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**ST.MARY'S UNIVERSITY SCHOOL OF GRADUATE STUDIES  
COLLEGE OF BUSINESS AND ECONOMICS  
DEPARTMENT OF MARKETING MANAGEMENT**

**FACTORS AFFECTING DEPOSIT MOBILIZATION: THE CASE OF  
COMMERCIAL BANK OF ETHIOPIA**

**BY: MULUKEN ABEBE**

**ADVISOR: ZEMENU AYNADIS. (ASS, PROFESSOR)**

**A Thesis Submitted to School of Graduate Studies of St. Mary's University in  
Partial Fulfillments of The Requirements for The Degree of Masters of Art in  
Marketing Management**

**January, 2019  
Addis Ababa, Ethiopia**

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**APPROVED BY BOARD OF EXAMINERS**

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## DECLARATION

I, the undersigned, declare that a thesis entitled '*Factors Affecting Deposit Mobilization: The Case of Commercial Bank of Ethiopia*' is my new and original work prepared under the advisor or direction of Zemenu Aynadis (Ass, Professor), submitted for MA Degree in Marketing Management. It has not been offered to any other University for award of a degree, diploma or certificate.

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Name

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Signature

## ENDORSEMENT

This is to clarify that Muluken Abebe carried out his thesis on “*Factors Affecting Deposit Mobilization: The Case of Commercial Bank of Ethiopia*” and submitted in partial fulfillment of the requirements for the award of the degree of Masters of Art in Marketing Management at St. Mary’s University, School of Graduate Studies for examination with my approval as a university advisor.

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Zemenu Aynadis. (Ass, Professor)-Advisor

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## Table of Content

Contents	Page
acknowledgement .....	<b>i</b>
List of Table.....	<b>iv</b>
List of Figures.....	<b>v</b>
Acronyms and Abbreviations .....	<b>vi</b>
Abstract.....	<b>vii</b>
Chapter One .....	<b>1</b>
Introduction.....	<b>1</b>
1. Background of the Study .....	<b>1</b>
1.1. Banking Industry Development in Ethiopia.....	<b>2</b>
1.2. Statement of the Problem.....	<b>4</b>
1.3. Basic Research Questions .....	<b>6</b>
1.4. Objectives of the Study .....	<b>6</b>
1.4.1. General Objective .....	<b>6</b>
1.4.2. Specific objective.....	<b>6</b>
1.5. Significance of the Study .....	<b>6</b>
1.6. Scope of the Study .....	<b>7</b>
1.7. Organization of the Research Report.....	<b>7</b>
CHAPTER TWO .....	<b>8</b>
RELATED LITRATURE REVIEW .....	<b>8</b>
2. Introduction.....	<b>8</b>
2.1. Theoretical and Conceptual Reviews.....	<b>8</b>
2.2. Commercial Bank Deposit.....	<b>9</b>
2.3. The Importance of Deposit for Banks.....	<b>11</b>
2.4. Factors Affecting Commercial Banks Deposits.....	<b>12</b>
2.5. Major Types of Deposit Products .....	<b>13</b>
2.5.1 Importance of Deposit mobilization .....	<b>14</b>
2.6 The Determinants of Commercial Banks Deposits- Theory .....	<b>15</b>
2.6.1 Determinants of commercial bank deposit.....	<b>15</b>
2.7. Empirical Literature Review .....	<b>17</b>

2.7.1. Empirical Review from abroad .....	17
2.7.2. Empirical Review in Ethiopia .....	19
2.8. Conceptual Framework .....	21
<b>CHAPTER THREE .....</b>	<b>23</b>
<b>RESEARCH METHODOLOGY .....</b>	<b>23</b>
3. Introduction.....	23
3.1. Research Design and Research Approach.....	23
3.2. Data Types and Source .....	24
3.3. Definition of Variables and Research Hypothesis .....	24
<b>3.4 Dependent variables .....</b>	<b>27</b>
3.5. Model Specification .....	28
3.6. Data Analysis Methods .....	29
3.7. Ordinary Least square .....	29
3.8. Validity and Reliability of Data .....	30
<b>CHAPTER FOUR.....</b>	<b>31</b>
<b>DATA PRESENTATION, ANALYSIS AND INTERPRETATION .....</b>	<b>31</b>
4. INTRODUCTION .....	31
4.1. Descriptive Data Analysis.....	31
4.2. Descriptive statistical analysis of the dependent and independent variables .....	35
4.3. Testing the Classical Linear Regression Model (CLRM) Assumptions .....	36
4.4. Test for non-normality test .....	36
4.4.1. The Assumption of Homoscedasticity .....	37
4.4.2. Test for Multicollinearity .....	38
4.5. Results of Regression Analysis.....	38
<b>CHAPTER FIVE .....</b>	<b>44</b>
<b>SUMMARY, CONCLUSIONS AND RECOMMENDATIONS .....</b>	<b>44</b>
5. Summary of major Findings .....	44
5.1 Conclusions.....	44
5.2. Recommendation .....	45
<b>REFERENCES .....</b>	<b>46</b>



## LIST OF TABLES

	Page
<b>Table 3.1 Variables, Definitions, Notations and Expected Signs.....</b>	<b>27</b>
<b>Table 4.1 Summary statistics – Dependent and Independent Variable.....</b>	<b>35</b>
<b>Table 4.2 Test for Non-normality Test.....</b>	<b>37</b>
<b>Table 4.3 Test of Heteroskedasticity .....</b>	<b>37</b>
<b>Table 4.4 Correlation matrixes.....</b>	<b>38</b>
<b>Table 4.5 Regression Analysis Result.....</b>	<b>40</b>
<b>Table 4.6. Summary of Hypothesis Test .....</b>	<b>43</b>

## LIST OF FIGURES

	Page
Figure 1 Conceptual framework .....	22
Figure 4.1 Compositions of Total Deposit/ Deposit Mobilization in Billon of Birr .....	32
Figure 4.2.The Trends of Money Supply and Government Expenditure .....	33
Figure4 .3 the trends of average deposit interest rate, overall inflation rate and exchange rate...	34

## **ACRONYMS AND ABBREVIATIONS**

ATM: Automatic Teller Machine

CBE - Commercial Bank of Ethiopia

CLRM - Classical Linear Regression Model

CRISK - Loan to Asset Ratio

CSA - Central Statistical Authority

EXGR - Exchange Rate

GOVEXG - Government Expenditure

INF - Inflation

INTR - Interest Rate

LIQ - Liquidity

MOFED Ministry of Finance and Economic Development

MS - Money Supply

NBE - National Bank of Ethiopia

OLS - Ordinary Least Square

ROA - Bank Profitability Bank

ROE - Return on Equity

USD - United State Dollar

## Abstract

*Deposits are the primary source of funds for a bank, which facilitates the uses of funds (loans and investments). The higher the deposits amount, the bigger the lending and investments portfolio can be maintained by the banks to sustain its expansion and future growth. The banks must have adequate deposits to meet the lending volume required by the public and at the same time maintain extra cash for withdrawals by depositors. Mobilizing deposits is one of the essential issues in developing countries as domestic funds provide cheap and reliable source of funds for development the same as Commercial Bank of Ethiopia (CBE) which embarks on aggressive branch network expansion aimed at mobilization of deposit resources. This study aimed to empirically investigate determinants of deposit mobilizations and identify which of those factors are influential in affecting the deposit mobilization of CBE for the periods 1995-2017. The researcher adopted Quantitative research approach. Bank specific and macroeconomic variables were analyzed by using the time series fixed effect regression model. Different diagnostic tests (test for assumption of Homoscedasticity, Autocorrelation, Normality, average value of the error is zero and independent variables are non-stochastic) were conducted to check the appropriateness of the model. The results reveal that Bank's Liquidity (statistically significant), exchange rate, and Bank Profitability are positively and statistically insignificant on bank deposit growth; whereas, Money Supply influence is negatively and statistically significant on bank deposit growth. Deposit Interest Rate and Inflation had insignificant positive influence on bank deposit growth, whereas credit risk and Government Expenditure had insignificant negative influence on bank deposit growth. Suggestions have been made to decrease the broad Money Supply to the economy since it had a negative significant effect on deposit mobilization.*

**Key words:** *Determinants of deposits mobilization, Commercial Bank of Ethiopia, Money Supply.*

# CHAPTER ONE

## INTRODUCTION

### 1. Background of the Study

Economic growth is the common goal of all nations. Everybody lives with more comfortable, better standard of living than before and holding a better welfare because of the surge in economic growth. Government in each country aims to reduce poverty and increase the level of national income. Therefore, 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 (Pinchawawee, 2011).

Mobilizing deposits is one of the essential issues in developing countries as domestic funds provide cheap and reliable source of funds for development, which is of great value to these countries, especially when the economy has difficulty raising capital from international donors, investors and markets. Yet, in many developing countries, there is a considerable amount of savings that are not intermediated through the formal sector particularly there exist significant savings potential in the rural (and/or semi-urban) sector of many developing countries.

Selvaraj& Kumar (2015) State that, the success of the banking greatly lies on the deposit mobilization. Performances of the bank depend on deposits, as the deposits are normally considered as a cost effective source of working fund. Mobilizations of rural and urban savings are the most important objectives of the Commercial Banks. It helps to expand banking operations. The successful functioning of commercial banks depends on the extent of funds mobilized. Deposits constitute a vital source of funds required for banking business. There are different types of deposits, with different maturity pattern carrying different rates of interests. Mobilization of deposits for a bank is as essential as oxygen for human being.

Compared to most countries, Ethiopia has taken a cautious approach toward the liberalization of its banking industry. For all intents and purposes, its industry is closed and generally less developed than its regional peers. The industry comprises one state-owned development bank and the financial giant dominated by Commercial Bank of Ethiopia (CBE) which embarks on aggressive branch network expansion aimed at mobilization of deposit resources; continued amassing of foreign currency proceeds of export items channeled from China, channeling of

savings made for the housing project in the capital city (though it also lends householders at a lower interest rate); imposition of private banks to purchase NBE-Bills and the sum effect of the above and other factors enable the CBE secure competitive edge over private banks with assets accounting for more than 65 percent of the industry's total holdings. The banking industry's nonperforming loan ratio is commendably low, and profitability is good, but the dominance of public sector banking certainly restricts financial intermediation and economic growth. It contrasts with regional and international peer countries where banking industries have a much higher share of private sector and foreign participation (Dereje, 2017).

In this study the determinants of commercial bank of Ethiopia deposit at macro level was studied empirically and the relationship between these variables and total deposit of the bank is also identified. Bank deposits and its determinants are very crucial to the financial sector of developing country like Ethiopia. This study enables banks and regulators to keep control to the issue of deposit which is very important to the security of their operation as well as the economy as a whole in the country. Therefore, this paper aimed to identify and evaluate those factors affecting deposit of Commercial Bank of Ethiopia.

### **1.1. Banking Industry Development in Ethiopia**

The fundamental role of monetary and financial institutions for economic development is widely recognized by economic literature. Basic conditions, although quite rudimentary, in financial field conducive to economic advancement were made available in Ethiopia at the beginning of the XX century. Banking history of this country starts just in those years.

There are five principal events, which may conveniently be taken as dividing Ethiopian banking history into periods. The first event was establishment in 1906 of the Bank of Abyssinia, marking the advent of banking into the country. The second event was Italian occupation in 1936, when, following liquidation of the Bank of Ethiopia, a broad colonial banking network, extended to encompass all Italian possessions in the Horn of Africa (Eritrea, Ethiopia and Somalia) and closely linked with the metropolitan financial system, was set up in the country.

The third event was, in 1943, establishment of the State Bank of Ethiopia, marking the rebirth of the Ethiopian independent banking. This occurred during World War II after liberation of the country. The fourth event was the revolution of 1974, which wiped out the monarchy,

nationalized companies and shaped a “socialist banking” two-tier model “suited” to Ethiopia, the whole credit system being based on the central bank and three state-owned financial institutions, each of them enjoying monopoly in its respective market. The fifth event was the collapse of socialist regime followed by a financial sector reform and liberalization according to Monetary and Banking Proclamation of 1994.

Commercial Bank of Ethiopia was legally established as a share company in 1963 to take over the commercial bank activities of the State Bank of Ethiopia, which was founded in 1942 with twin objective of performing the duties of both commercial bank and central banking (www.deepethiopian.com, 2014). During the 1974 revolution Commercial Bank of Ethiopia got its strength by merging with the owned Addis Ababa Bank. Since then, it has been playing a significant role in the development endeavors of the country.

The bank has been playing a pivotal role in advancing economic development of the country for 75 years now. This role can be maintained only when it is able to keep-up its good image by providing service that are most demanded by customers in the way they like it. To attain this, it has to continue improving the way it does business i.e. the way it provides service to its customers and the image it creates in the eyes of stakeholders have to go on improving. This is possible only when the bank is proactive and is able to perfect its strategies when surrounding dynamics change.

The commercial bank of Ethiopia still dominates the market in terms of asset, deposit, capital, and customer base and branch network. Despite the growing competition from private banks, CBE become powerful in all rounded banking business especially on deposit mobilization strategy. This makes it one of the most reliable and strong commercial banks in country and the region.

Its strong capital base , for the last seven decades of rich experience in the market and wide branch network throughout the country have enabled the bank to accommodate the large demand for its service and increase its overall revenue on sustainable basis. The bank with its employee and management has aspiration to promote sound liquidity management framework which enables the bank bring itself to standard of modern international business practice and be competent enough in the national and international market.

Today, more than ever before, CBE aggressively expanded its presence in all directions of the country. Despite the flourishing of private commercial banks in the country, CBE has remained potent and is in the lead in terms of assets, deposits, capital, and customer base.

Commercial Bank of Ethiopia is the leading bank in Ethiopia, established in 1942 and now the bank is leading African bank with assets of 495.4 billion Birr as on December 1st 2017. This bank is Pioneer to introduce modern banking to the country; it has more than 1,235 branches stretched across the country. It also plays a catalytic role in the economic progress & development of the country.

Commercial Bank of Ethiopia becomes the first bank in Ethiopia to introduce ATM service for local users and Currently CBE has more than 16.6 million account holders and the number of Mobile and Internet Banking users also reached more than 1.2 million as of December 1st 2017. Active ATM card holders reached close to a million. It has strong correspondent relationship with more than 50 renowned foreign banks like Commerz Bank A.G., Royal Bank of Canada, City Bank, HSBC Bank (CBE, 2017). The bank also operates two branches in South Sudan, and planning to re-opening a branch in Djibouti, and planning to open new branches in Dubai and Washington, DC to serve the Ethiopian Diaspora. Commercial bank of Ethiopia has a vision to become world class bank by 2025 to realize this vision the bank implemented different human resource strategies those are human resource development, human resource training and succession plan.

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

Deposits are the primary source of funds for a bank, which facilitates the uses of funds (loans and investments).The higher the deposits amount, the bigger the lending and investments portfolio can be maintained by the banks to sustain its expansion and future growth. The banks must 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 fast growing economy of the country, which is proactively investing in road infrastructure, building hydropower dams, constructing thousands of housing condominiums and expanding agricultural and other investments in the country are hugely relying on the commercial banks for loans and credits. Moreover, there have been multiple small 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 from public institutions, private sector and other potential contributors (Hibret, 2015).Ethiopian banking industry is still in its growing stage. The deposit generated by the county economy not yet been mobilized as much as expected.

NBE indicates that from deposits that should be mobilized by banks only 7% is mobilized as of 2012 (Wubitu, 2012). This indicates that from the money that should be deposited in the bank 93% of it was not mobilized.

Moreover, in the contexts of Ethiopia, the related research has mostly focus on only one public Bank (Commercial Bank of Ethiopia) to assessed the factors affecting the total amount of deposits in commercial bank of Ethiopia. In addition to this, there is also inconsistency finding among researcher. This inconsistency of results might be attributable to the method of data analysis used by different researchers, the time period used.

For instance; Inflation Rate taken as explanatory variable by (Andinet, 2016) the result of his study indicates inflation has a negative relation and insignificant to Commercial Bank of Ethiopia Deposit. (Giagn, 2015) also used the variable in his study to determine the effect of inflationto CBE Deposit Growth result of the study was positive relation and significant for deposit.

Finally (Shemsu, 2014) used Inflation rate as an explanatory variable to determine the effect on the Commercial bank of Ethiopia deposit result was positive relation and insignificant to the dependent variable deposit.

Interest rate: was taken as an explanatory variable by (Andinet, 2016), the result is positive and significant to deposit. (Shemsu, 2014) the result is positive and insignificant and (Giang, 2015) the result is negative and insignificant and lastly (Wubit, 2012) result shows positive and insignificant.

Currently the commercial bank of Ethiopia increases its deposits by overcoming the existing challenges. To do so it is important to know the main factors that affect deposit mobilization or financial savings. This study empirically investigates determinants of deposit mobilization in

financial savings for banks in Ethiopia and which of those factors are influential and also minimize the research gaps on factors affecting deposit mobilization in commercial banks.

### **1.3. Basic Research Questions**

- How do the factors affect deposit mobilization in CBE?
- What are the strategies to be implemented in order to enhance resource mobilization efforts in the bank?

### **1.4. Objectives of the Study**

#### **1.4.1. General Objective**

The general objective of this study is to examine and assess the general factors affecting deposit mobilization in commercial bank of Ethiopia.

#### **1.4.2. Specific objective**

- To evaluate the impact of identified factors on deposit mobilization of the bank.
- To recommend strategy towards resource improvement through deposit mobilization of the bank.

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

This research was focuses on the factors affecting the deposit mobilization in case of Commercial bank of Ethiopia are expected to benefit from this study. The followings are the major significance of the study:

- ✚ It will helps to the management of commercial bank of Ethiopia. and other private banks in identifying the factors affecting the deposit mobilization process of the bank and enables them take proper adjustments to alleviate such problems.
- ✚ This study will helpful to CBE and other commercial banks to manage their deposit by identifying factors determining deposit mobilization and further identify which variable is the most important so that more emphasis has to be given
- ✚ It will provides information for all stakeholders especially for boards and management of the commercial banks in order to minimize the impact of factors determining deposits mobilization by making them to design effective strategies.

- ✚ It will also helpful to the regulatory body to take as an additional input for future policy making.
- ✚ The findings of this study will give an input for various scholars, who are going to make further studies on similar issues or area.

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

This study is limited to the case of CBE and delimited to some major macro and micro level factors that determine commercial bank deposit mobilization in Ethiopia in turn which affecting deposit of CBE. The study uses secondary data review for the period of 1995-2017. This study examine the cause and effect relationships between growth of deposit and its determinant, therefore it is an explanatory case study and employed descriptive and inferential statistical analysis methods.

## **1.7. Organization of the Research Report**

The paper organized in to five chapters; the first chapter is an introduction for the study which introduces the overall study. This part consists of introduction or back ground of the study, problem statement, objectives, significance and scope of the study.

The second chapter focuses on review of literatures in which previous studies were consulted. In this chapter general concepts and definitions, basic issues and empirical evidences of factors affecting deposit mobilization were discussed in detail. The major areas and results of previous studies have also been presented.

The third chapter, research design and Methodology, emphasizes on the design of the study and the methodologies used. In this chapter; source of data, data collection, sample size & sampling techniques and selection of study organizations are discussed.

The fourth chapter is devoted to data presentation, analysis and interpretation in which the collected primary and secondary data analyzed and organized in meaningful manner so as to meet the objectives of the study. The fifth and last chapter is concerned with summary, conclusion and recommendations. Here the findings of the study are summarized, conclusions clearly presented and recommendations are provided for the findings of study.

# CHAPTER TWO

## RELATED LITRATURE REVIEW

### 2. Introduction

Literature Review is prepared in two parts, the theoretical part and the empirical part. In the theoretical review part the theories that states about the commercial banks deposits and the variables that are claimed to affect it will be discussed. The empirical literature part discusses past studies that were conducted on the area of factors determining commercial banks deposits.

### 2.1. Theoretical and Conceptual Reviews

A bank is a financial institution that provides banking and other financial services to their customers (Kapila, 2001). A bank is generally understood as an institution which provides fundamental banking services such as accepting deposits and providing loans. There are also non-banking institutions that provide certain banking services without meeting the legal definition of a bank. Banks are a subset of the financial services industry. A banking system also referred as a system provided by the bank which offers cash management services for customers, reporting the transactions of their accounts and portfolios, throughout the day.

The history of banking in Ethiopia goes back to the year 1905 E.C. when the bank of Abyssinia was first established with a capital of \$500,000.00. It was the foundation of this bank that marked the beginning of modern banking In Ethiopia. The government of Ethiopia and the national bank of Egypt jointly owned it under a 50 years franchise agreement.

The liquidation of Abyssinia bank in the year 1931 due to inefficiency and poor profit orientation was followed by the establishment of Bank of Ethiopia with a capital of \$750,000.00 the first indigenous bank in the country.

Financial sector mainly constitute financial markets and financial institutions. A financial market is a market in which financial assets (securities) such as stocks and bonds can be 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). Examples include commodity markets, money markets and capital markets. Financial institutions (intermediaries) are institutions that provide financial services for their customers. They play an important role in the economy because they provide liquidity services, promote risk sharing and also solve information problems thereby allowing small savers and borrowers to benefit from the existence of financial markets.

Financial institutions can be divided into:

1. Depository institutions (e.g. commercial banks, savings institutions, credit unions) that obtain funds mainly through deposits from the public; and,
2. Non-depository institutions (e.g. finance companies, mutual funds, securities firms, insurance companies, pension funds) that finance their investment activities from the sale of securities or insurances.

Commercial bank of Ethiopia is the most dominant depository institution. They serve investors by offering a wide variety of deposit accounts, and they transfer deposited funds to deficit units by providing direct loans or purchasing debt securities. Commercial bank of Ethiopia serve both the private and public sectors, as their deposit and lending services are utilized by households, businesses, and government agencies.

## **2.2. Commercial Bank Deposit**

Commercial bank deposits are major liabilities for 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.

Therefore, banks will be better off if they are mobilizing more deposits. However, as (N. Desinga, 1975) indicates deposit mobilization is a very difficult task. The cost of intermediation for mobilizing deposits is also very important part of overall intermediation cost of the banking system as (E.A. Shaw 1995) indicates. In spite of the difficulties, deposits play an important role not only to the banking sector but also the overall economy.

All the financial performance of most of the commercial banks in one way or the other related to the deposit it managed to be mobilized. Deposits provide limits to the working capital of the

bank. The higher the deposit, the higher will be the funds at the disposal of a bank to lend and earn profits (N. Desinga, 1975). Therefore, to maximize its profit the bank should increase its deposit. (Mahendra, 2005) had also mentioned deposits as a foundation up on 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 banking is a service industry with a high degree of built in profit potential (Meenakshi, 1975). 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 number one expense on the income statement of most commercial banks. (Hamid 2011) said that if banks lose their deposit base they rely on non-deposit based funding that is very expensive and consequently minimizes the profit margin.

Depositors keep their money in banks for a motive to undertake some activities in the future. According to Bhatt (1970), there are motives to save money, the followings are the example of some motives:-

- ✚ To provide for emergency expenditure
- ✚ To own house
- ✚ To provide for children's education and marriage
- ✚ To provide for old age

Commercial Bank deposits are major liabilities for commercial banks. Kelvin (2001) said that deposits of commercial banks account for about 75% of commercial bank liabilities. Due to the fact that commercial banks are using this liability to lend it and gain return on it their deposits are using them do their business. Therefore, banks will be better if they are mobilizing more deposits. However, as Desinga (1975) indicates deposit mobilization is a very difficult task. The cost of intermediation for mobilizing deposits is also very important part of overall intermediation cost of the banking system as Shaw (1995) indicates. Despite all these deposits play an important role in the banking system, whether cooperative or commercial? Deposits provide limits to the working capital of the bank concerned. The higher the deposits, the higher will be the funds at the disposal of a bank to lend and earn profits (Desinga, 1975). Therefore to

maximize its profit the bank should increase its deposit. Mahendra (2005) had also mentioned deposits as a foundations up on which banks thrive and grow and 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). Deposits are of three kinds, namely:

- ✚ Current or demand deposits,
- ✚ Fixed or Time deposits / Term deposits,
- ✚ Savings deposits

Hence, the competition for deposits is really a competition for profits. Commercial banks compete for deposits in order to become profitable and thus to be able to supply more funds to the public. However such financial growth is profitable only if the commercial bank does not incur additional expenses to obtain and retain cash (Davinaga, 2010).

## **2.3. The Importance of Deposit for Banks**

### **I. Deposits as a Source of Fund for Loan**

Herald and Heiko (2009) states deposits are the main source of banks to provide loan. This deposit is mainly provided by people as Mohammad and Mahdi (2010). However deposits can also be provided by business organizations, NGOs, government and so on. Therefore, whether deposits are from individuals, businesses and government they are important financial source of banks.

### **II. Attracting Deposit is Cheaper than Raising Equity**

Banks as any other business organizations funds from debt and/or equity. In the banks context raising equity is more expensive or costly than attracting deposits. Lorenzo et al (2010) states that, if the lending channel plays a role, the deposit growth should lead to an increase in the supply of loans due to the additional source of financing for banks. As demand for loan increases because of the development work done by individuals, businesses and government, banks should extend their deposit base. When a commercial bank creates a deposit

by lending to a business man, it is clearly performing a function for which it is entitled to a return in the form of interest payments (Harold, 1946).

### **III. Banks Make Profit Using their Deposits**

Mahendra (2005) said that deposits provide most of the raw materials for bank loans and thus represent the ultimate source of the bank's profits and growth. Banks make profit by using their deposits, therefore it is said that depositors can discipline banks. Maria and Sergio (2001), found that depositors discipline banks by withdrawing deposits and by requiring higher interest rates. For depository corporations mainly deposit money banks, their principal objectives is undertaking financial intermediation to make profit and increase their shareholders value (Sheku, 2005).

### **IV. Fund Investment and/or Development Projects**

Debt is largely held by domestic commercial banks which are funded mainly from deposits, the government demand for bank assets enabled banks to continue to expand their deposit base rapidly and profitably (Herald and Heiko, 2009). Individual investors and government are mainly depending on the deposits of banks to fund their investments and/or development projects.

#### **2.4. 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. But deposit mobilization is very difficult task. It depends up on various factors exogenous as well as endogenous, to the banking system (Desinga, 1975). Exogenous factors are the general economic environment of the region, the volume of business transaction of the region, the confidence of the people on the banking system, the banking habit of the people and the saving potential of the region. Even when exogenous factors are more conducive for deposit mobilization, banks may fail because of unfavorable endogenous 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 (Desinga,1975). Therefore, to maximize its profit the bank should increase its



deposit. (Mahendra, 2005) had also mentioned deposits as a foundation up on 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.

## **2.5. Major Types of Deposit Products**

Deposit account is a savings account, current account or any other type of bank account that allows money to be deposited and withdrawn by the account holder. These transactions are recorded on the bank's books, and the resulting balance is 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 this service, while others may pay the customer interest on the funds deposited. The account holders have 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:** it consists of funds held in an account from which deposited funds can be 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:** time deposit 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. Generally speaking, the longer the term the better the yield on the money (Dereje, 2017)

## **2.5.1 Importance of Deposit mobilization**

### **❖ A Source of Investment**

According to (Ongore&Kusa, 2013), Intermediation function of banks play a vital role in the efficient allocation of resources of countries by mobilizing resources for productive activities they transfer funds from those who don't have productive use of it to those with productive venture. (Nwanko, Ewuim, &Asoya, 2013) States that, savings are resources which one decides to put aside for investment purposes and not for luxury. What people save, avoiding consuming all their income, is called "personal savings". These savings can remain on the bank accounts for future use or be actively invested in houses, real estate, bonds, shares and other financial instruments.

### **❖ A Source of Profit**

According to (Varman, 2005) the ability of a bank's management and staff to attract checking and saving accounts from business and individuals is an important measure of the bank's acceptance by the public, Deposits provides most of the raw materials for bank loans and thus represent the ultimate source of bank profits and growth

### **❖ Economic Growth and Development**

According to (Ongore&Kusa, 2013), In addition to resource allocation good bank performance rewards the shareholders with sufficient return for their investment. When there is 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.

According to (Khalayi, Ondiek, &Musiega, 2014) there are a number of effects that are brought about as a result of the poor deposit mobilization. These Include

- Inability to disburse loans to qualifying members on demand,
- Inability to meet operation costs,
- Inability to service debts,

- Unstable board of directors due to frequent reshuffle as disgruntled members vote officials out,
- Quitting of members to competitors and
- Falsification of financial reports.

These can cause the voting out of elected officials on accusations of fraud, 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.

## **2.6 The Determinants of Commercial Banks Deposits- Theory**

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. But deposit mobilization is very difficult task. According to Desinga, (1975) it depends up on various factors exogenous as well as endogenous, to the banking system. Exogenous factors are the general economic environment of the region, the volume of business transaction of the region, the confidence of the people on the banking system, the banking habit of the people and the saving potential of the region. Even when exogenous factors are more conducive for deposit mobilization, banks may fail because of unfavorable endogenous 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 ( Desinga, 1975). According to (Dereje, 2017) the determinants of commercial bank deposit is classified as macroeconomic factors and micro economic factories that can affect the growth of commercial banks deposits, this variable also used in this study context.

### **2.6.1 Determinants of commercial bank deposit**

#### **2.6.1.1. Macroeconomic Factors**

- ❖ Deposit Rate: - The attraction for getting the deposit from the surplus sector is interest payment, which must be reasonable and acceptable to the owner of the money (Dereje, 2017).

- ❖ **Government Expenditure:-** 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).
- ❖ **Inflation:-** As to (Herald & Heiko, 2008), inflation is one of the factors that determine commercial banks deposits
- ❖ **Monetary Policy:-** 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. 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 (Ketema, 2017).
- ❖ **Exchange Rate:-** Exchange rates are quoted as foreign currency per unit of domestic currency or domestic currency per unit of foreign currency (Bishop, 2006).

#### **2.6.1.2. Micro economic factories/Bank specific factors**

- **Credit Risk:-** Credit risk is a financial exposure resulting from a bank’s dependence on another party (counterparty) to perform an obligation as agreed (National bank of Ethiopia 2010). Credit risk is the degree of value fluctuations in debt instruments and derivatives due to changes in the underlying credit quality of borrowers and counterparties (Chen and Pan, 2012).
- **Bank’s Liquidity:-** An important measure of liquidity is loan to deposit ratio. The loans to deposit ratio is inversely related to liquidity and consequently the higher the loans to deposit ratio the lower the liquidity and vice versa (Devinaga, 2010). Key liquidity indicators such as central bank credit to financial institutions, deposits as a share of monetary aggregates, loans to deposits ratios, are important for open market operations and liquidity management (Sheku, 2005).
- **Bank Profitability:-** According to (Hassan & Bashir 2003), “ROA shows the profit earned per dollar of assets and most importantly, it reflects the management's ability to utilize the bank's financial and real investment resources to generate profits. For any bank, ROA depends on the bank's policy decisions as well as on uncontrollable factors relating to the economy and government regulations”. Rivard and Thomas (1997) suggest

that “bank deposit performance is best measured by ROA in that ROA is not distorted by high equity multipliers and ROA represents a better measure of the ability of a firm to generate returns on its portfolio of assets”.

## **2.7. Empirical Literature Review**

The empirical literature part discusses past studies that were conducted on the area of factors determining commercial banks deposits and related studies in developed and developing countries like Ethiopia will be reviewed.

### **2.7.1. Empirical Review from abroad**

An empirical study made by Nathanael Eriemo (2014) aimed to analyze the effects of various macroeconomic indicators that influence bank deposits in Nigeria. The paper empirically examines 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. The economic analysis 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 indicates a long run relationship among the variables and the economic analysis result showed a satisfactory speed of adjustment. It is thus recommended among others that both the banks and the monetary authorities should take these factors into serious consideration when attempting to improve the deposits of banks and this will go a long way in increasing aggregate investment.

Siaw & Lawer (2015) the study investigates the influence of selected macroeconomic and financial level variables on bank deposits in Ghana. It specifically examines the dynamic effect of deposit interest rate, inflation, and monetary policy rate, growth of money supply and stock prices on the level of bank deposits. The dataset for the study consisted of quarterly data spanning the years of 2000 to 2013 gathered from the Bank of Ghana monetary time series database and the World development Indicator (WDI) database. Employing a Co-integration analysis and Fully Modified Ordinary Least Square (FMOLS), both short and long run elasticity's of the model are estimated. The short run effects of a change in the independent variables on bank deposit were found to have the expected influence on bank deposits. However,

only inflation and growth of money supply variables were found to be significant in explaining the short run dynamics of bank deposit.

Osei, (2015) the general objective of this study is to examine whether equity to asset ratio or capitalization, Liquidity ratio or Liquidity risk, Loan to asset ratio or credit risk, Return on asset or profitability and Log of assets or bank size are the factors that determine rural banks deposit mobilization in Ghana. The research included 112 rural banks in Ghana out of a total number of 137. These banks have been selected depending on the availability of their quarterly data from 2009Q1 to 2013Q4. Panel least regression with fixed effects has been used for analysis. The equity to asset ratio also known as the capitalization of the rural banks was found to negatively insignificantly influence rural banks deposit accumulation meaning a rise in capital requirements might lead to lower levels of deposit and vice versa. Again, the results indicated that liquidity ratio thus cash and due balances held at other financial institutions to total assets is positively correlated with rural banks deposit growth rate. This suggests that as liquid assets of rural banks increases deposit mobilization also increases and vice versa. The coefficient of loan to asset ratio is positively and significantly related to rural banks deposit mobilization. Return on asset, representing profit before interest and tax, was found to have a negative relationship with bank deposit mobilization but the relationship is however insignificant. An increase in profit leads to a decrease in rural deposit mobilization while a decrease in deposit mobilization can be attributed to fallen profitability. The insignificant nature of this fact could be due to the fact that in Ghana, the customers of rural banks are not ways better informed about the financial performance of a rural bank. Besides rural depositors do not see any motivation in rural banks profit since they are not the ultimate beneficiaries of the profits. The coefficient of size (log of assets) is positive and significant, suggesting size is important in explaining deposit performance of rural banks, with this finding being consistent with most studies of Western banks, where size has a positive influence on performance, which is often attributed to benefits achieved through economies of scale. But it is inconsistent with the results of (Shih et al. 2007) and (Lin and Zhang 2008). This result also agrees with (Sufien et al., 2008) that “log of total assets is a variable that measures bank size and is generally used to capture potential economies or diseconomies of scale in the banking sector”. Bigger banks are able to open branches at the convenience of depositors. As the rural bank gets closer to the people, more people are able to save.

### **2.7.2. Empirical Review in Ethiopia**

Ketema (2017) examines the determinants of commercial banks deposit mobilization in Ethiopia for the periods 2000-2015. From total of seventeen Commercial Banks which are engaged in commercial bank activities, seven selected based on the historical time formation of banks. The researcher adopted Quantitative research approach. Bank specific and macroeconomic variables were analyzed by using the balanced panel fixed effect regression model. The results reveal that credit risk, exchange rate, and Bank Profitability are positively and statistically significant on bank deposit growth; whereas, Loan to Deposit ratio (Bank's Liquidity) and Money Supply influence is negatively and statistically significant on bank deposit growth. Deposit Interest Rate had insignificant positive influence on bank deposit growth. Whereas Inflation and Government Expenditure had insignificant negative influence on bank deposit growth finally the researcher recommends that Government should decrease the broad Money Supply to the economy since it had a negative significant effect on deposit mobilization. Since the depositor confidence will increase if the commercial banks are profitable and have adequate asset return so commercial banks should sustain their profitability to increase their amount of deposit. Commercial Banks should also decrease their outstanding loan and advance to reduce their credit risk and decreases their liquidity by mobilizing more fixed time deposit instead of individual and demand deposit since credit risk had a positive and significant effect on bank deposit.

Andinet (2016) the aim of this study is to examine 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 were 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 were performed to know whether the model is valid or not. All the tests were valid and eventually regression analysis was 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 were

significantly and positively correlated with the explained variable. Lagged value of bank deposit was significantly and negatively correlated with total deposit. However, liquid asset to deposit ratio and inflation rate were insignificantly negatively correlated with bank deposit. Finally the study had recommended what should be done to mobilize more deposits.

Giragn (2015) this paper then explores the theoretical as well as empirical analysis of those factors having an impact on deposit volume in banks 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 study reveals that the branch expansion, the 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 is found to have negative relation against the deposit volume for the period under study. The study also exposes that the deposit mobilization activity is becoming challenging, its associated costs are escalating and the competition is also becoming stiff-the outcome of the competition favoring the big size state banks. Beyond that the government policies are also favoring the latter in an effort to mobilize huge fund for a national development activities. The research recommends that banks have to do much in branch expansion studying potential deposit areas.

Shemsu (2015) this study aimed to identify and evaluate those factors affecting bank deposit in general by taking Commercial Bank of Ethiopia as evidence. Accordingly, the researcher adopts mixed research approach. Regarding to the qualitative data; questionnaire is 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.



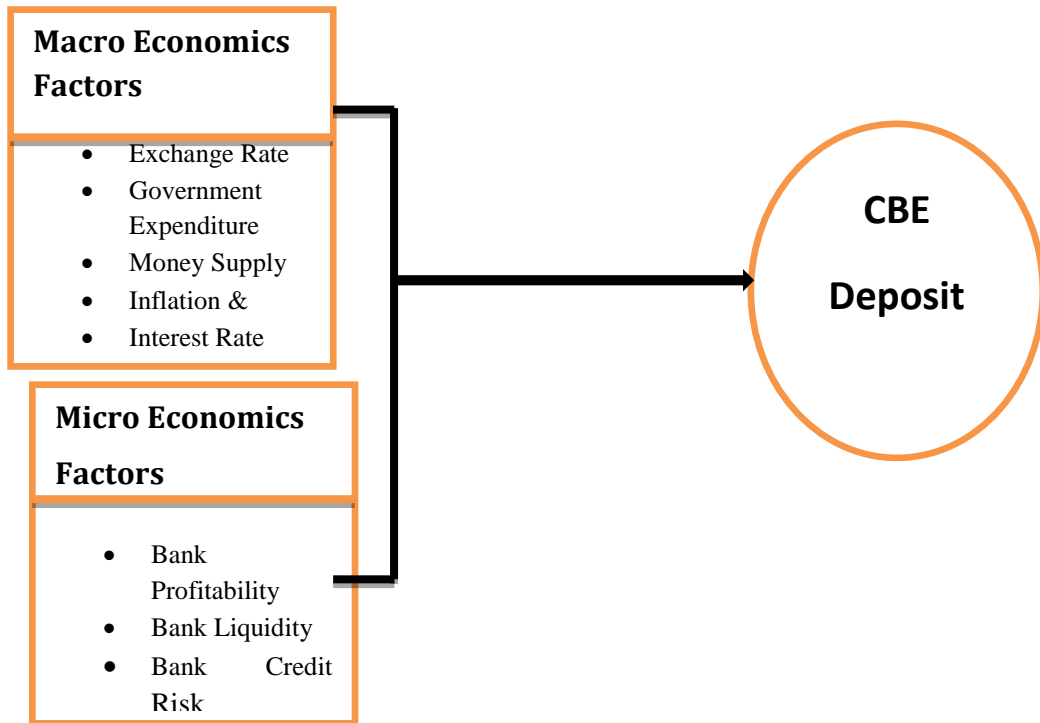
Second, estimated model was a single regression equation with deposit as the dependent variable and explanatory variables as deposit interest rate, overall inflation rate, number of branch opening, gross domestic product, individual foreign remittance and dummy variable.

The results from economic analysis showed that all the explanatory variables were positively correlated with the explained variable. Among these variables, branch opening is an important strategy for deposit mobilization, it is highly significant than others. Individual remittances from diasporas is also next to branch opening is significantly affects CBE's deposit. The others are affects positively and can increase CBE's deposit. And finally, the study had recommended what should be done to encouraging deposits growth by Commercial bank of Ethiopia for the benefit of the domestic deposit mobilization.

## **2.8. Conceptual Framework**

From the above theoretical and empirical literature reviews the main factors that determine the deposit growth of financial institution specifically banks is divided by mainly by both macro and micro economic factors. This study used both macro and micro determinants of bank deposit that includes Inflation rate, Interest rate and Exchange rate, Money Supply, Government Expenditure, Bank Profitability and Bank Credit Risk. The study has quantified how these variables are determining the deposit of commercial bank of Ethiopia.

The conceptual schema of the relationship between the dependent variable (commercial banks deposit) and independent (Interest Rate, Inflation, Government Expenditure, Money Supply, Liquidity ratio or Liquidity risk, Loan to Asset ratio or Credit risk, Return on Asset or ROA and Exchange rate) variables are depicted here below:



**Figure 1 Conceptual framework**

Source: The Researcher Construction (2018)

Mobilization of deposits is one of the important functions of banking business. It is an important source of working fund for the bank. Deposit mobilization is an indispensable factor to increase the sources of the banks to serve effectively. Mobilization of deposit plays an important role in providing satisfactory service to different sectors of the economy. The success of the banking greatly lies on the deposit mobilization. Performances of the bank depend on deposits, as the deposits are normally considered as a cost effective source of working fund.

As it was discussed in the literature review part, Most of study undertaken in our country related to the topic of determinates of deposit mobilization focus on a separately treating the total deposit amount to the private banks and the public Banks and some internal and external factors that are reviewed by different researchers indifferent research techniques also showed different effect on Bank deposit. Thus, the inconsistency founding among researchers and little attention given by researchers on the contributions of CBE to the overall deposit mobilization of commercial bank of Ethiopia, motivated the researcher to undertake a research in this particular area by adding new additional variable to fill these gap.

# CHAPTER THREE

## RESEARCH METHODOLOGY

### 3. Introduction

This chapter discusses the research procedure that is used to carry out this study. In case, it starts by discussing research design followed by the nature and instruments of data collection and sampling design. The subsequent section presents and discusses method of data process and analysis. Finally, definition of study variables with their measurement and model specifications are presented.

#### 3.1. Research Design and Research Approach

Research design is a master plan specifying the methods and procedures for collecting and analyzing the required data. The choice of research design depends on objectives that the researchers want to achieve (John, 2007).

As noted by Kothari (2004), explanatory research design examines the cause and effect relationships between dependent variables and independent variables. Therefore, this study examine the cause and effect relationships between growth of deposit and its determinant, therefore it is an explanatory research.

According to Creswell (2003), the objective to be achieved in the study is a base for determining the research approach for the study. In case, if the problem identified factors affecting the outcome having numeric value, it is quantitative approach. Therefore the researcher had employed quantitative research methodology and techniques an econometric model and descriptive Quantitative Analysis in order to address the research questions. Multiple regression using OLS (Ordinary Least Square) estimates of the dependent (Total Deposit Amount) and independent five macroeconomic variables Inflation, Interest Rate, Money Supply, Government Expenditure and Exchange and three bank specific variables Bank Profitability, Bank Liquidity and Bank Credit Risk were employed. It uses time series data covering the period from 1995 through 2017.

### **3.2. Data Types and Source**

The sources of data for this research were secondary sources. The researcher gathered the annual reports of commercial bank of Ethiopia from proper source. The bank specific data were collected from financial statements (i.e. Balance Sheet and Profit & Loss Statement) of CBE and macroeconomic data were collected from NBE, Central Statistical Authority (CSA) and World Bank annual report (WB). The data were collected from 1995 to 2017 on annual base and the figures for most of the variables were on June 30th of each year under study.

### **3.3. Definition of Variables and Research Hypothesis**

This section deals with the analysis of variables for determining commercial bank of Ethiopia's deposit mobilization.

### **3.4. Definition of Variables**

**Bank Deposit:** is a liability owed by the bank to the depositor. It's also referred as an amount of money in cash or check for or sent via aware transfer placed in to a bank account. The deposit account consists saving accounts, checking accounts and money market accounts. In this study, commercial bank of Ethiopia deposit represents the total accumulated amount of customer's deposit with the bank. The performance of the bank was best measured by the size of its deposit liabilities and measured by in billions birr.

**Exchange Rate:** refers to the price of a nation's currency in terms of another currency or exchange rate is the rate at which one currency will be exchanged for another. It is also regarded as the value of one country's currency in relation to another currency. Thus an exchange rate has two components, the domestic currency and foreign currency.

According to (Nugel 2012) as currencies depreciated in one country deposit will be reduced 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. (Alemayeh2015) also confirms that for developing country in general saving is negatively correlated with unstable exchange rate. In this study it is measured as the growth of Ethiopia BIRR against USD.

**Interest Rate:** is the amount interest due per period, as proportion of the amount deposited. It is also the rate at which the bank pays for it savers for keeping money in an account. it is calculated annually and measured in percent. McKinnon (1973) and Shaw (1973) argue that for the typical developing country, the net impact of a change in real interest rate on saving is likely to be positive. This is because, in the typical developing economy where there is no robust market for stocks and bonds, cash balances and quasi-monetary assets usually account for a greater proportion of household saving compared to that in developed countries.

**Inflation:** is defined as an increase in the overall price level in the country and measured in percent real value of money decline resulting in benefit to debtors and loss to creditors” (Brealey and Myers 2003). “From the monetarist point of view inflation is demand pull and an exogenous rise in money supply is the causality. In the short run an increase in money supply induces demand above supply of goods and services which causes prices to rise until the market adjusts to the equilibrium.

**Government expenditure:** refers to the overall public spending carried out by the government. Government spending or expenditure includes all governments’ consumption, investment and transfer payments etc. government acquisition of goods and services intended to create future benefits, such as infrastructure investment or research spending, is classed as government investment(government gross capital formation). Governments spend money on health care, education, social security benefits, and infrastructure and defense activities. It is measured by in Billions birr.

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 and 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).

**Money Supply:** is the total value of monetary assets available in an economy at a specific time. Broad money supply consist both narrow money and quasi money. Where narrow money contains currency outside the bank and net demand deposits while quasi-money includes

both saving and time deposits. Broad money supply is the broadest measure of financial development and it measures the depth of the financial system. It also indicates the degree of monetization with respect to the real economy. It is measured by in billions of birr.

**Credit Risk:** -is the probable risk of loss resulting from a borrower's failure to repay a loan or meet contractual obligations. Traditionally, it refers to the risk that a lender may not receive the owed principal and interest, which results in an interruption of cash flows and increased cost for collection. In other words credit risk is a financial exposure resulting from a bank's dependence on another party (counterparty) to perform an obligation as agreed (National bank of Ethiopia 2010). Credit risk is the degree of value fluctuations in debt instruments and derivatives due to changes in the underlying credit quality of borrowers and counterparties (Chen and Pan, 2012). It is measured by Loan to asset ratio for a certain period.

**Bank's Liquidity:** -is a measure of the ability and ease with which assets can be converted to cash in order to meet financial obligations an important measure of liquidity is loan to deposit ratio. The loans to deposit ratio is inversely related to liquidity and consequently the higher the loans to deposit ratio the lower the liquidity and vice versa (Devinaga, 2010). Key liquidity indicators such as central bank credit to financial institutions, deposits as a share of monetary aggregates, loans to deposits ratios, are important for open market operations and liquidity management (Sheku, 2005).

**Bank Profitability:**-is an important indicator of bank performance, it represents the rate of return a bank has. Profit can be measured as a return on asset (ROA) and return on equity (ROE) the study uses ROA to measured banks profitability. It is defined as the ratio of profit to assets According to (Hassan & Bashir 2003), "ROA shows the profit earned per 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 any bank, ROA depends on the bank's policy decisions as well as on uncontrollable factors relating to the economy and government regulations". Rivard and Thomas (1997) suggest that "bank deposit performance is best measured by ROA in that ROA is not distorted by high equity multipliers and ROA represents a better measure of the ability of a firm to generate returns on its portfolio of assets".

**Table 3.1 Variables, Definitions, Notations and Expected Signs****Dependent variables**

Variable	Definitions	Notations	Expected signs
commercial bank of Ethiopia deposit	the total accumulated amount of customer financial savings with the bank	DEP	

**Independent Variables**

Variable	Definitions	Notations	Expected signs
Exchange Rate	The Growth Ethiopia Birr with USD	EXG	+
Interest Rate	The rate of interest on deposit given by commercial banks	INTR	+
Inflation	The overall inflation rate in Ethiopia	INFL	-
Government expenditure	The growth of total amount of the Current and Capital Expenditure	GOVEXG	-
Bank's Liquidity	Total Deposit divided by Total Asset	LIQD	-
Credit Risk	Total loans divided by total assets	CRISK	+
Money Supply	The Growth of Broad Money Supply	MS	+
Return on Asset	Profit before interest and tax divided by total assets	ROA	-

**Source; Compiled by the Researcher (2018)**

### 3.5. Model Specification

The theoretical literature discussed above suggests that commercial bank deposit, Exchange rate, Interest Rate, Inflation, Money Supply, Government Expenditure, Bank Profitability, Bank Liquidity and Loan to Asset Ratio are related. (McKinnon 1973) for example, “argues that investment in a typical developing country is lumpy and self-financed and hence cannot be materialized unless adequate savings are accumulated in the form of bank deposits”

Following these theoretical views and based on (McKibbin 2007), “the study estimated the linear regression equation by calculating the values of the variables in the following equation”:

$$DEPG_{it} = \alpha_i + \beta_1 * INTR_{it} + \beta_2 * INFL_{it} + \beta_3 * MS_{it} + \beta_4 * CRISK_{it} + \beta_5 * ROA_{it} + \beta_6 * GOVEXG_{it} + \beta_7 * EXRG_{it} + \beta_8 * LIQD_{it} \dots \dots \dots (1)$$

Where`

**DEP<sub>it</sub>** is the dependent variable and represents the growth total amount of deposits held by all commercial banks for period t,

**INTR<sub>it</sub>** represents commercial bank interest rate on deposit for period t,

**INFL<sub>it</sub>** represents the overall inflation rate in Ethiopia for period t,

**MS<sub>it</sub>** represents the growth broad money of Ethiopia for period t,

**GOVEXG<sub>it</sub>** Represents the growth of government expenditure for period t,

**EXG<sub>it</sub>** Represents the growth of the exchange birr to USD for period t,

**LIQD<sub>it</sub>** Represents total deposit to total asset ratio for period t,

**CRISK<sub>it</sub>** Represents Loan to asset ratio for period t,

**ROA<sub>it</sub>** Represents Bank Profitability for period t,



$\mu t$  represent the stochastic error term of the linear regression model. It also represents all the relevant variables, which were omitted from the model as well as the random errors from the estimation process and

$\beta$  represent the estimated parameters or represent the slope co-efficient to the dependent variable.

### **3.6. Data Analysis Methods**

Data analysis as defined by Montgomery (1991) is a careful examination of collected information in an organized form in order to understand the growing trend in any situation. Creswell (2009) defined data analysis as a process which involves drawing conclusions and explaining findings in words about a study.

Time series analysis were conducted using E-View 9 data analysis econometric packages to determine the exact nature of the relationship that exist between commercial banks deposit and Interest Rate, Inflation, Government Expenditure, Money Supply, Liquidity ratio or Liquidity risk, Loan to Asset ratio or Credit risk, Return on Asset or ROA and Exchange rate in CBE over the period under study. Prior to the estimation of the regression line, descriptive analysis was used to describe the behavior of the individual variables over the period under review. The descriptive analysis will be also inculcated a brief assessment of the general external and internal variables in the country over the period. Correlation analysis also conducted to see the relationship among the dependent and independent variables. This would help to get an initial picture as to the nature of the relationship among the variables before proceeding to regression analysis.

### **3.7. Ordinary Least Square**

According to Brooks (2008), ordinary least squares (OLS) or linear least squares is a method to estimate the slope and intercept in a linear regression model. This study used an ordinary least squares (OLS) regression to estimate the linear equation. The rational for choosing OLS is that, if the Classical Linear Regression Model (CLRM) assumptions hold true, then the estimators determined by OLS will have a number of desirable properties, and are known as Best Linear Unbiased Estimators (Brooks, 2008). In addition, as noted in Petra (2007) OLS outperforms the

other estimation methods when the following holds; when the time dimension is short. Therefore, as far as both the above facts hold true in this study it is rational to use OLS.

### **3.8. Validity and Reliability of Data**

Reliability of data concerns its consistency. Thus, reliability refers to the extent to which the data is the same irrespective of their source. That is, the data specifically, the annual reports and publications of Commercial Bank of Ethiopia are checked to find variance with each other that will support the reliability of the data. This study, however, is threatened by the fact that the data used was mainly from secondary sources and therefore any error from that data collection process will definitely affect the outcome. The methodology used for this study was selected because of its suitability in its dependence on certified information from recognized institutions other than subjective opinions, which would have been associated with secondary sources. The F test and the coefficient of determination were used to test the validity and reliability of the relationship established by the regression analysis.

## **CHAPTER FOUR**

### **DATA PRESENTATION, ANALYSIS AND INTERPRETATION**

#### **4. INTRODUCTION**

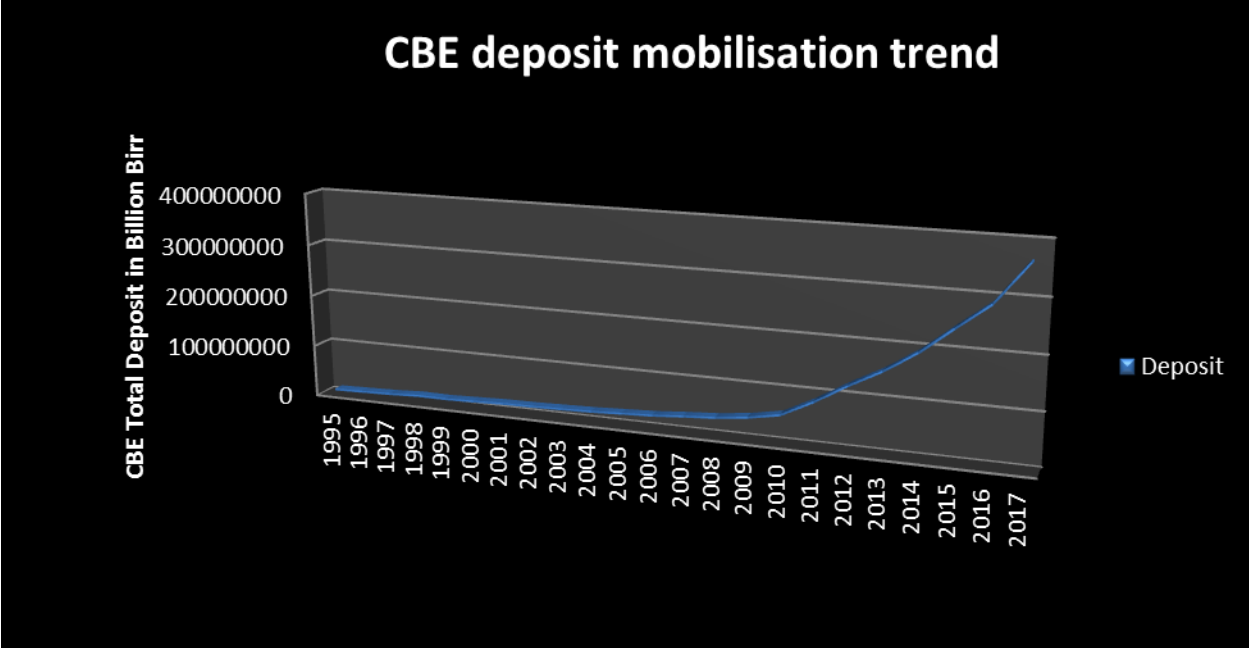
This chapter consists of the analysis of quantitative data identified in the previous chapter. The first section presents descriptive analysis of the dependent and independent variables using graphs and tables to provide an insight on the distribution of the data across time. Section two presents the classical linear regression model assumptions diagnostic test results. Section three presents the correlation analysis result of dependent and independent variables. The Fourth section presents the results of the regression analysis and finally discussion of the regression results are presented under section five.

#### **4.1. Descriptive Data Analysis**

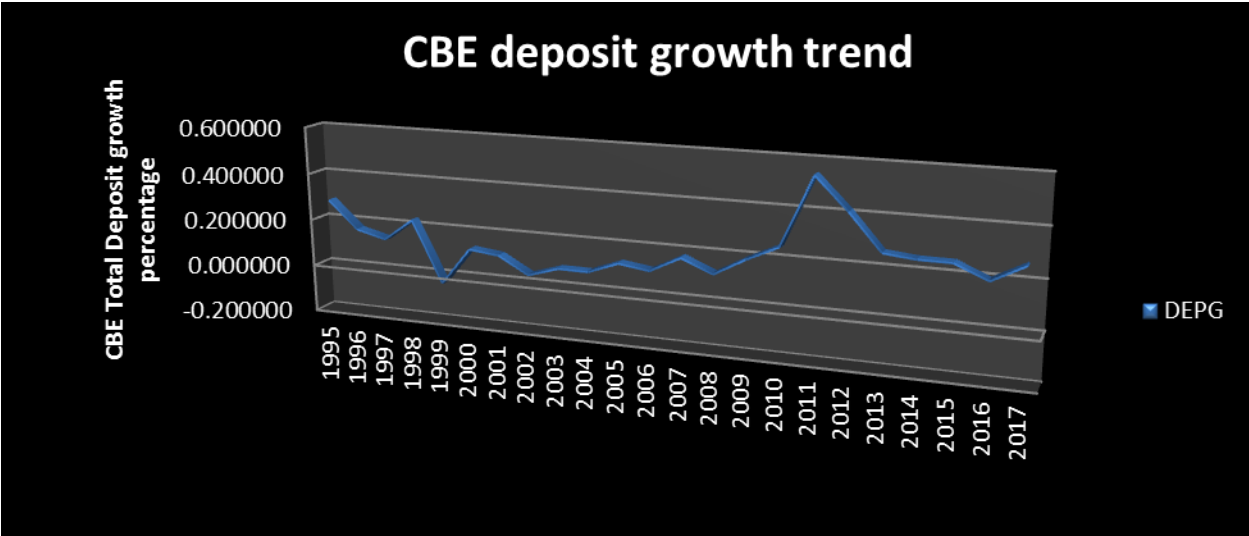
This section presents the descriptive statistics of dependent and explanatory variables used in this study. Descriptive analysis was conducted to observe the trend of the time series data to be used in economic analysis model of the dependent and independent variables.

Total deposit of commercial banks is the dependent variable in this study. Since the study concludes by taking commercial bank of Ethiopia (CBE) as evidence, total deposit of the bank from 1995 – 2017 is analyzed.

The total deposit increased over the years with 1995 having the lowest record while the value for 2017 is the highest deposit increment. Despite this consistent increase in deposits, it is realized that the year 1995 (9,653,593.00) up to 2006 (28,663,567.14) shows a slow growth due to the fact that there was less public awareness to savings, less branch accessibility to the society and little financial technologies such as E-banking (Shemsu, 2015). But from the year 2011 to 2017 reveals an upward trend.



**Figure 4.1 Compositions of Total Deposit/ Deposit Mobilization in Billion of Birr**  
**Source: CBE annual Reports/1995-2017/**

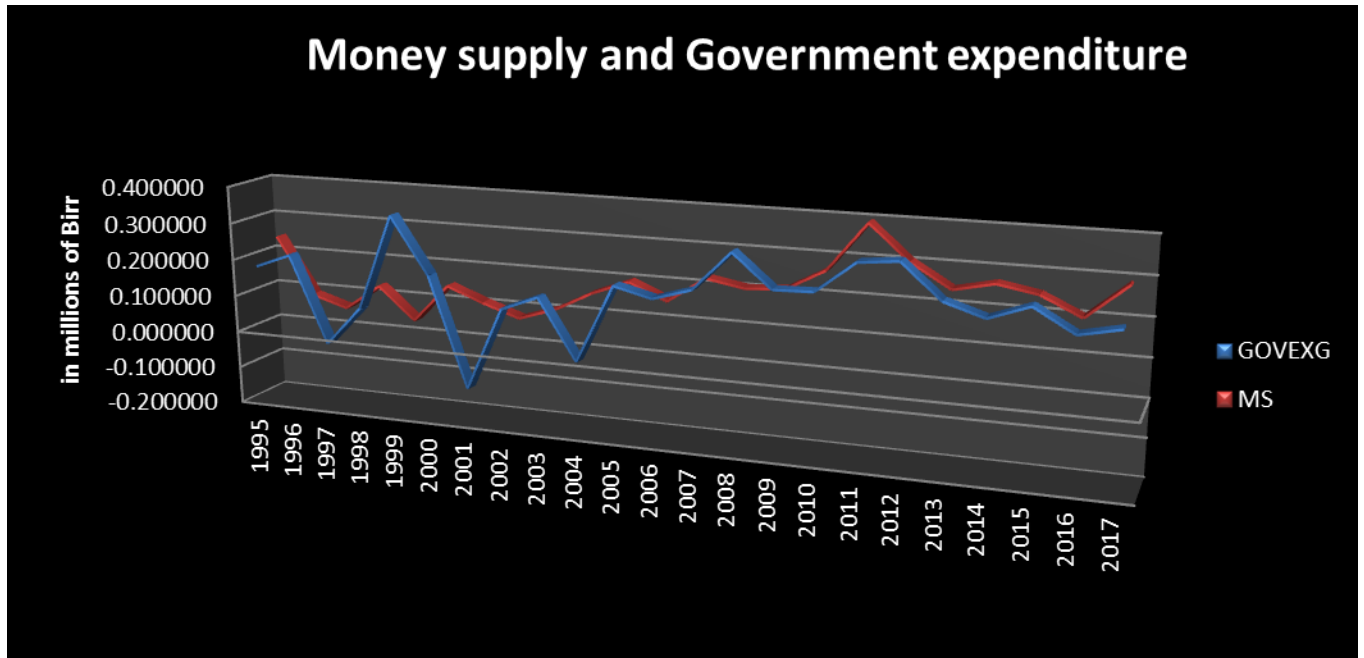


**Figure 4.1 Compositions of Total Deposit/ Deposit Mobilization growth in percentage**  
**Source: CBE annual Reports/1995-2017/**

Independent Variables in this study are factors that mostly affect the commercial banks deposits. These are deposit interest rate, overall inflation rate, exchange rate, money supply and

government expenditure. For the purpose of simplicity we include only these five explanatory variables.

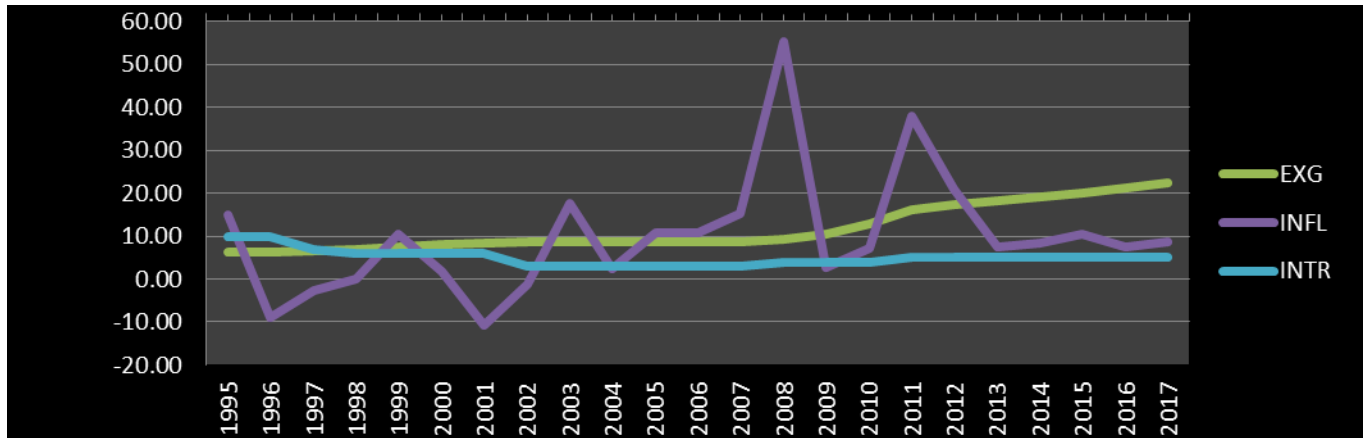
The below figures 4.2 and 4.3 shows the trend of each independent variables i.e. money supply and government expenditure, average deposit interest rate, overall inflation rate and exchange rate for the last 23 years period from 1995 to 2017.



**Figure 4.2. The Trends of Money Supply and Government Expenditure**

*Sources: NBE, CBE, CSA and World Bank Annual Report/1995-2017/*

Government expenditure and money supply from the year 2011 to 2017 reveals an upward trend. 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). In Ethiopia the government controls money supply through the central bank. 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 (Ketema, 2017).



**Figure 4.3 the trends of average deposit interest rate, overall inflation rate and exchange rate**

**Sources: NBE, CBE, CSA and World Bank Annual Report (1995-2017)**

National Bank of Ethiopia as a governing body of banks set Deposit interest rate in Ethiopia. As for interest rate, the NBE continued to set the minimum interest rate on saving and time deposits while leaving lending rates to be freely determined by banks. Based on this, the value for average deposit interest rate (saving and fixed time deposit interest rate) in Commercial Bank of Ethiopia was between 10% and 5% from 1995 to 2017. As the figure 4.3 above shows, over the past 23 years this indicator reached a maximum value of 10% between 1995 and 1997 and a minimum value of 3% between in 2002 and 2007. This trend indicate that the interest rate in CBE not adjusted on the bases of the market demand relative to the incremental deposit demand. This means the result of deposit incremental is not directly affected by deposit interest rate change.

The level of inflation has influenced the rate of interest that banks give to their depositors. This means the level of inflation influences that of deposit interest rate, while deposit interest rate in turn influences bank deposits. Again, inflation been higher than deposit interest rate is a recipe for not holding money especially in banks. High rates inflation has hindered the attainment of positive real deposit rates. In Ethiopia in 2008 the highest inflation rate was recorded with 55.24% preceded by 38.04% in 2011. This could be explained by relating the inflation to the drought and famine, which hit the economy during these periods but deposit was not negatively affected by that time.

The trend of exchange rate growth was slow from 1995 (6.25) to 2008 (9.24) but starting from 2009 shows an upward trend. The minimum and the maximum was 6.25 and 22.41 at 1995 and 2017 respectively.

## 4.2. Descriptive statistical analysis of the dependent and independent variables

The descriptive statistics gives a broader picture that the residuals from the regression using these variables were expected to follow a normal distribution for efficient and unbiased estimators. It includes mean, median, maximum, minimum, standard deviation and others statistics value.

**Table 4.1 Summary statistics – Dependent and Independent Variable**

Date:

12/06/18

Time: 07:52

Sample: 1995 2017

	DEPG	INTR	INFL	MS	CRISK	ROA	GOVEXG	EXRG	LIQD
Mean	0.189678	5.043478	9.873478	0.187952	1.226278	0.020613	0.186843	11.67522	0.874430
Median	0.173300	5.000000	8.460000	0.199100	0.901000	0.023200	0.206500	8.680000	1.008200
Maximum	0.542000	10.00000	55.24000	0.392100	4.832100	0.039800	0.346700	22.41000	3.088300
Minimum	-0.031900	3.000000	-10.77000	0.040600	-1.227500	-0.021600	-0.102300	6.250000	-1.630600
Std. Dev.	0.122970	1.965111	14.20271	0.088508	1.531443	0.012881	0.110019	5.377039	0.874409
Skewness	0.954881	1.224385	1.568094	0.200069	1.020890	-1.485467	-1.002918	0.810667	-0.604275
Kurtosis	4.454332	4.248659	6.133565	2.536852	3.296745	6.188048	3.787963	2.069377	5.923200
Jarque-Bera	5.522181	7.240812	18.83595	0.359008	4.079554	18.19885	4.450750	3.349169	9.588788
Probability	0.063223	0.026772	0.000081	0.835685	0.130058	0.000112	0.108027	0.187386	0.008276
Sum	4.362600	116.0000	227.0900	4.322900	28.20440	0.474100	4.297400	268.5300	20.11190
Sum Sq.									
Dev.	0.332675	84.95652	4437.774	0.172340	51.59698	0.003650	0.266294	636.0760	16.82102
Observations	23	23	23	23	23	23	23	23	23

**Source: E-Views 9 Output**

The table above shows the descriptive statistics of the variables used in the model and its interpretations are presented as follows.

The summary descriptive statistics of the variables used is presented in table 4.1 shows us over the study period, the average total CBE deposit grew by 18.96 percent. It can be noticed that the deposit growth is between 54.2 and -3 percent. Whereas the average, INTR, INFL, MS, CRISK, ROA, GOVEXG, EXRG and LIQD was 5.043478, 9.873478, 0.187952, 1.226278, 0.020613, 0.186843, 11.67522, 0.874430 percent respectively.

The skewness which measures the asymmetry of the distribution around its mean has values greater than 0 except in LIQD and ROA. This is an indication that the distribution has a long right tail. The kurtosis measures the flatness of the series. The result shows that all variables have values nearer to 3 and satisfies that condition except deposit interest rate. The result from the Jarque-Bera test indicates an acceptance of the null hypothesis that the random variables are normally distributed because the JB statistics are greater than critical values at 5% level. The probability value of the model also conform that the null hypothesis of variables being normally distributed as the result there is no reject region.

### **4.3. Testing the Classical Linear Regression Model (CLRM) Assumptions**

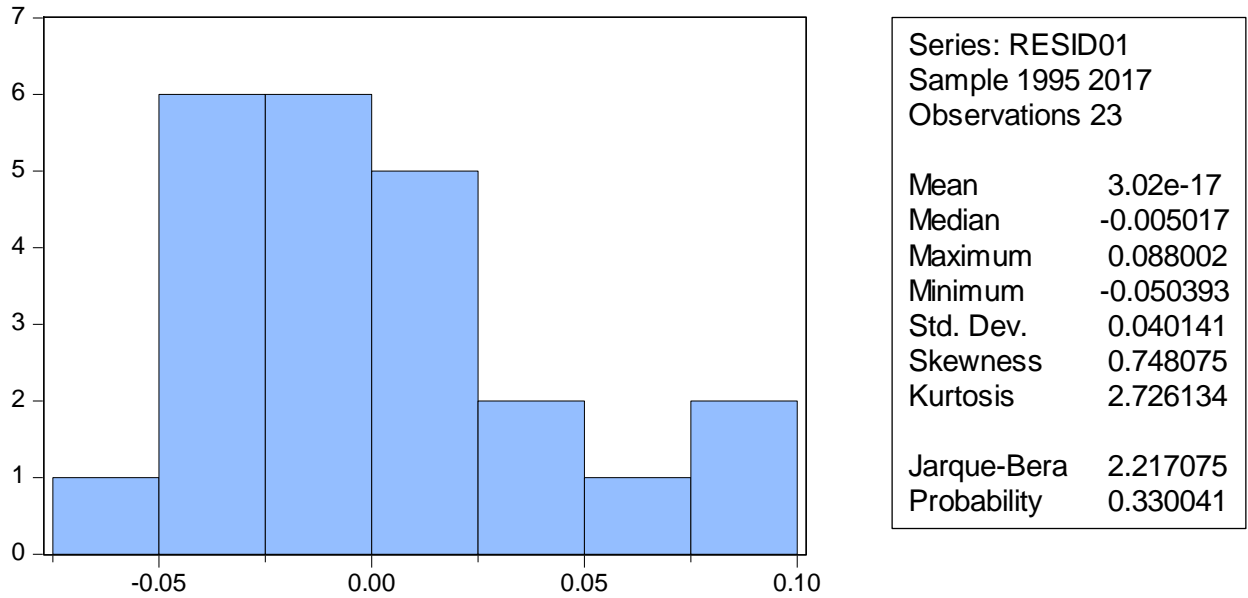
There are five assumptions made in relation to the classical linear regression model (CLRM). In view of that before running the regression equation the following tests were carried out; non-normality using Bera-Jarque normality tests, multi-co linearity using the correlation matrix and Heteroskedasticity using Breusech-Pagan Godfrey. As these tests prove the validity of the model, the study had continued into regression analysis. Accordingly, the output of the tests which are displayed by EViews9 software are presented and interpreted as follow.

### **4.4. Test for non-normality test**

A Jarque - Bera normality test has been used for normality test. The non-normality test table 4.2 indicates that the kurtosis value is around 2.726134 which are near to 3. Jarque - Bera's also indicates that the residuals are normally distributed having the value 2.21 which is greater than 0.05. The p-value given at the bottom of the normality test screen should be bigger than 0.05 to fail to reject the null hypothesis at the 5% level (Chris, 2008) In this case the p-value 0.33 which is greater than 0.05 had failed to reject the null hypothesis of normality presence.



**Table 4.2 Test for Non-normality Test**



Source: E-Views 9 Output

**4.4.1. The Assumption of Homoscedasticity**

The test of heteroskedasticity is a test of the second assumption of OLS estimator that says the variance of errors term is constant. The researcher uses Breusch Godfrey test (BG test) to test for heteroskedasticity.

**Table 4.3 Test of Heteroskedasticity**

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	1.648138	Prob. F(8,14)	0.1976
Obs*R-squared	11.15528	Prob. Chi-Square(8)	0.1931
Scaled explained SS	3.567182	Prob. Chi-Square(8)	0.8939

Source: E-Views 9 Output

Based on the result displayed in the above table 4.3 the three different types of tests for heteroskedasticity and all fails to reject the null hypothesis of homoscedasticity presence. Therefore it can be concluded that the variance of error term is constant or the second assumption of CLRM is not violated.

#### 4.4.2. Test for Multicollinearity

The results of correlation tests are depicted by a correlation matrix table:

**Table 4.4 Correlation matrixes**

	DEPG	INTR	INFL	MS	CRISK	ROA	GOVEXG	EXRG	LIQD
DEPG	1.000000								
INTR	0.186450	1.000000							
INFL	0.346602	-0.261855	1.000000						
MS	0.865436	-0.131913	0.521661	1.000000					
CRISK	-0.149504	0.498466	0.219513	-0.268109	1.000000				
ROA	0.555540	-0.091429	0.465659	0.650281	-0.014751	1.000000			
GOVEXG	0.351394	-0.056396	0.624801	0.486682	0.277965	0.567892	1.000000		
EXRG	0.557749	-0.177556	0.190324	0.682004	-0.243491	0.528192	0.349388	1.000000	
LIQD	0.336657	0.283131	-0.135761	0.082786	-0.018022	0.284721	-0.369427	-0.098680	1.000000

**Source: E-Views9 Output**

The correlation matrix presented in Table 4.4 indicates a positive relationship between Total deposit (dependent) with explanatory variables (GOVEXG, EXG, INFL, LIQD, INTR, MS and ROA) and negative relationship between CRISK with the dependent variable. As expected, most of explanatory variables are positively related or correlated to the explained variable and there is no higher correlation. Therefore it can be concluded that there is no multi-co linearity problem.

#### 4.5. Results of Regression Analysis

This section discusses the regression results of fixed effect model that determines deposit mobilization in commercial banks of Ethiopia. This regression analysis is based on the data collected from National Bank of Ethiopia, Commercial bank of Ethiopia Annual Report, CSA and WB from the year 1995 to 2017. The relationship between one dependent variable and eight independent variables is regressed using econometric software called E-Views 9 Thus, the model used to examine statistically significant determinants of commercial banks deposit measured by

$$DEPG_{it} = \alpha_i + \beta_1 * INTR_{it} + \beta_2 * INFL_{it} + \beta_3 * MS_{it} + \beta_4 * CRISK_{it} + \beta_5 * ROA_{it} + \beta_6 * GOVEXG_{it} + \beta_7 * EXRG_{it} + \beta_8 * LIQD_{it} \dots \dots \dots (1)$$

Where

**DEP<sub>it</sub>** is the dependent variable and represents the growth total amount of deposits held by all commercial banks for period t,

**INTR<sub>it</sub>** represents commercial bank interest rate on deposit for period t,

**INFL<sub>it</sub>** represents the overall inflation rate in Ethiopia for period t,

**MS<sub>it</sub>** represents the growth broad money of Ethiopia for period t,

**GOVEXG<sub>it</sub>** Represents the growth of government expenditure for period t,

**EXG<sub>it</sub>** Represents the growth of the exchange birr to USD for period t,

**LIQD<sub>it</sub>** Represents total deposit to total asset ratio for period t,

**CRISK<sub>it</sub>** Represents Loan to asset ratio for period t,

**ROA<sub>it</sub>** Represents Bank Profitability for period t,

## Table 4.5 Regression Analysis Result

Dependent Variable: DEPG

Method: Least Squares

Date: 12/06/18 Time: 07:35

Sample: 1995 2017

Included observations: 23

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.165179	0.045252	-3.650225	0.0026
INTR	0.015479	0.008206	1.886297	0.0802
INFL	6.59E-05	0.001338	0.049244	0.9614
MS	-1.137957	0.261760	-4.347321	0.0007
CRISK	-0.006949	0.011783	-0.589764	0.5647
ROA	2.313356	1.651802	1.400505	0.1831
GOVEXG	-0.244266	0.201846	-1.210161	0.2463
EXRG	0.002460	0.003268	0.752932	0.4640
LIQD	0.050435	0.021009	2.400691	0.0308
R-squared	0.893444	Mean dependent var		0.189678
Adjusted R-squared	0.832555	S.D. dependent var		0.122970
S.E. of regression	0.050319	Akaike info criterion		-2.854683
Sum squared resid	0.035449	Schwarz criterion		-2.410359
Log likelihood	41.82885	Hannan-Quinn criter.		-2.742936
F-statistic	14.67331	Durbin-Watson stat		1.193791
Prob(F-statistic)	0.000014			

The above table (Table 4.5) shows the results of regression analysis. An F statistics of 14.67331 (with Probability >F= 0.000014) indicates the significance of the model in explaining the factors that influence the growth of total CBE deposits from customers. R-squared coefficient of 0.893444 obtained from the estimated model revealing that 89 percent of variation in deposit growth (DEPG) is explained by the selected explanatory of Inflation(INFL), Interest Rate(INTR), Money Supply(MS), Government Expenditure(GOVEXG), Exchange Rate(EXG), Bank Profitability(ROA), Bank Liquidity(LIQ) and Loan to Asset Ratio(CRISK).

The coefficient estimate of the constant of the regression is -0.165179 shows that the value of dependent variable if all independent variable becomes zero. This indicate that the total deposit of commercial banks will be decreased by the unit 0.165179 given all independent variable zero and this indicate that the dependent variables in the model is highly depends on the dependent variable. Then again the probability of 0.0026 showed that this variable was significant.

Interest rate on deposit as a fraction of total deposit is taken as a measure for interest rate on deposit. It was hypothesized that deposit rate has positive and insignificant impact on bank's deposit. The result of the regression shows that, interest rate on deposit has positive and insignificant impact on CBE deposit. The positive relation (= 0.015479) was consistent with the findings of Hibret and Shemsu (2015) on commercial Bank of Ethiopia and (Andebet, 2016; Ketema, 2017) on Private Commercial Banks.

The other macroeconomic variable included in this study was Inflation. According to the regression result of this study, Inflation has positive and statistically insignificant impact on deposit of CBE. The positive relation of this variable is not consistence with our expectation. The positive relation was inconsistent with the findings of (Hibret 2015) on commercial Bank of Ethiopia on the long run and (Andebet, 2016; Ketema, 2017) on Private Commercial Banks.

The other macroeconomic variable included in this study was Money Supply. According to the regression result of this study, the coefficient of Money Supply is negative (-1.137957) and statistically significant impact on deposit of CBE. The negative relation of the Money Supply and Commercial Bank's deposit is consistence with our expectation. The coefficient of this relationship of 1.137957 indicates that holding other things constant, a unit increase in Money

Supply will lead to a 1.137957 unit decrease in bank deposit growth at a significant level. This significant impact relation of Commercial Bank Deposit and Money Supply is consistent with the funding of (Jemebere2012), (Hibret, 2015) ,(Girang, 2015) and (Ketema, 2017).

The other macroeconomic variable included in this study was Government Expenditure. According to the regression result of this study, Government Expenditure has negative (-0.244266) and statistically insignificant impact on deposit of CBE. The negative relation of the Government Expenditure and Commercial Bank's deposit is consistency with our expectation.

Exchange Rate was found to have a positive (0.002460) relationship with CBE deposit growth and the relationship significant according to the model in Table 4.5 above. According to (SHEMSU, 2014) it could be the attribution of remittance from Diasporas to families in home-country is increasing. According to NBE report, in Ethiopia remittance from Diaspora is one of the most beneficial sources to offset foreign trade deficit of the foreign currency for the country. It has positive impact on individual's income and savings (Ketema, 2017). The correlation coefficient for deposit rates is 0.002460 indicating that ceteris paribus a 1unit increase in exchange rate leads to a 0.002460 increase in CBE deposit deposits which can be noted as insignificant impact. The insignificant relation was inconsistent with the findings of (Jembere 2014), Hibret (2015) and Girang(2015).

Bank credit risk was measured as a ratio of total deposit to total asset which has insignificant negative impact on CBE deposit. The result of the study is in consistent with the finding of (Osie, 2015 and Ketema, 2017).

The other microeconomic variable included in this study was Bank liquidity. It is positively (0.050435) and statistically significant impact on CBE deposit. According to the regression result, a one unit change in the Bank's liquidity, keeping other things constant, has resulted in 0.050435 unit increases on the level of deposit of commercial banks. According to Ketema, (2017) it means that the depositors are concerned with liquidity position which determines a bank's ability to respond to the withdrawal needs which are normally on demand or on a short notice as the case may be. This significant impact relation Bank's liquidity and deposit is consistent with the funding of Jemeber (2012), (Bahredin (2016) and (Ketema, 2017).

The regression result shows that, profitability has positive (2.313356) and statistically significant impact on CBE deposit. The positive sign of the coefficient indicates direct relationship between profitability and banks deposit. According to the regression result a one unit change in bank profitability, keeping other things constant, has resulted in 2.313356 unit changes on the level of deposit of commercial bank.

**Table 4.6. Summary of Hypothesis Test**

<b>Hypothesis</b>	<b>Expected signs</b>	<b>Result</b>
H1: Exchange Rate has significant effect on CBE deposit.	+	+
H2: Deposit Interest rate has significant effect on CBE deposit.	+	+
H3: Inflation has a significant effect on CBE deposit.	-	+
H4: Government Expenditure has significant effect on CBE deposit.	-	-
H5: Liquidity Ratio has significant effect on CBE deposit.	-	+
H6: Loan to Asset Ratio has significant effect on CBE deposit.	+	-
H7: Money Supply has significant effect on CBE deposit.	+	-
H8: Return on Asset has insignificant effect on CBE deposit.	-	+

NB. The result of the hypothesis summary is duplicated from e-view software.

## **CHAPTER FIVE**

### **SUMMARY, CONCLUSIONS AND RECOMMENDATIONS**

#### **5. Summary of major Findings**

The main objective of this study was to investigate the determinants of deposit of Commercial Bank of Ethiopia during the period from 1995-2017. The study finds that CBE deposits have been continuously increasing through time with the rate varies from year to year. The study used three bank specific (Bank Credit Risk, Bank Liquidity and Bank Profitability) and five macroeconomic variables (Inflation, Deposit Rate, Government Expenditure, Money Supply and Exchange Rate) to determine deposit growth. Findings indicated that Commercial Bank of Ethiopia deposit growth are influenced by Inflation (INF), Interest Rate(INT), Money Supply(MSG), Government Expenditure (GOVEXG), Exchange Rate(EXG), Bank Profitability (ROA), Bank Liquidity (LIQ) and Loan to Asset Ratio (CRISK). As a result of the analysis and interpretation, the following are the summary of the major findings:

#### **5.1 Conclusions**

This study examined the determining factors of bank deposit growth in the case of Commercial Bank of Ethiopia. Based on the result of analysis, the study had concluded the following:

The study was used time series data from commercial bank of Ethiopia which had seventy five years of banking service over the period 1995 to 2017. The bank specific data were mainly collected from annual audited financial reports of the bank and the macroeconomic data were collected from NBE, Central Statistical Authority (CSA) and WB. Data was presented and analyzed by using descriptive statistics, correlation analysis and balanced fixed effect regression analysis to identify the determinants of deposit of CBE. Before performing OLS regression the model was tested for the classical linear regression model assumptions.

- The study indicated that the bank liquidity has positive and statically significant effect on commercial bank deposit. Deposit growth increase and the bank liquidity increases or increase liquidity risk.
- Among micro level determinant of commercial bank deposit is money supply which have a negative significant impact on the commercial bank deposit. When the government



supplies excess money to the economy the economic growth will be affected negatively by increasing the inflation, exchange rate etc. and also the commercial bank deposit will decrease.

- Concerning to deposit interest rate, it implies that deposit interest rate is not a major factor in explaining the deposit growth in Commercial bank of Ethiopia.
- The result of this study showed that, among the bank specific variables Bank Credit Risk has insignificant negative impact on CBE deposit.
- Profitability measured by Return on Asset has an insignificant positive impact on commercial bank deposits growth. Higher bank profits would tend to signal increased bank soundness, which could make it easier for these banks to attract deposits. The depositor confidence will increase if the bank is profitable and have adequate asset return.
- The relationship of inflation and deposit growth is not similar to the expected sign but has insignificant impact. Since the country has experienced double digits inflation in the study period that results in higher costs of doing business; which leads to decrease in deposit mobilized by commercial banks.

## **5.2. Recommendation**

Based on the objectives and the findings of the study, the following recommendations are drawn.

It is well known that deposits are the critical resource for the banks to stay profitable, by the same analogy CBE major activity is mobilizing deposit. Therefore the bank should give due emphasis to its deposit mobilizing tasks by considering mobilizing deposit is a way to survival.

- The government should decrease its supply of broad money to the economy. Since the excess supply of money will have a negative impact to the growth of the country and the growth of the commercial bank deposit.
- Since government is also one of the depositors in commercial bank deposit the growth of the government expenditure has a negative impact on the CBE deposit. So CBE should give to increase their time deposit instead of individual and demand deposit.
- CBE have assumed greater responsibilities in mobilizing domestic resources for financing the priorities of the economy and CBE should have managed high liquidity risk that contributed by increase in deposit

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