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**FACTORS IMPACTING PROFITABILITY OF
PRIVATE COMMERCIAL BANKS IN ETHIOPIA**

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Project work submitted to Indra Gandhi National Open University in Partial fulfillment of the requirement for the award of the degree-Master of arts in Economics. I hereby declare that this work has been done by me and has not been submitted elsewhere.

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CERTIFICATE

Certified that the project work entitled **_"FACTORS IMPACTING PROFITABILITY OF PRIVATE COMMERCIAL BANKS IN ETHIOPIA"_** submitted by Tulu Deressa Bedada is his own work and has been done in the light of evaluator's comments under my supervision.

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ABSTRACT

Factors Impacting Profitability of Private Commercial Banks in Ethiopia

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Indira Gandhi National Open University, 2016

Banking sector is the backbone of any economy and plays an important role in the economic development of a country. Mobilization of the national savings to the productive sectors is possible only with the help of commercial banks that augments the economic growth rate of a country.

This study investigates the effect of bank specific and macroeconomic factors on banks' profitability on profitability of private commercial banks in Ethiopia. The determinants of banks' profitability used in this study were bank size, capital adequacy, assets quality, expenses management and liquidity management as bank specific factors and NBE Bill, GDP, Inflation rate and real interest rate as macroeconomic factors. The econometric model of fixed effects regression method was used in this study, using a panel data of 6 banks in Ethiopia for period from 2006 to 2015.

Overall, results of this study show that, the profitability of the private commercial banks under study is mostly affected by bank specific factors (that are internal factors determined by bank's management decisions and policy objectives). Yet, macroeconomic factors with the exception of NBE Bill do not seem to significantly affect profitability. These results have important implications for banks' survival and growth. It is expected that this study will guide the policy makers and bank management in the formulation and implementation of better policies and strategies which may results better performance of banks in Ethiopia.

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Contents

LIST OF TABLES AND FIGURES

LIST OF ACRONYMS

ACRONYMS	FULL NAME
LogA	Logarithm of Total Assets
CA	Capital Adequacy
NPL	Non-Performing Loans
EM	Expense Management
LD	Loan to Deposit Ratio
GDP	Gross Domestic Product
INF	Inflation
RI	Real Interest Rate
NBB	National Bank of Ethiopia Bill
NIM	Net Interest Margin
ROA	Return on Assets
ROE	Return on Equity
NBE	National Bank of Ethiopia
CPI	Consumer Price Index
OLS	Ordinary Least Square
REM	Fixed Effect Model
FEM	Random Effect Model
DW	Durbin-Watson
CLRM	Classical Linear Regression Model
BJ	Bera-Jarque

Chapter 1

1. Introduction

1.1 Background of the Study

The fact that there are no capital and bond markets in Ethiopia put forth the importance of the banking sector as the only substantial source to mobilize saving thereby providing the much needed financial assistance to the real sector of the economy. Banks in developing countries like Ethiopia are basically engaged in the business of accepting deposits from depositors and channeling the resources to those who needs them. They are also engaged in areas like money transfer and international banking operations i.e. import and export businesses.

Banks plays an immense role in augmenting development process of a country. They are driving force for the real sectors of the economy and an engine for economic growth (Shoaib et el., 2015).

In Ethiopia, the liberalization of the banking industry in 1990s has created conducive environment for the emergence of private commercial banks. At present, there are three government owned banks and sixteen privately owned banks in the country. The banking sector of the country is not well developed even with the standard of Sub Saharan countries. Card Banking Service does have a history of less than a decade. Most of the banks do not provide online banking services till 2012. However,

currently there is stiff competition among these banks and they are trying to persuade customers by providing technology based products, by expanding their branch network to serve customers at door step, by providing banking product that targets specific section of the population (like interest free banking), etc. This Competition is a continuous driver for the participants in the industry to strive for best practices and up to date technology to improve their efficiency and to gain customer satisfaction. All these factors are being translated in to increased business and higher profitability.

Data obtained from National Bank of Ethiopia shows that, numbers of banks operating in the country has increased from 11 in FY 2006 to 19 as at the end of FY 2015. Total capital of banking system has also increased massively from Birr 3.5 million in 2005 to Birr 31.5 billion in 2015. Number of bank branches in the country increased substantially from 389 branches as at end of FY 2005 to 2,693 as at the end of FY 2015. As a result, total population per bank branch ratios has declined from 175,778.4:1 in FY 2005 to 33,448.2:1 in FY 2015 (National Bank of Ethiopia, Annual Report June 2015). This shows the continuous growth and future prospect of the banking industry in Ethiopia as considerable section of the population is not using the banking services.

In a developing country like Ethiopia a well-functioning broad based and stable financial system is a pre-requisite to support the much needed economic development and growth. Owing to its vital role in the economy it is important to regularly measure banking sector's performance.

In order to measure the performance of banking sector its profitability is used, as it is the single most important indicator of the financial health and sustainability in long run. A profitable banking sector is more likely to withstand a financial and economic distress like recent global financial crises of 2008 (Ani et al., 2012).

There are a number of studies undertaken on the factors affecting the profitability of the banks especially in developed countries. These literatures categorize the factors affecting the profitability of banks as internal and external.

Jiang et al. (2003) analyzed the profitability of banking industry in Hong Kong between 1990 and 2002, empirical results showing that both bank-specific as well as macroeconomic factors are important determinants in the profitability of banks. With regard to macroeconomic factors, real GDP growth, inflation and real interest rates have a positive impact. On the other hand, the size variable, represented by loans or deposits, has a negative relationship with profitability, suggesting that, on average, larger banks achieve a lower ROA than smaller ones.

Mishkin Frederic et al. (2009) suggested that a basic measure of bank profitability is the Return on Asset (ROA) which corrects for the size of the bank. It is true that ROA provides useful and necessary information on bank profitability but this is not on the major interest of the bank's owners (equity holders). They are more concerned about how much the bank is earning on their equity investment, an amount that is measured by the return on equity (ROE), the net income per currency of equity capital.

Wall (1985) concludes that a bank's asset and liability management, its funding management and the non-interest cost controls all have a significant effect on the profitability record. There is an abundant number of studies concluding that one of the primary factors influencing the bank profitability is the control on the expenses. The profitability can be improved through the expense management making this an opportunity for the banks to control it.

To the knowledge of the researcher, although an extensive literature on the determinants of banks' profitability exits for developed economies and other part of the world only scanty empirical research can be found in Ethiopia. Besides, to the knowledge of the researcher the impact of NBE bill which has been imposed on private banks since April 2011 has not been looked at in depth by any researcher. Therefore, the present study fills an important gap in the existing literature and improves the understanding of bank profitability in Ethiopia.

1.2 Statement of the problem

Banking sector is the backbone of any economy and plays an important role in the economic development of a country. Mobilization of the national savings to the productive sectors is possible only with the help of commercial banks that augments the economic growth rate of a country. Profitable commercial banks also stabilize the financial system of a country. The efficient and profitable banking industry is better able to withstand negative shocks and contribute to the stability of the financial sector of a country (Ani et al., 2012).

Despite reforms in the financial sector with a view of improving access to financial services financial depth in Ethiopia has remained very low. The banking sector in Ethiopia is still at an infant stage and there is considerable potential yet to be tapped through expanding the banking sector to widen the scope of financial inclusions.

Being the only sources to mobilize saving thereby providing the much needed financial assistance to the real sector of the economy, the importance of healthy banking to the economic development is immense. This development and economic growth caused by the financial assistance from the banking sector plays substantial role in facilitating development endeavor of the country.

Owing to its vital role in the economy it is important to regularly measure the bank sector's performance. In order to measure the performance of

banking sector its profitability is measured, as it is the single most important indicator of the financial health and sustainability in long run.

Ethiopian Private Banks faces a number of challenges in executing their operation. They face challenges with regards to deposit mobilization as the Commercial banks of Ethiopia (CBE), the single largest bank alone mobilized 66.1 percent of the total deposits of the banking system of the country as at June 30, 2015. CBE is also taking a number of steps that private banks couldn't withstand. Low deposits mean less income is generated from loans and advances in the form of interest and this would challenge the long term sustainability of banks as their major source of income come from interest income.

Restrictive directives of NBE such as reserve requirements, export to China which handed the sole responsibility to Commercial Bank of Ethiopia to conduct every export formality for products that are exported to China, etc are inhibiting the profitability of private banks significantly.

Moreover, NBE has introduced a directive which requires all private commercial banks in the country to purchase NBE Bill amounting to 27% of total loan disbursed starting from 4th April 2011 (Directive number: MFA/NBE Bills/001/2011). The bill has a maturity period of 5 years. The interest rate on the bills is 3 percent while the rate of interest that banks charge when they accept deposits is 5 percent. This literally meant that banks offered loan for the NBE at a loss of 2 percent. This does have a

significant negative impact on the profitability of private banks. Thus, study aims at looking at the impact of this NBE Bill and other factors on the profitability of banking sector in the Ethiopia.

1.3 Objectives of the study

1.3.1 General Objective

The main objective of the study is to assess the factors that impact the profitability of selected private bank in Ethiopia over the period 2006 to 2015.

1.3.2 Specific objectives

The specific objective of this study is to fill an important gap in the existing literature and improve the understanding of bank profitability in Ethiopia and to draws policy implications for industry improvement in the country.

1.4 Research Methodology

1.4.1 Data Type and Sources

In order to analyze the determinants of banks' profitability, the study uses nine variables, one of them is the dependent and the others are independent variables. The independent variables are comprised of bank-specific and macroeconomic determinants of bank profitability. The Dependent Variable is Return on Assets (ROA) whereas the independent variables are Bank size as measured by logarithm of total assets, Capital adequacy as determined by the ratio of equity to total assets, Asset Quality

as measured by non-performing loan to total loan ratio (NPL), Expenses Management as determined by the ratio of non-interest expenses to average assets, Liquidity as measured by the ratio of loans to deposits, Annual real gross domestic product growth rate (GDP), annual inflation rate (INF), real interest rate (RI), NBE Bill as measured by the ratio of NBE Bill to total loan.

The data for this study comprised of the panel secondary data (i.e. comprising cross-sectional and time-series data) which obtained from audited financial reports of 6 banks in existence as at the end of 2015 and that are in operation for at least 15 years. The cross sectional element is reflected by the six banks under consideration and the time series element is reflected in the period of study (2006 – 2015). The main advantage of using panel data is that it allows overcoming of the unobservable, constant, and heterogeneous characteristics of each bank included in the sample (Saona, 2011).

1.4.2 Method of Data Analysis

This study employed both descriptive and econometric analysis. The descriptive approach was used to analyze the sample and the observations that have been used in this study. The econometric method is used in this study to evaluate the main determinants affecting profitability of banking sector in Ethiopia.

Structured document survey is used to collect the necessary data from audited financial statements of each commercial bank in the sample for bank specific factors and annual reports of National Bank of Ethiopia and Ministry of Finance and Economic Development for macro factors.

1.4.3 Description of Variables

ROA: it is a general measure for bank profitability reflects bank ability to achieve

return on its sources of fund to generate profits. In the literature ROA is regarded as the best and widely used indicator of earnings and profitability, because ROA assesses how efficiently a bank is managing its revenues and expenses, and also reflects the ability of the management of the bank to generate profits by using the available financial and real assets' (Obamuyi, 2013).

Bank size: In most finance literature, total assets of the banks are used as a proxy for bank size. Bank size is represented by natural logarithm of total asset (log A). The effect of bank size on profitability is generally expected to be positive (Smirlock, 1985). Bank size accounts for the existence of economies or diseconomies of scale (Naceur & Goaied, 2008). The banking theory asserts that a firm enjoys economies of scale up to a certain level, beyond which diseconomies of scale set in. This implies that profitability increases with increase in size, and decreases as soon as there are diseconomies of scale. Thus, literature has shown that the relationship

between the bank size and profitability can be positive or negative (Staikouras and Wood, 2004; Athanasoglou et al., 2005; Flamini et al., 2009; Dietrich and Wanzenrid, 2009).

Capital adequacy: The ratio of equity to total assets (CA) is considered one of the basic ratios for capital strength. It is expected that the higher this ratio, the lower the need for external funding and the higher the profitability of the bank. It shows the ability of bank to absorb losses and handle risk exposure with shareholder. Equity to total assets ratio is expected to have positive relation with profitability that well-capitalized banks face lower costs of going bankrupt which reduces their costs of funding and risks (Berger, 1995; Bourke, 1989)

Asset Quality: The quality of assets held by a bank depends on exposure to specific risks, trends in nonperforming loans, and the health and profitability of bank borrowers. Poor asset quality and low levels of liquidity are the two major causes of bank failures. Poor asset quality led to many bank failures (Olweny and Shipo, 2011). The theory proposes that firm profitability will decrease if the firm is highly exposed by credit risk, hence we expect the inverse relationship between bank profitability and non-performing loan to total loan ratio (NPL) which is used to measure asset quality. For the purpose of this study, non-performing loan to total loan ratio (NPL) used to measure asset quality.

Expenses Management: The ratio of non-interest expenses to average assets is the ratio that more frequently used on studies of bank profitability in measuring the management quality (Kosmidou et al, 2006). It is expected a negative relationship between management quality (expenses management) and profitability, since improved management quality will increase efficiency and hence rise profits (Athanasoglou et al., 2005).

Liquidity: The ratio of loans to deposits is used in this study as a measure of liquidity. The higher this percentage the more liquid the bank is. Insufficient liquidity is one of the major reasons of bank failures. However, holding liquid assets has an opportunity cost of higher returns. Bourke (1989) finds a positive significant link between bank liquidity and profitability. However, in times of instability banks may choose to increase their cash holding to mitigate risk. Unlike Bourke (1989), Molyneux and Thorton (1992) come to a conclusion that there is a negative correlation between liquidity and profitability levels.

GDP: It is a measure of the total economic activity and it is adjusted for inflation. It is expected to have an effect on many determinants related to the demand and supply for banks deposits and loans. In the literature GDP growth is expected to have a positive effect on bank profitability (Demirguc-Kunt and Huizinga, 1999.

Annual Inflation Rate: This measures the overall percentage increase in Consumer Price Index (CPI) for all goods and services. Inflation affects the real value of costs and revenues. Inflation and profitability may have positive or negative relation depending on whether it is anticipated or unanticipated (Perry, 1992). In the literature most of studies observe a positive impact between inflation and profitability (Bourke, 1989; Molyneux and Thorton 1992; Kosmidou, 2006).

Real Interest Rate: According to previous studies, the evidence has shown that, there is a positive relationship between interest rates and banks performance, bank profits increase with rising interest rates (Samuelson 1945).

National Bank of Ethiopia Bill (NBE Bill): empirical research conducted on the effect of NBE Bill on profitability of private banks in Ethiopia appears to show a positive relationship. NBE bill seems contributed positively to performance via moping the excess liquidity holding of banks or providing an opportunity for private banks to invest their excess funds in government securities than the customary practice of holding their liquid asset in zero earning accounts at the National Bank of Ethiopia. In addition, it instigated banks to work on fee generating sources (Tesfay B. Lelisa 2014).

1.5 Scope of the study

This study is limited to looking at the factors impacting the profitability of selected private commercial banks in the country over the period 2006 to 2015. It will look at the impact of Bank size Capital adequacy, Asset Quality, Expenses Management, Liquidity, GDP, inflation, and NBE Bill on profitability for six sample banks for the stated period.

1.6 Significance of the study

The study intends to make contributions on the factors impacting the profitability of private commercial banks in Ethiopia. This will have a paramount significance as the efficient and profitable banking industry is better to withstand negative shocks and contribute to the stability of the financial sector of a country. Therefore, the major beneficiaries from this study are commercial banks in general and private banks in particular, regulatory bodies, academicians and the country as a whole.

1.7 Organization of the study

This research report is organized in five chapters. Chapter one provides the general introduction about the whole report. Chapter two describes the review of related literatures. Chapter three provide detail description of the methodology employed by the researcher. Chapter four contains data presentation, analysis and interpretation. Finally, the last chapter concludes the total work of the research and gives relevant recommendations based on the findings.

Chapter 2

2. Literature Review

In the literature, determinants of bank profitability can be split between those that are internal and those that are external. Internal determinants or bank specific factors can be defined as those factors that are influenced by the bank's management decisions and policy objectives. Management impacts are the results of differences in bank management objectives, strategies policies, decisions, and actions reflected in differences in bank operating results. The external factors are determinants that are not related to bank management but reflect the macroeconomic, political and legal factors that affect the operation and performance of banks. Various determinants have been proposed for both internal and external factors according to the nature and objective of each research. In the following sections the researcher is trying to review both theoretical and empirical literatures on the factors affecting profitability of commercial banks.

2.1 Theoretical Literature Review

2.1.1 Structural Approach to Measure Bank's Profitability

Structural theories on issues of profitability of banks are considered to be divided into three major categories. These are Market Structure Theories, theories related to conduct & performance and those related to efficiency structure.

2.1.1.1 Market Structure Theories and Bank Profitability

The traditional theory of the firm was assumed that a firm's objective is simply to maximize profits. In practice this theory is not applicable because of most modern industries, involvement in providing a variety of products/services, and faced with much more complex decisions to be taken in a dynamic and uncertain environment Devinaga (2010).

Market structure theory suggested two alternative policy drives in order to increase profit of the bank industry and for rationalizing market structure in banking industry. The first one lies in limiting the number of banking units in the market through encouraging mergers among existing banks. This is help to increase the bank size for pursuing scale of economics.

The second strategy is the sharing common facilities such as ATM with other banks in the industry. Both strategies may be useful in enhancing the competition in the market and improving the overall profitability and efficiency of the market (Devinaga (2010).).

2.1.1.2 Structure Conduct Performance (SCP) Hypothesis

Market structure conduct and performance (SCP) framework derived from the neo-classical analysis of markets. The SCP was the central opinion of the Harvard school of thought and popularized during 1940-60 with its empirical work involving the identification of correlations between industry structure and profitability. Most early research explanation for the

relationship between the market concentration and profitability based on the structure-conduct performance (SCP) hypothesis, and focused on the interpretation of a positive empirical relationship between concentration and profitability (Goddard et al. 2004).

The SCP paradigm asserts that there is a relationship between the degree of market concentration and the degree of competition among firms. This hypothesis assumes that firms behave or rivalry in the market determined by market structure conditions, especially the number and size distribution of firms in the industry and the conditions of entry. This rivalry leads to unique levels of prices, profits and other aspects of market performance (Berger et al. 1989).

The Structure-Conduct-Performance (SCP) hypothesis, which also sometimes referred to as the Market Power (MP) hypothesis, asserts that increased market power yields monopoly profits. The assumptions of SCP hypotheses have been applied in different research by various researcher and supported positive relationship between market concentration (measured by concentration ratio) and performance (measured by profits) exists. Firms in more concentrated industries can earn higher profit than firms operating in less concentrated industries earn, irrespective of their efficiency (Goldberg et al.1996).

SCP, in general, provides two main benefits to studies, which investigate the banks profit behavior. First, it shows the way to the banks' profits are

operating. Thus, it explains different forces that restrict or expand the scope of banks' operations in the market. Especially with profitability studies, SCP helps to interpret different sources of productivity and efficiency gains or losses. Second, SCP provides a rational basis for analyzing the market behavior (Goldberg et al.1996).

2.1.1.3 The Efficient Structure Hypothesis (ESH)

The other formulation of theoretical framework for studying determinants of commercial banks profitability is the efficient structure hypothesis. According to the 'efficiency' hypothesis, a positive concentration–profitability relationship may reflect a positive relationship between size and efficiency. It states that efficient banks in the market lead to increase in the firms' size and market share due to the aggressive behavior. This behavior of the efficient banks allowed such firms to concentrate and earn higher profits with further enhancing their market share. Those firms can maximize profits either by maintaining the present level of product price or service charge and firms' size or by reducing the service charge and expanding the firm size (Smirlock 1985).

The ESH stated that the positive relationship between profit and concentration results from the lower cost achieved through superior management and efficient production process.

In contrast to SCP hypothesis, the ESH is uncertain whether the high profits of large banks are a consequence of concentrated market

structures and collusion. As explained by Berger and Hannan (1989), ESH and SPC stand on similar observation on the relationship between concentration and performance (profitability). However, the difference in two theories consisted mainly in ways of interpretation of the relationship.

2.1.2 Internal determinants of Profitability

Internal determinants or bank specific factors can be defined as those factors that are influenced by the bank's management decisions and policy objectives. Management impacts are the results of differences in bank management objectives, strategies policies, decisions, and actions reflected in differences in bank operating results.

Zimmerman (1996) has mentioned that management decisions, particularly regarding loan portfolio concentration, were an important factor contributing in bank performance. Researchers frequently attribute good bank performance to quality management. Management quality is assessed in terms of senior officers' awareness and control of the bank's policies and performance.

Wall (1985) concludes that a bank's asset and liability management, its funding management and the non-interest cost controls all have a significant effect on the profitability record. There are abundant numbers of studies concluding that one of the primary factors influencing the bank profitability is the control on the expenses. The profitability can be

improved through the expense management making this an opportunity for the banks to control it.

The level of staff expenses appears to have a negative impact on banks ROA in the study of Bourke (1989) even though Goddard et al. (2004) found a positive relationship between total profits and staff expenses.

There exists direct causation in both way between capital and profitability (Berger, 1995). Growing at international level banking demand high level of capital to make sure that banks are more capable to take extra risk (Hanweck & Kilcollin, 1984).There is a straight connection between the capital and the earnings of the local banks, as well-organized banks are more profitable because they earn more return on their investment (Demirgüç-Kunt & Huizinga, 1999).

Size of the bank is also the result of administration policy that cannot grantee the excess profit. (Vernon, 1971) among the first few researchers who found the direct relationship between the banks size and profitability and according to him larger banks have high profitability.

Bank size has direct impact on profitability by reducing the cost of raising the capital for large banks was conducted in a study by (Short, 1979). Bank size is introduced to report for present economies and diseconomies of scale in the marketplace a study conducted by (Akhavein, Berger, & Humphrey, 1997).

Deposit is the most valuable and significant indicator of the balance sheet as it symbolizes a clue of conventionality banking activities. The deposit structure of banks indicates that banks which are strongly committed to short term and long term deposits are earning lower as compare to banks that depends on demands deposits described by (Heggestad, 1977). Smirlock (1985) explored that short term deposits are more inexpensive source of financing and had significant impact of banks profitability.

The banks which have high deposits comparative to their assets and using those to strength the equity to enhance the performance of the bank , those are the better developing banks as illustrated by(Naceur & Goaied, 2001).

Lending decision of a bank is very important because it determine the future profitability and performance of the bank. Recently banks are becoming more and more conscious in customer selection to avoid the negative impact of bad loan or non-performing loan. The issue of nonperforming loans (NPLs) has gained increasing attentions in the last few decades. Amounts of bad loans are alarmingly increasing in not only the developing and under developed countries but also in developed countries. Banks' lending policy could have crucial influence on non-performing loans. A default is not entirely an irrational decision. Rather a defaulter takes into account probabilistic assessment of various costs and benefits of his decision. Lazy banking' critically reflects on banks'

investment portfolio and lending policy (Reddy & Mohan (2003); Sinkey (1991) & Dash (2010)

The immediate consequence of large amount of NPLs in the banking system is bank failure as well as economic slowdown. The causes of nonperforming loans are usually attributed to the lack of effective monitoring and supervision on the part of banks, lack of effective lenders' recourse, weaknesses of legal infrastructure, and lack of effective debt recovery strategies (Adhikary,2006).

There is no global standard to define non-performing loans at the practical level. Variations exist in terms of the classification system, the scope, and contents. Such problem potentially adds to disorder and uncertainty in the NPL issues. Non-performing loans have non-linear negative effect on banks' lending behavior (Hou, 2001)

At large, the main effect of bad loans on banks is the fact that increasing bad loans limit the financial growth of banks (Karim, Chan & Hassan, 2010; Kuo et al., 2010). This consequence is as a result of the fact that bad loans deprive banks of the needed liquidity and limit their capability to fund other potentially viable businesses and make credit facilities available to individuals. Karim et al. (2010) argues that there are a lot of other viable businesses that the bank cannot explore as a result of the fact that its funds are caught up in bad loans. In the face of these consequences, the bank experiences a shortfall in generated revenues

(Ghana Banking Survey, 2013), and this translates into reduced financial performance (Karim et al., 2010; Nawaz et al. 2012; Ghana Banking Survey, 2013). Another basic effect of bad loans on the bank is a reduction in the bank's lending potential (Karim et al., 2010).

2.1.3 External determinants of Profitability

External factors identify the outcome of the macroeconomic environment on banks profitability and these are the factors which are not under the control of bank supervision and they signify the measures outside the impact of the bank. However the management can take steps to explore the expected variation in external environment and adjust the organization to get the expected advantages of economic advancement.

Bank performance is expected to be sensitive to macroeconomic control variables. The impact of macroeconomic variables on bank risk has recently been highlighted in the literature. GDP growth as can be used as a control for cyclical output effects, which we expect to have a positive influence on bank profitability. As GDP growth slows down, and, in particular, during recessions, credit quality deteriorates, and defaults increase, thus reducing bank returns (Valentina et al 2009).

Demirguc-Kunt and Huizinga (1999) show that rapid economic growth increase profitability for a large number of countries. Technically speaking, GDP captures upswings and downswings manifesting in the business

cycles. Consequently, movements in general activity level are expected to generate direct impacts on profitability of banks.

The effects of inflation can be substantial and undermines the stability of the financial system and the ability of the regulator to control the solvency of financial intermediaries. (Revell, 1979) noted that variations in bank profitability can be strongly explained by the level of inflation. The impact of inflation on bank income or profit depends on whether banks running cost growing higher than inflation rate. This is why the effect of inflation is reliant on the general macroeconomic solidity that permits the accurate forecasting of inflation.

Inflation is normally linked with high profitability and efficiency as it suggests extra income from float that inclines to pay for high labor costs incorporated by (Hanson, 1986.)(Bourke, 1989); Molyneux and Thornton (1992) discover a positive link between inflation and bank profitability.

Inflation is a significant factor that impact profitability of bank positively as high inflation is strongly related with the high interest rate on credit and high return on investment as effect of inflation depends whether the inflation is predicted or unpredicted as investigated by (Perry, 1992). If we find inflation as a predictable factor and interest rate is accordingly set, then there is a direct association between the bank profitability and inflation. It is explored by Hoggarth et al. (1998) that an unexpected variation in inflation can create problems in the planning of loans and also

effect profitability. Increase in inflation has a positive association with performance of bank in a study conducted by (Guru et al., 2002).

Inflation is highly associated with bank profitability; inflation involves high cost as more business operation and large branch network rise cost but also more revenue from bank float, this constructive link shows that bank earnings rise with inflation more than bank cost. Inflation also impacts company evaluating behavior as it projected that the trend of rates will increase in future then the corporations will also increase their rates that lead to an additional increment in the profit of bank as discussed by Driver (2008).

Interest rate is constructive with profitability in countries where capital market and banking sectors of well advanced and profit earned by banks in their normal activates highly related with the GDP growth rate and interest rate on lending. High interest rate on lending creates problems for borrowers and their credit risk possibility explored by (Kindleberger). It is accepted that increase in interest rate leads to high commercial banks profit by increasing the gap between the deposits and borrowing rates.

2.2 Empirical Literature Review

Abreu and Mendes (2001) discovered inverse relationship between the inflation factors and profitability of Europe banks. The banks in less advance world are earning low in inflationary atmosphere, at the time high

capital ratio as in these countries bank expenses are more than bank earning was explored by (Demirgüç-Kunt & Huizinga, 1999).

It is discovered that more saving and more borrowing both have a positive association that leads to high profitability a study of USA from 1976-1984 and is also explored that decrease in interest rate in the period of recession decrease in growth in loans and enhance in loan loss (Hanweck & Kilcollin, 1984). High interest rate is directly related with profitability in less developed nation explored by (Demirgüç-Kunt & Huizinga, 1999).

This identified that current deposits pay nothing in developing states. In the related sense the interest rate unpredictability normally infers high interest margins as financial institutions largely able to handover the high risk to their customers a study incorporate by (Ho & Saunders, 1981).

The profitability of the European banking industry was studied by Goddard et al. (2004) during the 1990s. The empirical study was performed on six European banks - Denmark, France, Germany, Italy, Spain and the UK (665 banks) and revealed that the relationship between the capital–assets ratio and profitability (ROE) was positive.

Athanasoglou et al. (2005) investigated the profitability of Greek banks between 1985- 2001 and found that credit risk and operational expenses have a negative impact on profitability, while labour productivity and inflation are positively correlated with financial performance.

Dietrich şi Wanzenried (2010) studied the profitability of 453 commercial banks in Switzerland over the period 1999-2008. In order to take into account the impact of the recent financial crisis, they additionally consider the pre-crisis period and the crisis years 2007-2008 separately. The capital ratio, which is defined as equity over total assets, has a positive and significant effect on bank profitability as measured by ROA, and this holds in all three time periods considered. The coefficient of the cost-to-income ratio, a measure of efficiency, is negative and highly significant for the whole period as well as for the years before the crisis. The more efficient a bank is, the higher is its profitability. The loan loss provision relative to total loans ratio, which is a measure of credit quality, does not have a statistically significant effect on bank profitability before the crisis. The loan loss provisions, which have also significantly increased during the crisis, negatively affect ROA.

Hoffmann (2011) examines the determinants of the US banks profitability during the period 1995-2007. The empirical analysis combines bank specific and macroeconomic variables. The empirical findings document a negative relationship between the capital ratio and the profitability, which supports the notion that banks are operating over-cautiously and ignoring potentially profitable trading opportunities.

Capital plays vital role in the performance of a bank, as the banks that have higher capitals perform well as compare to smaller. A direct

association between the capital and the bank profit was concluded in a study of European commercial banks by (Staikouras & Wood, 2003). A significant direct link between the equity and profit of banks was found by (Abreu & Mendes, 2001).

There is an indirect association between the bank size and profitability in the study conducted by the (Boyd & Runkle, 1993). Banking size has an inverse link with larger banks and direct association with smaller banks profitability but the intermediate size bank earns high return on investment. Berger et al. (1987) explored a negative relationship between the bank size and return by using a set of scale and product mix on the other hand no association between size and profitability, so slight cost reduction can be achieved by raising the magnitude of the banking firm.

Bank size is introduced to report for present economies and diseconomies of scale in the marketplace a study conducted by (Akhavein, Berger, & Humphrey, 1997). Steinherr and Huveneers (1994), in their study using bank size as an independent factor found that it has mixed impact on the banks profitability. As investigated by Kapoor (2004) the fundamental purpose of commercial banks is to enhance their size not to have the benefit of cost approving from the financial system of scale but also to force their existence in the fresh market situation of Europe after introducing euro. The impact of bank size on its performance is different as explored in a study conducted by Goddard et al. (2004) from 1992-1998

of Europe it shows mix association and relationship among size and profitability.

Hoggarth et al., (1998) conclude that the behavior of real GDP fails to explain the greater variability of banking sector profits in the UK than in Germany. But they do not say that GDP variability did not affect profits, only that they could not use it to explain different UK/German banks performance. If this variable is not statistically significant in explaining profitability, then the conclusions of the authors are reinforced. Otherwise, the expected sign should be positive since higher growth implies both lower probabilities of individual and corporate default and an easiest access to credit.

Jiang et al. (2003) analysed the profitability of banking industry in Hong Kong between 1990 and 2002, empirical results showing that both bank-specific as well as macroeconomic factors are important determinants in the profitability of banks. With regard to macroeconomic factors, real GDP growth, inflation and real interest rates have a positive impact. On the other hand, the size variable, represented by loans or deposits, has a negative relationship with profitability, suggesting that, on average, larger banks achieve a lower ROA than smaller ones. The conclusion of this study is that a profitable banking sector is better able to withstand negative shocks and contribute to the stability of the financial system.

Gul et.al (2011) examined the relationship between bank-specific (capital ratio, equity to total assets) and macroeconomic (GDP real growth, inflation and market capitalization) characteristics over bank profitability (ROA, ROE, net interest margin) by using data of top fifteen Pakistani commercial banks over the period 2005-2009. The conclusions were that between total loans, deposits, inflation, GDP on the one hand and ROA on the other hand is a positive relationship, while between market capitalization and ROA the correlation is negative.

The study on Malaysian banks by Guru et al. (2002) shows that efficient management is among the most important factors that explain high bank profitability. Further found out that credit risk and operational inefficiencies explain most of the variation in net interest margins across the region, with macroeconomic factors, having less influence on performance.

Deposit is the most valuable and significant indicator of the balance sheet as it symbolizes a clue of conventionality banking activities. Guru tried to elaborate the factors of successful deposits banks for the sake to give a useful guide for enhance profitability performance of these banks, for this purpose in this study included 17 Malaysian banks.

In a study of European banks (Abreu & Mendes, 2001) it is explored that the operational expenses of the banks have an indirect correlation with bank profit, even though they have a direct association with net interest

margins of the banks. Different studies in different parts of the world found that bank expenses have negative relations with profitability of the banks as incorporated by (Grigorian & Manole, 2006).

As expense has inverse relationship with profit, high expense leads to less profitability, this indirect association between expense and profit is investigated by the study of (Bourke, 1989). Positive relation between cost and profitability was found by (Jiang, Tang, Law, & Sze, 2003).

Opposite view of (Molyneux & Thornton, 1992) expense factors influenced European bank profit significantly. They suggest that high earnings produced by the firm in rigid industry may be proper in the shape of high pay and remuneration cost. Their studies assist the efficiency wage theory, which states that the output of the workers boost with wage rate. Similarly direct and significant association between profit and expenses is explore in Tunisia (Naceur, 2003).

Bank expenses are regarded as very essential determinant of profitability, directly associated to concept of proficient management. As expected coefficient of cost to income ratio is inverse and positive in different studies, telling that efficiency in expenses management is the strong factors of UK bank performance and profitability (Guru & Staunton),(Pasiouras & Kosmidou, 2007).

Mohammed (2012) studied the bank performance in context of corporate governance for which mainly the ratios of non-performing loans and loan

deposits have been used. Study was conducted on 9 banks of Nigeria for a period of 10 years from 2001-2010. According to generalized least square regression results, non-performing loans ratio has significant negative effect while loan deposit ratio has insignificant negative effect on performance. So, survival of banks is strongly dependent upon the better asset quality means dependent upon minimizing the non-performing loans ratio.

2.2.1 Empirical studies in Ethiopia

Most literatures that are examined in this study used banks specific, industry specific and macroeconomic factors as a determinant of banks profitability. Empirical evidence which included in this study are determinants of commercial banks profitability: an empirical study on Ethiopian commercial banks by, Demena (2011), determinants of commercial banks profitability: an empirical review of Ethiopian commercial banks by Belayneh (2011), factors affecting profitability: an empirical study on Ethiopian banking industry by Amdemikael (2012), determinants of commercial banks profitability: an empirical evidence from the commercial banks of Ethiopia by Birhanu (2012), determinants of bank profitability: an empirical study on Ethiopian private commercial banks by Habtamu (2012). Samuel (2015) Determinants of Commercial Banks Profitability: The Case of Ethiopian Commercial Banks.

Damena (2011) in his study examined the determinants of Ethiopian commercial banks profitability. The study applied the balanced panel data of seven Ethiopian commercial banks that covers the period 2001- 2010. The paper used Ordinary Least Square (OLS) technique to investigate the impact of some internal as well as external variables on major profitability indicator i.e., ROA. The estimation results showed that all bank-specific determinants, with the exception of saving deposit, significantly affect commercial banks profitability in Ethiopia.

Belayneh (2011) examined the determinants of Ethiopian commercial banks profitability. The study applied the balanced panel data of seven Ethiopian commercial banks that covers the period 2001- 2010. The paper used Ordinary Least Square (OLS) technique to investigate the impact of some internal as well as external variables on major profitability indicator i.e., ROA, The estimation results of his study show that all bank-specific determinants, with the exception of saving deposit, significantly affect commercial banks profitability in Ethiopia. Market concentration is also a significant determining factor of profitability. Finally, with regard to macroeconomic variables, only economic growth exhibits a significant relationship with banks profitability.

The study made by Amdemikael (2012) examined the determinants of Ethiopian commercial banks profitability. The study applied the balanced panel data of eight Ethiopian commercial banks that covers the period

2001- 2011. The study adopts a mixed methods research approach by combining documentary analysis and in-depth interviews to investigate the impact of some internal as well as external variables on major profitability indicator i.e., ROA. The findings of the study show that capital strength, income diversification, bank size and gross domestic product have statistically significant and positive relationship with banks profitability. On the other hand, variables like operational efficiency and asset quality have a negative and statistically significant relationship with banks profitability. However, the relationship for liquidity risk, concentration and inflation is found to be statistically insignificant.

Birhanu (2012) examined the determinants of Ethiopian commercial banks profitability. The study applied the balanced panel data of eight Ethiopian commercial banks that covers the period 2001- 2011. The paper used Ordinary Least Square (OLS) technique to investigate the impact of some internal as well as external variables on profitability indicator i.e., ROA, NIM. The finding shows all bank-specific determinants, with the exception of bank size, expense management and credit risk, affect bank profitability significantly and positively in the anticipated way. However, bank size, expense management and credit risk affect the commercial banks profitability significantly and negatively. In addition to this, no evidence is found in support of the presence of market concentration. Finally, from macro-economic determinants GDP has positive and significant effect on both asset return and interest margin of the bank. But

interest rate policy has significant and positive effect only on interest margin.

Habtamu (2012) examined the determinants of Ethiopian private commercial banks profitability. The study applied the balanced panel data of seven Ethiopian commercial banks that covers the period 2002- 2011. The paper used Ordinary Least Square (OLS) technique to investigate the impact of some internal as well as external variables on profitability indicator i.e., ROA, ROE & NIM. The empirical results shows that bank specific factors; capital adequacy, managerial efficiency, bank size and macro-economic factors; level of GDP, and regulation have a strong influence on the profitability of private commercial banks in Ethiopia.

Samuel (2015) investigates determinants of commercial banks profitability in Ethiopia by using panel data of eight commercial banks from year 2002 to 2013. The study used mixed research approach and secondary financial data are analyzed by using multiple linear regressions models for the bank profitability measure, Return on Asset (ROA). Fixed effect regression model was applied to investigate the impact of bank size, capital adequacy, liquidity risk, operating efficiency, management efficiency, employee efficiency, funding cost, banking sector development, real GDP, inflation rate and foreign exchange rate on Return on Asset (ROA) and also primary data was used to support the result of the documentary analyses. The findings of the study show that bank size, capital adequacy and gross

domestic product have statistically significant and positive relationship with bank's profitability. On the other hand, variables like liquidity risk, operational efficiency, funding cost and banking sector development have a negative and statistically significant relationship with banks' profitability.

2.3 Overview of banking in Ethiopia

2.3.1 Historical Overview

The agreement that was reached in 1905 between Emperor Minilik II and Mr.Ma Gillivray, representative of the British owned National Bank of Egypt marked the introduction of modern banking in Ethiopia. Following the agreement, the first bank called Bank of Abyssinia was inaugurated in Feb.16, 1906 by the Emperor. The Bank was totally managed by the Egyptian National Bank

The society at that time being new for the banking service, Bank of Abyssinia had faced difficulty of familiarizing the public with it. It had also need to meet considerable cost of installation and the costly journeys by its administrative personnel.

Generally, in its short period of existence, Bank of Abyssinia had been carrying out limited business such as keeping government accounts, some export financing and undertaking various tasks for the government. Moreover, the Bank faced enormous pressure for being inefficient and purely profit motivated and reached an agreement to abandon its

operation and be liquidated in order to disengage banking from foreign control and to make the institution responsible to Ethiopia's credit needs. Thus by 1931 Bank of Abyssinia was legally replaced by Bank of Ethiopia shortly after Emperor Haile Selassie came to power.

The new Bank, Bank of Ethiopia, was a purely Ethiopian institution and was the first indigenous bank in Africa and established by an official decree on August 29, 1931 with capital of £750,000. Bank of Ethiopia took over the commercial activities of the Bank of Abyssinia and was authorized to issue notes and coins. The Bank with branches in Dire Dawa, Gore, Dessie, Debre Tabor, Harar, agency in Gambella and a transit office in Djibouti continued successfully until the Italian invasion in 1935. During the invasion, the Italians established branches of their main Banks namely Banca d'Italia, Banco di Roma, Banco di Napoli and Banca Nazionale del lavoro and started operation in the main towns of Ethiopia. However, they all ceased operation soon after liberation except Banco di Roma and Banco di Napoli which remained in Asmara.

 In 1941 another foreign bank, Barclays Bank, came to Ethiopia with the British troops and organized banking services in Addis Ababa, until its withdrawal in 1943. Then on 15th April 1943, the State Bank of Ethiopia commenced full operation after 8 months of preparatory activities. It acted as the central Bank of Ethiopia and had a power to issue bank notes and coins as the agent of the Ministry of Finance. In 1945 and 1949 the Bank

was granted the sole right of issuing currency and deal in foreign currency. The Bank also functioned as the principal commercial bank in the country and engaged in all commercial banking activities.

The State Bank of Ethiopia had established 21 branches including a branch in Khartoum, Sudan and a transit office on Djibouti until it ceased to exist by bank proclamation issued on December, 1963. Then the Ethiopian Monetary and Banking law that came into force in 1963 separated the function of commercial and central banking creating National Bank of Ethiopia and commercial Bank of Ethiopia. Moreover it allowed foreign banks to operate in Ethiopia limiting their maximum ownership to be 49 percent while the remaining balance should be owned by Ethiopians.

The National Bank of Ethiopia with more power and duties started its operation in January 1964. Following the incorporation as a share company on December 16, 1963 as per proclamation No.207/1955 of October 1963, Commercial Bank of Ethiopia took over the commercial banking activities of the former State Bank of Ethiopia. It started operation on January 1, 1964 with a capital of Ethiopian Birr 20 million. In the new Commercial Bank of Ethiopia, in contrast with the former State Bank of Ethiopia, all employees were Ethiopians.

There were two other banks in operation namely Banco di Roma S. C. and Banco di Napoli S.C. that later reapplied for license according to the new proclamation each having a paid-up capital of Ethiopian Birr 2 million.

The first privately owned bank, Addis Ababa Bank Share Company, was established on Ethiopians initiative and started operation in 1964 with a capital of Birr 2 million in association with National and Grindlay Bank, London which had 40 percent of the total share. In 1968, the original capital of the Bank rose to Birr 5.0 million and until it ceased operation, it had 300 staff at 26 branches.

Following the declaration of socialism in 1974 the government extended its control over the whole economy and nationalized all large corporations. Organizational setups were taken in order to create stronger institutions by merging those that perform similar functions. Accordingly, the three private owned banks, Addis Ababa Bank, Banco di Roma and Banco di Napoli Merged in 1976 to form the second largest Bank in Ethiopia called Addis Bank with a capital of Ethiopian Birr 20 million. Then Addis Bank and Commercial Bank of Ethiopia S.C. were merged by proclamation No.184 of August 2, 1980 to form the sole commercial bank in the country till the establishment of private commercial banks in 1994. The Commercial Bank of Ethiopia commenced its operation with a capital of Birr 65 million.

The financial sector that the socialist oriented government left behind constituted only 3 banks and each enjoy monopoly power in its respective market. These are The National Bank of Ethiopia (NBE), The Commercial Bank of Ethiopia (CBE) and Agricultural and Industrial Development Bank (AIDB).

Following the demise of the Dergue regime in 1991 that ruled the country for 17 years under the rule of command economy, the EPRDF declared a liberal economy system. In line with this, Monetary and Banking proclamation of 1994 established the national bank of Ethiopia as a judicial entity, separated from the government and outlined its main function (retrieved from www.nbe.gov.et).

2.3.2 The Current Development

Monetary and Banking proclamation No.83/1994 and the Licensing and Supervision of Banking Business No.84/1994 laid down the legal basis for investment in the banking sector. Consequently shortly after the proclamation the first private bank, Awash International Bank was established in 1994 by 486 shareholders and by 1998 the authorized capital of the Bank reached Birr 50.0 million. Dashen Bank was established on September 20, 1995 as a share company with an authorized and subscribed capital of Birr 50.0 million (retrieved from www.nbe.gov.et).

As at June 30, 2014, 19 banks are operating in the county of which 16 are privately owned and the remaining 3 are state owned. The total branch network in country stood at 2,208 during the same period and the population to bank ratio was 1:39,402.

The total capital of the banking industry reached Birr 26.4 billion by the end of June 2014. The share of private banks in total capital was 55.3 percent, whereas the share of CBE in total capital of the banking sector stood at 38.7 percent as at the end of June 2014.

Total resources mobilized by the banking system in the form of deposit, loan collection and borrowing increased by 13.6 percent and reached Birr 111.4 billion at the end of 2013/14. Spurred by remarkable branch expansion, deposit liabilities of the banking system reached Birr 292.8 billion during the same period.

Total outstanding credit of the banking system (excluding NBE) including the central government increased by 19.9 percent and reached Birr 181.3 billion at the end of June 2014. Meanwhile, Total gross profit of private banks during the 2013/14 fiscal year was Birr 4.4 billion (NBE 2014).

2.3.3 Role of National Bank of Ethiopia

In accordance with Article 55(1) of the constitution of the Federal Democratic Republic of Ethiopia, the NBE is established to control the financial system and monetary policy of the country. This monetary policy

refers to a bundle of actions and regulatory stances taken by the central bank including; setting minimum interest rates on deposits or the rediscount rate charged to Commercial banks borrowing reserves, setting reserve requirements on various classes of deposits, increasing or decreasing commercial bank reserves through open market purchases or sales of government securities.

Furthermore, regulatory actions to constrain commercial bank financial activity or to set minimum capital requirements, intervention in foreign exchange markets to buy and sell domestic currency for foreign exchange and decide on the level of required reserve of commercial banks total deposit. In Ethiopia, National Bank exercises control over the banking sector through issuance of directives pertaining formation and operation of a banking business. Most of the directives on operation aim at reducing risk of liquidity and solvency in the banking system. Some of NBE‟s directives are issued as part of the central bank's conduct of monetary policy and some are issued to ensure that the sector plays adequate role in channeling funds to priority sectors of the economy. Most notable action by NBE is its revision of the reserve requirement to combat souring inflation in the country. The bank revised the reserve requirement from 5% to 10% in 2007 (NBE directive NO.SBB/42/2007) and to 15% in 2008 (NBE directive NO.SBB/45/2008).

In the beginning of 2009 NBE imposed a credit cap on private commercial with the aim of curbing the inflationary pressure and calming down the seemingly overheating economy. However, the cap was removed and subsequently NBE has introduced a directive which requires all private commercial banks in the country to purchase NBE Bill amounting to 27% of total loan disbursed starting from 4th April 2011 (Directive number: MFA/NBE Bills/001/2011). The bill has a maturity period of 5 years. The interest rate on the bills is 3 percent while the rate of interest that banks charge when they accept deposits is 5 percent.

2.4 Conclusions and Knowledge Gap

It has been indicated that, determinants of bank profitability can be split between those that are internal and those that are external. Internal determinants or bank specific factors can be defined as those factors that are influenced by the bank's management decisions and policy objectives. Management impacts are the results of differences in bank management objectives, strategies policies, decisions, and actions reflected in differences in bank operating results. The external factors are determinants that are not related to bank management but reflect the macroeconomic, political and legal factors that affect the operation and performance of banks. Various determinants have been proposed for both internal and external factors according to the nature and objective of each research.

It has been argued that internal factors mainly, management decisions, particularly regarding loan portfolio concentration, a bank's asset and liability management, its funding management and the non-interest cost controls, Bank size Deposit, Lending and non-performing loans (NPLs) are affecting bank's profitability considerably.

Various theoretical and empirical literatures have tried to show the impact of macroeconomic variables such as GDP, Inflation, Interest Rate, etc on profitability of banks. Empirical literatures in Ethiopia have also been tried to show factors affecting profitability of commercial banks in Ethiopia.

However, none of the studies discussed in the above section have seen the impact of regulation such as that of National Bank of Ethiopia's Bill (NBE Bill) on the profitability of banks.

Therefore, the objective of this study is to examine the factors that affect bank profitability in Ethiopia and to fill the knowledge gap that exists in the area by including and testing new variable, NBE bill that is not tested by prior Ethiopian researchers. Besides, the researcher uses large numbers of observations and time span to have a comprehensive look at the factors affecting profitability of private commercial banks in Ethiopia.

Chapter Three

3. Methodology

Having seen both the empirical and theoretical review of literature in the preceding chapter, this chapter will be devoted to the methodological aspect of the study.

3.1 Data Type

In order to analyze the determinants of banks' profitability, the study uses nine variables, one of them is the dependent and the others are independent variables. The independent variables are comprised of bank-specific and macroeconomic determinants of bank profitability. The Dependent Variable is Return on Assets (ROA) whereas the independent variables are Bank size as measured by logarithm of total assets, Capital adequacy as determined by the ratio of equity to total assets, Asset Quality as measured by non-performing loan to total loan ratio (NPL), Expenses Management as determined by the ratio of non-interest expenses to average assets, Liquidity as measured by the ratio of loans to deposits, Annual real gross domestic product growth rate (GDP), annual inflation rate (INF), real interest rate (RI), NBE Bill.

3.2 Sample Design

The data for this study comprised of the panel secondary data (i.e. comprising cross-sectional and time-series data) which obtained from audited financial reports of the banks. Currently, there are sixteen private commercial banks and three govern owned banks in operation in Ethiopia. The researcher takes six banks that have been in operation for more than ten years as at June 30, 2015 for the study purpose. The cross sectional element is reflected by the six banks under consideration and the time series element is reflected in the period of study (2005 – 2014). The main advantage of using panel data is that it allows overcoming of the unobservable, constant, and heterogeneous characteristics of each bank included in the sample (Saona, 2011).

3.3 Method of Data Collection and Analysis

Structured document survey is used to collect the necessary data from audited financial statements of each commercial bank in the sample for bank specific factors. Thus, audited financial statements of six banks namely, AIB, DB, WB, BoA, NIB and UB for ten years covering 2006-2015 have been looked at. For macroeconomic determents, the necessary data have been collected from annual reports of National Bank of Ethiopia and Ministry of Finance and Economic Development.

This study employed both descriptive and econometric analysis. The descriptive approach was used to analyze the sample and the observations that have been used in this study. The econometric method is used in this study to evaluate the main determinants affecting profitability of banking sector in Ethiopia.

3.4 Description of Variables

3.4.1 Dependent Variable

ROA: it is a general measure for bank profitability reflects bank ability to achieve

return on its sources of fund to generate profits. In the literature ROA is regarded as the best and widely used indicator of earnings and profitability, because ROA assesses how efficiently a bank is managing its revenues and expenses, and also reflects the ability of the management of the bank to generate profits by using the available financial and real assets' (Obamuyi, 2013).

3.4.2 Independent Variables

Bank size: In most finance literature, total assets of the banks are used as a proxy for bank size. Bank size is represented by natural logarithm of total asset (log A). The effect of bank size on profitability is generally expected to be positive (Smirlock, 1985). Bank size accounts for the existence of economies or diseconomies of scale (Naceur & Goaied, 2008). The banking theory asserts that a firm enjoys economies of scale up to a

certain level, beyond which diseconomies of scale set in. This implies that profitability increases with increase in size, and decreases as soon as there are diseconomies of scale. Thus, literature has shown that the relationship between the bank size and profitability can be positive or negative (Staikouras and Wood, 2004; Athanasoglou et al., 2005; Flamini et al., 2009; Dietrich and Wanzenrid, 2009).

Capital adequacy: The ratio of equity to total assets (CA) is considered one of the basic ratios for capital strength. It is expected that the higher this ratio, the lower the need for external funding and the higher the profitability of the bank. It shows the ability of bank to absorb losses and handle risk exposure with shareholder. Equity to total assets ratio is expected to have positive relation with profitability that well-capitalized banks face lower costs of going bankrupt which reduces their costs of funding and risks (Berger, 1995; Bourke, 1989)

Asset Quality: The quality of assets held by a bank depends on exposure to specific risks, trends in nonperforming loans, and the health and profitability of bank borrowers. Poor asset quality and low levels of liquidity are the two major causes of bank failures. Poor asset quality led to many bank failures (Olweny and Shipo, 2011). A bank's profitability will decrease if it is highly exposed by credit risk, hence inverse relationship between bank profitability and non-performing loan to total loan ratio (NPL) is expected. For the purpose of this study, non-performing loan to

total loan ratio (NPL) used to measure asset quality. Thus, a negative relationship is expected to between NPL and Profit (ROA).

Expenses Management: The ratio of non-interest expenses to average assets is the ratio that more frequently used on studies of bank profitability in measuring the management quality (Kosmidou et al, 2006). It is expected a negative relationship between management quality (expenses management) and profitability, since improved management quality will increase efficiency and hence rise profits (Athanasoglou et al., 2005).

Liquidity: The ratio of loans to deposits is used in this study as a measure of liquidity. The higher this percentage the more liquid the bank is. Insufficient liquidity is one of the major reasons of bank failures. However, holding liquid assets has an opportunity cost of higher returns. Bourke (1989) finds a positive significant link between bank liquidity and profitability. However, in times of instability banks may choose to increase their cash holding to mitigate risk. Unlike Bourke (1989), Molyneux and Thorton (1992) come to a conclusion that there is a negative correlation between liquidity and profitability levels.

GDP: It is a measure of the total economic activity and it is adjusted for inflation. It is expected to have an effect on many determinants related to the demand and supply for banks deposits and loans. In the literature

GDP growth is expected to have a positive effect on bank profitability (Demirguc-Kunt and Huizinga, 1999.

Annual Inflation Rate: This measures the overall percentage increase in Consumer Price Index (CPI) for all goods and services. Inflation affects the real value of costs and revenues. Inflation and profitability may have positive or negative relation depending on whether it is anticipated or unanticipated (Perry, 1992). In the literature most of studies observe a positive impact between inflation and profitability (Bourke, 1989; Molyneux and Thorton 1992; Kosmidou, 2006).

Real Interest Rate: According to previous studies, the evidence has shown that, there is a positive relationship between interest rates and banks performance, bank profits increase with rising interest rates (Samuelson 1945).

National Bank of Ethiopia Bill (NBE Bill): empirical research conducted on the effect of NBE Bill on profitability of private banks in Ethiopia appears to show a positive relationship. NBE bill seems contributed positively to performance via moping the excess liquidity holding of banks or providing an opportunity for private banks to invest their excess funds in government securities than the customary practice of holding their liquid asset in zero earning accounts at the National Bank of Ethiopia. In addition, it instigated banks to work on fee generating sources (Tesfay B. Lelisa 2014).

However, given the fact that the interest rate on the bills is 3 percent while the rate of interest that banks pay when they accept deposits is 5 percent which imply that banks offer loan for the NBE at a loss of 2 percent. The researcher, thus, expects a negative relationship between NBE Bill and banks' profitability.

Table 1 : **Summary of the independent variables and their expected relationship with the dependent variable**

Dependent Variables	Measures	Notations	Expected relationship with ROA
Bank size	Natural Logarithm of Total Assets	LogA	+/-
Capital adequacy	Ratio of total equity to total assets	CA	+
Asset Quality	Ratio of non-performing loan to total loan	NPL	-
Expenses Management	Ratio of non-interest expenses to average assets	EM	-
Liquidity	Ratio of loans to deposits	LD	-
GDP	Real GDP Growth in %	GDP	+
Inflation	Annual Inflation Rate	INF	+
Interest Rate	Real Interest Rate	RI	+
NBE Bill	Dummy variables, 0 and 1	NBB	-

3.5 Model Specification

The econometric method was used in this study to evaluate the main determinants affecting profitability of private banks in Ethiopia. To investigate the factors affecting bank profitability, the study used panel data. In panel data models, the data set consists of n cross sectional units, denoted i = 1... N, observed at each of t time periods, t = 1... T. In data set, the total observation is n x t. The basic framework for the panel data is defined according to the following regression model (Brooks, 2008):

$$Y_{it} = \alpha + \beta X_{it} + \mu_{it}$$

Where Y_{it} is the dependent variable, α is the intercept term, β is a K x 1 vector of parameters to be estimated on the explanatory variables, and X_{it} is a 1 x k vector of observations on the explanatory variables, t = 1... T; i = 1... N.

In regression analysis the dependent variable, or regressand, is frequently influenced not only by ratio scale variables (e.g., income, output, prices, costs, height, temperature) but also by variables that are essentially qualitative, or nominal scale, in nature, such as sex, race, color, religion, nationality, geographical region, political upheavals, and party affiliation.

Since such variables usually indicate the presence or absence of a "quality" or an attribute, such as male or female, black or white, Catholic or non-Catholic, Democrat or Republican, they are essentially nominal scale variables. One way we could "quantify" such attributes is by constructing artificial variables that take on values of 1 or 0, 1 indicating the presence (or possession) of that attribute and 0 indicating the absence of that attribute (Gujarati, 2004).

A Dummy variable is added to the model to classify the periods in to two: before and after the bill purchase policy was introduced. A variable 1 is assigned to represent the period after the bill purchase policy and 0, otherwise.

We can therefore extend the above equation, by including explanatory variables and ROA as dependent variables as follows;

$ROA_{it} = \alpha_0 + \beta_1 (LogA_{it}) + \beta_2 (CA_{it}) + \beta_3 (NPL_{it}) + \beta_4 (EM_{it}) + \beta_5 (LD_{it}) + \beta_6 (GDP_t) + \beta_7 (INF_t) + \beta_8 (RI_t) + \beta_9 (D_t) + \mu_{it}$

Where:

ROA_{it} = Return on Asset of Bank i at time t

α_0 = Intercept

$LogA_{it}$ = bank size of bank i at time t

CA_{it} = Capital Adequacy of bank i at time t

NPL_{it} = Asset Quality of bank i at time t

EM_{it} = Expenses Management of Bank i at time t

LD_{it} = Liquidity Ratio of Bank i at time t

GDP_t = Gross Domestic Product (GDP) at time t

INF= Annual Inflation Rate at time t

RI_t = Annual Real Interest Rate at time t

D_t = A Dummy variable t=1 for the period after the NBE bill purchase policy and t=0, otherwise.

μ_{it} = Error term where i is cross sectional and t time identifier

Chapter 4

4. Empirical Results and Discussions

In chapter two, important literatures relating to the topic that gives an insight into the matter under discussion were reviewed. Issues with regards to Data Type, Method of Data Collection and Analysis, Sample Design and Description of Variables have been discussed in the preceding chapter. This chapter is devoted to presentation of findings of the analysis.

The data for this study is comprised of the panel secondary data (i.e. comprising cross-sectional and time-series data) which are obtained from audited financial reports of 6 banks that are in operation for at least 15 years as at June 30, 2015. The cross sectional element is reflected by the six banks under consideration namely; Awash International Bank, Dashen Bank, Wegagen Bank, Bank of Abyssinia, Nib International Bank and United Bank and the time series element is reflected in the period of study (2006 – 2015).

Since panel data relate to individuals, firms, states, countries, etc. over time, there is bound to be heterogeneity in these units. The techniques of panel data estimation can take such heterogeneity explicitly into account by allowing for individual-specific variables. We use the term individual in a generic sense to include micro units such as individuals, firms, states, and countries. By combining time series of cross-section observations,

panel data give "more informative data, more variability, less collinearity among variables, more degrees of freedom and more efficiency (Gujarati 2004)."

4.1 Choice of Model

Panel-data models are extensions of standard regression models that take into account group (or panel) effects. There are two most prominent models in dealing with Panel Data analysis.

 (1) The fixed effects model (FEM)
(2) The random effects model (REM)

In FEM the intercept in the regression model is allowed to differ among individuals in recognition of the fact each individual, or cross-sectional, unit may have some special characteristics of its own. In REM, on the other hand, it is assumed that the intercept of an individual unit is a random drawing from a much larger population with a constant mean value. The individual intercept is then expressed as a deviation from this constant mean value (Gujarati, 2004).

If T (the number of time series data) is large and N (the number of cross-sectional units) is small, there is likely to be little difference in the values of the parameters estimated by fixed effect model (FEM) and random effect model (REM) (Gujarati, 2004). Since the number of time series (i.e. 10 year) is greater than the number of cross-sectional units (i.e. 6 commercial

banks), the researcher has made the choice based on computational convenience. The researcher finds the FEM model to be computationally convenient while dealing with the data.

According to Brooks (2008); Verbeek (2004) and Wooldridge (2006), it is often said that the REM is more appropriate when the entities in the sample can be thought of as having been randomly selected from the population, but a FEM is more plausible when the entities in the sample effectively constitute the entire population/sample frame. Hence, the sample for this study was not selected randomly and thus the researcher found the FEM to be appropriate.

4.2 Classical Linear Regression Model Assumptions and Diagnostic Test

It is essential to test the assumptions Classical Linear Regression Model prior to undertaking the estimations of variables. We have to be sure that the assumptions underlying Ordinary Least Square (OLS) estimation are not violated. This is done through testing each assumption.

4.2.1 Test for Heteroskedasticity

One of the important assumptions of the classical linear regression model is that the variance of each disturbance term u_i, conditional on the chosen values of the explanatory variables, is some constant number equal to σ^2.

This is the assumption of homoscedasticity. If the errors do not have a constant variance, they are said to be heteroscedastic.

To test this assumption the whites test was used having the null hypothesis of Heteroskedasticity. Both F-statistic and chi-square (x^2) tests statistic were used.

In this study as shown in table 4.1, both the F-statistic and Chi-Square versions of the test statistic gave the same conclusion that there is no evidence for the presence of Heteroskedasticity, since the p-values were in excess of 0.05. The third version of the test statistic, "Scaled explained SS", which as the name suggests is based on a normalized version of the explained sum of squares from the auxiliary regression, also gave the same conclusion that there is no evidence for the presence of Heteroskedasticity problem, since the p-value was considerably in excess of 0.05.

Table 2 : Test for Heteroskedasticity

Heteroskedasticity Test: White

F-statistic	2.474837	Prob. F(49,10)	0.0617
Obs*R-squared	55.42916	Prob. Chi-Square(49)	0.2452
Scaled explained SS	34.54657	Prob. Chi-Square(49)	0.9413

Source: Eviews 9

4.2.2 Test for Autocorrelation

The term autocorrelation may be defined as "correlation between members of series of observations ordered in time [as in time series data] or space

57

[as in cross-sectional data]." In the regression context, the classical linear regression model assumes that such autocorrelation does not exist in the disturbances *ui* (Gujarati 2004). In other words, it is assumed that the errors are uncorrelated with one another and correlation of error terms implies violation of the OLS assumption that error terms are not serially correlated.

There are a number of tests available for Autocorrelation. The most celebrated test for detecting serial correlation is Durbin-Watson test (DW Test).

The value of Durbin Watson Test *(d)* always lies between 0 and 4. If the Durbin–Watson statistic is substantially less than 2, there is evidence of positive serial correlation. As a rough rule of thumb, if Durbin–Watson is less than 1.0, there may be cause for alarm. Small values of *d* indicate successive error terms are, on average, close in value to one another, or positively correlated. If *d* > 2, successive error terms are, on average, much different in value from one another, i.e., negatively correlated. In regressions, this can imply an underestimation of the level of statistical significance. If *d* is equal to 2 it indicates that there is no Autocorrelation. If *d* is closer to 2, it indicates that the problem of serial correlation in not serious (Gujarati 2004).

As it has been shown in Table 4.4 of regression result, the Durbin Watson statistic stood at 1.76 which is much closer to 2 indicating that there is no serious autocorrelation problem in the data set.

4.2.3 Test for multicollinearity

Multicollinearity refers to the existence of a perfect or exact, linear relationship among some or all explanatory variables of a regression model. If multicollinearity is perfect, the regression coefficients of the explanatory variables are indeterminate and their standard errors are infinite. If multicollinearity is less than perfect, the regression coefficients, although determinate, possess large standard errors (in relation to the coefficients themselves), which means the coefficients cannot be estimated with great precision or accuracy. It thus violates the classical linear regression model (CLRM) assumption which states that there is no multicollinearity among the regressors included in the regression model (Gujarati 2004).

Table 4.2 below presents the summary results of the correlation analysis for the study in order to determine the level of association among the explanatory variables. As seen in the table, there are fairly low data correlations among the independent variables. As per statistics in the table most of the variables are weakly correlated with coefficients of correlation less than 0.4. Kennedy (2008), state that correlation is high when its value is above 0.80 or 0.90.

Bryman and Cramer (2001) view that multicollinearity is when correlation exceeds 0.80 whereas, Anderson, Sweeney and Williams (1990) use 0.70 as standard point indicating multicollinearity. Hence due to these low correlation coefficients the results show that there is no multicollinearity problem for the independent variables.

Table 3 : Results of Correlations between Independent Variables

	CA	DO1	EM	GDP	INF	LD	LOGA	NPL	RI
CA	1								
DO1	0.29801	1							
EM	0.24766	0.21951	1						
GDP	-0.2093	-0.7191	0.00466	1					
INF	-0.0190	-0.1054	-0.1214	-0.3805	1				
LD	0.06917	-0.3665	0.13214	0.52471	-0.0346	1			
LOGA	-0.0063	0.7198	0.01297	-0.575	-0.1386	-0.7287	1		
NPL	0.21905	-0.4003	0.24415	0.19399	0.22737	0.40081	-0.5404	1	
RI	0.12806	0.25381	0.04277	-0.5734	0.21057	-0.7326	0.5841	-0.0316	1

Source: Computed from Eviews result

4.2.4 Normality Test

Normality Test is another important test to undertake while undertaking the regression analysis. Brooks (2008) stated that the normality assumption ($u_t \sim$ N (0, $\sigma2$) is required in order to conduct single or joint hypothesis tests about the model parameters. One of the most commonly applied tests for normality is the Bera-Jarque (BJ) test. BJ uses the property of a normally distributed random variable that the entire distribution is characterized by the first two moments - the mean and the

variance Brooks (2008). In case of this study, the researcher used BJ normality test to test the null hypothesis of normally distributed errors assumptions.

As shown in figure 4.2 since, the histogram is bell-shaped and the Bera-Jarque statistic is not significant. This means that the *p*-value given at the bottom of the normality test screen should be bigger than 0.05 to not reject the null of normality at the 5% level so, the residuals are normally distributed in this study, concluded that there is no the problem of normality on ROA model (see figure 1).

Figure 1 : **Normality Test for Residual**

Series: Standardized Residuals	
Sample 2006 2015	
Observations 60	
Mean	-1.16e-17
Median	0.038203
Maximum	0.891952
Minimum	-0.676455
Std. Dev.	0.329536
Skewness	-0.080916
Kurtosis	2.918861
Jarque-Bera	0.081933
Probability	0.959861

Source: Eviews 9

61
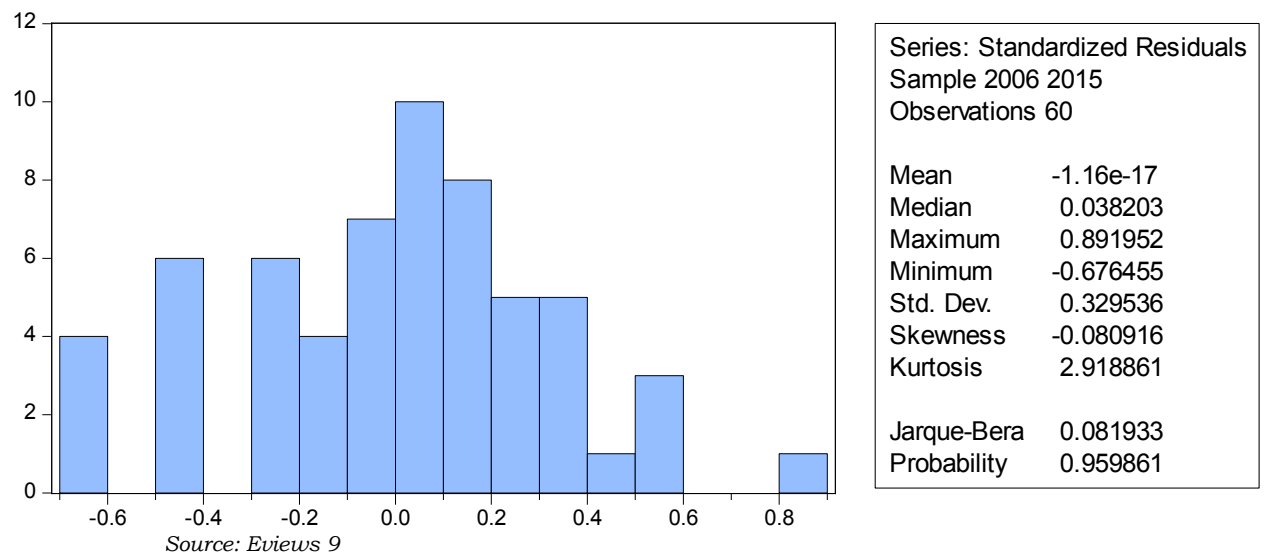
4.3 Descriptive Statistics

Descriptive statistical variables are summarized and presented in table 4.2 which shows the mean value for each variable, as well as minimum and maximum values, and standard deviation. As shown by the results, for the six private banks under study, the mean of ROA was 2.86 percent with a minimum of 0.37 percent and a maximum of 4.02 percent over the time period covering from 2006 to 2015. That means the most profitable bank among the banks under study earned 4.02 percent of profit after tax for a single birr invested in the assets of the firm. On the other hand, the least profitable bank of the sampled banks earned 0.37 cents of profit after tax for each birr invested in the assets of the firm. The standard deviation statistics for ROA was (0.59) which indicates that the profitability variation between the selected banks was not that much significant.

Looking at explanatory variables, the average capital adequacy ratio is 12.86 percent, which is higher than the National Bank's Capital Adequacy requirements of 8percent (Directives No. SBB/50/2011). Theoretically it is likely that higher capital adequacy ratio means less risky weighted assets which indicate a better asset quality. Minimum value for Capital Adequacy is 8.06 percent and maximum value is 19.22 percent indicating that there is no significant variation among the banks under study with this regard.

Banks often report their ratio of nonperforming loans to total loans as a measure of the quality of their outstanding loans. The average asset

quality the private banks under study stood at 3.7percent which is much lower than the acceptable ratio set by NBE of 5.0 percent. It implies that the banks under consideration follow prudent loan granting practices.

The ratio of loans to deposits is used in this study as a measure of liquidity. The average liquidity of the private banks understudy during the period covering from 2006 to 2015 was 65.3 percent implying that these banks have not utilized about 35 percent of their fund for lending purpose. The main reason for such a high liquidity ratio figure is the credit cap imposed by National Bank on these banks and the imposition of NBE bill after the lifting of the cap. The maximum Loan to Deposit ratio during the started period was 101.6 percent implying that that specific bank lent more loans that the deposit it collected from customers. The reason for such an instance is banks do lend from their paid-up capital and this would lead to rise in deposit to loan ratio.

The average growth rate of real GDP is approximately 10.56 percent during the period under study. The maximum real GDP growth rate was 11.8 whereas the minimum was 8.7 percent. With regards to Inflation rate, the country experienced double digit inflation during most of the period under study. The average inflation rate recorded during the study period is 17.2 percent, the maximum being 36.4 percent and the minimum is 2.8 percent.

Real interest rate was negative during most of the period under study. The high inflation rate that had been persistent during the period was the main reason for the negative real interest rate recorded. The average real interest rate was -5.55 percent, the maximum being 9.45 percent and the minimum is -24.15 percent.

On the other hand, bank size which is measured by logarithm of total asset has the average figure of 6.86%, the maximum being 6.9 percent and the minimum is 7.4 percent. Logarithm of total asset has standard deviation of 0.29 percent which is the least standard deviation figure implying that the variation among the banks under study is insignificant with respect to asset size.

The ratio of non-interest expenses to average assets is the ratio that more frequently used on studies of bank profitability in measuring the management quality. The descriptive statistics of shows that an average Expense management for the banks under study stood at 3.13 percent implying that for a single Birr invested in the assets of the firms those banks spent Birr 0.031 as non-interest expense (see table 4.2).

Table 4 : Results of Descriptive Statistics for Variables

	Observations	Mean	Median	Maximum	Minimum	Std. Dev.
ROA	60	2.857	2.929	4.021	0.367	0.594
CA	60	12.860	11.895	19.218	8.066	3.117
EM	60	3.135	3.021	5.724	2.118	0.691
GDP	60	10.560	10.450	11.800	8.700	0.899
INF	60	17.240	14.650	36.400	2.800	10.863
LD	60	65.313	60.252	101.572	48.847	12.841
LOGA	60	6.866	6.900	7.402	6.204	0.289
NPL	60	3.719	2.987	10.180	1.519	2.016
RI	60	-5.550	-3.460	9.450	-24.150	10.750

Source: Computed from Eviews result

4.4 Empirical Results from Panel Data Analysis

Tables 4.3 show the estimated parameters and t-statistics obtained from the application of fixed effects model, using ROA as a profitability measure which represents a dependent variable. The fixed effects coefficients of the regressors indicate how much profitability changes which is measured in term of ROA when there is a change in the Bank Size, Capital Adequacy, Assets Quality, Expenses Management, Liquidity Management as internal factors and NBE Bill, Gross Domestic Product, Inflation Rate and Real Interest Rate as external factors. The sample is comprised of 60 observations. The overall regression is statistically significant, F = 7.22, p = 0.0000, thus supporting the fact that the internal and external determinants used in the model are important factors in explaining the profitability of the commercial banks under study. The explanatory power of the model, the R-squared and adjusted R squared are at the satisfactory

level of 79.2% and 69.3% respectively. The standard error of the regression is 0.3773. The result of the Durbin Watson Statistics of 1.76 indicates that there is no autocorrelation among the variables included in the model, making the model more reliable (see table 4.1).

Among the bank specific variables, capital adequacy (CA) and Bank size (LogA) have positive effect on the profitability of the private commercial banks under study. Capital adequacy happens to have a significant positive impact on profitability whereas, the impact of asset size as measured by logarithm of total assets is found to be insignificant. Asset quality as measured by the ratio of non-performing loans, Expense management and liquidity as measured by loan to deposit ratio have significant negative impact on profitability. Among external determinant, with the exception of NBE Bill, the impact of other variable has been found to be insignificant.

Table 5 : Determinants of Return on Assets (ROA)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	5.20458	4.177054	1.24599	0.2192
CA	0.55807	0.036904	1.51222	0.0025
EM	-0.40227	0.098887	-4.068	0.0002
LOGA	0.22435	0.700991	0.32004	0.7504
NPL	-0.01978	0.043499	-0.4548	0.0114
LD	-0.00372	0.008929	-0.4166	0.0039
D01	-0.35429	0.38414	-0.4016	0.0099
GDP	0.07159	0.155039	0.46172	0.6465
INF	0.19107	0.196954	0.97014	0.3372
RI	0.19533	0.196534	0.99385	0.3256

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.792161	Mean dependent var	2.85715
Adjusted R-squared	0.696389	S.D. dependent var	0.69394
S.E. of regression	0.377331	Akaike info criterion	1.10093
Sum squared resid	6.407033	Schwarz criterion	1.62452
Log likelihood	-18.02786	Hannan-Quinn criter.	1.30573
F-statistic	7.227158	Durbin-Watson stat	1.76397
Prob(F-statistic)	0.000000		

Source: Eviews 9

4.5 Analysis and Discussions

In this section the result of the regression analysis will be discussed in light of the specific research hypotheses made and theoretical framework.

✛ **Capital Adequacy:** The coefficient of capital adequacy is positive and highly significant, reflecting the sound financial condition of the banks under study. A bank with a sound capital adequacy is in the better position to use better banking technologies which results in high efficiency and thus achieving higher profitability. As Athanasoglou et al. (2005) argue that, a bank with a sound capital position is able to pursue business opportunities more effectively and has more time and flexibility to deal with problems arising from unexpected losses, thus achieving increased profitability. This result stands in line with the empirical evidence of Dietrich and Wanzenrid (2009), Bourke (1989), DemirgucKunt and Huizinga (1999), Goddard et al. (2004), Pasiouras and Kosmidou (2007), Amdemikael (2012), Habtamu (2012) and Samuel (2015).

✛ **Bank Size:** In most finance literature, total assets of the banks are used as a proxy for bank size. Bank size is represented by natural logarithm of total asset (log A). In the hypothesis the researcher expects either negative or positive relationship between asset size and profitability. The result of regression analysis shows that LogA is found to be positively related with profitability of the private commercial banks under study and

the impact is found to be insignificant. (Vernon, 1971) was among the first few researchers who found the direct relationship between the banks size and profitability and according to him larger banks have high profitability. The implication is that size of the bank is also the result of administration policy and can have a positive impact on profitability; but that cannot grantee the excess profit.

Be Berger et al. (1987), Birhanu (2012) and Samuel (2015) on the other hand found out a negative relationship between the bank size and return on assets. The impact of bank size on its performance is different as explored in a study conducted by Goddard et al. (2004) from 1992-1998 of Europe it shows mix association and relationship among size and profitability.

Empirical study conducted by Amdemikael (2012) and Habtamu (2012) shows that bank size has statistically significant and positive relationship with banks profitability.

⊕ **Expense Management:** Expenses Management which is measured by the ratio of non-interest expenses to average assets appears to be an important determinant of banks' profitability for the private commercial banks under study. This variable has negative relationship with banks' profitability and the impact is found to be statistically highly significant which meets the expectation of this study. Operation cost control is a prerequisite for an efficient and higher profitability of a bank. Thus cost

control management is very crucial for improved profitability of private banks in Ethiopia. This result, which stands in line with the results of Dietrich and Wanzenrid (2009) clearly show that, the more efficient a bank, the higher is its profitability. Athanasoglou et al. (2008), clearly shows that efficient cost management is a prerequisite for improved profitability of a bank.

⊕ **Asset Quality:** The assets quality which is measured by non-performing loan to total loan ratio (NPL) is found to have a significant negative impact on banks' profitability. Higher level of nonperforming loans means higher credit risk and poor asset quality management in the banks. It reduces interest income and increases provisioning costs, thus decreasing profits of a bank. Banks tend to be more profitable when they are able to undertake more lending activities. High provision is needed for non-performing loan in Ethiopia and this would have a significant negative impact on profitability.

This result is consistent with the empirical evidence of Athanasoglou et al. (2008) observed that the loan-loss provisions to loans ratio (credit risk) is negatively and significantly related to banks' profitability.

⊕ **Liquidity:** Liquidity management which is measured by the ratio of loans to deposits is found to have a negative relationship with banks' profitability and the impact is statistically highly significant. Higher liquidity implies that banks held high amount of deposits without

redirecting them for lending purpose. This implies that banks are paying interest on the deposits, but they are not earning interest income on the deposits by redirecting them for lending purpose. Thus, high liquidity affects the profitability of banks negatively.

The result found to be consistent with that of Bourke (1989) who found positive and significant relationship between bank liquidity and profitability.

⊕ **NBE Bill:** National Bank of Ethiopia has introduced a directive which requires all private commercial banks in the country to purchase NBE Bill amounting to 27% of total loan disbursed having a maturity period of 5 years. The interest rate on the bills is 3 percent while the rate of interest that banks charge when they accept deposits is 5 percent. This literally meant that banks offered loan for the NBE at a loss of 2 percent. The result found is consistent with the expectation and a significant negative relationship has been observed between NBE Bill and profitability.

⊕ **GDP:** The coefficient of growth in GDP variable is positive and insignificant. This finding agrees with theory and empirical evidence that; the relationship between GDP trend growth and banks' profitability could be pro-cyclical. This would imply that when GDP trend growth is positive, the effect to bank profitability is positive and when GDP trend growth is negative, the effect on profitability is negative. An important finding from this study is that, in recent years, economy experienced positive economic

71

growth that could have impacted positively on banks' profitability. The positive impact in GDP to banks' profitability could be due the following reasons. Bank credit could increase during boom period since such periods are normally associated with lower risk. Insignificant positive effect of GDP is supported by researches of (Athanasoglou and Staikouras, 2006; Demirguc-Kunt and Huizinga, 1999, Flamini, et al 2009; Naceur, 2003).

✛ **Inflation**: inflation is one of the Macro Economic determinants used by the researcher. The coefficient of Inflation variable is positive but insignificant on bank profitability. It implies that inflation is not significant factor in affecting profitability of private commercial banks in Ethiopia. The impact of inflation on bank income or profit depends on whether banks running cost growing higher than inflation rate. The result is found to be consistent with empirical studies conducted by Gul et.al (2011) and Jiang et al. (2003) who found positive relationship between inflation and profitability.

✛ **Real Interest Rate:** For real interest rate variable, the coefficient is positive but insignificant which implies that the effect of real interest rate on profitability of private commercial banks under study is not significant. The insignificant positive relationship of interest rate with banks' profitability is in line with previous studies such as Aburime, 2008; Athanasoglou, Brissimis and Delis, 2005: Demirgüç-Kunt & Detragiache, 1998; Demirguc-Kunt and Huizinga, 1999; Staikouras and Wood, 2004.

Chapter 5

5. Conclusion and Recommendation

Banking sector is the backbone of any economy and plays its important role in the economic development of a country. Mobilization of the national savings to the productive sectors is possible only with the help of commercial banks that augments the economic growth rate of a country.

In Ethiopia, the liberalization of the banking industry in 1990s has created a conducive environment for the emergence of private commercial banks. At present, there are three government owned banks and sixteen privately owned banks in Ethiopia. The banking sector of the country is not well developed even with the standard of Sub Saharan countries. Card Banking Service does have a history of less than a decade. Most of the banks do not provide online banking services till 2012. However, currently there is stiff competition among these banks and they are trying to persuade customers by providing technology based products, by expanding their branch network to serve customers at door step, by providing banking product that targets specific section of the population (like interest free banking), etc. This Competition is a continuous driver for the participants in the industry to strive for best practices and up to date technology to improve their efficiency and to gain customer satisfaction. All these factors are being translated in to increased business and higher profitability.

In a developing country like Ethiopia a well-functioning broad based and stable financial system is a pre-requisite to support the much needed economic development and growth. Owing to its vital role in the economy it is important to regularly measure banking sector's performance. In order to measure the performance of banking sector its profitability is used, as it is the single most important indicator of the financial health and sustainability in long run. A profitable banking sector is more likely to withstand a financial and economic distress like recent global financial crises of 2008 (Ani et al., 2012).

5.1 Conclusions

It is generally agreed that a strong and efficiency of banking system is important for sustainable economic growth. This study investigates the effect of bank specific and macroeconomic factors on banks' profitability on profitability of private commercial banks in Ethiopia. The determinants of banks' profitability used in this study were bank size, capital adequacy, assets quality, expenses management and liquidity management as bank specific factors and NBE Bill, GDP, Inflation rate and real interest rate as macroeconomic factors. Some theoretical and empirical reviews were employed to support the relationship between banks' profitability and determinants of banks' profitability. The econometric model of fixed effects regression method was used in this study, using a panel data of 6 banks in Ethiopia for period from 2006 to 2015.

The followings conclusions have been drawn from the result of empirical findings;

⊕ The coefficient of capital adequacy is positive and highly significant, reflecting the sound financial condition of the banks under study. A bank with a sound capital adequacy is in the better position to use better banking technologies which results in high efficiency and thus achieving higher profitability.

⊕ Bank size is found to be positively related with profitability of the private commercial banks under study and the impact is found to be insignificant. The implication is that size of the bank is also the result of administration policy and can have a positive impact on profitability; but that cannot grantee the excess profit.

⊕ Expenses Management has negative relationship with banks' profitability and statistically highly significant which meets the expectation of this study. Operation cost control is a prerequisite for an efficient and higher profitability of a bank and it is very crucial for improved profitability of private banks in Ethiopia.

⊕ The assets quality which is measured by non-performing loan to total loan ratio (NPL) is found to have a significant negative impact on banks' profitability. Banks tend to be more profitable when they are able to undertake more lending activities. High provision is

needed for non-performing loan in Ethiopia and this would have a significant negative impact on profitability.

✛ Liquidity management which is measured by the ratio of loans to deposits is found to have negative and statistically highly significant effects on banks' profitability. Higher liquidity implies that banks held high amount of deposits without redirecting them for lending purpose. This implies that banks are paying interest on the deposits, but they are not earning interest income on the deposits by redirecting them for lending purpose. Thus, high liquidity affects the profitability of banks negatively.

✛ NBE's directive which requires all private commercial banks in the country to purchase NBE Bill amounting to 27% of total loan disbursed is having a negative and a significant impact on profitability of private commercial banks under study. The interest rate on the bills is 3 percent while the rate of interest that banks charge when they accept deposits is 5 percent. This literally meant that banks offered loan for the NBE at a loss of 2 percent. The result found is consistent with the expectation and a significant negative relationship has been observed between NBE Bill and profitability.

✛ The coefficient of growth in GDP variable is positive and insignificant. This finding agrees with theory and empirical

evidence that; the relationship between GDP trend growth and banks' profitability could be pro-cyclical.

⊕ Inflation variable, the coefficient is positive but insignificant on bank profitability. It implies that inflation is not significant factor in affecting profitability of private commercial banks in Ethiopia.

⊕ For real interest rate variable, the coefficient is positive but insignificant which implies that the effect of real interest rate on profitability of private commercial banks under study not is significant.

5.2 Recommendations

⊕ Overall, results of this study show that, the profitability of the private commercial banks under study is mostly affected by bank specific factors (that are internal factors determined by bank's management decisions and policy objectives). Yet, macroeconomic factors with the exception of NBE Bill do not seem to significantly affect profitability. These results have important implications for banks' survival and growth. It is expected that this study will guide the policy makers and bank management in the formulation and implementation of better policies and strategies which may results better performance of banks in Ethiopia.

- Banks tend to be more profitable when they are able to undertake more lending activities, yet due to the credit quality of lending portfolios and the general practice in Ethiopia is a higher level of provision is needed. Such a high level of provision for non-performing loans against total loans in fact affects adversely banks' profitability significantly. Thus, banks should follow a prudent lending practice while granting loan.

- Expense management is found to have a significant impact on profitability of commercial banks under study. Thus, commercial banks should strive to minimize controllable expenses. They should minimize the high branch expansion cost through providing state-of-the-art banking products which would minimize the need for customer to visit bank branches. The role of internet banking, mobile banking and card banking is considerable in this regard.

- The banking sector in the country is at an exciting point in its evolution. The opportunities are immense to enter into new businesses and new markets, to develop new ways of working, to improve efficiency and to deliver higher level of customer service. Thus, private banks need to make service available anywhere anytime 24/7.

- Ethiopia is one of the most under banked country even with in the standard of Sub-Saharan Africa. This shows there is a huge future

potential and prospect for the banking industry in Ethiopia as considerable section of the population is not using the banking services. Thus, private banks should direct their strategy to open branch outlets in regional towns rather than concentrating in Addis Ababa and few other known cities and towns to reap the potential out there and to boost their profitability.

- ✥ NBE Bill is having a significant negative impact on profitability of private commercial banks in Ethiopia. It is important to note that Government banks are not required to purchase the Bill which is an indication of lack of level playing ground between private and government banks. Thus, private commercial banks should organize themselves and challenge the government on some of its biases such as NBE Bill directive and other directives that are favoring government banks such as export to China which handed the sole responsibility to Commercial Bank of Ethiopia.

- ✥ There is high employee turnover in the banking sector of the country. High employee turnover hurts the industry significantly. Thus, they should come up with sound measures to reduce employee turnover.

- ✥ The opening of financial sector to the foreign banks is eminent and the commercial banks operating in the country cannot withstand those foreign banks entering the country with huge capital base

and advanced technology and managerial skill. Thus, private banks should devise a sound strategy to withstand the upcoming eminent treat from foreign banks. They can raise huge capital base from the public or they can strengthen their capital base through merger.

For future research, this study can be extended to cover longer time periods. Unbalanced panel data can be used to incorporate the banks which are recently established. Other econometric techniques can be applied to verify the relationship. More macroeconomic factors such as exchange rate, imports, exports, tax rates and income level can be focused on. Moreover, researcher shall conduct studies on the effect merger of private banks on their performances.

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Appendices

Appendix –I: Tests for the Heteroskedasticity

Heteroskedasticity Test: White

F-statistic	2.474837	Prob. F(49,10)	0.0617
Obs*R-squared	55.42916	Prob. Chi-Square(49)	0.2452
Scaled explained SS	34.54657	Prob. Chi-Square(49)	0.9413

Test Equation:

Dependent Variable: RESID^2

Method: Least Squares

Date: 04/05/16   Time: 17:04

Sample: 1 60
Included observations:
60
Collinear test regressors dropped from
specification

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-269.2151	230.6676	-1.167113	0.2702
CA^2	0.016552	0.009088	1.821249	0.0986
CA*D01	-0.177803	0.136607	-1.301572	0.2222
CA*EM	-0.020623	0.044282	-0.465716	0.6514
CA*GDP	0.063898	0.075269	0.848935	0.4158
CA*INF	0.218806	0.160564	1.362739	0.2029
CA*LD	0.013191	0.006342	2.079935	0.0642
CA*LOGA	0.656583	0.240852	2.726086	0.0213
CA*NPL	-0.034932	0.027748	-1.258917	0.2367
CA*RI	0.215954	0.158136	1.365621	0.202
CA	-8.800914	3.462278	-2.541943	0.0293
D01^2	94.64516	45.14161	2.096628	0.0624
D01*EM	0.978718	0.77185	1.268017	0.2335
D01*GDP	-8.346393	3.900226	-2.139977	0.058
D01*INF	0.008407	0.171427	0.04904	0.9619
D01*LD	-0.066685	0.103733	-0.642849	0.5348
D01*LOGA	-0.138695	2.963714	-0.046798	0.9636
D01*NPL	-0.17929	0.238613	-0.751385	0.4697
EM^2	-0.159438	0.115181	-1.384239	0.1964
EM*GDP	0.385431	0.400787	0.961686	0.3589

87

EM*INF	0.00503	0.556823	0.009033	0.993
EM*LD	-0.010785	0.030705	-0.351241	0.7327
EM*LOGA	-0.914435	1.063178	-0.860096	0.4099
EM*NPL	0.064485	0.088627	0.727605	0.4835
EM*RI	-0.012952	0.55171	-0.023476	0.9817
EM	3.494728	13.15224	0.265714	0.7959
GDP^2	-2.774768	1.203212	-2.306134	0.0438
GDP*INF	-0.666868	1.011623	-0.659207	0.5247
GDP*LD	-0.046419	0.058821	-0.789158	0.4483
GDP*LOGA	0.684989	1.064119	0.643715	0.5342
GDP*NPL	-0.016613	0.114358	-0.145272	0.8874
GDP*RI	-0.709392	0.991912	-0.715176	0.4909
GDP	67.66477	31.3844	2.156	0.0565
INF^2	-0.088322	0.070103	-1.259896	0.2363
INF*LD	-0.164015	0.075524	-2.171686	0.055
INF*LOGA	2.588617	1.559095	1.660333	0.1278
INF*NPL	0.324894	0.157873	2.057946	0.0666
INF*RI	-0.101158	0.075644	-1.337286	0.2108
LD^2	-0.002514	0.001723	-1.459119	0.1752
LD*LOGA	0.036795	0.105266	0.349539	0.7339
LD*NPL	0.009059	0.011327	0.799756	0.4424
LD*RI	-0.164031	0.074825	-2.192208	0.0531
LD	2.335249	0.970871	2.405313	0.037
LOGA^2	0.045961	3.844876	0.011954	0.9907
LOGA*NPL	-0.203101	0.691921	-0.293533	0.7751
LOGA*RI	2.536126	1.557971	1.627839	0.1346
LOGA	-44.60341	55.83519	-0.798841	0.4429
NPL^2	-0.037167	0.022172	-1.676296	0.1246
NPL*RI	0.328909	0.158015	2.081514	0.064
NPL	-2.141791	5.927598	-0.361325	0.7254

R-squared	0.923819	Mean dependent var	0.16648
Adjusted R-squared	0.550534	S.D. dependent var	0.22492
S.E. of regression	0.150793	Akaike info criterion	-1.0709
Sum squared resid	0.227386	Schwarz criterion	0.67438
Log likelihood	82.12715	Hannan-Quinn criter.	-0.3882
F-statistic	2.474837	Durbin-Watson stat	2.18091
Prob(F-statistic)	0.061708		

Appendix-II: Regression Results for Factors affecting Bank Profitability

Dependent Variable: ROA
Method: Panel Least Squares
Date: 03/25/16 Time: 10:32
Sample: 2006 2015
Periods included: 10
Cross-sections included: 6
Total panel (balanced) observations: 60

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	5.20458	4.177054	1.24599	0.2192
CA	0.55807	0.036904	1.51222	0.0025
EM	-0.40227	0.098887	-4.068	0.0002
LOGA	0.22435	0.700991	0.32004	0.7504
NPL	-0.01978	0.043499	-0.4548	0.0114
LD	-0.00372	0.008929	-0.4166	0.0039
D01	-0.35429	0.38414	-0.4016	0.0099
GDP	0.07159	0.155039	0.46172	0.6465
INF	0.19107	0.196954	0.97014	0.3372
RI	0.19533	0.196534	0.99385	0.3256

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.792161	Mean dependent var	2.85715
Adjusted R-squared	0.696389	S.D. dependent var	0.69394
S.E. of regression	0.377331	Akaike info criterion	1.10093
Sum squared resid	6.407033	Schwarz criterion	1.62452
Log likelihood	-18.02786	Hannan-Quinn criter.	1.30573
F-statistic	7.227158	Durbin-Watson stat	1.76397
Prob(F-statistic)	0.000000		