriately adjust interest rates in order to increase their revenues faster than their costs and thus acquire higher economic profits. (Birhanu, 2018)

2.2 Empirical Literature Review

Various financial indicators have been employed in empirical literature to assess the profitability of banks. Two commonly used metrics for assessing profitability are return on equity and return on assets. The ROA (net income/total asset) measures how well a corporation uses its entire asset base to produce profits. The investment return is defined as ROE (net income/total equity) (Guru B., Staunton, & Balashanmugam, 2002). Stated differently, ROE evaluates a bank's capacity to turn a profit using its equity. Empirical research indicates that ROA is more frequently used as the main metric for evaluating bank profitability than ROE. The literature also includes other measures of profitability, such as return on average equity (ROAE) and return on average assets (ROAA).

The factors influencing bank profitability were the subject of numerous researches. According to (Bougatef, 2017) bank profitability in Tunisia is positively correlated with corruption levels. (Ozili P. K., 2017) Looked at the elements that affect bank profitability in African banks and discovered that the size of the bank, the regulatory capital ratio, and loan loss provisions are important factors that affect the return on assets of listed banks in Africa. From 1995 to 2012, (Borio, 2017) examined how monetary policy affected bank profitability in 14 significant advanced economies. They discovered that the short-term rate level positively affects bank profitability as indicated by return on assets.

Investigated how capital requirements affected Bangladeshi banks' profitability between 2000 and 2015. They discovered that Bangladeshi banks were more profitable when their regulatory capital ratios were greater. When the authors utilized the equity to total assets ratio as a different way to quantify bank capital, their findings stayed the same. The impact of macroeconomic factors on the profitability of EU banks was examined by Bonaccorsi di Patti and Palazzo (2018), who discovered that GDP growth and loan growth have an impact on EU bank profitability.

(Ozili P. K., 2015) Looked at the factors that influence bank profitability in Nigeria and discovered that nonperforming loans, bank size, and cost effectiveness have a big impact. (Hesse et al, 2016) Examined how oil price shocks affected the profitability of 145 banks in 11 MENA nations that export oil between 1994 and 2008. They discovered that shocks to the price of oil have an indirect effect on bank profitability, and that this effect is mediated by institutional and macroeconomic factors unique to each nation. The impact of revenue diversification on bank

profitability was examined by Ammar and Boughrara (2019) in 14 MENA nations between 1990 and 2011. They discovered that increased bank profitability is a direct result of income diversification.

The profitability of both domestic and foreign banks before and during the 2008 financial crisis was studied by (Bouzgarrou et al, 2018) .During the 2008 financial crisis, they discovered that overseas banks were more profitable than domestic banks. The factors influencing bank profitability in Nigeria were investigated by (Bolarinwa et al, 2019). They looked at how commercial bank profitability was affected by factors such bank size, deposit growth, credit risk, capital ratio, and cost effectiveness. From 2005 to 2015, they examined 15 commercial banks and discovered that one factor influencing bank profitability in Nigeria is cost effectiveness. The present research differs from that conducted by (Bolarinwa et al, 2019).

A number of prior researches have tried to find the major determinants of bank's profitability. Some studies base their analysis on cross-country evidence, such as the researches by (Halkos et al, 2005) using panel data from the Western European banking sector and (Pasiouras et al, 2008) research on dataset consisting of commercial banks across 74 countries. While some scholars focus on the banking system of individual countries. For example, the study by (Barros et al, 2011) investigate the Portuguese banking industry, (Liu et al, 2010) examine the profitability of banks in Japan.

Using bank level data for 80 countries in the 2005–10 periods, (Demirgüç-Kunt et al, 1999) analyze how bank characteristics and the overall banking environment affect both interest rate margins and bank returns. In considering both measures, this study provides a decomposition of the income effects of a number of determinants that affect depositor and borrower behavior, as opposed to that of shareholders. Results suggest that macroeconomic and regulatory conditions have a pronounced impact on margins and profitability. Lower market concentration ratios lead to lower margins and profits, while the effect of foreign ownership varies between industrialized and developing countries. In particular, foreign banks have higher margins and profits compared to domestic banks in developing countries, while the opposite holds in developed countries.

Gelos (2016) studies the determinants of bank interest margins in Latin America using bank and country level data. He finds that spreads are large because of relatively high interest rates (which

in the study is a proxy for high macroeconomic risk, including from inflation), less efficient banks, and higher reserve requirements.

In a study of United States banks for the period 2011–15, Angbazo (2015) finds that net interest margins reflect primarily credit and macroeconomic risk premia. In addition, there is evidence that net interest margins are positively related to core capital, non-interest bearing reserves, and management quality, but negatively related to liquidity risk.

Saunders and Schumacher (2010) apply the model of Ho and Saunders(2006) to analyze the determinants of interest margins in six countries of the European Union and the US during the period 2000–2005. They find that macroeconomic volatility and regulations have a significant impact on bank interest rate margins. Their results also suggest an important trade-off between ensuring bank solvency, as defined by high capital to asset ratios, and lowering the cost of financial services to consumers, as measured by low interest rate margins.

Athanasoglou, et al. (2016) studies the profitability behavior of the south eastern European banking industry over the period 2009–14. The empirical results suggest that the enhancement of bank profitability in those countries requires new standards in risk management and operating efficiency, which, according to the evidence presented in the paper, crucially affect profits. A key result is that the effect of market concentration is positive, while the picture regarding macroeconomic variables is mixed.

One often used indicator of bank size is asset size, which is calculated using the asset's natural logarithm. If a bank's assets exceed 1-2 percent of GDP, it is deemed systemically important (Huber, 2021) A significant factor influencing banking profitability is asset quality and asset management, which are somewhat connected with asset size. The literature research indicates that asset size may have a positive or negative effect on profitability (Bai, 2010). It is important to note that the magnitude of the bank determines the direction of the influence of bank size.

The relative percentage of the bank's assets financed by deposits is indicated by deposit size, which is calculated by deposit/asset. Deposits are crucial for ensuring positive profits for commercial banks that primarily rely on the interest difference between loans and deposits as a source of income. A high ratio indicates that the bank's assets are financed from a reliable source. A high ratio, on the other hand, suggests higher operational expenses to draw deposits, and if

deposits are taken out in significant quantities quickly, a liquidity issue could arise. Empirical findings indicate that deposit size has a favorable effect on profitability, while profitability and deposit size have a negative connection. (Shawuya et al, 2023).

By comparing a bank's capital to its risk-weighted assets, the capital adequacy ratio shows how resilient a bank is to its risky assets. Research shows that ROA is positively impacted by the capital adequacy ratio; (Malik, 2015); (Albulescu, 2015); (Islam, 2016). The quantity of capital adequacy is influenced by the bank's ability to turn a profit as well as the configuration of funding available to assets based on the degree of risk. A study by (Dao B. T., 2020), that looked at 16 commercial banks in Vietnam from 2010 to 2017 found that the capital adequacy ratio had a negative effect on ROE but a good effect on ROA. The results align with the earlier research conducted by (Dao B. T., 2016). Which was performed from 2011 to 2014 on 20 listed Vietnamese commercial banks?

Unsatisfactory asset condition and ineffective credit management are reflected in the non-performing loan ratio (non-performing loan/total loan), which is closely related to low profitability (Zhong, 2013). (Qu, 2007) Discovered that the ratio of non-performing loans had no discernible effect on profitability. Because the loan loss provision serves as a buffer against possible losses, the loan loss provision ratio (loan loss provision/total loan) indicates a bank's credibility. In order to guard against credit risk when a non-performing loan turns into a default loan, commercial banks need to account for potential loan defaults and associated expenses. The amount of provision is a measure of the general health of the national economy as well as the financial health of the banking industry. There may be a positive or negative correlation between the loan loss provision ratio and profitability (Noman, 2015).

The efficiency of banking operations and management efficacy are gauged by the operational ratio, which is calculated as operating expense divided by operating income. The bank is more profitable when it uses its funds and controls operating costs, which results in a higher level of profit. The lower the ratio, the more operationally efficient the bank is. According to (Buchory, 2015), (Chen, 2016), the operating ratio significantly reduces banking profitability. With a negative sign for the operating ratio, it is logical to assume that profitability and operation efficiency are positively connected. The bank's ability to pay short-term obligations, which usually mature in less than a year, is determined by the current ratio, which is calculated as

current assets divided by current liabilities. (Akter et al, 2014) Found that bank liquidity and profitability are correlated. The correlation between two variables might be positive or negative (Nabeel, 2017).

One commonly used statistic to evaluate the nation's overall economic health is the natural logarithm of GDP. Empirical study on the relationship between GDP and bank profitability has produced a range of findings, some of which support the opposite result and others that show positive benefits (Karimzadeh et al, 2013).

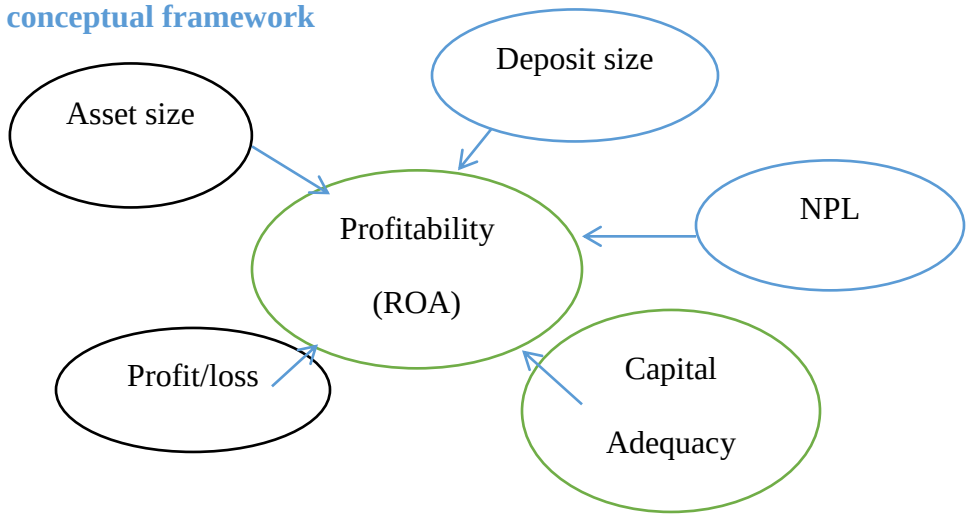
Another often cited indicator of a nation's macroeconomic health is inflation. The consumer prices index (CPI) in Ethiopia is used to gauge the level of inflation, according to data from the World Bank and the Ethiopian National Bureau of Statistics. Through its impact on interest rates, empirical research demonstrates that inflation is a significant factor in determining banking profitability. The rate of inflation affects interest rate movement, and vice versa. In order to maintain low and steady inflation, the central bank or authorities typically boost interest rates when high inflation develops. Inflation tends to decrease when interest rates rise because saving becomes more advantageous, which incentivizes people to save more and spend less. In general, high inflation rates are associated with high profitability of the banks. The relationship between inflation and bank profitability is influenced by whether or not commercial banks anticipate inflation, claims (Perry, 1992). Profitability will improve if the banks can predict inflation and adjust interest rates to increase revenues more quickly than costs. Prior research on the relationship between profitability and inflation has produced varying results. According to research by (Chen, 2016), (Zhang, 2009), banks' profitability is positively impacted by inflation. According to (Karimzadeh et al, 2013), banks' profitability is negatively impacted by inflation. According to (Jumono et al, 2019), and (Yong, 2016), banks' profitability is not significantly impacted by inflation.

2.3 Conceptual Framework

The conceptual framework helps to identify the variables that are used in the research process and shows how particular variables are connected in the study.

As discussed above this conceptual framework depicts a relation that exists between study variables. The study seeks to identify determinants of banks profitability by using time series data from 2012-2022 from financial statement of Nib International Bank. The research aimed to find out factors that affect profitability of NIB using Linear regression model (OLS) based on findings of the research to meet policy and implication. As shown in figure below.

Figure 1 conceptual framework



Chapter Three

Research Methodology

3.1. Research Design and Research Approach

3.1.1. Research Design

Quantitative time-series analysis using Ordinary Least Squares (OLS) regression involves modeling time-dependent data by minimizing the sum of squared errors, where the dependent variable is a function of independent variables and time-lagged versions of the series itself.

The Researcher use OLS because it helps to build predictive models by quantifying the relationship between variables over time, it provides insights into how past values or other factors influence current and future values of a time series and as a foundational technique, linear regression is a straightforward starting point for many time-series problems.

3.1.2. Research Approach

The data collected by both qualitative and quantitative method. The qualitative method used to obtain qualitative data and the quantitative method used to collect quantitative data from the Bank.

3.2. Estimation Procedure

The researcher used ordinary least squares (OLS) estimation technique to estimate the model. OLS regression method used because it is not that much sensitive to outliers in the data. The M-estimation addressed outliers in the dependent variable when the value of the (DV) dependent variable differs significantly from the regression line. IBM SPSS was used to estimate the model. The OLS estimation method was a superior estimation technique method compared to the other least squares estimators which were sensitive to outliers in the data.

3.3. Model Specification

The model used to analyze the determinants of bank profitability (y) was similar to the models used in prior studies such as Huang (2020), Ozili and Uadiale (2017) and Borio et al (2017).

x_k= (bank specific determinants, macroeconomic determinants) or external and internal explanatory.

The econometric model was specified below as:

$$y_{it} = \beta_0 + \alpha_i + \beta_1 \times x_{1\,it} + \beta_2 \times x_{2\,it} + \ldots + \beta_k \times x_{kit} + \varepsilon_{it}$$

In the mathematical algorithm of models, the indicator of the individual was i (i = 1, 2, 3, ... , n) and t (t = 1, 2, 3, ... , T) was the indicator of time. y_{it} was the dependent variable. x_k, it was the explanatory variable matrix with k columns and N = i × t rows, x_k,it was the kth explanatory variable. αi was specific for each individual, which can explain correlations between observations that are not caused by dynamic trends over time. Either the FE or the RE could be chosen based on whether the specific feature was fixed or random for each individual (Sheytanova 2015).

Table 1 Variables

S no.	Variable	Dependent/Independent
1	Profitability /ROA	Dependent
2	Asset size	Independent
3	Deposits size	Independent
4	Capital adequacy ratio	Independent
5	Non-performing loan	Independent
6	Income or Loss	Independent

3.4. Type and Source of Data

The data that were required to achieve the objective of the study was secondary data. The Secondary data was obtained from annual reports on the study area.

3.5. Method of Data Collection

To achieve the objective of the study the researcher used secondary data. The data were collected from Secondary source from the annual financial statement of Nib International Bank. Basically the reality and validity of good research based on quality data that was being collected. Therefore, to get relevant data or information verified financial statement was used and all necessary precaution taken, so as to ensure genuine (true) information was obtained.

3.6. Method of Data Analysis and Presentation

After the secondary data was collected and analyzed, the data were presents using different tables, diagrams and percentages which used to compare the trends in different years. The bank's profitability was evaluates using ratio analysis method through graphical and tabular data analysis technique

Chapter Four

Data Analysis and Interpretation

In presenting findings and discussion of the data, this chapter is organized in a way to meet the broad research objective and to answer the research questions. First, the findings that answer the research questions are presented to show the relationship of the independent variables to dependent variables. In this chapter the data collected were presented and important correlation and regression analysis findings were discussed, the data which was collected through secondary data annual reports made with some personnel of the organization were analyzed and interpreted. The data obtained from the reports were presented and analyzed using tabulation, graphics percentages and simple statements were given for each data analysis.

4.1. Overview of NIB

Nib International Bank is financial intermediary in Ethiopia and it work for 24 years in the industry and also it have good performance (progress) in the market. when we look recent three years performance, In 2019/2020 budget year the Bank Achieve 1.04 Billion Birr Profit, increase the Asset to 42.5 Billion and Deposit also Increased to 33.6 Billion Birr, In 2020/2021 budget year the Bank also Achieve 1.2 Billion Birr profit, increase the Asset to 54.2 Billion and Deposit also Increased to 43.5 Billion Birr and In 2021/2022 budget year the bank get 1.3 Billion Birr profit, increased the Asset to 61.5 Billion and Deposit also Increased to 49.8 Billion Birr. The data shows that there is increment in Asset, Deposit and Profit but it is not enough that match when we compare 2019/2020, 2020/2021 and 2021/2022 budget years. In 2020/2021 Budget year 11.7 Billion, 0.17 Billion and 9.9 Billion net increment shows in Asset, Profit and Deposit respectively from 2019/2020 Budget year but In 2021/2022 Budget year it shows 7.3 Billion, 0.12 Billion and 6.2 Billion net increment in Asset, Profit and Deposit respectively. It shows that the Bank must work hard to get better market share than now for making good profit to increase its asset and to collect more deposit than previous years.

4.2. Descriptive Statistics

In this section the results from descriptive statistics are discussed. Generally, the data that were collected for the study are secondary data by its nature. The descriptive statistics was used in

order to get awareness about variables that determine the profitability of nib international bank and used to give some recommendation after determining relation between variables from regression and correlation analysis.

The results are shows in below figure. The Return on Equity (ROE) does not affected by asset size of the bank. On other hand ROA (return on asset) depends on the total asset of the bank, but the estimated coefficient has a statistical significance at 5%. The coefficient has the expected sign, thus the management efficiency enhanced by asset size of the bank.

If the operating income has the desired (positive) sign, it is seen that the operating expenses are significant for dependent variables, but their relative effects are reduced. Profitability is affected by the operating income from off-balance sheet activities. It is seen that approximately 0.75% of the change in other operating income is affected by the return on equity difference, while only 0.25% is affected by the Return on Assets difference.

Non-performing loan has a negative, statistically significant impact on bank performance. Non-performing loan measured by ratio of loan to deposits of customer. If the ratio increase, the bank use less deposit to give loan or give more loan than the collected deposit, after that the performance of the bank will decline.

The capital adequacy ratio has no significant effect on ROE (return on equity). These may be described by that high capital adequacy reduce the bank risk, but, at the same time, the shareholders does not get benefit from leverage effect. Solvency has the positive (significant) effect on profitability of the bank. Concerning the external factors like industry characteristics (market concentration) the researcher reflects that competition has a positive impact on profitability of the bank.

The study shows that a significantly positive connection between bank asset size and profitability in the fixed effect model. This positive relationship could be explained in two ways. On one hand, banks can take advantage of the economies of scale during the financial crisis. On the other hand, the positive relationship also suggests that the Federal Reserve offered more support to large banks to prevent the potential collapse. The great support allowed banks to maintain profitability of large banks during the crisis. The positive and significant coefficient of the bank asset size variable gives support to the economies of scale market-power hypothesis. Larger

banks make efficiency gains that can be captured as higher earnings due to the fact that they do not operate in very competitive markets. It may also be that large asset banks have more diversified portfolios and earn higher profits during recessions. Without more information on which banks were assisted by the Federal Reserve, it is hard to know which effect is driving the result.

In addition, this study indicates a positive relationship between the bank's profitability and the deposits ratio. Should notice that the deposit and other safety net protections would decrease the agency cost of outside debt. Therefore, the lower agency costs predict higher profitability. The relationship between rate of return and the bank deposit keeps in a positive direction, because the risky banks can achieve higher rates of return. A higher bank deposit would result higher profitability for the banking sector. Moreover, the investment in securities (SEC) displays a positive connection with the bank's return. This phenomenon could be explained by the low interest policy since the financial crisis. Thus, the relationship between bank deposit and profitability is positive.

Table 2 Correlations

		Profitability	Asset size	Deposit size	Capital adequacy ratio	Non-performing loan	Income or loss
profitability	Pearson Correlation	1	.991''	.988''	.973''	.363	.989''
	Sig. (2-tailed)		<.001	<.001	<.001	.303	<.001
	N	10	10	10	10	10	10
Asset size	Pearson Correlation	.991''	1	1.000''	.981''	.435	.990''
	Sig. (2-tailed)	<.001		<.001	<.001	.209	<.001
	N	10	10	10	10	10	10
Deposit size	Pearson Correlation	.998''	1.000''	1	.981''	.443	.988''
	Sig. (2-tailed)	<.001	<.001		<.001	.200	<.0001
	N	10	10	10	10	10	10
Capital adequacy ratio	Pearson Correlation	.973''	.981''	.981''	1	.469	.952''
	Sig. (2-tailed)	<.001	<.001	<.001		.171	<.001
	N	10	10	10	10	10	10
Non-performing loan	Pearson Correlation	.363	.435	.443	.469	1	.329
	Sig. (2-tailed)	.303	.209	.200	.171		.353
	N	10	10	10	10	10	10
Income or loss	Pearson Correlation	.989''	.990''	.988''	.952''	.329	1
	Sig. (2-tailed)	<.001	<.001	<.001	<.001	.353	
	N	10	10	10	10	10	10

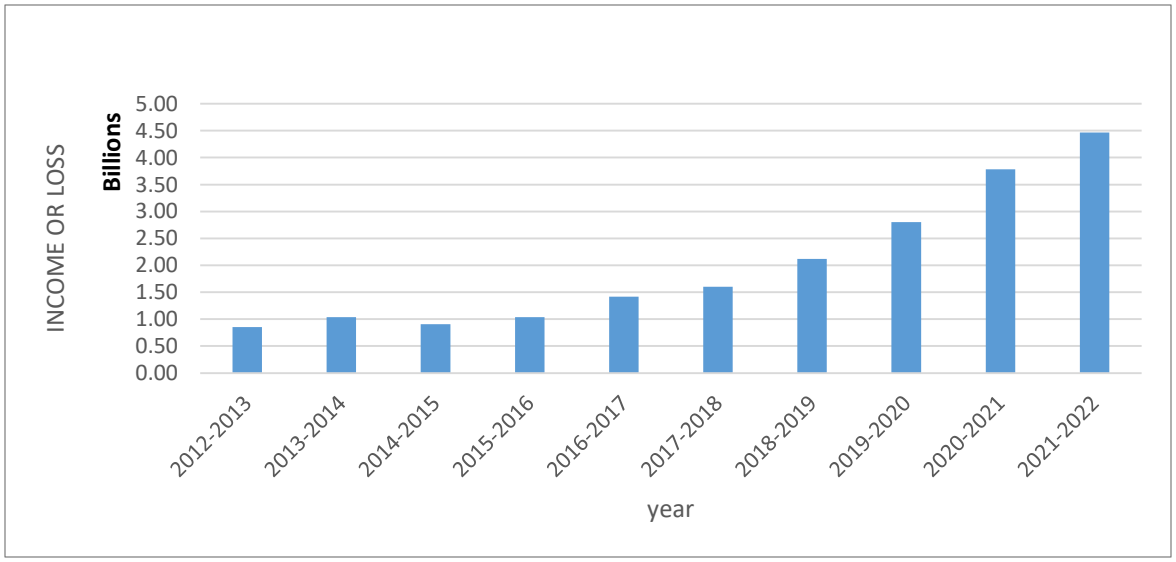
'Correlation Is Significant At The 0.01level(2-Tailed)'

Table 3 Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Asset size	10	9,144.00	61,491.00	28,855.00	18,594.00
Deposit size	10	6,655.00	49,758,.00	22,942.00	15,273.00
Capital adequacy ratio	10	1.25	4.79	2.75	1.38
Non-performing loan	10	1,300.00	2,100.00	1,860.00	235.00
Income or loss	10	851.00	4,466,.00	2,002.00	1,281.00
Profitability	10	286.00	1,338.00	664.00	397.00
Valid N (list wise)	10				

Operating Income

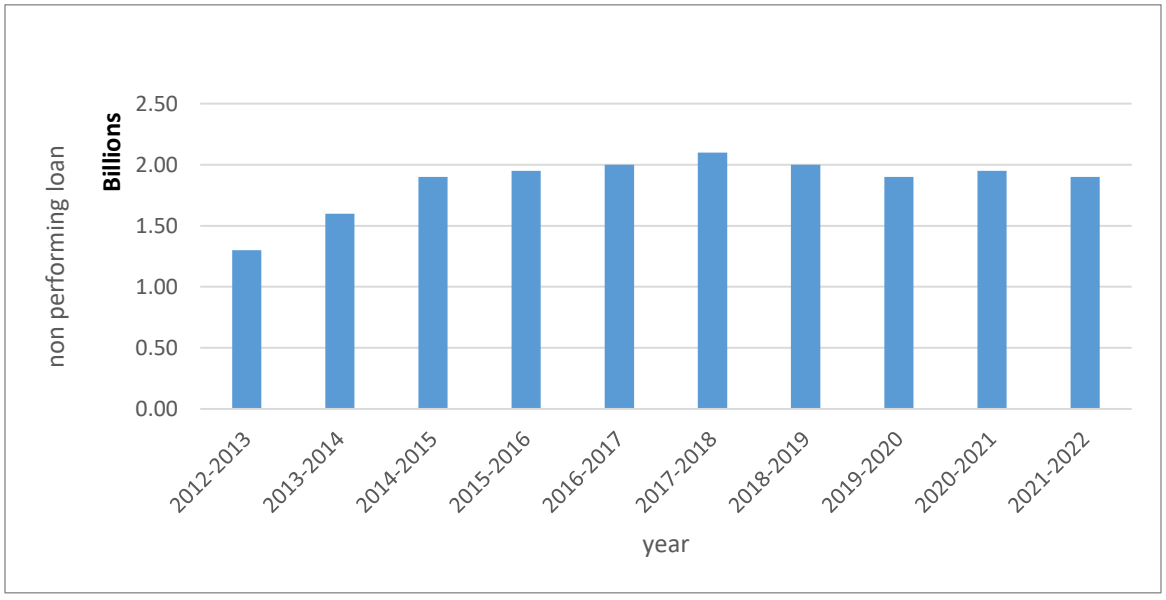
Figure 2 Operating Income Trend



Operating income measures the efficiency of the banking activities and the effectiveness of the bank management. The operational income ratio lower the higher operational efficiency of the bank and it indicate the bank has better profitability by using its funds and control operational costs (expense), which take to higher level of profit.

Non-Performing Loan

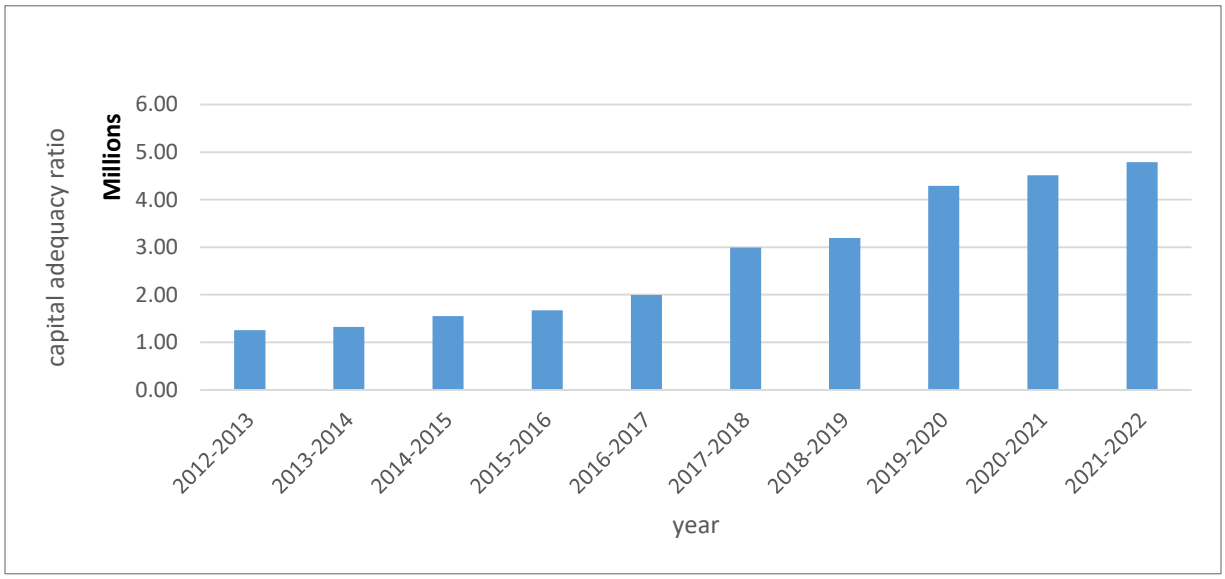
Figure 3 Non-Performing Loan Trend



Non-performing loans (non-performing loans/total loan) indicate bad assets and poor credit management, which directly impacts profitability.

Capital Adequacy

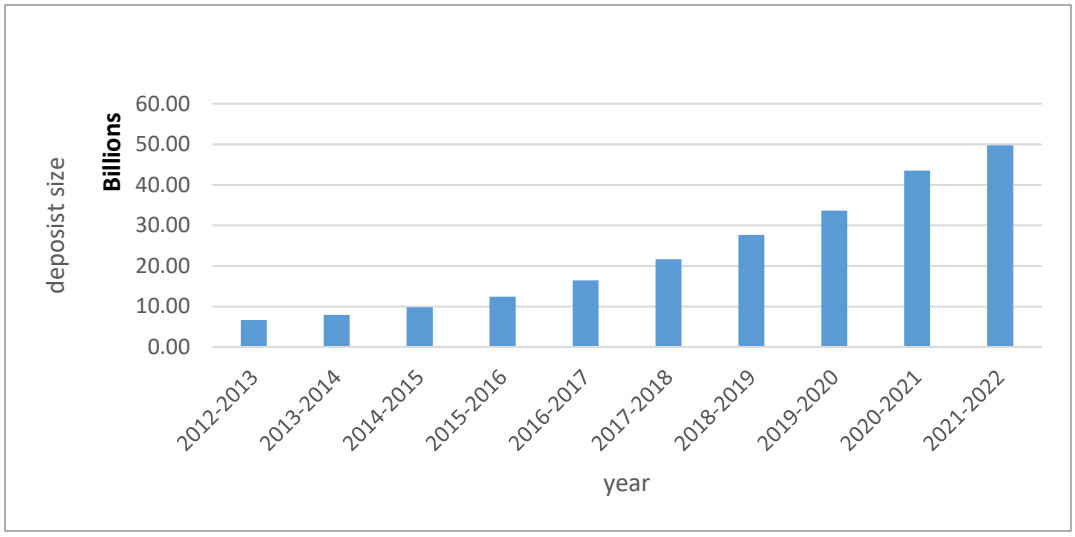
Figure 4 Capital Adequacy Trend



Capital adequacy measures the ratio of a bank's capital to its risk-bearing assets and indicates the firm's ability to withstand risky assets. Empirical studies have shown that adequate resource allocation has a positive effect on results. The financial structure of the bank's income and assets in terms of risk level has a positive effect on capital adequacy.

Deposit Size

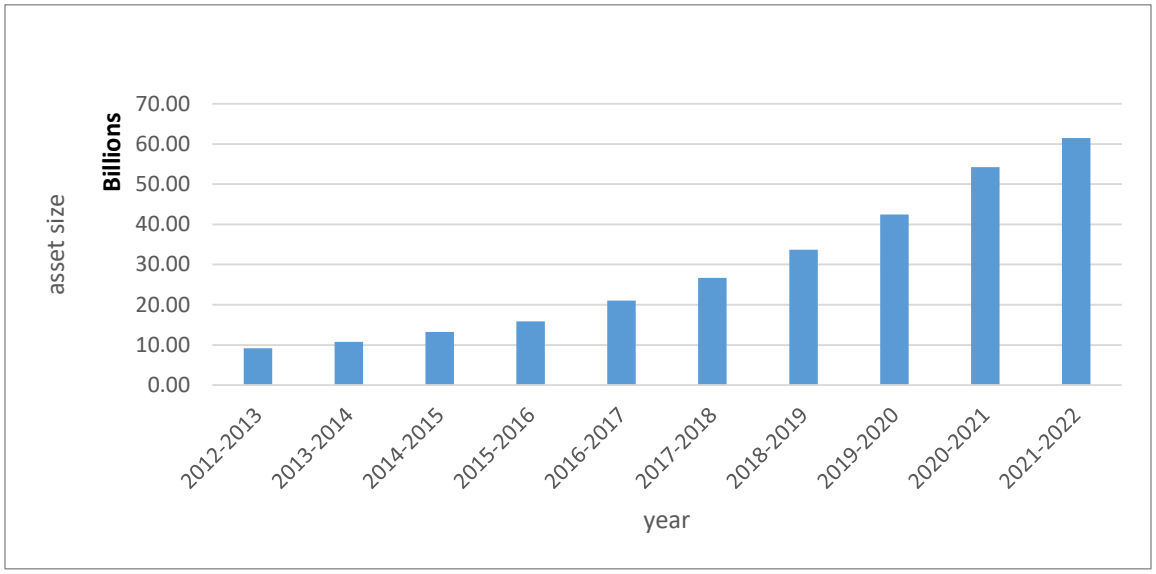
Figure 5 Deposit Size Trend



Deposit size (measured as deposits/assets) measures the proportion of a bank's assets held in deposits. Deposits are essential to generating income for banks, which rely on the interest rate spread between deposits and loans as their primary source of income. If the ratio is high bank asset are fund from stable source.

Assets Size

Figure 6 Asset Size Trend



The effect of the bank's total capital is found to be quite effective and related to profitability. The effect of asset size on bank profitability is very positive. The effect of bank size on profitability is very positive. However, the positive effect of large corporate assets is valid only within a certain range, beyond which large changes will lead to negative effects. Bank size is often used to measure the potential of a bank's assets for economic growth or decline.

4.3. Model Result

Linear regression is a statistical method for modeling the relationship between a dependent variable and one or more independent variables. It finds the line of best fit for the data by minimizing the sum of the squared residuals, or differences between observed and predicted values of the dependent variable. Multiple linear regressions involve more than one Independent variables. The linear regression equation estimates the value of the dependent variable based on the independent variable(s). Ordinary least squares are commonly used to estimate the coefficients in the linear regression equation.

$$y_{it} = \beta_0 + \beta_1 \times x_{1\,it} + \beta_2 \times x_{2\,it} + \beta_3 \times x_{3\,it} + \beta_4 \times x_{4\,it} + \beta_5 \times x_{5\,it} + \varepsilon_{it}$$

Estimated Regression Model

$$\hat{y}_{it} = \beta_0 + \beta_1 \times x_{1\,it} + \beta_2 \times x_{2\,it} + \beta_3 \times x_{3\,it} + \beta_4 \times x_{4\,it} + \beta_5 \times x_{5\,it}$$

$$\hat{y}_{it} = 234{,}838{,}334.79 + 0.128x_{1\,it} + 0.117x_{2\,it} + 16.304x_{3\,it} - 0.149x_{4\,it} + 0.128x_{5\,it}$$

Table 4 Coefficients

Coefficients[a]					
Model	Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	T	Sig.
1(Constant)	234838334.788	234794074.731		1.000	.0374
Asset size	.128	.047	5.985	2.711	.035
Deposits size	.117	.042	4.493	2.794	.049
Capital adequacy ratio	16.304	82.456	.057	.198	.028
Non-performing loan	-.149	.117	-.089	1.273	.027
INCOME OR LOSS	.128	.196	.412	.651	.045

a. Dependent Variable: profitability

Based on the above table the researcher gives the following interpretation by aligning with economies of scale theory (Athanasoglou, 2015).

- Constant $\beta_0 =$ 234,838,334.79 is expected price of Y when all independent variable are Zero.
- Asset Size $\beta_1 =$ 1% increase in asset size raised Profitability by 0.128%,
- Deposit Size $\beta_2 =$ 1% increase in deposit size raised Profitability by 0.117%.
- Capital Adequacy ratio $\beta_3 =$ 1% increase in risk weight ratio raised profitability by 0.117%.
- Non-performing loan $\beta_4 =$ 1% increase in non-performing loan reduce profitability by 0.149 %.
- Income or Loss $\beta_5 =$ 1% income increase raised profitability by 0 .128%.

Table 5 Model Summary

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.998[a]	.996	.992	36403566.7899665700000

a. Predictors: (Constant), INCOME OR LOSS, non-performing loan, capital adequacy ratio, deposits size, asset size

Based on the above table the researcher gives some interpretation

R – In regression analysis is called the correlation coefficient and it is relationship between Dependent and Independent variable it rage from -1 to +1. It indicates perfect Negative and Positive relationship between Variables when its value equal to -1 and +1 respectively and if R=0 there is no relationship between the dependent and independent variables.

In this model R = 0.998 it means that the variables have a positive relationships

R Square – known as the coefficient of determination explains the variation in the Dependent variable accounted for by the Independent variable its range from 0 to 1 but typically expressed as a percentage during interpretation and it obtained by squaring R value.

R value is 0.998 in the model so R Square will be 0.996 (R*R) and it means 99.6%of the variation or change in profitability is accounted for by independent variables which means Income or Loss, non-performing loan, capital adequacy ratio, deposit size and Asset size.

Cofficiecents that describe only the mathematical relationships between Depended and Independent variables so let we see p value for variables to see the significance of independent variables on the dependent variable.

When we come to p value if the p value of the variables are less than 0.05 the independent variables has significant on the dependent variable in this study all independent variables has less than 0.05 p value so we can conclude that independent variables that satiated on the model has significant influence on the dependent variable(profitability).

If the coefficient of asset size was positive it is significant. This study indicates that the banks utilized their assets in economies of scale fashion. The changes in additional unit investment in total assets of banks increase the bank profitability by considering other variables constant. The positive and significant coefficient of the asset size variable gives support to the economies of scale Efficient Structure hypothesis. Larger firms can obtain lower unit cost and higher profits through economies of scale.

The coefficient of the variable representing non preforming loan is measured by ratio of loan loss provision to total loan. Can we show it on the above graph and regression estimation, PLL (loan loss provision) has a negative coefficient and statistically significant effect on profitability of the Bank. The profitability of the bank reduces when there is a change in unit percent on PLL if other variables constant (ceteris paribus), Banks may increase their profitability by improving screening and monitoring of credit risk and such policies involve the forecasting of future levels of risk.

The ratio of cash and bank balances to total deposits (LQD) was positive and had significant relationship with profitability. Banks failures occur in different case but the major case is insufficient liquidity. Holding more liquid assets has an opportunity getting higher returns. When we look the change in unit percent increase in liquidity is expected to raise bank profitability by holding other variables constant. The finding of the study shows that investing in short term less risky securities for example government treasury bills leads to increase profitability.

Chapter Five

Conclusion and Recommendation

Healthy and strong financial system is a requirement for sustainable economic growth of a country and for maintaining good financial stability and to survive from negative shock it is important identifying the determinants that influence the performance and profitability. The study specified the empirical framework to investigate the effect of bank specific and external variables of Nib International Banks for the period of 2012-2022. The study were analysis variables which are; income or loss, non-performing loan, capital adequacy ratio, deposit size and asset size. The study also used an appropriate methodology for the estimation of variables coefficient using descriptive and linear model. The following sections confirmed about the final concluding remarks of the study and possible recommendations.

5.1 Conclusion

After analyzing the main determinants of banks' profitability in Nib International Bank the researcher conclude that the empirical findings are consistent with the expected results. Thus, common factors namely bank size, customer deposit size, non-performing loan, operating income, and capital adequacy influencing bank profitability on banking system.

The coefficient of Asset size variable is positive and reliability is significant. It is used to provide information about the change in bank over all assets in banking system. The result shows the variable has positive coefficient and its effect on the bank profitability is significant.

The results of capital adequacy (adequate asset allocation) show that it has a positive coefficient and significant impact on profitability. This result will mean that private banks that increase their capital will have lower cost of capital and therefore be more profitable. It shows that the bank has the ability to absorb losses and manage its stakeholders appropriately.

Concerning to operating income, it affects profitability of the Bank positively and significant.

The finding of Non-performing loan is associated with significant inverse relationship with profitability on the study area. The magnitude of this ratio was high, so it had higher impact on bank profitability.

All external factors of were not significant to explain bank profitability in this study. Generally, all of the bank specific variables were significant and positive impact on bank profitability except loan variable. Therefore, the study concluded that most of bank profitability drivers are explained by bank specific determinants rather than external determinants.

5.2 Recommendation

Based on the findings the researcher gives the following possible recommendations.

- Banks should focus on way of increasing profitability by using Income-Focused Strategies like Diversify Revenue Streams, Strategic Pricing and Cross-Selling and Upselling.
    - Increase income by offering non-core activities like brokerage services, wealth management, transaction fees, and commissions.
    - Implement relationship-based pricing for products and services to balance customer interests with institutional returns, maximizing profitability from each customer relationship.
    - Encourage customers to purchase additional financial products or services by identifying needs and offering bundled solutions or new products at checkout.
- Banks also need to work to reduce credit losses and manage costs to better manage resources by Implement robust systems to manage various risks, including credit risk, concentration risk, and market risk, to protect profits and ensure financial stability.
- The researcher also suggested that the bank must focus on Customer and Operation. Identify and leverage the most profitable customer relationships by analyzing contribution and risk-adjusted returns, and develop strategies to grow these relationships. And Establish strong governance structures to guide strategic decisions, ensure accountability, and foster a culture of long-term profitability.
- The researcher also suggested that the bank must invest on technology to acquire latest e-banking technology to increase profitability by increasing efficiency and that employees be given adequate training about customer satisfaction.
- The researcher also suggested that the bank must work on Enhance Working Capital Management and Strengthen Capital Planning. By Implement effective strategies for managing current assets and liabilities to improve cash flow, which can directly impact profitability and Ensure a strong capital base and develop sound capital planning strategies to support long-term growth and profitability.

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Appendix (Birr stated in Million)

year	asset size	deposist size	capital adequacy ratio	non performing loan	INCOME OR LOSS	profitability
2012-2013	9,144.00	6,655.00	1.26	1,300.00	851.19	286.27
2013-2014	10,747.00	7,923.00	1.32	1,600.00	1,038.00	313.77
2014-2015	13,256.00	9,774.00	1.55	1,900.00	908.26	337.07
2015-2016	15,830.00	12,423.00	1.67	1,950.00	1,038.00	356.68
2016-2017	21,019.00	16,416.00	2.00	2,000.00	1,417.00	516.44
2017-2018	26,688.00	21,619.00	2.99	2,100.00	1,601.00	514.85
2018-2019	33,717.00	27,663.00	3.19	2,000.00	2,120.00	720.75
2019-2020	42,463.00	33,651.00	4.29	1,900.00	2,800.00	1,043.00
2020-2021	54,199.00	43,537.00	4.52	1,950.00	3,784.00	1,216.00
2021-2022	61,491.00	49,758.00	4.79	1,900.00	4,466.00	1,338.00