WOLKITE UNIVERSITY

SCHOOL OF GRADUATE STUDIES

DEPARTMENT OF ECONOMICS

ANALYSIS OF FACTORS AFFECTING DEPOSIT MOBILIZATION OF PRIVATE COMMERCIAL BANKS IN ETHIOPIA

BY

MEKUANINT AYALEW FELEKE

JUNE, 2019

WOLKITE, ETHIOPIA

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A THESIS SUBMITTED TO THE SCHOOL OF GRADUATE STUDIES OF WOLKITE UNIVERSITY IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF SCIENCE IN ECONOMICS

JUNE, 2019

WOLKITE, ETHIOPIA

DECLARATION

I declare that the thesis entitled, **ANALYSIS OF FACTORS AFFECTING DEPOSIT MOBILIZATION OF PRIVATE COMMERCIAL BANKS IN ETHIOPIA,** hereby presented by me in partial fulfillment of the requirements for the degree of Master of Science in Economics at Wolkite University.

To the best of my knowledge, this study has not submitted for any degree in this University or any other University. In addition, that all sources of materials used for the study have been duly acknowledged.

By**: MEKUANINT AYALEW FELEKE**

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Date ----------

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ADVISORS' APPROVAL SHEET

This is to certify that the thesis entitled "**Analysis of Factors Affecting Deposit Mobilization of Private Commercial Banks in Ethiopia**" submitted in partial fulfillment of the requirements for the degree of Master's with specialization in Developmental Economics, the Graduate Program of Economics Department, and has been carried out by **Mekuanint Ayalew Feleke** Id N**o** GSE 083/09 under our supervision. To the best of our knowledge, it is an original work and not submitted earlier for any degree either at this University or for any other University.

Therefore, we recommend that the student has fulfilled the requirements and hence hereby can submit the thesis to the department.

Badassa Wolteji (PhD)  ----------
Main advisor Signature Date

Biruk Birhanu (Assistant Professor) ---------- ----------
Co-Advisor Signature Date

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EXAMINERS' APPROVAL SHEET

We, the undersigned, members of the Board of Examiners of the final open defense by **Mekuanint Ayalew Feleke**, have read and evaluated his thesis entitled **"Analysis of Factors Affecting Deposit Mobilization of Private Commercial Banks in Ethiopia"** and examined the candidate. This is, therefore, to certify that the thesis has been accepted in partial fulfillment of the requirements for the degree of Master of Science in Economics.

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Final approval and acceptance of the thesis is contingent upon the submission of the final copy of the thesis to the School of Graduate Studies (SGS) through the Department/School of Graduate Committee (DGC/SGC) of the candidate's department.

Stamp of SGS Date ----------

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ACRONYMS AND ABBREVIATIONS

ADF	Augmented Dickey-Fuller
AIB	Awash International Bank
ATM	Automatic Teller Machine
BDG	Bank Deposit Growth
BOA	Bank of Abyssinia
CAR	Capital Adequacy Ratio
CBE	Commercial Bank of Ethiopia
CLRM	Classical Linear Regression Model
DB	Dashen Bank
ECM	Error Correction Model
EVIEW	Econometric View
GDP	Gross Domestic Product
FED	Fixed Effect Model
GTP	Growth and Transformation Plan
IMF	International Monetary Fund
LIQ	Liquidity
NBE	National Bank of Ethiopia
NIB	Nib International Bank
OLS	Ordinary Least Square
POS	Point of Sale
REM	Random Effect Model
RGDP	Real Gross Domestic Product
SMEs	Small and Medium Enterprises
UB	United Bank
UD	United States Dollar
VECM	Vector Error Correction Model
WB	Wegagen Bank

ABSTRACT

The aim of this study is analyzing factors affecting deposits mobilization of private commercial banks in Ethiopia. In doing so, the study used Pearson correlation analysis, ordinary least squares (OLS) technique, Granger causality analysis and descriptive statistics using secondary data. The data are collected from national bank of Ethiopia (NBE) and sampled private commercial banks from the year 2002 up to 2017. The collected panel data also, regressed based on random effect model. Econometric view version 8 (Eview 8) and stata version 13 statistical software has been used to perform the analysis. The result of correlation analysis showed that, deposit interest rate and lending interest rate strongly correlated, while the inflation weakly correlated with bank deposit. As per the Granger causality analysis, the variables included in the estimation model have a unidirectional relationship in the long run. In addition to, the results of regression analysis showed that, deposit interest rate; the lending interest rate and return on asset were positively and significantly influence the bank deposit. However, inflation affects bank's deposit negatively and significantly during the study period. Finally the study has recommended that, the private commercial banks should give due emphasis to deposit mobilization tasks and its determining factors by considering mobilizing deposit is a way to sustain in the banking industry.

Key Words: - Deposit Mobilization, Ethiopia**,** Factors Affecting Bank Deposit

CHAPTER ONE

1. INTRODUCTION

1.1. Background of the Study

Economic growth is the common objective of all nations. Everybody lives with a better standard of living than before and bring about a better welfare because of the surge in economic growth. The government of each country struggle to reduce poverty and increase the level of national income. Thus, to achieve the main target of economic growth, governments may implement various kinds of policies such as encouraging saving, stimulating investment and production in their countries. Mobilizing domestic resources are vital activity to achieve self-sufficiency. Therefore, the financial sector is one of the major sectors of the country's economy that needs to revitalize constantly in mobilizing domestic deposits to increase investment (Pinchawawee, 2011).

Financial institutions are an organization that provides financial services for their customers whose primary objective and function is to collect money from their customers and invest it in financial assets such as stocks and bonds, loans and leases and insurance policies. They are business organizations that act as mobilizes and depositors of savings and as suppliers of credit finances. Commercial banks, investment banks, insurance companies and brokerages are common examples of financial institutions (Peter and Keith, 2007).

From the financial institutions in the world that give financing services is commercial bank. Commercial banks are banks whose main functions are to accept deposits and to lend, thereby facilitating the transfer of funds in the economy. So that, deposit provides the raw materials for bank loans and thus represents the ultimate source of bank profits and growth (Peter and Keith, 2007). Mobilization of commercial bank's deposit plays an important role by offering satisfactory service to different sectors of the economy. The success of banking is highly lies on deposit mobilization. Deposit is the main source of funds to undertake lending operations and for profitable operation, the amount of deposits

is very important. Mobilizations of deposits for banks are as essential as oxygen for human being (Richard, *et al.*, 2015).

The financial resources of banking system provided from people deposit. So that, we can say that deposits are the main resources of commercial banks. Therefore, the amount of deposit a commercial bank should have at hand must be enough to make the bank that involve in the market and satisfy the financial wants of their customers. From this general fact, the bank should manage its deposit. However, properly managing deposits is not possible without knowing and controlling the factors affecting it. In literature, many factors claimed to be determinants of deposits (Mohammad and Mahdi, 2010).

Factors affecting commercial bank deposits are divided into two, namely exogenous and endogenous factors. Exogenous factors are factors that not controlled by bank and endogenous factors are factors that are controlled by the bank. Exogenous factors are further sub divided into two, i.e. country specific factors and bank specific factors. Country specific factors includes saving interest rate, inflation, real interest rate, population growth of the country, per capita income of the society, economic growth, consumer price index, shocks etc. Bank specific factors include liquidity of the bank, profitability of the bank, security of the bank, number of commercial bank's branches, bank size, reserves and transaction cost etc. The endogenous factors include awareness of the society, convenience of bank's office and services in the bank etc. These variables claimed in the literature to affect the volume of total deposit of commercial banks (Wubitu, 2012).

Commercial banks are the main player and the most active sector that is highly considered as the backbone of the country especially in the developing nation like Ethiopia where no capital market at all. They have been playing an essential and peculiar role in the progress of the Ethiopian economy through supporting the private sector and financing government mega projects. In addition to the huge sum paid by private banks as corporate profit tax, private banks are purchasing NBE bills valuing 27% of the total loan they disbursed since April 6, 2011. According to the Reporter newspaper published on August 1, 2015 the total outstanding bills peaks to 36 bullions Birr as of June 30,

2015. Since the past couple of years mobilizing deposit became the contest point among commercial banks be it government or privately owned. Unless commercial banks could manage to mobilize enough deposit, their existence questioned (Andinet, 2015).

Currently in Ethiopia, it is not a new task to see the staff of commercial banks participating in deposit mobilization through door-to-door service to open accounts. This implies that how the commercial banks are highly needed the deposit because it is the question to sustain in the banking industry. In order to increase the deposit, the commercial banks first identify the factors that affect deposit mobilization and then implement different strategies and techniques to mobilize deposits. Thus the motivation to know the effect of such factors and to exert maximum effort on deposit mobilization of commercial banks in Ethiopia, enforce the researcher to undertake this study.

1.2. Statement of the Problem

The commercial bank deposits are the primary sources of funds for banks, which facilitates the uses of funds such as loans and investments. The higher the deposit amount, the higher the lending and investment portfolio maintained through banks to sustain its expansion trend and future growth. The banks should have adequate deposits to meet the lending volume required by the public and at the same time maintain extra cash for withdrawals by depositors. The cash reserve is a component of liquidity reserves that measure the ability of the bank to meet its expected withdrawals and recurring withdrawals. The withdrawals made from their services are oddly offset against new deposits which the banks should continuously mobilize. The inability to get sufficient deposits could result in a negative fund situation. The increase in deposit growth also indicates the bank's performance in relation to customers' satisfaction on interest payout and services rendered (Ketema, 2017).

The fast growing economy of Ethiopia, which is proactively investing in road infrastructure, building hydropower dams, constructing thousands of housing condominiums and expanding agriculture and other investments in the country are hugely relying on the commercial banks loans and credits. Moreover, there have been multiple smaller enterprises incubated in the last decades and increasing number of import and

export companies, heavily relying on commercial banks for loans, foreign currency and trade assurances. This calls for an increased demand for deposit mobilization of public institutions, private sector and other potential contributors (Hibret, 2015).

Mobilizing deposit is not an easy task for commercial banks. The performance of any commercial bank is a derivative of the mobilized fund. The higher deposit the bank mobilizes, the higher the ability to lend it. So that, as long as a deposit has a vital role in commercial banks; we should trace out which factors are affecting it and determining the relationship between them. According to NBE (2015/16) annual report, the share of private commercial banks deposit mobilization increased only to 33.9 percent from 31.5 percent in 2014/15 despite their opening of 359 new branches. CBE alone mobilized 66.1 percent of the total deposits due to its large branch network. From various literatures and the researcher own observation, Ethiopian banking industry is still at its infancy stage. As a result, deposit not yet been mobilized as much as expected. NBE indicates that, from deposits that should mobilize by banks only 7% is mobilizing as of 2012. This indicates that, from the money that should be deposited in the bank 93% of it was not mobilized (Wubitu, 2012).

The country had permitted the financial institutions for private investors 20 years back. Following the government approval, the first private commercial bank had opened its door in 1995. For various reasons, the deposits mobilized by all private commercial banks are by far less than the state owned commercial bank. According to the annual report issued by NBE for the fiscal year ended June 30, 2015, the total deposit mobilized during the year 2014/15 by all private banks were 26 billion Birr whereas 49 billion Birr was collected by public banks. In order to do well in the deposit mobilization activities, private commercial banks need to set certain mechanisms to mobilize such deposit rather than doing the old way of banking services (Andinet, 2015).

In Ethiopia, as the knowledge of the researcher is concerned, the major points of analysis that put clearly as the research gaps are: The majority researcher were conducted on the determinants of commercial bank deposit as evidence only a single Ethiopian state owned bank, which is the Commercial Bank of Ethiopia. No previous work exists by this award.

The causal relationship between estimate variables of the study not examined. The methodology taken into account and variables incorporated in the econometric model for further analysis based on the expected results is also another area of disparity among these researchers. Thus, this study tries to address and fill the gap by taking into account the above noted issues using the panel data analysis.

1.3. Research Questions

- What does the correlation between estimate variables of the study?
- How factors affecting deposit mobilization of private commercial banks?
- What is the causal relationship between estimate variables of the study?

1.4. Objectives of the Study

The main objective of this study is analyzing factors affecting deposit mobilization of private commercial banks in Ethiopia. More specifically, the research attempt to:-

- Examine the correlation between estimate variables of the study.
- Analyze factors affecting deposit mobilization of private commercial banks.
- Analyze the causal relationship between estimate variables of the study.

1.5. Significance of the Study

Banks play an important role in economic development through mobilization of funds within and outside the country and channeling such funds to various needy and viable sectors of the economy. To put in place adequate bank deposit management tools, understanding factors that determine commercial bank's deposit play a crucial role. The study has great contribution to existing knowledge in the area of factors that affect commercial banks deposit in the case of private commercial banks of Ethiopia. This in turn contributes to the well-being of the financial sector of the economy and the society as a whole. Therefore, the major beneficiaries from this study are private commercial banks of Ethiopia, regulatory bodies and the academic staff of the country.

1.6. Scope and Delimitation of the Study

The work of this study was delimit to some major macro specific and bank specific factors that determine private commercial banks deposit mobilization in Ethiopia. This research could not assess all private commercial banks, rather only six private commercial banks selected purposefully Based on their establishment seniority for a period of sixteen years from 2002 to 2017. Because these banks only fit for the study in terms of period and existed in business for more than a decade that enables to get enough panel data for the study.

1.7. Organization of the Study

This study is organized into five chapters. Following the introductory chapter, the second chapter presents a review of literatures. The third chapter deals about methodology and data used followed by Chapter four, results and discussion. Finally, chapter five presents conclusions and recommendation of the study.

CHAPTER TWO

2. LITERATURE REVIEW

2.1. Theoretical Literature

Banking is one of the oldest professions in human history, it flourished with civilizations. Since humans started, using money bank services were in use throughout history. A modern banking system established in Italy and Greece in the 15th century. Different historical sources stated that, Goldsmiths and Silversmiths put the first foundations of the banking service in the world. They have a safe box to put & they were the most trusted. They used to receive gold, silver and various jewelries to part with them. Therefore, an individual or a merchant puts his wealth under their custody, for their service they charge a small amount of money and give the customer a receipt to guarantee their acceptance. Then they started using, money paying instrument what we now call this document as 'cheque'. However, as time goes by, the Goldsmiths and Silversmiths observed that their customers wouldn't take their jewelry soon, and those clients, whenever they face the shortage of money, they started lending to this person and started to get profit from their service. They encouraged depositing and lending and rather than making the customers pay a charge for depositing, they started to pay them interest and introduced the public to work with money. It believed that, ancient Assyrians, Babylonians, Athenians, Romans and Abyssinians also used the banking service (Devinaga, 2010).

Some authorities, relying upon a broad definition of banking that equates it with any sort of intermediation activity, trace early banking as far back as ancient Mesopotamia, where temples, royal palaces, and some private houses served as storage facilities for valuable commodities such as grain and different important materials. There are records of loans by the temples of Babylon as early as 2000 BC. Temple considered as a special safe depositories because, as they were secured places watched over by the gods, their contents believed to protect from theft. The ancient time trader's companies provided banking services that connected with the buying and selling of goods (Britannica, 2010).

A broader definition of a bank is any financial institution that receives, collects, transfers, pays, exchanges, lends, invests, or safeguards money for its customers. This broad definition includes many other financial institutions that not usually thought of as banks, but which provide one or more of these defined banking services. These institutions included the finance sectors, investment companies, insurance companies, pension funds, security brokers and intermediaries, and real estate investment trusts (Encarta, 2009).

The commercial banks play a very important role in the economic development of every nation. They have control over a large part of the supply of money circulation. Banks are the main stimulus of the economic progress of a country. The financial sector's contribution to growth lies in the central role of mobilizing customers deposit and allocating these deposit effectively to more productive uses and investments in the real sector (Pinchawawee, 2011).

2.1.1. Bank Led Theory

Bank led theory offers a distinct alternative to conventional branch based banking in that customer conducts financial transactions at a whole range of retail agents instead of at bank branches or through bank employees. The commercial banks are the ultimate provider of financial services and are the institution in which customers maintain accounts. Retail agents have face to face interaction with customers and perform cash in/cash out functions much as a branch based teller would take deposits and process the withdrawals. Eventually, any outlet that handles cash and is located near customers could potentially serve as a retail agent. Whatever the establishment, each retail agent outfitted to communicate electronically with the bank for which it is working. The equipment may be a mobile phone or an electronic point of sale (POS) terminal that reads cards. Once an account is established or loan approved, the customer goes to the retail agent to conduct all or certain financial transactions. The retail agent checks the customer identification documentation and the transaction, debiting the customer’s cash, crediting the payee’s bank account and a transfer of funds between accounts. Unless the transaction is merely a transfer of funds, cash either deposited to or withdrawn from the retail agent’s cash drawer. An electronic record of the transaction either is routed directly from the retail

agent to the bank or handled by the payment processing agent that settles the transaction between the customer's account and the payee's account (Lyman, et al., 2006).

The bank led theory is related to the study as its focus on how financial institutions like bank delivery of financial services through a retail agent, where the bank develops financial products and services but distribute them through a retail agent. This can be a way of mobilizing deposits of commercial banks as a new model to increase financial inclusion and facilitate the transaction process. This theory facilitates the banks to raise its deposits and lead to financial performance.

2.1.2 .Savings Behavior Theories

Existing literature to date presents three major theories behind savings: Life cycle hypothesis (Modigliani & Brumberg, 1954), Permanent Income hypothesis (Friedman, 1957) and the Buffer stock hypothesis (Deaton, 1991).

The life cycle hypothesis is an extension to the Keynes (1936) absolute income hypothesis. It emphasizes that the main motive of saving is retirement accumulation. The theorem views consumption in any given period as a function of future expected lifetime income. As income fluctuates over an individuals' life span, saving behavior influenced by one's stage in the life cycle. As such, it has anticipated that, individual's smooth consumption over their lifetimes, such that they save during their working years and consume upon retirement (Ozcan et al., 2003).

The Permanent income hypothesis attempts to differentiate between permanent and transitory income as the determinants of private savings. Changes in income perceived by households to be permanent tend to reduce current savings because they can justify higher consumption today and in the future. On the other hand, income changes perceived to be transitory induced smoothing consumption, whereby today's income is, saved for tomorrow's higher consumption.

In its basic form, the Buffer stock hypothesis of savings behavior proposes that consumers accumulate assets to hedge against unpredictable income fluctuations. It has

anticipated that whenever wealth is above a certain target, consumers tend to spend more and save less, while, when current wealth is lower than the perceived target, individuals become prudent leading to higher savings.

2.1.3. Significance of Banks in Financial Systems

The financial sector plays a vital role in the overall economic system of every nation. The two components of a financial sector are the financial market and financial institutions. The former defined as a market in which financial assets (securities) such as stocks and bonds purchased or sold. Financial markets, thus, facilitate the flow of funds and thereby allow financing and investing by households, firms and government agencies (Madura, 2011).

Financial institutions such as banks, insurances, micro finances etc are institutions that provide financial services for their customers. In the context of the African continent, financial institutions in general and banking industry in particular carry the greater share of the financial system (Sheku, 2005). Most of the businesses rely on the banking sector as a source of financing (Medhat, 2004). It is no exception to Ethiopia, where the others like insurance companies and microfinance institutions (MFI) are by far lesser than banks in terms of capital size, total assets, employment capacity and profits (NBE annual report, 2011/12).

Commercial Banks have historically viewed as playing a role in financial markets for two reasons. The first one is that they perform a critical role in facilitating payments. Commercial banks, as well as other intermediaries, provide services in screening and monitoring borrowers; and the other one is by developing expertise as well as diversifying across many borrowers, banks reduce the cost of supplying the credit (Katherine, 2004). Thus, in their role as lenders, banks are often not merely buying some one’s debt; rather they are providing significant financial services associated with extending credit to their customers directly. The main providers of additional financing are domestic commercial banks (Herald et al, 2009).

2.1.4. Commercial Banks Deposit

Commercial bank deposits are major liabilities of commercial banks. (Kelvin, 2001) said that deposits of commercial banks account for about 75% of commercial banks' liabilities. Commercial banks keep lending as long as they possess adequate deposit. Mahendra (2005) had also mentioned deposits as a foundation upon which banks thrive and grow and deposit is unique items on a bank's balance sheet that distinguish them from other type of business organizations. Commercial banks mainly depend on the funds deposited with them by the public to lend it out to others in order to earn interest income (Davinaga, 2010). However, banks attract deposits by paying a risk free return to the savers. Interest expense is the number one expense on the income statement of most commercial banks. As noted by Hamid (2011), if banks lose their deposit base, they rely on non-deposit based funding that is very expensive and consequently minimizes the profit margin.

2.1.5. Major Types of Deposit Products

Deposit account is a savings account, current account or any other type of bank account that allows money deposited and withdrawn by the account holder. These transactions recorded on the bank's books, and the resulting balance recorded as a liability for the bank and represents the amount owed by the bank to the customer. Some banks may charge a fee for service, while others may pay the customer interest on the funds deposited. The account holder has the right to withdraw any deposited funds, as set forth in the terms and conditions of the account. The following are most common type of bank deposit.

Demand Deposit: consists of funds held in an account from which deposited funds withdrawn at any time without any advance notice to the depository institution. Demand deposits can be "demanded" by an account holder at any time. Many checking accounts today are demand deposits and are accessible by the account holder through a variety of banking options, including teller, ATM and online banking.

Savings Account: is a deposit account, held at a bank or other financial institution that provides principal security and a modest interest rate. Depending on the specific type of savings account, the account holder may not be able to write checks from the account (without incurring extra fees or expenses) and the account is likely to have a limited number of free transfers/transactions.

Time Deposit: is deposited or certificate of deposit (CD), held for a fixed-term, with the understanding that the depositor can make a withdrawal only by giving notice. A time deposit is an interest-bearing bank deposit that has a specified date of maturity (Dereje, 2017).

2.1.6. Importance of Deposit Mobilization

According to Ongore and Kusa, (2013), the intermediation function of banks plays a vital role in the efficient allocation of resources of countries by mobilizing resources for productive activities. They transfer funds from those who do not have productive use of it to those with productive venture. Nwanko et al., (2013) States that, savings are resources which one decides to put aside for investment purposes and not for luxury. What people save, avoiding to consuming all their income called personal savings. These personal savings can remain in the bank accounts for future use or invested in houses, real estate, bonds, shares and other financial instruments.

According to Varman (2005), the success of the banking sector highly lies in the deposit mobilization. A performance of the bank depends on deposits, as the deposits considered as a cost effective source of working fund. The ability of a bank‘s management and staff to attract checking and saving accounts for business and individuals is an important measure of the bank’s acceptance by the public. Deposits provide most of the raw materials for bank loans and thus represent sources of bank profits and growth. Tuyishime et al., (2015) also affirmed that, deposits are an indispensable tool for commercial banks and use to enhance its profitability through advancing deposits mobilized customers in the form of loans, which make in return interest to commercial banks.

According to Ongor and Kusa (2013), in addition to resource allocation, good bank performance rewards the shareholders with sufficient return for their investment. When there is a return, there shall be an investment, which in turn, brings about economic growth. On the other hand, poor banking performance has a negative repercussion on the economic growth and development. Poor performance can lead to runs failures and crises. Banking crisis could entail financial crisis, which in turn brings the economic meltdown.

2.1.7. The Effects of Poor Deposit Mobilization

According to Khalayi, et al., (2014), there are a number of effects that bring about poor deposit mobilization. This includes-inability to disburse loans to qualifying members on demand, inability to meet operating costs, inability to service debts quitting of members to the competitors and falsification of financial reports. These can cause the voting out of elected officials on accusations of fraud and financial mismanagement practices. In addition, dissatisfied members can quit in large numbers to join alternative and emerging financial institutions for fear of losing their savings if the situation deteriorates.

2.1.8. Factors Affecting Commercial Banks Deposits

An important indicator of the success and efficiency of any credit agency, which is also a banking institution, is the extent to which it is able to mobilize the savings of the community in the form of deposit. However, deposit mobilization is a very difficult task. It is upon various factors internal and external to the banking system. External factors are the general economic environment of the region, the volume of business transacted in the region, the confidence of the people in the banking system, the banking habit of the people and the saving potential of the region. Even when external factors are more conducive for deposit mobilization, banks may fail because of unfavorable internal factors such as location, type of building and window dressing (furniture, cheque books, vouchers, pay slips etc.), which assure the customers about the physical fitness of a bank. The variables, which claimed to have an effect on commercial bank deposit classified into two, namely exogenous and endogenous factors. Exogenous has further divided into country specific factors and bank specific factors for clarification purpose. Endogenous

(Internal) factors can control by the banking system. However, the Exogenous factors (The bank specific factors and the country specific factors) cannot be controlled by the banking system. The bank specific factors are factors that are specific to the banking system and the country specific factors are factors that are beyond the banking system (N. Desinga, 1975).

2.1.8.1. Macroeconomic Factors

The country specific risks such as political, economic and financial risks may affect the propensity for depositors to place funds in the banking system. Any single bank operates under the rule and regulation of the country where it belongs to different problems and shocks that has happened in the country has its own concern in the banks operation. Generally, banks' success in their operation is mainly depends on the environment where the business is undertaken (Herald and Heiko (2009).

According to Mohammad and Mahdi (2010), real interest rate is nominal interest rate minus the inflation rate. In negative real interest rate condition, people withdraw their resources from the banking system. The decrease in real interest rate to the nominal nature of their assets and the asset- liability maturity mismatched. Therefore, it states that the interest rate and deposit of the banks have a positive relationship.

The twin objectives of commercial banks, i.e. acquiring deposits and advancing credit cannot attain without good banking habits of the people (Mahendra, 2005). Especially, Mahendra (2005) stated that, the number of deposit accounts is more important. Because it ensures that, the probability of account is more important because it ensures that the probability of account holders withdrawing cash at a time decreases as the amount of deposit account increase, thereby creating an advantage for banks in terms of increasing the size of the loan able fund. Therefore, the higher number of deposits accounts the greater is the advantage to banks. The number of deposit accounts depends on the number of deposit account holders.

According to Jim (2008), per capita is GDP of the country divide by the total population of the country. Changes in real GDP per capita over time, often interpreted as a measure

of changes in the average standard of living of a country. If households and firms desire to hold more money, deposits will increase (Evan, 2006). Therefore, the relationship between income and deposits is positive. That is, as the income of the society increases the same happens to the commercial banks' deposits. Income expected to have a positive effect on deposits (Baqui et al., 1987). Therefore, as society's per capita income increases the same will happen for commercial bank deposits. Mahendra (2005) also indicates that income of the society matters for banks' deposit growth. Eshetu et al., (2009) stated that Ethiopia is one of the poorest countries in the world with an estimated per capita income of just $203 (IMF 2007 cited by the Financial Standards Foundation).

As economic performance measured through gross domestic product (GDP), a variable that has also become the de facto universal metric for 'standards of living (Yanne et al, 2007). It universally applied according to common standards, and has some undeniable benefits mainly due to its simplicity (Yanne et al., 2007). According to Herald and Heiko (2009), growth is one of the determining factors for commercial banks deposits. GDP, calculated by adding up the value-added at each stage of production (deducting the cost of produced inputs and materials purchased from an industry's suppliers) (Jim, 2008). Erna and Ekki (2004) finds four variables, GDP, number of Islamic bank's branch offices, profit sharing rate, and interest rate that are thought to have influence on the volume of deposits. Therefore, GDP can influence the growth of commercial banks deposits. In addition, real gross domestic product growth is the economic output of a country minus the effect of inflation or deflation. The real GDP growth used as a proxy of business cycle in which banks operate and controls for variance in deposit due to differences in business cycles that influence the supply and demand for loans and deposits (Staikourasb & Wood, 2004;Ommeren, 2011). Higher (lower) GDP indicates favorable (unfavorable) business opportunities under which a bank can achieve higher (lower) deposits. This is because an increase in economic activities of the country signals that customers' demand for loans will increase, and with improved lending activities make banks able to generate more profits.

Government expenditure refers to all monetary expenditure on goods and services made by the government on behalf of the community. It includes both recurrent and capital

expenditure on items, health, education, administration and so on. The recurrent expenditure refers to the expenditures that occur at regular intervals in the annual budget of the government. These expenses include expenditure on defense, administration and debt servicing particularly payment of interest on loans, road maintenance, and cost of health and education services. As Sahoo et al., (2001) in the Indian case accepts that, saving is the engine of growth. Expenditure that creates jobs, ensures regular income and savings, hence, bank deposits increase. On the other hand, expenditure on investment such as importation of capital goods, development of institutional and infrastructure facilities which aid private sector investments may generate employment and multiplier on savings and output in the long run. Where the latter situation holds, all things being equal, deposit mobilization will increase.

Generally, an increase in government expenditure injects more money into the hands of the people and assuming no change in inflation and tax rates as well as demand for more goods, services, more income will be available for savings, and deposits will increase accordingly. Also, where expansionary government expenditure leads to increase in domestic borrowing, interest rates on loans increase and all other things being equal, more deposits would be attracted (Osie, 2015).

Monetary policy to be a policy used by a government or central bank to influence the supply of money and credit in private hands, used for controlling inflation. In Ethiopia, the government controls money supply through the central bank unlike in the United Kingdom where the Bank of England is independent of the government in pursuing monetary policies. The central bank being the main actor in this respect uses monetary tools such as reserve ratios, discount rates, and open market operations to control money supply and inflation in the economy. Control of money supply has a direct relationship with deposit mobilization and inflation control.

An exchange rate has quoted as foreign currency per unit of domestic currency or domestic currency per unit of foreign currency (Bishop, 2006). Exchange rate allows denominating the cost or price of a good or service in a common currency. As Thomas's explanation, the term depreciation and appreciation used to show the decrease and

increase in the value of currency. Depreciation is a decrease in the value of currency relative to another currency. Appreciation is an increase in the value of a currency relative to another currency. According to Nugel (2012), as currencies depreciated in one country deposit will be reduce since investors tend to withdraw deposit and exchanged to keep it by appreciating currency (hard currency) or invest in another form of investment rather than bank deposit.

2.1.8.2. Bank Specific Factors

The Bank specific factors are factors that related to internal efficiencies and managerial decisions. Such factors include determinants such as Bank Profitability, Bank Liquidity, Bank Credit Risk and the like.

The liquidity position of a bank should be ascertained, monitored and controlled daily. Liquidity measured as the ratio of loans over total deposits of the bank. The liquidity of an entity requires that its ability to pay its debts when due and the ability of its debtors to pay the amount they own to the entity are of great importance. However, the liquidity or solvency of a firm usually measured by liquidity ratios, which are a class of financial ratios used to determine a company's ability to honor its short-term debt obligation. Commonly used liquidity ratios are the current ratio and the quick ratio. The current ratio used to test a firm's liquidity because it shows the proportion of the firm's current assets available to cover its current liability. The concept behind this ratio is to ascertain whether a company's short-term assets (such as cash, cash equivalents, marketable securities, receivables and inventory) are sufficient to pay its short-term liabilities (notes payable, current portion of term debt, payables, accrued expenses and taxes). In this study, we shall use the ratio of total loan-to-total deposit as a measure of the liquidity of the deposit money banks (Fadare, 2011).

According to Osie (2015), institutional governance, ownership and reputation of the financial institutions are key factors for successful deposit mobilization. Prior to offering voluntary deposit services, financial institutions must ensure that they have the institutional structures that allow them to mobilize savings legally. "Institutional capacity requires that adequate governance, management, staff and operational structures are in

place to provide savings services". Klaehn, et al., (2002) expound that, the "vision, commitment and disposition of the pro poor institutions are critical in successfully mobilizing deposit from the public".

There is a relationship between commercial banks deposits and commercial bank's branch expansion. The level of deposits in any area (M. A. Baqui et al., 1987) also influences not only deposits influenced by bank branches, but the expansion of bank branches. It expected that banks make decisions on expanding their facilities by considering factors such as level of competition, deposit potential, regional income and existence of road and vehicles. As deposit potential is one thing that banks consider in expanding its branches, the deposit can also be a reason for branch expansion strategy that the banking sector uses. There is a long run relationship between commercial banks branch and commercial banks deposits (Erna and Ekki, 2004).

In addition to the factors prominently identified as affecting deposit variability is bank size. Evidence indicates that the number and diversity of the ownership of individual deposit accounts as well as the distribution of deposits by type vary with bank size (George, 1972). Herald and Heiko (2009) found that; although insignificant once controlled by other variables bank size have an effect on deposits. Smaller banks has to generate less deposits in absolute terms to achieve the same deposit growth than large banks, thus possibly favoring smaller banks in achieving higher deposit growth. However, a larger bank with economies of scale as well as larger branch network might be able to better attract deposits (Herald and Heiko, 2009).

Now a day Competition in the banking industry operation is fierce; the competitive advantage strategy would be that the bank would be able to compete on deposit mobilization. Differentiation would be viable strategy in this case as there is like hood that the loyal customer would stay with bank. It would also be hard for competitor to cope with the specialist. When bank inaugurated will strive to be the best and to deliver better and quality service through well-trained and qualified workforce and win the competition through delivering better and quality service by well-trained and qualified workforce and by using differentiation strategy. Banks should win this competition by

providing excellent service for its customers to mobilize more resource and use their good will to attract its customers and for those that do not have good will recommended that Banks should build good will to be acceptable for the society and should win the public confidence (Brickwork, 2008).

As Thomas Ogoro (2010) stated that, technological development removed repetitive and time-consuming tasks, reduced human error and extended access to banking related facilities. Technology also provides customer information that it would be much more expensive to provide on a person-to-person basis. The dilemma remains, however, as to how to maintain a satisfactory number of face-to-face interactions with the customers.

2.2. Empirical Literature Review

The empirical literature part discusses past studies that conducted on the area of factors determining commercial bank deposits. In this Part, the variables that were included, the methodology that used to undertake the study and the results of the study under review has discussed. These will help to see where the literature on this study is and how this study been will add to the existing literature.

2.2.1. Related Empirical Evidence in Worldwide

The study conducted by Prema, et al., (2001) in India examined the determinants of private saving in the process of economic development, in the light of the Indian experience during the period 1954 -1998. The independent variables in this study pointed to the real interest rate, growth and the level of per capita income, spread of banking facilities, and the rate of inflation, terms of trade changes and inward remittances by expatriate Indians; whereas, as domestic saving was the dependent variable. The methodology involves the estimation of a saving rate function derived within the life cycle framework while paying attention to the structural characteristics of a developing economy. The estimation process was by testing the time series properties of the data using the augmented Dickey - Fuller (ADF) test. The researcher found that, saving rate rises with both the level and the rate of growth of disposable income and the magnitude of the impact of the former was smaller than that of the latter. The real interest rate on bank deposits was a significant positive impact, but the magnitude of the impact was modest. Public saving seems to crowd out private saving, but less than proportionately, suggesting that public policy can influence the national saving rate. Among the other variables considered, the spread of banking facilities in the economy and the rate of inflation seem to have a positive impact and changes in the external terms of trade and migrant remittances a negative impact on private saving.

Erna and Ekki (2004) in Indonesia conducted the following studies. The aim of this study was to figure out the factors affecting mudaraba deposits in Indonesia using a well-known econometrics co integration method. It uses quarterly time series in the period of 1993 to2003. Four variables, GDP, number of Islamic bank's branch offices, profit sharing rate, and interest rates thought to have influence on the volume of mudaraba deposits. The co integration test indicates that the number of Islamic bank's branch offices and profit sharing rate are significantly affects the volume of mudaraba deposits in Indonesia in the end, while GDP and interest rate are not.

After all the researchers concluded that, the volume of mudaraba deposits in Indonesia does not depend on income or interest rate, but depend on profit sharing rate and the number of branch offices of the Islamic commercial banks. And also they concluded that this finding supported the view that depositors are attracted to put their money in Indonesian Islamic banks partly due to welfare maximization reasons not only because of their religious considerations. Moreover, they concluded that in order to increase the volume of mudaraba deposits in Indonesia, it suggested that more branch offices of Islamic commercial banks built. Lastly, they concluded that Indonesian Islamic commercial banks should also provide an optimal profit sharing rate in order to attract more depositors.

An empirical study examined by Hossein and Ali (2014), on Isfahan Sepah Bank in Iran with the aim of effective factors on the absorption of bank deposits in order to increase the relative share of Isfahan Sepah Bank. The purpose of this research applied in terms of research methods, the branch of the field is descriptive survey. The collected data was tested using panel data Stationary test and assumptions of classical co linearity regression model, t test, Fisher F test, Durbin Watson test was significant, F Lymr personal effects, Hausman test, the variance test anisotropy the remaining residues of Normality review for multiple regression analysis has been used. The research population was consisted of Sepah Bank deposits in the province during the period 1989 to 1999. Independent variables of volume of high powered money, inflation, interest rate, rate of exchange, electronic researchers used banking index, GDP growth and stock index. The results were indicating that, the effect of e-banking parameters like the relative contribution of POS

and ATM on bank deposits is positive and significant. The effect of variable and other variables such as market shares of competing money market were negative and significant. On the one hand, inflation versus fixed interest decreases the value of money; on the other hand, with the boom in the stock market in the contrary to fixed interest rates, money market deposits go toward this bazaar. The effect of production was positive and significant on the share of deposits and had shown that by increasing production, the relative share of bank deposits will increase. Effect of exchange rates on deposits were negative that indicating by increasing the relative contribution of the exchange rate, the discounted value of cash in banks and individuals seeking to become sustainable assets entrusted to the fixed return rate.

The study conducted by Mohamed (2014) in Bahrain aimed at investigating the effect of Real Gross Domestic Product (GDP), interest rate and inflation rate on national saving rate in kingdom of Bahrain over the last twenty years. The study adopts Augmented Dickey-Fuller unit root test and co integration test to examine the long run relationship between the variables under study. The dependent variable was the national savings rate while the independent variables were real GDP, nominal interest rate and inflation. The findings indicate that the Real GDP growth rate has positive effect on national saving in the short run and significant at 5% level in the end. Nominal interest rate has positive and significant effect on national saving rate at 1%level on the short run; however, its effect in the long run appears to be positive but insignificant, while the inflation rate (as a measure of macroeconomic uncertainty) has positive and significant effect on national saving rate in both the short run and the long run.

The study conducted by Mohammed and Mansur (2014) in Malaysia attempted to investigate the impact of selected macroeconomic variables on the level of deposits in the Islamic banking system. The data used from the period 2007 to 2013. They apply Auto Regressive Distributive Lag model, which has taken care of a major limitation of the conventional co integrating tests in that they suffer from pretest biases. Based on the above rigorous methodology, they try to measure both long and short run relationships among the dependent variable (total saving deposit of Islamic banks in Malaysia) and independent variables (GDP, inflation and Kuala Lumpur composite Index). By applying

ARDL techniques, we find that the determinants such as inflation has strong negative impact on deposits of Islamic banking system while other macroeconomic variables GDP and Kuala Lumpur composite Index do not have significant impact.

2.2.2. Related Empirical Evidence in Africa

The study examined by Ngula (2012) in Ghana was the determinants of savings mobilization and its role in promote economic growth in Ghana. Data for the analysis cover the period between 1980 and 2010. Time series characteristics of data investigated by, applying unit root tests to examine the stationary of each variable. Estimated model was a single regression equation with total amount of deposits held by all banks as the dependent variable and explanatory variables as deposit interest rate, exchange rate, inflation rate and broad money supply. To determine the robustness of the Ordinary Least Squares (OLS) regression coefficients, a test for serial correlation and heteroscedasticity performed. The demand for real bank deposits modeled using the OLS technique. A result from the study shown that exchange rate, inflation rate and money supply (M2) significantly affect the mobilization of financial savings (deposit) in Ghana. Deposit interest rate however, proofed to be a weak determinant of bank deposit mobilization. This is because of the lack of confidence that people had in the banking system.

The study investigated by Orji (2012) in Nigeria was the determinants of bank savings in Nigeria as well as examined the impact of bank savings and bank credits on Nigeria's economic growth from 1970-2006. The researcher was adopted two impact models; Distributed Lag-Error Correction Model (DL-ECM) and Distributed Model. The time series properties of the data examined using the Ordinary Least Square (OLS) technique. The empirical results showed a positive influence of values of GDP per capita (PCY), Financial Deepening (FSD), Interest Rate Spread (IRS) and negative influence of Real Interest Rate (RIR) and Inflation Rate (INFR) on the size of private domestic savings. In addition, a positive relationship exists between the lagged values of total private savings, private sector credit, public sector credit, interest rate spread, exchange rates and economic growth.

The study conducted by Nathanael (2014) in Nigeria, empirically examined the macroeconomic determinants of bank deposits in Nigeria using data covering the period between 1980 and 2010. It tries to analyze the effects of various macroeconomic indicators, on the performance of banks within the context of deposit mobilization of banks and its determinants. Factors like interest rate, consumer price index, number of bank branches that determine bank deposits were carefully analyzed using the OLS technique and results are robust. The parsimonious ECM result showed that in Nigeria, bank investment, bank branches, interest rate and the general price level are important determinant of bank deposit. The Vector Error Correction and Johansen co integration test was indicate a long run relationship among the variables and the ECM result showed a satisfactory speed of adjustment. The researcher among others that both the banks and the monetary authorities should consider these factors when attempting to improve the deposits of banks and this will go a long way in increasing aggregate investment thus recommends it.

The study conducted by Pauel and Omosefe (2014) in Nigeria investigated the effect of interest rates on customer savings behavior in the Nigerian banking sector using times series data from the period 1989 to 2012.After identifying a host of factors that are influence customer confidence in commercial banks, such as average income, commercial lending, legal right strength, central bank monetary policy and total annual commercial bank losses. Using quantify regression estimation method, a non parametric estimation process that is based on the premise that the sample median will tend to that of the distribution and addresses issues of heteroscedasticity errors and data stringency associated with the data used in the study under question. The bank deposit was dependent variable while interest rate, income, legal rights strength, bank lending, losses and money supply was independent variables. They found interest rates were having a positive effect on customer savings; income was also affecting customer's savings, other factors such as bank lending was exerting a negative effect on bank deposits and money supply exerted a strong effect on customer savings. Since the impact of money supply on bank, deposits were not robust and exerting no significant effect on savings and bank lending found not to be commensurate with the current level of savings.

The study Conducted by Kalebe (2015) looked at the broad set of possible determinants of private savings in Lesotho using annual time series data for the period 1980-2010. The co-integration and Error Correction Methodology (ECM) utilized in this study to measure the relationship between the variables used. The study used independent variables of real deposit rate, public saving rate, external saving rate, real GDP growth rate and terms of trade and dependent variable of private savings. The results indicate that public savings are important in explaining changes in private savings, both in the short-run and long run and the terms of trade negatively influence private savings in Lesotho in the long -run.

An empirical study Conducted by Eric et al., (2015), on commercial banks in Ghana with the aim of examines the effect of interest rate liberalization on bank deposits in Ghana. The study used secondary data on deposits, interest rates and inflation based on the consumer price index obtained from Bank of Ghana (BOG) and Ghana Statistical Service website (GSS) respectively. The analysis covers adjusted quarterly data from the year 1991 to 2012 to be seasonal. Research papers from the International Monetary Fund (IMF) publications, the World Bank publications and other scholarly peer reviewed journals considered. A deposit function model specified with long term deposit as the main dependent variable with real savings rate, real Treasury bill rate, exchange rate movement and gross domestic product as independent variables while controlling for inflation. Ordinary Least Squares (OLS) method used to estimate the specified model, which covered seasonally adjusted quarterly data drawn from Bank of Ghana and Ghana Statistical Service. The data input into a spreadsheet and exported into Econometric View 7, which used for processing the data.

The results of the study revealed that the interest rate liberalization and gross domestic product jointly accounted for about 78% of the variation in the level of bank savings deposits in Ghana. The study has also shown that the liberalization of the interest rates has made it attractive for people with idle funds to save with financial institutions especially the banks. It also revealed a negative relationship between real savings rate and the real Treasury bill rate expected in a high inflationary environment. All the independent variables were significant. Based on this the researchers recommended that

the Bank of Ghana remains resilience on interest rate liberalization so that surplus funds can be made available for investors and also to reduce the level of inflation in Ghana.

The study undertaken by Hassen (2016) was on the effect of interest rate on commercial bank deposits in Nigeria. Hence, this study examined how interest rates affects commercial bank deposits between 2000 and 2013 in Nigeria. The study made use of secondary data sourced from the Central Bank of Nigeria statistical bulletin and the National Bureau of Statistics between 2000 and 2013. The model for the study has as its dependent variable the Commercial Bank Deposits (CBD) while its explanatory variables were the interest rates and the Gross Domestic Product (GDP). Using the Ordinary Least Square (OLS) multiple regression techniques; the study revealed that there was a negative relationship between the interest rates and the commercial bank deposits suggesting that interest rates has not been responsible for customers deposits in commercial banks in Nigeria while the GDP has a positive relationship with commercial bank deposits.

2.2.3. Related Empirical Evidence in Ethiopia

The study conducted by Wubitu (2012) had looked at the potential factors determining commercial bank deposit in Ethiopia by taking CBE as evidence. The study had used both primary and secondary data. The primary data collected by a means of interview and questionnaire. Secondary data for the study were the values of dependent and independent variables. The study had found variables that can affect the total deposit of commercial banks. Three variables were regressed with the dependent variable, i.e. total deposit, these variables include deposit rate, inflation rate and bank branches. The data for these variables collected from commercial bank of Ethiopia, national bank of Ethiopia and central statistics authority of the sample year from 2000 up to 2011. The multiple regression models constructed for the dependent variable and the three independent variables. Different diagnostic tests were tested to know whether the model is valid or not, having the model was valid the regression analysis and hypothesis testing was performed using EViews 8 software. Because of the hypothesis, testing it found that all the three variables could affect total deposit. Branch expansion had positive and

significant effect on total deposit whereas deposit rate and inflation rate had positive and insignificant effect on total deposit.

The study conducted by Jembere (2014) investigates the determinants of deposit mobilization in private commercial banks of Ethiopia using panel data of six private commercial banks from year 2002 to 2012. The study used both quantitative and qualitative research approach. Secondary financial data analyzed using multiple linear regressions models for the six bank's deposit. Fixed or random effect regression model applied to investigate the impact of bank branches, exchange rate, real gross domestic product, Capital Adequacy and Liquidity on private commercial banks deposits. Besides, the study used primary data analysis to solicit manager's perception towards the determinants of private commercial banks deposit mobilization.

The empirical results from regression analysis showed that bank branches, exchange rate, and real gross domestic product affects deposit of the bank positively whereas, capital adequacy and liquidity affects the deposit of the private banks negatively. This implication show that better capitalized banks tend to create less liquidity that leads to mobilize little deposit amount. On the other hand, the feedback of respondents depicted that managerial efficiency, government policy, convenience of bank office, technology, bank size and awareness of savings by society affected deposit level of the banks significantly.

The conducted by Giragn (2015) explored, the theoretical as well as empirical analysis of those factors, have an impact on deposit volume in commercial banks in Ethiopia and even assesses which ones are more significant or less significant. To do the practical investigation in terms of commercial banks in Ethiopia, the researcher collected the relevant data from annual reports of twelve years (2001/2-2012/13) and from questionnaires and interviews made to senior bank officers of seven banks. The banks included in the survey were Commercial Bank of Ethiopia, Awash International Bank, Dashen Bank, Bank of Abyssinia, Nib International Bank, Wegagen Bank and United Bank. The data analyzed through econometric analysis using SPSS software. The study reveals that, the branch expansion, money supply, the exchange rate of Birr to USD and

general inflation are the most significant factors of deposit mobilization activity. The other variables deposit rate and real per capita GDP growth rate have insignificant power to influence the dependent variable. In this research, as opposed to the conventional economic theory, the deposit rate found to have negative relation against the deposit volume for the period under study. The study also exposed that the deposit mobilization activity was becoming challenging, its associated costs are escalating and the competition was becoming stiff-the outcome of the competition favoring the big size state banks. Beyond that, the government policies were also favoring the latter in an effort to mobilize huge fund for a national development activities. The research recommended that banks have to do much in branch expansion studying potential deposit areas.

The study undertaken by Shemsu (2015) identify and evaluate those factors affecting bank deposit in general by taking Commercial Bank of Ethiopia as evidence. Accordingly, the researcher adopted mixed research approach. The rationale of using such a mixed approach used to gather data that could not obtained by adopting a single method. Regarding to the qualitative data; questionnaire was used to gather information from the employees of commercial bank of Ethiopia particularly for those employees who actively participated in deposit mobilization tasks in CBE city branches. Regarding to the secondary data; time series data covering 1998 -2014 was analyzed. First, the time series data were assessed using descriptive statistics for the variables as well as the test for heteroscedasticity, autocorrelation and normality testing to know if the assumptions of CLRM violated or not. Second, estimated model was a single regression equation with deposit as the dependent variable and explanatory variables as deposit interest rate, overall inflation rate, number of branch opening, gross domestic product, individual foreign remittance and dummy variable. Estimation undertakes using Ordinary Least Squares technique by E-views7 statistical package.

The results from econometric analysis showed that, all the explanatory variables positively correlated with the explained variable. Among these variables, branch opening was an important strategy for deposit mobilization, it is highly significant than others. Individual remittances from Diasporas were also next to branch opening was significantly

affects CBE's deposit. The others affected positively and can increased deposit of commercial bank of Ethiopia (CBE's).

The study conducted by Hibret (2015) primarily aimed at determining the short and long run impacts of determinant factors on deposit growth of commercial bank by taking Commercial Bank of Ethiopia for the period 1974/75 to 2013/14 using Vector Error Correction Model (VECM). The study also checked the causal relationships that exist between deposit growth and its determinant factors employing test of Granger causality. In the empirical VECM model, control variables (Economic Growth, Inflation, Interest Rate, Exchange Rate, Population Growth and Branch Expansion) were included to enable ceteris paribus interpretation of the relationship and impact on the growth of deposit in commercial bank of Ethiopia.

The estimated results suggest that interest rate had positive but insignificant impact on deposit growth both in the end and in short run. While Exchange rate and branch expansion significantly increases, banks deposit contemporaneously both in the short run and long run. Population and Economic growth also had a positive relationship with deposit growth and it was significant in the long run but insignificant in the short run. However, Inflation had positive and significant impact on deposit in the long run and negative impact in the short run. Using test of granger causality, the study found unidirectional causality that runs from deposit to inflation, from exchange rate to deposit, from deposit to interest rate, from population growth to deposit without any feedback response. The finding also indicated that there was bidirectional causality between branch expansion and deposit and economic growth in Ethiopia. This implies that deposit can affect economic growth through investment.

The study undertaken by Bahredin (2016) aimed to identify the determinants of commercial banks deposit growth in Ethiopia. The quantitative research approach has been used in order to achieve the objective. Target population was all banks that engage in commercial activities and registered by NBE to act. Consequently, eight banks, out of eighteen commercial banks in existence as at 2014, have purposively selected for the study. The panel dataset for the study used secondary source consisted of annual data

spanning from 2000 to 2014 gathered from the National Bank of Ethiopia time series database and commercial banks financial database. The dependent variable used to this study was bank deposit growth. Explanatory variables used in this study were inflation, deposit interest rate, loan to deposit ratio, bank branches, money supply growth, per capita income growth, and lagged bank deposit. Different diagnostic tests conducted to check the appropriateness of the model. The random effects technique applied to find out the most significant variables. According to the results achieved by applying panel data techniques, bank branches and per capita income growth influence was positively and statistically significant on bank deposit growth; whereas, lagged bank deposit and loan to deposit ratio influence was negatively and statistically significant on bank deposit growth. Money supply growth had insignificant negative influence on bank deposit growth; whereas interest rate and inflation had insignificant positive influence on bank deposit growth. The study implies that stimulation of economic growth; the presence of banks and financial intermediation were most important factors that affect bank deposit growth.

The study undertaken by Andinet (2016) examines factors influencing deposit mobilization in private commercial banks in Ethiopia. In doing so, the study adopted quantitative methods research approach using secondary data. The study had found variables that can affect the total deposits of the banks. Seven variables are regressed with the dependent variable i.e. total deposit. The explanatory variables are number of bank branches, deposit interest rate, liquid asset to deposit ratio, lagged value of bank deposits, net interest margin, inflation rate and economic growth (GDP). The data for these variables collected from the respective private commercial banks' financial statements, national bank of Ethiopia, central statistical authority and MOFEC of the sample year 2005 up to 2015. Different diagnostic test performed to know whether the model is valid or not. All the tests were valid and eventually regression analysis performed using E view statistical package. The result from regression analysis showed that number of bank branches, deposit interest rate, net interest margin and GDP significantly and positively correlated with the explained variable. Lagged value of bank deposit significantly and negatively correlated with total deposit. However, liquid asset to

deposit ratio and inflation rate insignificantly and negatively correlated with bank deposit. Finally, the study had recommended what should do to mobilize more deposits.

The study conducted Dereje (2017) investigate the determinants of deposit mobilization in private commercial banks of Ethiopia using panel data of six private commercial banks from year 2002 to 2012. The study used both quantitative and qualitative research approach. Secondary financial data analyzed using multiple linear regressions models for the six banks deposit. Fixed or random effect regression model applied to investigate the impact of bank branches, exchange rate, real gross domestic product, Capital Adequacy and Liquidity on private commercial banks deposits. Besides, the study used primary data analysis to solicit managers‟ perception towards the determinants of private commercial banks deposit mobilization. The empirical results from regression analysis showed that bank branches, exchange rate, and real gross domestic product affects deposit of the bank positively whereas, capital adequacy and liquidity affects the deposit of the private banks negatively. This implication show that better capitalized banks tend to create less liquidity that leads to mobilize little deposit amount. On the other hand, the feedback of respondents depicted that managerial efficiency, government policy, convenience of bank office, technology, bank size and awareness of savings by society affected deposit level of the banks significantly. Thus, management bodies of private commercial banks should strive to strengthen the identified significant factors and government bodies should also see the adverse effect of tight polices imposed on the existing private commercial banks as well as for the new entrant banks.

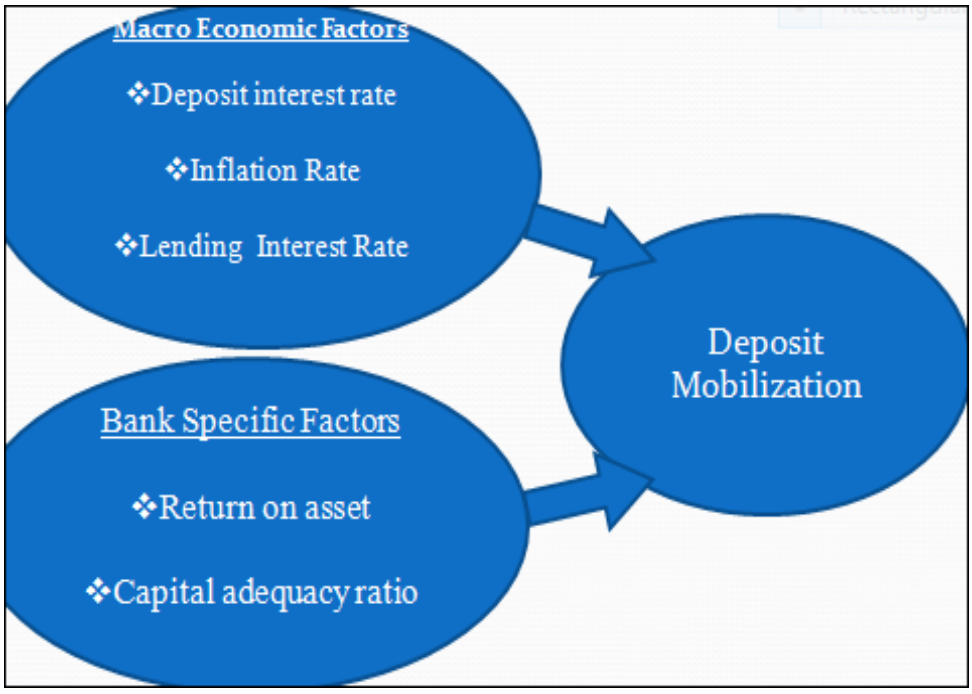
Evidences from prior studies shown the effect of various external and internal factors affecting commercial banks deposit. However, the significance of each factor differs across continent, countries and time. These differences also belong to model specification, sampling technique, reliability of data and methods of analysis during the study.

2.3. Conceptual Framework of the Study

The researcher revealed that, there are independent factors determining deposit mobilization performance of private commercial banks in Ethiopia. Deposit mobilization

is a deliberate effort by relevant organ vested that right by the central bank. It normally not brought about by a single variable but rather an interaction of various networks of different variables and factors. Among the factors interest rate, inflation, population growth, per capita income, economic growth, consumer price index, shocks, liquidity of the bank, security of the bank, number of branches, reserves, transaction cost, awareness of the society, technology, competitive rivalry, convenience of bank's office services in the bank are claimed to affect the deposit mobilization activity of the banks. The Conceptual framework of these variables is a guide to this research and shows how they determine deposit mobilization performance of private commercial banks in Ethiopia. In order to this, the researcher adopted five variables to perform this study from the year 2002 up to 2017. While assuming other variables remain constant during this research. These variables are, inflation rate, deposit interest rate, capital adequacy ratio, return on asset and lending rate.

Figure 2.1 Conceptual Framework



Source: Developed by the author, 2019

CHAPTER THREE

3. DATA AND METHODOLOGY

3.1. Research Design

To achieve the objective of the study, explanatory type of research design and quantitative research approach were employed. The explanatory type of research design helps to identify and evaluate the causal relationships between the different variables under consideration (Creswell, 2009). Determining the research approach properly is a base for achieving the objective of the study. Therefore, in this study, explanatory research design and quantitative research approach employed to analyze the causal relationship between deposit mobilizations and its selected factors.

3.2. Sources of Data

This study used secondary panel data set for six private commercial banks operating in Ethiopia from 2002 up to 2017. The researcher prefers to use panel data since it can take heterogeneity among different units into account over time by allowing for individual-specific variables. By combining time series and cross-section observations, it gives informative data. Furthermore, it can better detect and measure the effects that simply cannot observe in pure cross-section or pure time series data (Gujarati, 2004).

The study used secondary sources of data that is panel in nature. The researcher preferred a secondary source of data since it is less expensive in terms of time and money during collecting the data. In addition, it affords an opportunity to collect high quality data (Saunders *et al.,* 2007). Secondary data obtained from the audited annual financial statements of the concerned private commercial banks in Ethiopia. These data include both bank specific and macroeconomic factors. Bank specific data were sourced from annual reports and account statement of selected banks. However, data on macroeconomic variables (inflation rate, deposit interest rate and lending interest rate) sourced from annual report bulletins published by the National Bank of Ethiopia (NBE).

3.3. Sampling Techniques

As noted by Kothari (2004), good sample design must be viable in the context of time and funds available for the study. Accordingly, this study employed purposive sampling technique to select the required sample of banks from the total banks in Ethiopia since it is viable in line with time and funds available for this study. This sampling method is a form of non-probability sampling in which decision concerning the individual source of data to be included in the sample taken by the researcher, based upon a variety of criteria. However, the major limitation of purposive sampling is making description rather than generalization (Dawson, 2002). The researcher considers that the sample size is sufficient to make sound conclusion about the population as far as it covers around 40% of the total population. Moreover, the big portion of total deposit of private commercial banks found in the banks selected as sample i.e. private banks established before 2005.

The selection criteria set by the researcher was first, the required banks are only private commercial banks in Ethiopia. Second, those commercial banks should operate from 2002 to 2017 having financial statements. Third, the researcher chooses this sample banks because of their deposit share in the entire research period relative to others private owned banks. With regard to deposit shares, there was also concentration in favor of CBE, though with a declining trend. Whilst CBE takes a 65.2 % share in 2013, among the private banks, the highest share went to Dashen Bank (9.7%), followed by Awash International Bank (6.2%) and Bank of Abyssinia (5.4%) as of June 30, 2013 (Zerayehu et al., 2013). Based on, these criterions, six private commercial banks selected from sixteen private commercial banks operating since 2005. These banks included Awash International Bank S.C, Dashen Bank S.C, Bank of Abyssinia S.C, Wegagen Bank S.C, United Bank S.C and NIB International Bank S.C.

3.4. Model Specification

In this study, panel data approach is adopted which includes cross-sectional and time series observations for six private commercial banks that range from the year 2002 up to 2017. The commonly used models for panel data are fixed effect and random effect models. The estimation technique carried out based on balanced panel data regression. A

balanced panel data have equal time series observations for the study entities. In this study, the cross sectional units are six and the time series is 16 years. Hence, the model of this study developed based on the variables selected (DEPO, DIR, INF, LIR, ROA and CAR) in order to address the objectives.

Therefore, the functional form between dependent and independent variables specified as follows:-

$$\text{DEPO} = \text{f}(\text{DIR}, \text{INF}, \text{LIR}, \text{ROA}, \text{CAR}) - (1)$$

Where: $DEPO$ is bank deposit, DIR is deposit interest rate, INF is inflation, LIR is lending interest rate, ROA is return on asset, CAR is capital adequacy ratio. The deposit is the weighted performance of each commercial bank to their mobilization effort. The empirical model for this specification given as:

$$DEPO_{it} = \beta_0 + \beta_1 DIR_{it} + \beta_2 INF_{it} + \beta_3 LIR_{it} + \beta_4 ROA_{it} + \beta_5 CAR_{it} + u_{it} - - - - (2)$$

The β_0 is a constant term and β_1, to β_7 are estimate parameters in the model and "i*"* is a cross-section data for banks referred to, and *t* is a time series data and u_{it} is an error term.

3.5. Operational Definition and Expected Sign of Variables

3.5.1. Operational Definition of Variables

The private commercial banks deposit is the dependent variable in this study. Deposit represents the total accumulated amount of customer financial savings within the private commercial banks. The performance of private commercial banks is a measure of the size of its deposit liabilities. The large portion of commercial bank's asset base financed by their deposit mobilized. Private Commercial banks ability to lend more loans for their customers determined by the size of their deposits. The growth of the bank is therefore subject to its ability to mobilize more deposit at cheaper cost from the public (Ketema, 2017). In view of this, it is worth studying and analyzing the major factors of efficient deposit mobilization.

Deposit interest rate (DIR) is one of the most effective factors for deciding to deposit in banking system (Mohammad and Mahdi, 2010). Banks usually pay interest on money collected from depositors. Particularly, saving deposits commonly earn interest for savers at a rate determined by individual banks and the directive issued by the national bank of Ethiopia. Herald and Heiko (2009) also revealed interest rate as one of the determining factor for commercial banks deposits. According to classical economists, deposits are a function of the rate of interest. The higher the rate of interest, the more money will be save since at higher interest rates people will be more willing to forgo present consumption. Low deposit rates are discouraging saving mobilization (Mustafa and Sayera, 2009).

Inflation Rate (INFR) is the persistent increase in the average price of goods and services (Baherdin, 2016). The rate of inflation and the inflationary expectations might have some influence on the growth of overall deposits with the banking system. It is generally, assumed that the growth of total deposits is to be negatively related with inflationary expectation. As inflation accelerates, deposits become less attractive, depending on the interest rate. In this case, the assumption would be that as deposit interest rates rise, deposits would increase in principle as well. As the rate of inflation increases, people will be tempted to divert their savings from bank deposits to any other kind of tangible assets because these assets act as hedge against.

Lending Interest Rates (LIR) refers to the price a borrower pays for the use of money he does not own and has to return to the lender who receives for deferring his consumption by lending to the borrower. The Interest also measured as a percentage of money taken over the period of one year, (Devereux and Yetman, 2002). An Interest, which is charged or paid for the use of money, often it expressed as an annual percentage of the principal. Lending interest rates often change because of the inflation and Government policies. It is also a tool used by the central bank of a country to keep a check on any major currency fluctuation. An increase in lending rates is necessary to stabilize the exchange rate depreciation and to curb the inflationary pressure and thereby helps to avoid many adverse economic consequences.

Return on Asset (ROA) refers to the profit earned per birr/dollar of assets and most importantly, it reflects the management's ability to utilize the banks financial and real investment resources to generate profits. For the purpose of this study, return on asset measures the overall financial performance of banks and it measured by the ratio of net profit to total asset. For any banks, ROA depends on the bank's policy decisions as well as on uncontrollable factors relating to the economy and government regulations.

Capital Adequacy Ratio (CAR) refers to the ability of the capital base of a financial institution to absorb unexpected shocks. Capital adequacy of any financial institution is instrumental in the formation of risk perceptions about it amongst its stakeholders. Availability of capital affects every aspect of banking either directly or indirectly. As stated earlier, we can find many ways to determine capital adequacy ratio in the literature. Hence, total capital to total asset ratio (CAR) considered for this particular study (Ommeren, 2011). The ratio measures how much of the banks' assets are funded with owners fund.

3.5.2. Expected Sign of Variables

Table 3.1.Expected Sign of Variables

	Variables	**Measure**	**Notation**	**Expected sign**
Dependent Variable d	Deposit	Natural logarithm of total deposit	DEPO	NA
Independent variables	Deposit interest rate	Average Deposit Interest Rate of the Year	DIR	+
	Inflation rate	Average Annual Inflation Rate	INF	–
	Lending interest rate	Average Annual Lending Rate	LIR	+
	Return on asset	Net Profit/ Total Asset	ROA	+
	Capital adequacy ratio	Total capital/ Total Asset	CAR	+

Source: Author own, 2019

3.6. Method of Data Analysis

As noted by (Kothari, 2004), data has to be analyzed in line with the purpose of the research plan after data collection. Accordingly, secondary data collected from annual financial statements of the concerned private commercial banks in Ethiopia and national bank of Ethiopia (NBE) analyzed using ordinary least squares (OLS) technique to determine its suitability, reliability, adequacy and accuracy in the study. Thus, this study utilized both descriptive and econometric analysis based on a panel data from 2002-2017 to analyze the relationship between the bank deposit and its factors in private commercial banks found in Ethiopia.

In panel data, regression methodology, three estimations adopted, namely, pooled OLS, fixed-effects and random effects. The selection between fixed effect and random effect model were based on compatibility of the model, number of cross-section, number of observations and nature of omitted variables. To conducting all the data analysis, Eview version 8 and stata version13 software have been used during the study period.

3.7. Panel Unit Root Test

Before undertaking estimation process, it is common to examine the stationary properties of the data series. In stationary time series, shocks will be temporary and over time, their effects will be eliminate as the series revert to their long run mean values. On the other hand, non-stationary series will contain permanent components. In fact, most of the economic variables show a trend and therefore in most cases they are non-stationary. These non-stationary time series can easily lead the regression results to incorrect or spurious conclusions. Thus, a key way to test for non-stationary is to test for the existence of unit root.

It become well known that the traditional Augmented Dickey Fuller (ADF) type tests of unit root suffer from the problem of low power in rejecting the null of stationary of the series, especially for short-spanned data. Recent literatures suggest that panel-based unit root tests have higher power than unit root tests based on individual time series. A number of such tests have appeared in the literature. Recent developments in the panel

unit root tests include: Levin, Lin and Chu (LLC) (2002), Im, Pesaran and Shin (IPS) (2003), Maddala and Wu (1999), Choi (2001), and Hadri (2000).

From these different panel unit root tests developed in the literature, LLC and IPS are the most popular tests. These tests are depending on the ADF principle. However, LLC assumes homogeneity in the dynamics of the autoregressive coefficients for all panel members. In contrast, the Im, Pesaran and Shin (2003) panel unit root test that commonly known, as IPS is more general in the sense that it allows for heterogeneity in these dynamics. Therefore, it described as a heterogeneous panel unit roots test. It is particularly reasonable to allow for such heterogeneity in choosing the lag length in ADF tests when imposing uniform lag length is not appropriate. In addition, slope heterogeneity is more reasonable in the case where cross-bank data is used. In this case, heterogeneity arises because of differences of banks context. As a result, the test IPS has higher power than other tests in its class, including LLC.

IPS begins by specifying a separate ADF regression for each cross section:

$$\Delta y_{it} = \alpha_i + \beta_i y_{i,t-1} + \sum_{j=1}^{pt} \rho_{i,j} \Delta y_{i,t-j} + \varepsilon_{i,t} \quad ----------(3)$$

where $Y_{i,t}$ (i=1, 2,….., N; t=1, 2, …T) are the series for panel member (banks) i over period t, pi is the number of lags in the ADF regression, and the error terms $\varepsilon_{i,t}$ are assumed to be independent and normally distributed random variables for all i's and t's with zero means and finite heterogeneous variances $\sigma 2_i$.Both β_i and the lag order ρ in (3) are allowed to vary across the sections (banks). Hence, the null hypothesis to be tested is:

$H_0: \beta = 0, \forall_i$

Against the alternative hypothesis

$$H_1: \begin{cases} \beta_i = 0 & for\ some\ i\ s. \\ \beta_i < 0 & for\ atleast\ one\ i. \end{cases}$$

The alternative hypothesis simply implies that some or all of the individual series are stationary.

3.8. Correlation Analysis

Correlation is a way to index the degree to which two or more variables are associated with or related to each other. The chief objective is measuring the strength or degree of linear relationship between two variables. As noted by Gujarati (2004), most widely used bi-variant correlation statistics is the Pearson product-movement coefficient, commonly called the Pearson correlation which was used in this study.

3.9. Fixed Effects Vs Random Effects Models

In a panel data analysis, most commonly estimated models are the fixed effects (FE) and random effects (RE) models. The crucial distinction between fixed and random effects is whether the unobserved individual effect embodies elements that correlated with the regresses in the model or not. Fixed Effects explore the relationship between predictor and outcome variables within an entity (bank, person, company). Fixed effect models control the effects of time invariant variables with time-invariant effects. When there are many variables that arise over time, and when one is interested in analyzing the impact of variables over time FE effect models are essential to capture the effect of these variables (Maziya, Tijani and Masuku, 2005). Accordingly, the fixed effect model equation becomes as:

$$Y_{it} = \alpha_i + \beta_i X_{it} + u_{it} ----------------------------(4)$$

Where, $\boldsymbol{\alpha_i}$ is the unknown intercept for each entity (i = 1, 2….n) or n- entities in this research i denotes individual banks. The dependent variable Y_{it} denote like deposit mobilization in this study i cross section entity and t denotes time. X_{it} Refers to explanatory variable; β_i refer to the coefficient of independent variables included in the model, and u_{it} is the error term. We use fixed effects model when there is exist unexpected variation or special events that affect the outcome variable by using time dummies to control for time effects. Thus, the equation for the fixed effects model becomes:

$$Y_{it} = \theta_1 X_{1,it} \ldots + \theta_k X_{K,it} + \delta_2 F_2 + \delta_3 F_3 \ldots\ldots\ldots \delta_n F_n + u_{it} ----------(5)$$

Where; $Y_{it}$is as usual dependent variable, whereas i and t refer cross section entities and time; $X_{K,it}$ refers to the potential explanatory variables; θ_k denote the coefficients of the independent variables; F_n is binaries (dummies) for n-entities, requires n-1 entities included in the model; $\delta_2$is the coefficients of these entities. By add the dummy for each entity, (specific bank). FE model also used by LSDV to estimating the pure effect of each independent variable (by controlling for the unobserved heterogeneity) through each dummy is absorbing the effects particular to each bank. The fixed effect model is:

$$Y_{it} = \theta_1 X_{1,it} \dots + \theta_k X_{K,it} + \delta_2 F_2 + \delta_3 F_3 + \cdots \delta_n F_n + \alpha_2 T_2 \dots \alpha_t T_t + u_{it} -----(6)$$

Where all the variables are refers as defined in equation (5) above; the only variable included here is T_n is time dummy (binary variable) thus we have t-1 time periods whereas α_t is the coefficient for the binary time repressors. While, we use random effect model when we assume variation across entities to be random and uncorrelated with explanatory variables included in the model. In other words if we find reasons that influence difference across entities affect the dependant variable. The equation of random effect model is given by:

$$Y_{it} = \alpha_i + \beta_i X_{it} + U_{it} + \epsilon_{it} -------------------------(7)$$

Where; Y_{it} is the dependent variable as usual; X_{it} represent the potential explanatory variables; β_i is the corresponding coefficients of independent variables. α_i represents the group specific constant term; U_{it} is the error term which unobserved due to specification problem of individual entity specific error or idiosyncratic error varies over time and entities while ϵ_{it} is the usual error component which is assumed to be independent and identically distributed over individual bank and time with mean zero variance.

To decide between fixed effect and random effects model for this study we will see after running a Hausman test where the null hypothesis is that the preferred model is RE versus the alternative the FE. It is tested whether the idiosyncratic error (U_{it}) is correlated with the repressors. The null hypothesis says there is no correlation against the alternative (there is a correlation) (Masuku, 2015).

In addition to this criterion, the test that helps to choose between fixed effect model (FEM) and random effect model (REM), which developed by Hausman in 1978.The null hypothesis of the underlying Hausman test is that there is no substantial difference between FEM and REM estimators. Again, the test statistic developed by Hausman has an asymptotic $\chi 2$ distribution. If the null hypothesis is rejected, we use FEM, while if the null hypothesis is not-rejected (accepted) used the REM. In the case, statistical inferences will be conditional on the u_{it} in the sample (Gujarati, 2004, P 651).

3.10. Diagnostic Tests

Every estimator of the model should have to meet the Ordinary Least Squares (OLS) assumptions during the estimations are carried out. If the estimators of the model satisfy the OLS assumptions, it is possible to say the estimators are blue (best linear unbiased estimator) (Brooks, 2008). The econometric estimation technique that used in this study is ordinary least square (OLS).The diagnostic tests were performed to check for the validity of the parameters.

3.10.1. Normality Test

Normality tests were use to determine if a data set is well modeled by a normal distribution. With the normality assumption, ordinary least square estimation can be easily derive and would be much more valid and straightforward. This study used Jarque Bera test to find out whether the error term is normally distributed or not.

3.10.2. Multicollinearity Test

The term Multicollinearity refers to a linear relationship between explanatory variables, which may cause the regression model, bias (Gujarati, 2004). Most of the time, it is common to test if there is Multicollinearity among the explanatory variables in the estimation and interpretation of the model. Most econometric literatures reveal that the presence of Multicollinearity results in inflated standard errors which make inferences from estimation highly problematic (Gujarati, 2004). Therefore, this study employed variance inflation factors (VIF test to check the presence of Multicollinearity.

3.10.3. Heteroscedasticity Test

According to Brooks (2008), heteroscedasticity means that, error terms do not have a constant variance. If heteroscedasticity occur, the estimators of the ordinary least square method are inefficient and hypothesis testing is no longer reliable or valid, as it will underestimate the variances and standard errors. There are several tests to detect the heteroscedasticity problem, which are Park test, Glesjer test, Breusch Pagan Goldfrey test, White's test and Autoregressive Conditional heteroscedasticity (ARCH) test. In this study, White's test employed to test for the presence of Heteroscedasticity.

3.11. Panel Causality Test

Pedroni's heterogeneous panel co-integration method tests only for the existence of long run relationships. The tests indicate the presence or absence of long run links between the variables, but do not indicate the direction of causality when the variables are co-integrated. Panel Causality tested by the standard Engle and Granger causality procedures.

A typical example of traditional panel data causality testing is Holtz-Eakin et.al (1988, 1989). Given two variables X and Y is having a long run relationship, being Co integrated, the causality equation given by running each variable as a function of its lags and the lags of the other variable in the following form.

$$Y_{it} = \sum_{k=1}^{k} \alpha_i Y_{it-k} + \sum_{l=1}^{L} \delta_l X_{il-l} + f_{yi} + u_{il} \quad (8)$$

$$X_{it} = \sum_{m=1}^{M} \beta_m Y_{il-m} + \sum_{n=1}^{N} \gamma_n X_{il-n} + f_{xi} + v_{il} \quad (9)$$

Where Y_{it} and X_{it} are the two co-integrated variables, i=1… N represents cross-sectional panel members, i=1… T represents the time, uit and it v are error terms. This model differs from the standard causality model in that it adds two terms, f_{xi} and f_{yi} which are individual fixed effects for the panel member i.

Given these two variables, causality may run from X to Y, or X causes Y if, after controlling for the information in the past value of Y, the past value of X adds

significantly to the explanation of current Y, we can say that X causes Y. Similarly, if we control for the information in the past value of X and then, if the past value of Y add significantly to the explanation of current X, we can say that Y causes X. If only one of these two relationships hold, it implies that there is unidirectional causation. However, if both of them hold, there will be a bidirectional relationship between them.

CHAPTER FOUR

4. RESULT AND DISCUSSION

4.1. Descriptive Statistics

Table: 4.1. Summary of Descriptive Statistics

	DEPO	DIR	INF	LIR	ROA	CAR
Mean	5610.325	0.042500	15.39375	11.25938	2.940000	7.377646
Median	3780.550	0.040000	10.75000	11.88000	3.160000	7.500000
Maximum	22832.80	0.070000	36.40000	12.75000	5.000000	18.50000
Minimum	135.8000	0.030000	6.100000	9.250000	-2.100000	0.099000
Std. Dev.	5344.268	0.010954	9.825732	1.184988	1.045388	5.124737
Skewness	1.300077	0.652024	1.017287	-0.605726	-1.663022	0.144252
Kurtosis	4.230722	3.160665	2.605880	2.021381	8.020711	2.011484
Jarque-Bera	33.10192	6.905410	17.17929	9.701242	145.0804	4.241592
Probability	0.000000	0.031660	0.000186	0.007824	0.000000	0.119936
Sum	538591.2	4.080000	1477.800	1080.900	282.2400	708.2540
Sum Sq. Dev.	2.71E+09	0.011400	9171.776	133.3986	103.8194	2494.979
Observations	96	96	96	96	96	96

Source: Generated from Eview 8 using NBE data (2017)

As shown table 4.1, the mean value of bank deposit is around 5610.325units for sampling private commercial banks in Ethiopia. The researcher noticed that the bank deposit growth fluctuates between 135.8 and 22832.80 unit. This means, private commercial banks achieved, on average, 5610.325 unit of deposit for the period of 2002- 2017. The standard deviation among banks in terms of bank deposit is 5344.268; this confirms that there were high variations of deposit among private commercial banks during the study period. The reason of this variation of deposit may attribute to the high amount of deposit collected by Commercial Bank of Ethiopia compared to other commercial banks.

The mean value of the bank deposit interest rate over the study period was 0.0425 units with the minimum and maximum values of 3% and 7% respectively. There was little variation of deposit interest rate towards its mean value over the study periods with the value of standard deviation 0.010954%. This implies that, there was stability of deposit interest rate for subsequent years under the study period. In a sense, there is a control of minimum and maximum deposit interest rate by the government body. Therefore, there was no competition between private commercial banks to attract the customers with a motive of return on deposit under the study period.

The average price of goods and service because of inflation in the country over the sample period was recorded an average value of 15.39375%. The maximum inflation recorded in the sample year was 36.40% and the minimum 6.10%. The rate of inflation was highly dispersed which exhibits higher dispersion from its mean value with a standard deviation of 9.825732% over the study periods. This clearly shows that, there were variations in terms of cost of living as it measured by the inflation consumer price indexes.

As shown table 4.1, the mean value of lending rate was 11.25938%. It fluctuates between the value 9.25% and 12.75% with a standard deviation of 1.184988% during the study period. This implies that there was a high dispersion of lending rate from the mean among selected private commercial banks. Therefore, there was fierce competition between private commercial banks to attract the customers with a motive of return on deposit under the study period.

As shown table 4.1, the mean value of return on asset was 2.94 units for the study period. The minimum and maximum return on asset of selected banks was 2.10 and 5.0% respectively during the study period with a standard deviation of 1.045388 units. This shows that, the little dispersed of the average return on asset of study banks towards their mean value.

Capital adequacy ratio calculated as the ratio of equity to total assets. The ratio measures how much of the banks' assets funded with owners fund. In addition, it is a proxy for

capital adequacy of a bank by estimating the ability to absorb losses (Ommeren, 2011). As shown table 4.1, the mean value of the capital Adequacy ratio was 7.377646% for selected private commercial banks and it fluctuates between 0.099% and 18.5%with standard deviation of 5.124737% during the study period.

As shown table 4.1, the Skewness of deposit, deposit interest rate, inflation, lending interest, return on asset and capital adequacy ratio is 1.300077, 0.652024, 1.017287, 0.605726, -1.663022 and 0.144252 respectively. The Kurtosis of deposit, deposit interest rate, inflation, lending interest, and return on asset and capital adequacy ratios are4.230722, 3.160665, 2.605880, 2.021381, 8.020711 and 2.011484 respectively. Whereas, Jarque-Bera of deposit, deposit interest rate, inflation, lending interest rate, return on asset and capital adequacy ratios are 33.10192, 6.905410, 17.17929, 9.701242, 145.0804 and 4.241592 respectively over the study period.

4.2. Result of Panel Unit Root Test

It is common to test the stationary of variables in the first place before estimating the regression of an equation as the presence of unit root leads to spurious results. Accordingly, a panel unit roots test developed by Im Pesaran and Shin (2003) employed in this study. This method of testing a panel unit root allows for differences across the panel members. Therefore, the null hypothesis of this test is, all banks have a unit root for the variable against of the alternative hypothesis that at least some panel members are without unit root.

Table 4.2.Panel Unit Root Test

Im, Pesaran stat and Shin W- stat test				
Variables	Statistics	Probability		Order-of Integration
		At level	1st Difference	
LNDEPO	-6.67431	0.0000*	0.0002	I(0)
DIR	-4.15832	1.0000	0.0000*	I(1)
LNLIR	-5.43636	0.6609	0.0000*	I(1)
LNROA	-14.3530	0.0000*	0.0000	I(0)
LNCAR	-4.69227	0.9983	0.0000*	I(1)

Source: Generated from Eview 8 using NBE data

Note: * represent significant level at 1%

The table 4.2 shows that, bank deposit and return on asset were stationary at a level and statistically significant at a 1% level of significance. However, deposit interest rate, lending interest rate and capital adequacy ratio were stationary at first difference and statistically significant at the1% level of significance. Thus, the null hypothesis that the existence of unit root was rejected for all estimate variables in their order of integration.

4.3. Correlation Analysis

Correlation is a way to index the degree to which two or more variables are associated with or related to each other. The sample size is the key element to determine whether the correlation coefficient is different from zero/statistically significant. The values of the correlation coefficient are always between -1 and +1. A correlation coefficient of +1 indicates that the two variables are perfectly related in a positive linear sense; while a correlation coefficient of -1 indicates that, two variables are perfectly related in a negative linear sense. A correlation coefficient of 0, on the other hand, indicates that there is no linear relationship between two variables (Brooks, 2008). The chief objective is measuring the strength or degree of linear relationship between two variables.

Table 4.3 Result of Partial Correlation Analysis

	LNDEPO	DIR	LNINF	LNLIR	LNROA	LNCAR
LNDEPO	1.000000					
DIR	0.847717	1.000000				
LNINF	-0.035129	-0.103784	1.000000			
LNLIR	0.877101	0.799001	0.204839	1.000000		
LNROA	0.415032	0.274995	0.177648	0.413540	1.000000	
LNCAR	0.165929	0.049664	-0.025833	0.047757	0.071319	1.000000

Source: Generated from Eview 8 using NBE data

As shown table 4.3, lending interest rate and deposit interest rate positively and strongly correlated with bank deposit with a correlation coefficient of 0.847717 and 0.877101

respectively. Returns on asset and capital adequacy ratio have positive and medium correlation with bank deposit with their correlation coefficient of 0.415032 and 0.165929 respectively. Those correlation results clearly indicate the existence of direct association among the above mentioned variables and Ethiopian private commercial bank deposit. However, inflation negatively and weakly correlated with bank deposit with a correlation coefficient of -0.035129. This negative correlation coefficient result clearly indicates the existence of an inverse association between the two variables. In other word, as inflation increase, bank deposit moves in the opposite direction. Higher inflation induces savers to save less; perhaps households get a stable price prediction for the deposit.

In addition, inflation with deposit interest rate and inflation with capital adequacy ratio negatively correlated with correlation coefficient of -0.103784 and -0.025833 respectively. However, all other explanatory variables positively correlated; these positive correlations clearly indicate the existence of linear association between the explanatory variables.

4.4. Choosing Fixed Effect Vs Random Effect Models

In a panel data analysis, most commonly estimated models are the fixed effects (FE) and random effects (RE) models. The fixed effects model allow the intercept in the regression model to differ cross-sectional, but not over time, while all of the slope estimates are fixed both cross-sectional and over time. The random effects model proposes different intercept for each entity and again, these intercepts are constant over time, with the relationships between the explanatory and explained variables assumed to be the same both cross sectional and temporally (Brooks,2008). To examine whether individual effects are fixed or random, a Hausman specification test is providing evidence in favor of the REM model (Baltagi, 2005). The null hypothesis for this test is unobservable heterogeneity term is not correlate or random effect model is appropriate, with the independent variables. If the null hypothesis is rejecting then we employ Fixed Effects method (Brooks, 2008).

4.4.1. Hausman Test Result

Ho: Random effect model is appropriate. If P-value > 5%, we fail to reject the null

Ha: Fixed effect model is appropriate. If P-value < 5%, we reject the null.

As shown the Hausman test result in the appendix 1, the P value is 0.9914, which is more than 5%. Hence, the null hypothesis of the random effect model failed to reject at 5 % level of significance. Because, no significant evidence to reject the null hypothesis. This implies that, the random effect model is more appropriate than a fixed effect model.

4.5. Regression Analysis and Interpretation

4.5.1. Regression Analysis

This section presents the regression result of random effect model to analyze factors affecting deposit mobilization of private commercial banks in Ethiopia. Accordingly, the regression result and coefficients of the variables estimated by ordinary least squares (OLS) technique using Eview version 8 software. As stated earlier in model selection, the random effects regression model is an appropriate model used in this study. Thus, the model measured statistically significant factors of private commercial banks deposit mobilization by:

$$LNDEPO_{it} = \beta_0 + \beta_1 DIR_{it} + \beta_2 LNINF_{it} + \beta_3 LNLIR_{it} + \beta_4 LNROA_{it} + \beta_5 LNCAR_{it} + U_{it} \quad (10)$$

Where: -$LNDEPO_{it}$ represent natural logarithm of deposit amount of private commercial banks for period t

DIR_{it}-represent deposit interest rate at period t

$LNINF_{it}$-represent natural logarithm of inflation rate at period t

$LNLIR_{it}$-represent natural logarithm of lending interest rate at period t

$LNROA_{it}$-represent natural logarithm of return on asset at period t

$LNCAR_{it}$-represent natural logarithm of capital adequacy ratio at period t

i& t-represent cross section and time series respectively

β_0- represent intercept, β_1- β_5 represent slopes & u_{it} represent error term.

Table 4.5 Results of Random Effect Regression Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DIR	33.63916	5.411834	6.215851	0.0000*
LNINF	-0.291562	0.062590	-4.658257	0.0000*
LNLIR	6.716714	0.570830	11.76658	0.0000*
LNROA	0.121873	0.044028	2.768047	0.0068*
LNCAR	0.036642	0.039425	0.929415	0.3552
C	-8.993240	1.136041	-7.916297	0.0000*

R-squared	0.930368	Mean dependent var	1.486527
Adjusted Rsquared	0.926499	S.D. dependent var	1.131638
S.E. of regression	0.306798	Sum squared resid	8.471265
F-statistic	240.5016	Durbin-Watson stat	1.99870
Prob(F-statistic)	0.000000		

Source: Generated from Eview 8 using NBE data

Note:* refers to significant at 1%

The regression result in table 4.5 demonstrates both coefficients of explanatory variables and corresponding p-values. Thus, the specified model presented as follows:

$$LNDEPOit = -8.99324 + 33.63916(DIR)it - 0.291562(LNINF)it + 6.716714\,(LNLR)\text{it} + 0.121873(LNROA)it + 0.03664(LNCAR)\text{it} + u_{it} \quad (11)$$

As shown in the table 4.5, coefficient of R-squared is 0.930368. The regression result confirmed that, 93.03 percent of variation in bank deposit growth explained by selected explanatory variables. Such as, deposit interest rate (DIR), inflation rate (INF), capital adequacy ratio (CAR), return on asset (ROA) and lending rate (LR). The R-square result makes sense because there are other factors that were not included in the model, but

could help in explaining deposit growth in private commercial banks of Ethiopia account for the remaining 6.97 percent.

An adjusted R-squared value, which takes into account the loss of degrees of freedom associated with adding extra variables inferred to see the explanatory powers of the models. In other words, the adjusted R-squared shows satisfaction levels, which mean that nearly 92.64 percent of the volatilities in deposit growth, explained by the volatilities of independent variables included in the equation. Therefore, an adjusted R square having the value of 0.926499 shows that 92.64 percent of the dependent variable explained by the independent variables included in the model.

The final summary statistic is the "Durbin-Watson statistics". It is the classic test statistics for serial correlation. A Durbin-Watson close to 2.0 is consistent with no serial correlation, while a number closer to 0 means there is probably serial correlation Brooks (2008). Hence, as concluded in the table 4.5, the value of Durbin-Watson statistics is 1.99870, which close to 2.0 and it is consistent with no serial correlation in this study.

4.5.2. Interpretation on Regression Result

As shown table 4.5, deposit interest rate found to have a positive relationship with private commercial bank deposit and the relationship is significant at 1% significance level. According to the regression result, a 1% increase in deposit interest rate generates a 33.63 % increase in deposit growth. In addition, concluded that, deposit interest rate influenced positively and, significantly, the private commercial bank deposit during the study period. This implies that the deposit interest rate is a major factor in explaining the private commercial bank deposit in Ethiopia, meaning that deposit interest rate plays an important role in deposit growth of private commercial banks by inducing potential depositors. The regression result supports the study's expected sign of variables.

As reviewed in the empirical literature, this regression result is in line with the findings of Andinet (2016) and shemsu (2016) in Ethiopia, Ngula (2012) and Eric et al., (2015) in Ghana, Pauel and Omosefe (2014) in Nigeria and Kalebe (2015) in Lesetho. While it inconsistent with the findings of Giragn (2015) and Wubitu (2012) in Ethiopia.

Inflation is a sustained rise in the general level of prices. The inflation rate is the rate at which the price level increases. Symmetrically, deflation is a sustained decline in the price level of goods and services. The regression result in table 4.5 shows that, the inflation rate has significant and negative impact on bank deposit growth. The coefficient of this relationship was -0.291562 that indicates, holding other things constant, a one percent increase in inflation rate will lead to 0.291562 percent decrease in bank deposit growth in the study period. This implies that, persistent inflation has a significant negative effect on the growth of private commercial bank deposit. So higher inflation induces savers to save less, perhaps households get a stable price prediction from the deposit. This result is consistent with the precautionary motive, suggesting that increased macroeconomic uncertainty induces people to save a proportion of their income. This is particularly true for households in developing countries such as Ethiopia, whose income prospects are more uncertain than their counterparts in developed countries. The regression result supports the study's expected sign of variables.

The regression result of inflation rate was in line with the finding of Hussein & Ali (2014) in Iran, Prema et al., (2001) in India, Orji (2012) in Nigeria, Ngula (2012) in Ghana, Mohamed and Mensur (2014) in Malasia and Giragn (2015) in Ethiopia. It also inconsistent with the findings of Wubitu (2012) and Behredin (2014) in Ethiopia showed that, the positive &insignificant effect of inflation on bank deposits. While, Hibret (2015) and Shemsu (2015) in Ethiopia confirmed that, the positive & the significant effect of inflation on bank deposit.

The regression coefficient for lending interest rate is 6.71. This indicates that ceteris paribus, an increase in the lending interest rate by 1 percent leads to increase in deposits by 6.71 percent. This implies that, lending interest rate has a positive effect on private commercial bank deposit growth. Thus, it was other depository corporation rate usually meets the short and medium term financing needs of the private sector. This rate differentiated according to the creditworthiness of borrowers and objectives of financing. For the banks to balance their main objectives of liquidity, profitability, solvency and lending interest rates could handle effectively. The regression result supports the study's expected sign of variables.

The regression result of the lending interest rate was in line with the findings of Prema et al., (2001) in India and Mohamed (2014) in Bahrain, that the lending interest rate has significant and positive effects on the performance of commercial banks deposit in the financial markets globally. While, inconsistent with the findings of Hibret (2015) and Behredin (2016) in Ethiopia examined that lending interest rate positively and insignificantly affect the bank deposit during their study period.

For the purpose of this study, return on asset measures the overall financial performance of banks and it measured by the ratio of net profit to total asset. The regression result shows that, return on asset has positive and statistically significant effect on private commercial bank deposit at a one percent significant level. The positive sign of the coefficient indicates a direct relationship between profitability and bank deposit. According to the regression result, a one percent change in the bank's profitability, keeping other things constant, has resulted in 0.12 percent change in the level of deposit of private commercial banks. It means that a more efficient company will generate a higher level of profit from a given level of total asset than its less efficient competitors will perform.

The regression result of return on asset in this study is in line with the findings of Ketema (2015) in Ethiopia and Erna and Ekki (2004) in Indonesia. They found that, return on asset has positive and statistically significant effect on bank deposit. They also considered ROA as a ratio that used to measure the company's efficiency in the use of its assets to generate profit. Higher bank profits would tend to signal increased bank soundness, which could make it easier for these banks to attract deposits. The regression result supports the study's expected sign of variables.

Capital adequacy ratio is the duty of the bank to have the confidence of depositors and shareholders. It shows that, the financial condition of banks and the capability of managed to assemble the want for additional capital. Therefore, the researcher used capital adequacy ratio in order to evaluate the financial condition of the private banking sector in the country. According to the regression result of table 4.5, as the capital adequacy ratio increases by one percent, the private commercial bank deposit level

increases by 0.037 percent when the other things remain constant for the study period. This implies that the capital adequacy ratio has positive and very less effect on the deposit growth of private commercial banks. Despite, capital adequacy ratio is a reflection of the inner strength of a bank, which would stand by in good stead during the times of adverse situation; the regression result confirmed the insignificant effect of capital adequacy on bank deposit. The regression result supports the study's expected sign of variables.

The regression result of capital adequacy ratio in this study is inconsistence with the study conducted by Jembere (2014) and Dereje (2017) in Ethiopia found out the capital adequacy ratio has a negative effect on private commercial bank deposit.

4.6. The Diagnostic Test Result

Every estimator of the model should have to meet the Ordinary Least Squares (OLS) assumptions when the estimation carried out. If the estimators of the model satisfy the OLS assumption, it is possible to say the estimators are blue (best linear unbiased estimator) (Brooks, 2008). The econometric estimation technique that used in this study is ordinary least square (OLS). In order to this, the researcher test for normality, Multicollinearity and Heteroscedasticity assumptions to check the accuracy and reliability of the regression result in this study.

A normal distribution not skewed and defined to have a coefficient of Kurtosis 3. Jarque Bera formalizes this by testing the residuals for normality and testing whether the coefficient of skewness and kurtosis are zero and three respectively. Skiweness measures the extent to which a distribution is not symmetric about its mean value and kurtosis measures how far the tails of the distribution are. The Jarque-Bera probability, statistics /P-value/ is also expected not to be significant even at 10% significance level (Brooks, 2008). The study develops the following hypothesis to check the normality: Ho: The residuals are normally distributed, H1: The residuals are not normally distributed.

As shown the histogram in the appendix 2, the value of kurtosis is 3.632344 and the Jarque-Bera statistics was not significant even at the 10 % level of significance as per the

P-values shown in the histogram (i.e. 0.186043). Hence, the null hypothesis of normally distributed failed to reject at 5 percent of significant level. This implies that there is no significant evidence for the presence of not normally distributed. The Jarque Bera P-value of the model also supports the presence of normally distributed of the residuals. Therefore, the researcher could conclude that the residuals are asymptotically normal during this study.

Most econometric literatures revealed that the presence of Multicollinearity results in inflated standard errors which make inferences from estimation highly problematic (Gujarati, 2004). If an explanatory variable is an exact linear combination of the other explanatory variable, then we say the model suffers from perfect Co linearity and it cannot estimate by OLS (Brooks, 2008). Therefore, this study employed variance inflation factor test to check the presence of Multicollinearity. Depending on different authors like Maddala (1992), VIF greater than 10 or 1/VIF greater than 0.10 indicates, the presence of serious Multicollinearity. As shown in the appendix 3, the VIF statistics for these series are less than 10; there is no indication of a serious Multicollinearity problem for all variables under consideration. Therefore, all the variables retained for use in the estimations.

The estimators of the ordinary least square method are inefficient and the hypothesis testing is no longer reliable or valid, when Heteroscedasticity occurred in the regression. As can be confirmed by the result of Heteroscedasticity test in the appendix 4, there is no evidence for the presence of heteroscedasticity since the p value in all of the cases above 5 percent. The test statistics is not significant and the variance of the error term is constant or homoscedastic and we had sufficient evidence to accept the null hypothesis of Homoscedasticity. Thus, the linear model also correctly specified during the study period.

4.7. Granger Causality Test Result

Pedroni's heterogeneous panel co-integration method tests only for the existence of long run relationships. The tests indicate the presence or absence of long run links between the variables, but do not indicate the direction of causality when the variables are co-integrated. Panel Causality shows that, the standard Engle and Granger causality

procedure traditionally test the direction of the long run relationship between the variables. If two variables are Co integrated, there is a long run relationship between them and at least there will be a one directional relationship between the two variables.

Table 4.7 Pair Wise Granger Causality Tests

Pair wise Granger Causality Tests
Date: 06/03/19 Time: 11:31
Sample: 2002 2017
Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
DIR does not Granger Cause LNDEP	84	0.40915	0.6656
LNDEP does not Granger Cause DIR		9.33577	0.0002*
LNINF does not Granger Cause LNDEP	84	1.82887	0.1673
LNDEP does not Granger Cause LNINF		6.37831	0.0027*
LNLIR does not Granger Cause LNDEP	84	1.81108	0.1702
LNDEP does not Granger Cause LNLIR		3.60003	0.0319**
LNROA does not Granger Cause LNDEP	84	0.44070	0.6452
LNDEP does not Granger Cause LNROA		1.52569	0.2238
LNCAR does not Granger Cause LNDEP	84	2.11888	0.1269
LNDEP does not Granger Cause LNCAR		1.65286	0.1981

Source: Generated from Eview 8 using NBE data

Note: * refers to significant at 1% & ** refers to significant at 5%

As shown table 4.7 pair wise Granger causality test, the null hypothesis deposit interest rate does not Granger cause for bank deposit is fail to reject. This is because; the p value is greater than 5% and it is insignificant. This implies that, deposit interest rate does not Granger cause for bank deposit. While the second null hypothesis deposit growth does not Granger Cause deposit interest rate rejected at 1% significant level. This is because the p value is less than 5%. This implies that deposit growth is granger cause for the deposit interest rate.

The third null hypothesis inflation does not Granger cause for deposit growth is failing to reject. This is because; the p value is greater than 5% and it is insignificant. This implies that, inflation does not Granger Cause deposit growth. While the fourth null hypothesis deposit growth does not Granger Cause, inflation rejected at the 1 % significance level.

This is because the p value is less than 5%. This implies that deposit growth is granger cause of inflation.

The fifth null hypothesis lending rate does not Granger Cause for deposit growth was failed to reject. This is because; the p value is greater than 5% and it is insignificant. This implies that, lending rate does not Granger Cause for deposit growth. While the sixth null hypothesis deposit growth does not Granger cause lending rate, was rejected at the 5 % significance level. This is because the p value is less than 5%. This implies that deposit growth is granger cause for lending rate.

Generally, using the panel Granger causality test, the study found unidirectional causality that runs from deposit growth to deposit interest rate, from deposit growth to inflation rate and from deposit growth to lending interest rate, without any feedback response.

CHAPTER FIVE

5. CONCLUSIONS AND RECOMMENDATIONS

5.1. Conclusion

This section presents the conclusion drawn from the findings of the study. The main objective of this study is analyzing factors affecting deposits mobilization of private commercial banks in Ethiopia. Nowadays, finding deposit is becoming a challenging job for the banks in Ethiopia compatible with the growing need of loans. Related to the growing need for finances for new and existing businesses of the country and banks own desire to make profits from those finances, deposit mobilization is becoming the critical factor for banks.

To comply with the objectives of the study, two-bank specific and three macroeconomic variables purposely selected. The bank specific variables includes, return on asset (ROA) and capital adequacy ratio (CAR) and the macroeconomic variables were inflation rate (IFR), deposit interest rate (DIR) and lending interest rate (LIR). The study adopted random effect model to analyze the panel data collected from national bank of Ethiopia and sampled private commercial banks from the period 2002 to 2017. The analysis also performed by econometric view version 8 (Eview8) and stata version 13statistical software during the study period.

As the finding showed, deposit interest rate is a major factor in explaining the private commercial banks' deposit growth in Ethiopia. Meaning, the deposit interest rate plays an important role in deposit growth. Therefore, the competitions between private commercial banks in terms of deposit interest rate may attract. The effect of deposit interest rate on private commercial bank deposit growth is higher as compared with other variables during the study period. Return on asset has a significant and positive effect on private commercial bank deposit growth. The better return on assets would tend to increase bank soundness to perform deposit mobilization in order to attract potential depositors. The deposit growth reacts negatively towards the increase in inflation. The relationship is similar to the expected sign. Since the county has experienced double digit

inflation in the study period that results in higher costs of doing business; which leads to decrease in deposit mobilization by private commercial banks. Despite, Capital adequacy is a duty of a bank to have the confidence of depositors and shareholders, the regression result confirmed the insignificant effect on bank deposit.

In general, the regression analysis result confirmed that, deposit interest rate, lending interest rate and return on asset have a positive and significant effect on private commercial banks deposit. However, inflation rate significantly and negatively affecting private commercial bank deposit during the study period.

5.2. Recommendation

- The private commercial banks should give due emphasis to their deposit mobilizing tasks by considering mobilizing deposit is a way to sustain in the banking industry.
- The private commercial banks should provide competitive deposit interest rates on selected stable demand deposits in order to attract potential depositors keeping a sufficient margin of profitability.
- There should be determined effort by the monetary authorities to bridge the existing widening gaps between the lending rate and the deposit rate to motivate the potential depositors in order to generate needed loan able funds from bank deposit.

5.3. Suggestion for Future Studies

The prime focus of this study is analyzing factors affecting deposit mobilization of private commercial banks in Ethiopia using five selected variables for six private commercial banks. However, all commercial banks and their influential macroeconomic and bank specific variables were not included in this study. Thus, future researchers are recommended for undertaking similar study by considering additional macroeconomic and bank specific variables for all commercial banks.

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Website Sources

- *National Bank of Ethiopia: www.nbe.gov.et*

APPENDICES

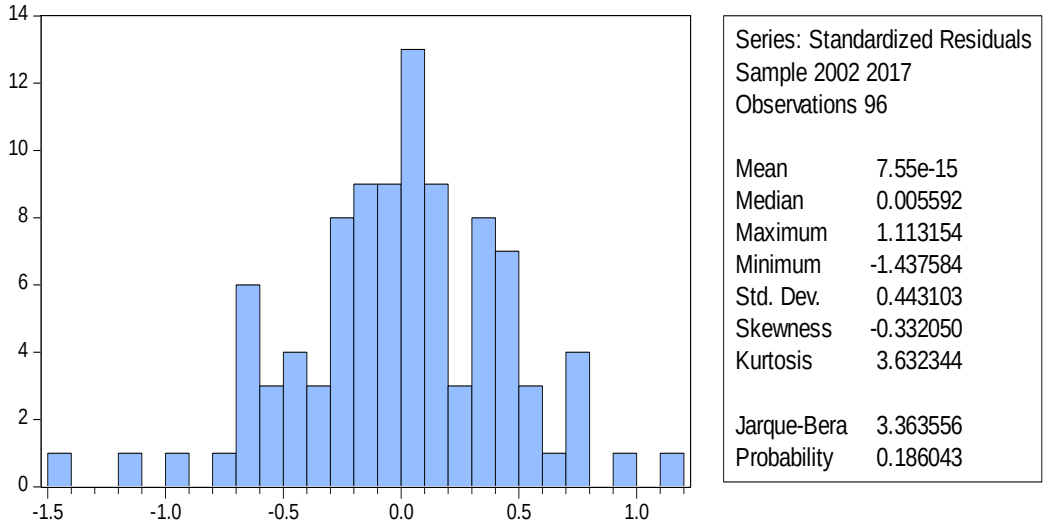
Appendix 1. Result of Husman Test

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	0.519951	5	0.9914

Source: Generated from Eview 8 using NBE data

Appendix 2. Normality test result



Source: Generated from Eview 8 using NBE data

Appendix 3. Result of Multicollinearity Test

Variable	VIF	1/VIF
LNLIR	3.88	0.257543
DIR	3.50	0.285862
LNINF	1.32	0.756001
LNROA	1.23	0.813884
LNCAR	1.01	0.992659
Mean VIF	2.19	

Source: Generated from Eview 8 using NBE data

Appendix 4. Result of Hetroscedaciticity Test

```
White's test for Ho: homoskedasticity
         against Ha: unrestricted heteroskedasticity

         chi2(20)      =     30.65
         Prob > chi2   =    0.0600
```

Source: Generated from Eview 8 using NBE data