



ST. MARY'S UNIVERSITY

SCHOOL OF GRADUATE STUDIES

**FACTORS AFFECTING DEPOSIT GROWTH OF
COMMERCIAL BANKS IN ETHIOPIA**

BY

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JANUARY, 2019

SMU, A.A

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**A THESIS SUBMITTED TO ST.MARY'S UNIVERSITY, SCHOOL OF
GRADUATE STUDIES IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR MBA IN ACCOUNTING AND FINANCE**

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DECLARATION

I, the undersigned, declare that this thesis is my original work, prepared under the guidance of Simon Tarekegn (Assistant Professor). All sources of materials used for the thesis have been duly acknowledged. I further confirm that the thesis has not been submitted either in part or in full to any other higher learning institution for the purpose of earning any degree.

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ACKNOWLEDGMENT

First of all I am deeply grateful to God and his mother, St. Virgin Mary, for helping me to complete this work. Secondly, I would like to thank my advisor Simon Tarekegn (Assistant Professor) for his guidance, insightful comments and encouragement throughout the process of conducting this thesis.

Thirdly, I am grateful to NBE and the selected commercial banks officials and staffs and my best friend Esubalew Zeleke (Subu) for their invaluable help during the data collection process.

Finally, I must express my very profound gratitude to Mr. Dereje Gebretsadik (MBA), Mrs.Serkaddis Debebe (MBA) and Mrs.Asefash Worku (MBA) for their reviews and comments during the preparation of this work.

ABSTRACT

The purpose of this study is to determine the factors affecting deposit growth of commercial banks in Ethiopia. In order to achieve this objective descriptive and econometric analyses were performed. The target populations were all commercial banks operating in Ethiopia. Accordingly, six commercial banks were purposively selected for this study. The panel dataset for the study used consisted annual data spanning from 2001 to 2017. The data were gathered from National Bank of Ethiopia and the purposively selected commercial banks' annual reports. The dependent variable used in this study was commercial banks' deposit growth. The explanatory variables used in this study were advertising and publicity, bank branches, exchange rate, inflation, loan and advances, money supply and nominal gross domestic product. Different diagnostic tests namely test for zero mean of error terms, homoscedasticity, no autocorrelation, no multicollinearity and normality were conducted to check the appropriateness of the model. The diagnostic results show that none of the classical linear regression model assumption is violated. To determine the effects of the independent variables on the dependent variable fixed effect model was used. The Fixed-effect model results show that bank branch, exchange rate, loan and advances and nominal gross domestic product have significant positive effect on commercial banks' deposit growth. However, inflation and money supply found to have significant negative effect on bank deposit growth. The effect of advertising and publicity was found to be positive and insignificant. Thus, based on the findings the study suggests that commercial banks should open more branches and expand their loan giving capacity in order to increase their deposit. Further, the government should work seriously to increase the country's gross domestic product.

Key Words: Bank deposits growth, Commercial banks, Factors affecting

LIST OF ACRONYMS AND ABBRIVATIONS

AB: Awash Bank
ADV: Advertising and Publicity
BB: Bank Branch
CBE: Commercial Bank of Ethiopia
BBs: Commercial Banks
CLRM: Classical Linear Regression Model
DB: Dashen Bank
DEP: Deposit Growth
E views9: Econometric Views9
ER: Exchange Rate
ETB: Ethiopian Birr
FEM: Fixed Effect Model
GDP: Gross Domestic Product
GTP II: Growth and Transformation Plan II
INF: Inflation
LO: Loan and Advances
MS: Money Supply
NBE: National Bank of Ethiopia
NGDP: Nominal Gross Domestic Product
NIB: Nib International Bank
OLS: Ordinary Least Square
UB: United Bank
USD: United States Dollar
WB: Wegagen Bank

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CHAPTER ONE

1.0 INTRODUCTION

This chapter provides a general overview of the study. In this chapter background of the study, statement of the problem, objective (s) of the study, research hypotheses, significance of the study, scope of the study, limitation of the study and organization of the paper are included.

1.1 BACKGROUND OF THE STUDY

Bank deposits are one of the most important elements on which banks are based in general, whether Islamic or commercial. The deposit is an agreement between the client and the bank under which the customer to deposit a sum of money with the bank for the purpose of conservation or investment and the bank undertakes to refund the money to the client at a certain date upon request, according to terms agreed upon in advance (Jaber and Manasrah, 2017).

Unquestionably, deposits are the heart of financial institutions like banks. Financial systems have been recognized to play an imperative role in economic development. One of such important factors in financial systems that account for growth in a country's economy is bank deposits (Boadi, Li and Lartey, 2015). Commercial bank deposits are main liabilities for commercial banks. According Kelvin (2001) deposits of commercial banks account for about 75% of commercial bank liabilities. Commercial banks are using this liability to lend it and gain return on it. Thus, their deposits enable them to do their businesses. Commercial banks accept deposit from the customer and provide loan to customer, through in this way commercials banks mobilize the resource. As a result, banks will be better if they are mobilizing more customer deposits in different deposit type (Mamo, 2017).

Deposit may be important for both developed and developing countries such that it helps depositors to earn on their funds which they have no immediate use for. It also creates a platform for banks to channel such funds to businesses and individuals who have urgent use of such funds (Boadi, Li and Lartey, 2015).

Commercial banks in Ethiopia are expected to play critical role towards the economy. According to NBE (National Bank of Ethiopia), there are seventeen commercial banks (CBs) operating throughout the country.

According to GTP II (Ethiopian Growth and Transformation Plan Two), it is planned to finance at least two-third of gross domestic investment from domestic saving. During GTP II period (2014/15-2019/20), the Commercial Bank of Ethiopia (CBE) is expected to provide credit for public investment projects in infrastructure and working capital for industrial sector. The total credit allocated for the service sector is to be obtained from CBE and private CBs. Investment financing through banks, microfinance institutions, bond sales and contractual saving is projected at ETB 1.9 trillion (93.7 percent) from banks and microfinance institutions through deposits and loan repayment and ETB 120 billion (6.3 percent) from bond sale, contractual saving and from other finance sources during GTP II period. To finance the GTP II, banks' deposit is expected to grow at an annual average rate of 30.9 percent.

Thus, in order to finance the country's investment needs CBs are expected to mobilized adequate fund in the first place. However, mobilizing sufficient deposit is not a simple undertaking for commercial banks rather it needs to know what factors can affect their deposit growth firstly. Jaber and Manasrah (2017), Boadi, Li and Larrey (2015), Ostadi and Sarlak (2014), Sanayei, Shahin and Amirosadt (2012), Ngula (2012) and Katalai (2008) are researchers who conducted studies on factors affecting deposit growth of CBs in foreign countries.

What basically fuel customers of banks to deposit money in CBs in Ethiopia is the center of this research. The objective of this study is to determine factors affecting deposit growth of CBs in Ethiopia by taking CBE and five purposively selected private CBs as a sample. Different researchers including Mamo; Fisseha and Ketema (2017), Behredin; Kibebe; Andinet; Yannet; Nafkot and Ephrem (2016), Shemsu and Hibret (2015), Getahun (2014), Sisay (2013) and Wubitu (2012) carried out researches to determine factors affecting CBs' deposit growth in Ethiopia. Their results were inconsistent towards the effect of inflation, loan and advances and money supply. This study tasted the effect of those variables on CBs' deposit growth again in order to alleviate the ambiguity towards their effects on CBs' deposit growth. Furthermore, unlike former researches this study tested the effect of advertising and publicity on CBs deposit growth in econometric way for the first time.

1.2 STATEMENT OF THE PROBLEM

Deposit is the main component of bank's fund. The existence of a CB is totally impossible in the absence of deposits. Thus, every bank expects that deposits will be sufficient, safe and the flow of deposit will remain smooth. Changes and different mixtures in economic and commercial activities make deposit management challenging to the bank managers (Parvin, Rumana and Afsana, 2014). Mobilization of deposits is one of the main functions of banking business. It is an essential source of working fund for the bank. Deposit mobilization is key 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 CBs must tap deposits from urban and rural areas (Shettar, 2014). Since deposits are normally considered as a cost effective source of working fund, the bank's ability to lend more as well as its success greatly lies on its deposit mobilization. However the bank's ability to mobilize enough funds from the public through its current, savings, fixed, recurring accounts and other specialized schemes will depend on the systems employed in this highly competitive industry (As Digaria, 2011 cited by Viswanadham, Yirgalem, and Medanit 2014). "The survival of the fittest" has made applicable for the banks. To enhance profitability, banks take steps to minimize the expenditure and are forced to mobilize low cost deposits (Shettar, 2014).

Therefore, banks should grow their deposits in order to survive firstly and then to play their expected role in the economy. On the other hand, growing deposit is not an easy task for CBs whereas, banks should understand what factors can affect their deposit growth initially. Also, they should know to what level those factors can affect their deposit growth. Numbers of researches were conducted to determine the factors affecting CBs' deposit growth in different countries. The following are researches which were conducted in overseas with the aim of determining the factors affecting CBs' deposit growth:-

Jaber and Manasrah (2017) carried out research with the aim of identifying the factors that affect attraction of deposits in Palestinian Islamic banks. The study found that advertising campaigns and promotion are the most important factors affecting bank deposits growth.

Ostadi and Sarlak (2014), studied to identify the effective factors on the absorption of bank deposits in Isfahan Sepah Bank in Iran. The results indicated that money supply has positive

effect on bank deposit growth. Conversely, exchange rate has negative effect on bank deposit growth.

Sanayei, Shahin and Amirosadt (2012) conducted a research on a topic “evaluating the effectiveness of TV advertisement and analyzing its influence on attraction of saving in Ansar Bank in Iran”. The results specified that TV advertisement was effective in absorption of bank deposit growth.

According to Boadi, Li and Lartey (2015) real saving rate has negative effect on Ghanaian CBs’ deposit growth. Whereas, GDP and real Treasury bill rate have positive effect.

Ngula (2012) also tried to study the determinants of saving mobilization in Ghanaian CBs. The research findings showed that exchange rate, money supply and inflation have negative significant effect on deposit mobilization.

Finally, Katalai (2008) attempted to analyze the factors that influence CBs’ deposit growth in Kenya. The study disclosed that exchange rate and GDP have positive significant influences on CBs’ deposit growth.

When we move to Ethiopia, as far as the researcher concerned, the following are researchers who conducted researches on factors affecting deposit growth of CBs in Ethiopia; - Mamo; Fisseha and Ketema (2017), Behredin; Kibebe; Andinet; Yannet; Nafkot and Ephrem (2016), Shemsu and Hibret (2015), Getahun (2014), Sisay (2013) and Wubitu (2012). In their researches they tested the effect of numerous independent variables on deposit growth. According to the researches conducted by Kibebe and Behredin (2016), money supply has insignificant negative effect on CBs’ deposit growth. Whereas, the research conducted by Ketema (2017) revealed that money supply has significant negative effect on CBs’ deposit growth. Again, Mamo (2017) and Yannet (2016) studied to determine the effect of loan and advances on CBs’ deposit growth. Mamo (2017) found that loan and advances has positive significant effect on CBs’ deposit growth. Conversely, Yannet (2016) found that loan and advances has insignificant positive effect on CBs’ deposit growth. Finally, Ketema and Fiseha (2017) and Behredin (2016) tried to determine the effect of inflation on CBs’ deposit growth. Their findings revealed that inflation has negative significant effect, positive significant effect and positive insignificant effect respectively on CBs’ deposit growth. These different findings on the same variables need additional research to be conducted

in order to mitigate the vagueness with such independent variables' effect on CBs' deposit growth.

Moreover, according to the studies done by Jaber and Manasrah and Fisseha (2017), Ephrem (2016), Sisay; Sanayei, Shahin and Amirosadt (2013) advertising was found to have positive effect on CBs' deposit growth. Advertising helped in attracting people towards bank and helped them in understanding how banks work especially those people who were afraid to go to banks with of loss or fraud. Through advertising people become aware of bank's offers and keep on availing those offers, which result in large revenues for banks. Advertising helps in establishing goodwill of banks and thus making a bank who advertises most, popular over others which results in people first choice and their trust (business-finance.blurtit.com).

However, none of the former researchers tested the effect of advertising and publicity on CBs' deposit growth in econometrical way. By studying the effect of this independent variable quantitatively this study is unique from previous studies.

1.3 OBJECTIVE OF THE STUDY

1.3.1 GENERAL OBJECTIVE

The main objective of this study is to determine the factors affecting deposit growth of CBs in Ethiopia.

1.3.2 SPECIFIC OBJECTIVES

The specific objectives of this study are:-

- To determine the effect of advertising and publicity on CBs' deposit growth.
- To determine the effect of bank branch on CBs' deposit growth.
- To determine the effect of exchange rate on CBs' deposit growth.
- To determine the effect of inflation on CBs' deposit growth.
- To determine the effect of loan and advances on CBs' deposit growth.
- To determine the effect of money supply on CBs' deposit growth.
- To determine the effect of Nominal Gross Domestic Product (NGDP) on CBs' deposit growth.

1.4 RESEARCH HYPOTHESES

In order to determine the factors affecting deposit growth of CBs in Ethiopia the following seven key variables were identified: advertising and publicity, bank branch, exchange rate, inflation, loan and advances, money supply and NGDP.

Consistent with the existing literatures and empirical studies, the following hypotheses were developed to test the relationship between the deposit growth and the independent variables.

Hypothesis 1: There is positive relationship between advertising and publicity and CBs' deposit growth.

According to the studies done by Jaber and Manasrah; Fisseha (2017), Ephrem (2016), Sisay; Sanayei, Shahin and Amirosadt (2013) advertising was found to have positive effect on CBs' deposit growth.

Hypothesis 2: There is significant positive relationship between bank branches and CBs' deposit growth.

Based on the findings of researches conducted by Fisseha and Mamo (2017), Behredin; Yannet and Andinet (2016), Shemsu and Hibret (2015), Sisay (2013) and Wubitu (2012) bank branch was found to have positive significant effect on bank deposit growth.

Hypothesis 3: There is significant positive relationship between exchange rate and CBs' deposit growth.

According to studies carried out in abroad by Ostadi and Sarlak (2014) and Ngula (2012) the effect of exchange rate on bank deposit found to be negative. However, Ketema (2017) and Nafkot (2016) found that exchange rate has positive significant effect on bank deposit growth in Ethiopia.

Hypothesis 4: There is negative relationship between inflation and CBs' deposit growth.

According to Ngula (2015) inflation has negative significant effect on deposit growth. Whereas, Ketema (2017) Yannet and Andinet (2016) found that the effect is negative and insignificant. Conversely, Fiseha (2017) found that inflation has positive significant effect on deposit growth.

Finally, Behredin (2016) and Shemsu (2015) found that inflation has positive insignificant effect on banks deposit growth.

Hypothesis 5: There is positive relationship between loan and CBs' deposit growth.

According to Mamo (2017) loan and advances has significant positive effect on CBs' deposit growth. Conversely, Yannet (2016) found the effect of loan and advance on CBs' deposit growth is positive but insignificant.

Hypothesis 6: There is negative relationship between money supply and CBs' deposit growth.

Money supply was found to have positive effect on banks' deposit growth, according to Kibebe (2016), Ostadi and Sarlak (2014) and Ngula (2012). But, the research finding by Behredin (2016) revealed that money supply has insignificant negative effect on CBs' deposit growth. Whereas, the research conducted by Ketema (2017) revealed that money supply has significant negative effect on CBs' deposit growth.

Hypothesis 7: There is positive relationship between NGDP and CBs' deposit growth.

Studies by Fiseha (2017), Andinet (2016), Boadi, Li and Lartey and Hibret (2015) found that Gross Domestic Product (GDP) has significant positive effect on CBs' deposit growth. On the other hand, the study by Shemsu (2015) found that GDP has positive insignificant effect on CBs' deposit growth.

1.5 SIGNIFICANCE OF THE STUDY

This study is helpful for policy makers, commercial banks and future researchers by:-

- Enabling commercial banks to increase their deposit by making them familiar with the factors affecting their deposit growth.
- Providing a reference for policy makers in policy making process.
- Contributing to the body of knowledge by determining the potential relationship between bank deposit and factors affect it for future researchers.

1.6 SCOPE OF THE STUDY

Deposit mobilizations in Ethiopia are performed by different financial institutions like commercial banks, contractual savings (such as private pension fund, health insurance and insurance premium) and microfinance institutions. However, this study was limited on CBs only. Also, the study was limited on seventeen years quantitative data of six CBs;- namely Awash Bank (AB), Commercial Bank of Ethiopia (CBE), Dashen Bank (DB), Nib International Bank (NIB), United Bank (UB) and Wegagen Bank (WB). The study excluded ten private commercial banks with less than seventeen service years (2001 to 2017).

1.7 LIMITATION OF THE STUDY

Though Bank of Abyssinia (BoA) has been operating in Ethiopian banking sector since 1996 G.C it was not included in this study. BoA was excluded due to the fact that the researcher could not find the needed years data from both BOA's public website and the bank's research and development office. Moreover, since 2017/18 annual reports of the selected CBs have not been released, the study excluded 2017/18 data.

1.8 ORGANIZATION OF THE PAPER

The paper is organized in five chapters. Chapter one introduces the general overview of the study. Chapter two is literature review which includes both theoretical and empirical reviews. The methodology which was employed for conducting the research is organized in chapter three. The analysis and interpretation of the research findings is incorporated in chapter four. Chapter five, finally, encloses conclusions and recommendations based on the findings of the study.

CHAPTER TWO

RELATED LITERATURE REVIEW

2.0 INTRODUCTION

This chapter has three parts; the first part is theoretical reviews, the second part is empirical studies reviews and finally the third part is conceptual framework. In the theoretical review part the literatures that are related to CBs and bank deposits are discussed. In the empirical studies part past studies which were conducted on the area of factors affecting CBs' deposits growth are discussed. Finally, based on the literatures conceptual framework was developed.

2.1 THERETICAL REVIEW

2.1.1 FINANCIAL SYSTEM

The financial system is complex, comprising many different types of private-sector financial institutions, including banks, insurance companies, mutual funds, finance companies, and investment banks—all of which are heavily regulated by the government (Mishkin and Eakins, 2012). Financial institutions are firms and their behavior can be analyzed in much the same way that economists analyze any other type of firm. Thus, we can think of them as producing various forms of loans out of money which people are willing to lend. Furthermore, we can assume that they are profit maximizers and that the profit arises from charging interest to borrowers at a rate which exceeds that paid to lenders. One of the most common types of financial intermediary is bank (Howells and Bain, 2007).

2.1.2 COMMERCIAL BANKS MEANING

CBs are the most common and important type of banking institutions. They have the lion's share in banking operations. They are monetary institutions that serve the interest of their depositors by providing with security vaults for the surplus resources and, on the other hand, make profits by investing its resource in the productive measures by extending loans.

CBs receive deposits in the form of fixed deposit, saving bank account and current account. They grant loans, generally for short period, in the form of cash credits, overdrafts and ordinary loans.

They also render numerous services such as collection of cheques, safe custody of valuables, remittance and payment of insurance premium, etc. CBs may be owned by the government or may be run in the private sector (Kumar and Mittal, 2002).

2.1.3 FUNCTIONS OF COMMERCIAL BANKS

Commercial banks perform variety of functions which includes:-

ACCEPTING DEPOSITS

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 banks' books, and the resulting balance is recorded as a liability for the banks and represents the amount owed by the banks 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 holder has the right to withdraw any deposited funds, as set forth in the terms and conditions of the account. The following are most common type of bank deposit.

➤ DEMAND DEPOSIT

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, Automated Teller Machine (ATM) and online banking.

➤ SAVING DEPOSIT

It is a deposit account held at a bank or other financial institution that provides principal security and a modest interest rate to the depositor. Depending on the specific type of saving account, the account holder may not be able to write checks from the account and the account is likely to have a limited number of free transfers/transactions (Jhingan, 1999).

➤ **FIXED OR TIME DEPOSIT**

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; the longer the term the better the yield on the money (Dereje, 2017 as cited by Ketema 2017).

ADVANCING LOAN

Commercial banks are financial intermediaries that borrow funds from people who have saved and in turn make loans to others on higher interest rate than it pays to the depositors (Mishkin and Eakins, 2012).

CREDIT CREATION

Credit creation is also one of the most important functions of the commercial banks. Like other financial institutions, they aim at earning profit. For this purpose, they accept deposits and advance loans by keeping small cash in reserve for day-today transactions. When CBs advance loans, they open accounts in the name of the customer and do not pay him/her in cash but allow him/her to draw the money by cheque according to his/her needs. By granting loans CBs create credits or deposits (Jhingan, 1999).

FINANCING FOREIGN TRADE

CBs finance foreign trade of their customers by accepting foreign bills of exchange and collecting them from foreign banks. They also transact other foreign exchange businesses and buy and sell foreign currency (Jhingan, 1999).

AGENCY SERVICE

CBs operate as agent of their customers in collecting and paying cheques, billing of exchange, drafts, dividends, etc. they also buy and sell shares, securities, debentures, etc. for their customers. Further, they pay subscriptions, insurance prima, rent, electric and water bills and other similar charges on the behalf of their clients. They also act as trustee and executor of the property and will of their customers. Moreover, the CBs act as income tax consultant to their clients. For some of these services the CBs charge a normal fee while they render other free of charge (Jhingan, 1999).

MISCELLANEOUS SERVICES

More to the point the above noted services; the CBs perform a number of other services. They act as the custodian of the valuable of their customers by providing those lockers where they can keep their jewellery and valuable documents. They issue various forms of credit instruments such as cheques, drafts, travellers' cheques etc which facilitates transactions. The CBs also issue letter of credits and act as a referee to their clients. In underwrites shares and debenture of companies and helps in the collection of funds from public. Some CBs also publish journal which provide stastical information about money market and business trends of the economy (Jhingan, 1999).

2.1.4 THE ROLE OF COMMERCIAL BANKS IN A DEVELOPING ECONOMY

The banking system is of more importance for the economic growth of less developed countries. A sound banking system mobilizes saving of the people, channelizes them into productive activities and boosts up the rate of capital formation in the economy. Secondly, through a network of branches in rural and backward areas, the banking system can accelerate the process of monetization in the economy. Thirdly, the banking system can permits business innovations by providing cheap credit facilities to entrepreneurs, which not be possible for want of adequate bank credit. Fourthly, the banking system can provide long term finance to business and industry and that helps the development of commerce and industry in less developed countries. Fifthly, the banking system by adopting a cheap money policy can help the economic growth of such countries. Finally, the banking system can provide financial accommodation to priority sectors such as agriculture and small scale industries. Thus, a well-developed commercial banking system can prove a boon for economic development of less developed counties. Yet, the

importance of CBs is not limited on the developing economy whereas they are very important to the developed economy too (Hajela, 2009).

2.1.5 BANK DEPOSIT THEORIES

According to the Keynesian hypothesis, saving is the excess of income over consumption expenditure, or simply, saving is a function of income. Extending the Keynesian perspective, Modigliani and Brumberg (1954) proposed the life-cycle model which emphasizes that the main motive of saving is an accumulation for retirement. The model predicts that consumption in a particular period depends on expectations about lifetime income and, hence, saving will be different across one's stages of life cycle. Theories relating to savings can be seen from both banks and depositor's perspective. The following are theories relating to savings from bank standpoint:-

➤ REAL BILLS THEORY

This theory holds that banks should concentrate on making short term self-liquidating loans and advances; implying that CBs should hold assets in short term loans that would be liquidated in the normal course of business. The proponents of this theory are the view that banks should only finance the movement of goods through successive stages of production to consumption (making working capital loan). The proponents do not expect CBs to make long term or even medium term loans for the purpose of financing the purchase of plants and equipment, real estate or agricultural loans. The rationale is that since the liabilities of a bank are payable on demand, it would be unable to meet its obligations if its assets are tied up over a long period of time. They further stressed that a bank needs a continual and substantial flow of cash moving through it in order to maintain its own liquidity and such cash flow can be attained only if the bank limits its lending activities to short term facilities otherwise the bank has to hold more of deposits to attain a cash flow in short term demands.

➤ SHIFTABLETY THEORY

The next theory of bank deposit analysis is the shiftability theory of Moulton (1981). Asset shiftability refers to the ability of financial assets to move between persons or institutions (banks) at negotiated prices. The shiftability theory holds that the liquidity of a bank depends on its ability to shift its assets to someone else at a particular price. The theory is based on the proposition that

a bank's liquidity could be maintained by holding assets that could be shifted or sold to other lenders or investors for cash at short notice. On the whole, a bank's interests as regards deposit will be better served if its assets are shiftable to enable it acquire liquidity readily as the need may arise. It would be appropriate for a bank to hold short-term open market investment in its portfolio of assets. The essence of holding short-term investments is to help banks to meet the withdrawal demands of customers from available cash or near cash assets that can easily be sold for cash. On the other hand, if loans are not repaid, the collateral security on the loan could be sold in the market for cash if they are marketable, or rediscounted at the central bank. Deposits therefore, satisfy the shiftable requirement of the bank (Mutton, 1981).

➤ **THE LIABILITY MANAGEMENT THEORY**

The liability management theory is also another important theory to be considered in this review. This theory suggests that banks can meet liquidity requirement by bidding in the market for additional funds. It further suggest that a bank borrow (purchase) the fund it needs by means of the various bank related money market instrument; inter-bank fund (call money fund), certificate of deposits and Eurocurrencies. Under words, the bank goes out to purchase the liquidity it need to liability management. This theory is contrast of the liquidity management theory which suggest that the bank sells secondary reserve assets to meet customers deposit withdrawals and legitimate loan request of its customers. Investment whether of the short term or intermediate terms provides some income and can quickly be converted. Loans which are much less liquid assets serve the credit needs of the society and provide the greatest sources of profits of banks.

The theory emphasized the need for a good mix of bank deposits. A well-mixed deposit with regular monthly or quarterly payments of principal and interest has some liquidity because of the regular monthly or quarterly cash flow that can be anticipated. It also emphasizes the desirability of relating loan repayment to the future anticipated income of the borrower. This means emphasizing the cash flow prospect of a project rather than placing undue reliance on security.

However, from the depositor's perspective there are three main theories relating to savings behaviour: the traditional models of the life-cycle hypothesis (Modigliani & Brumberg, 1954), the permanent- income hypothesis (Friedman, 1957) and the more recent buffer-stock theory of savings behaviour (Deaton, 1991). These theories explain why the individual depositor would like to hold part of asset portfolios in savings.

➤ **THE LIFE-CYCLE HYPOTHESIS OF SAVINGS**

This theory assumes the individual to be a net saver during the early stages of life, and dissave during retirement. And as Haron and Azmi (2006) put it, the cornerstone of the life-cycle hypothesis is age related consumer heterogeneity. According to the predictions of this model of savings, the savings curve takes a hump-shaped pattern which peaks in the middle ages of one's life. Conversely, there is low savings during the young and old ages.

➤ **THE PERMANENT-INCOME HYPOTHESIS OF SAVINGS**

The permanent income hypothesis was first propounded by economist Friedman in his treatise "A theory of consumption" in 1957. This model abstracted from retirement saving decisions. This theory distinguishes between permanent and temporary income. Income is argued by this model to consist of the permanent (anticipated and planned) component which is the expected long-term average income, and the temporary (transitory or windfall gain or unexpected) component. According to the permanent-income hypothesis, consumption at a particular point in time is dependent on not only on one's current income but also on their expected future income (permanent income). The theory postulates that a consumer will save only if he/she expects that his/her long-term average income (permanent income) will be less than his current income.

➤ **THE BUFFER-STOCK THEORY OF SAVINGS**

This theory of saving is usually termed as the precautionary savings model. It argues that consumers are impatient and prudent in the face of unpredictable income fluctuations. The buffer-stock theory assumes consumers to be impatient because they resort to borrowing against future income in order to meet (finance) current consumptions if income were certain, and also as prudent because they have precautionary motives. To avoid or avert the dangers associated with future fluctuations in income and also retain a smooth consumption pattern, individuals are forced to set aside some precautionary reserves by way of reducing current consumption in order to save against the contingent occurrences. Therefore, one would expect savings rate to be pro-

cyclical, with individuals saving more when incomes are higher, in order to smoothen consumption in bad times.

2.2 EMPIRICAL REVIEW

2.2.1 EMPIRICAL STUDIES IN OVERSEAS

Sanayi, Shahin and Amirosadt (2012) conducted a research on the topic, “evaluating the effectiveness of TV advertisement and analyzing its influence on attraction of saving”. The purpose of the study was to establish a theoretical and empirical basis that shows the impact of advertising effectiveness on attraction of deposit of Ansar Bank in the City of Isfahan. The citizens of the city who watched the target advertisements include the population of the study. Random sampling method was used for collecting data. In their study, Structural Equation Modeling (Path analysis and confirmatory factor analysis) was used for data and hypotheses analysis. The results indicated that TV advertisements were effective in absorption deposits of Ansar bank.

Ostadi and Sarlak (2014), studied on effective factors on the absorption of bank deposits in Isfahan Sepah Bank. The aim of the study was determining the effective factors on the absorption of bank deposits in Isfahan Sepah bank. The research was applied and in terms of research methods, the branch of the field was descriptive – survey. Data collection and statistical tests using panel data Stationarity test assumptions of classical collinearity regression model, test t, Fisher F test, Durbin Watson test was significant, F Lymr personal effects, Hausman test, the variance test anisotropy the remaining residues of Normality review for multiple regression analysis was used. The research population consisted of Sepah Bank deposits in the province during the period 1379 to 1389. The results indicated that the effect money supply was increased relative share of bank deposits. Exchange rates’ effect on deposits was negative.

Jaber and Manasrah (2017) carried out research with the aim of identifying factors that affect attraction of deposits in Palestinian Islamic banks. The researchers used descriptive approach to reach the results and recommendations of the study. The study populations were all branch managers of Islamic banks operating in Palestine. The sample was the same of study population; because the small size of study population. The study found that there is a relation between advertising campaigns and bank deposits in Islamic banks in Palestine.

Boadi, Li and Lartey (2015) did a study to find out the determinants of bank deposits in Ghana. Their research examined the effect of interest rate liberalization on bank deposits in Ghana. A deposit function model was specified with long term deposit as the main dependent variable with real savings rate, real Treasury bill rate, exchange rate movement and gross domestic product as independent variables while controlling for inflation. Ordinary Least Squares (OLS) method was used to estimate the specified model which covered seasonally adjusted quarterly data drawn from Bank of Ghana and Ghana Statistical Service. The results of the study revealed that the interest rate liberalization and gross domestic product jointly accounted for about 78% of the variation in the level of bank savings deposits in Ghana. The results also showed that the liberalization of the interest rates is attractive for people with idle funds to save in financial institutions especially in banks. It also revealed a negative relationship between real savings rate and the real Treasury bill rate expected in a high inflationary environment. All the independent variables were significant.

Ngula (2012) made research with the aspiration of examining the determinants of savings mobilization and its role in promote economic growth in Ghana. Data for the analysis cover the period between 1980 and 2010. Time series characteristics of the data were investigated by applying unit root tests to examine the stationarity of each variable. To determine the robustness of the Ordinary Least Squares (OLS) regression coefficients, a test for serial correlation and heteroskedasticity was performed. The demand for real bank deposits was modeled using the OLS technique. Results from the study show that exchange rate, inflation rate and money supply (M2) significantly affect the mobilization of financial savings (deposit) in Ghana. Deposit interest rate however, proofed to be a weak determinant of bank deposit mobilization. This is because of the lack of confidence that people had in the banking system. Successful mobilization of domestic resources requires a stable macroeconomic environment in which inflation is under control and possible currency substitution is tamed by a stable exchange rate. The functions performed by banks, especially their use of deposits to allocate credit to the private sector for investment, promote growth to an extent. However, government borrowing and other factors constrain the economy from realizing the full growth benefits of functions performed by the banks. Financial policies by government can also augment this development process by assuring greater amount of information on credit worthiness of businesses and households in the economy.

Katalai (2008) the objective of the study was to analyze the factors that influence Commercial banks' deposit growth in Kenya. Time series data covering 1968 - 2006 was analyzed. First, the

time series characteristics of the data were assessed using unit root tests to examine the stationarity of each variable. Secondly, the test for co integration was performed to determine the long run relationship of the non-stationary variables. Lastly, estimated model was a single regression equation with deposit as the dependent variable and explanatory variables as deposit rate, nominal exchange rate, investment income ratio, number of cheques cleared (used as proxy for innovations in the financial sector), real GDP, ratio of monetary GDP to total GDP and Structural Adjustment Programs (SAPs). Estimation was done using Ordinary Least Squares (OLS) technique and Econometric Views (E-views) statistical package. Analysed results showed that lagged Commercial bank deposits and all the other variables including Structural Adjustment Programs (SAPs) significantly affect Commercial banks deposit growth in Kenya.

2.2.2 EMPIRICAL STUDIES IN ETHIOPIA

Sisay (2013) the aim of the paper was to examine and assess deposit mobilization of private commercial banks. Those having two years and above experience senior Addis Ababa area branches and head office employee were selected for data collection. The research used questionnaire and structured interview discussion for employees and the management of Awash International Bank Share Company. The result shows that the reconstruction of Addis Ababa roads, Aggressive branch expansion of CBE, the current condominium house construction program, peoples attitude towards using private banks and poor parking area are strongly influence the deposit mobilization process of Awash International Bank S.C. Opening of additional branches, aggressive promotion and upgrading service deliverance can boost the deposit balance of a bank positively.

Kibebe (2016) the research tried to determine factors that affect deposit mobilization, the associated costs of deposit mobilization in private banks. The study adopted mixed approach to gather the data. The primary data were gathered using questionnaire. On the other hand, the secondary data were extracted from annual reports of all private commercial banks in Ethiopia, NBE and from Central Statistical Authority (CSA). The secondary data were time series data from 2000-2014. Sampling method of the primary data was purposive sampling technique. The analysis was made by using Classical linear regression method. The study showed that, Age dependency ratio, Investment and money supply, are the most significant factors of deposit mobilization activity. The other variable such as Per capita income has insignificant power to influence the dependent variable.

Andinet (2016) the aim of this study was 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 were regressed with the dependent variable i.e. total deposit. The explanatory variables were 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 Eviews 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.

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 adopted mixed research approach. Regarding to the qualitative data; questionnaire was used to gather information from the employees of commercial bank of Ethiopia particularly for those employees who actively participated in deposit mobilization tasks in CBE city branches. Regarding to the secondary data; time series data covering 1998 - 2014 was analyzed. First, the time series data were assessed using descriptive statistics for the variables as well as the test for heteroskedasticity, autocorrelation and normality testing to know if the assumptions of CLRM violated or not. Second, estimated model was a single regression equation with deposit as the dependent variable and explanatory variables as deposit interest rate, overall inflation rate, number of branch opening, gross domestic product, individual foreign remittance and dummy variable. Estimation was done using Ordinary Least Squares technique by E-views7 statistical package. The results from economic analysis showed that all the explanatory variables were positively correlated with the explained variable. Among these variables, branch opening was an important strategy for deposit mobilization, it was highly significant than others. Individual remittances from Diasporas were also significantly affecting CBE's deposit next to branch opening. The others factors had positive effect and can increase CBE's deposit.

Hibret (2015) this study primarily aimed on determining the short and long run impacts of determinant factors on deposit growth of commercial bank of Ethiopia for the period 1974/75 to 2013/14 by using Vector Error Correction Model (VECM). The study checked the causal relationships between deposit growth and its determinant factors (Economic Growth, Inflation, Interest Rate, Exchange Rate, Population Growth and Branch Expansion). The results revealed that interest rate has positive but insignificant impact on deposit growth both in the long run and short run. While Exchange rate and branch expansion significantly increases banks deposit both in the short run and long-run. Population and Economic growth also had a positive relationship with deposit growth and the relationships were significant in the long run only. However, Inflation has positive and significant impact on deposit in the long-run and negative impact in the short run.

Mamo (2017) the study was mainly aimed to investigate factors that determine customer deposit mobilization by the commercial bank of Ethiopia by using data for 20 years. Both descriptive and econometric analysis was applied in order to investigate factors that determine deposit mobilization in the case of commercial bank of Ethiopia. As determinants of customer deposit mobilization in the bank five explanatory variables such as loan, existence of competitors, interest rate and branch expansion were included. The econometric result indicated that loan provision, branch expansion and number of customers were found to have significant positive impact on the growth of deposit mobilization. However the emergence of new competitors and interest rate were not found to have positive impact to induce deposit mobilization in the bank.

Getahun (2014) this study examined the determinants of deposit mobilization in commercial bank of Ethiopia using secondary data. The data were collected from national bank of Ethiopia from 1971 up to 2013. Multiple regression model was developed to determine the effect of dependent variables (bank deposit) and independent variables (real interest rate, real per capital income, active labor force and last year deposit. Different diagnostic tests were tested to know whether the model is valid or not. The tests revealed none of the assumptions was violated. The regression result revealed that all the four variables positively and significantly affect deposit mobilization in Ethiopia. The diagnostics tests and the regression were done by using EVIEWS 7.

Yannet (2016) the aim of study was to identify the factors having an impact on banks deposits and even assesses which ones are more significant or less significant by taking CBE as evidence. To do the practical investigation, the researcher collected both primary and secondary data. The

primary data were collected by using questioner. The secondary data for the study were eleven years' (2006-2015G.C) values of dependent and independent variables which were collected from commercial bank of Ethiopia, national bank of Ethiopia and CSA. Four variables are regressed with the dependent variables, i.e. total deposit; including inflation rate, loan disbursement, per capital income and bank branches. The data analysis was done using SPSS software. Different diagnostic tests were tasted to know whether the model is valid or not. The study revealed that branch expansion has positive and significant effect on total deposit whereas inflation rate has negative and insignificant effect on total deposit. And the remaining two variables loan provision and per capital income has positive but insignificant effect.

Bahredin (2016) the study aimed to find the determinants of commercial banks deposit growth in Ethiopia. In order to achieve this objective quantitative research approach was used. Target populations were all banks that engage in commercial activities and registered by National Bank of Ethiopia to act. Consequently, eight banks, out of the eighteen commercial banks in existence as at 2014, were purposively selected for the study. The dependent variable used to the study was bank deposit growth. Explanatory variables used for the study were inflation, deposit interest rate, loan-to-deposit ratio, bank branches, money supply growth, per capita income growth, and lagged bank deposit. In order to determine the cause and effect relationship between dependent and independent variables 15 years' secondary data from NBE and purposively selected commercial banks were used. Different diagnostic tests were conducted to check the appropriateness of the model. The random effects technique was applied to find out the most significant variables. According to the final results achieved by applying panel data techniques, bank branches and per-capita-income growth influence is positive and statistically significant; whereas, lagged bank deposit and loan-to-deposit ratio influence is negative and statistically significant. Money supply growth has insignificant negative influence; whereas deposit interest rate and inflation have insignificant positive influence on bank deposit growth.

Fisseha (2017) the aim of the study was to reveal the insight dynamics that determine commercial banks deposit with reference to Ethiopian commercial banks. In order to achieve this objective the study adopted mixed research approach. Regarding to the qualitative data; the study used semi structured personal interview from the employees of sampled commercial banks of Ethiopia. Regarding to quantitative data the study referenced to Ethiopian commercial banks on basis of data covers sixteen years (1999/2000-2014/2015) period. The data were collected from NBE, Central Statistical Authority, Ministry of Finance and Economic Cooperation and the

selected commercial banks. The target population was all banks that engage in commercial activities and registered by National Bank of Ethiopia to act. Consequently, eight banks, out of the eighteen commercial banks in existence at 2014/15, were purposively selected for the study. Results from random effect panel least square regression exhibited that number of branch, deposit interest rate, loan to deposit ratio, annual inflation rate, real gross domestic product and population number have significant effect on commercial banks deposit.

Ketema (2017) this paper examined 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. 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 revealed that the effect of credit risk, exchange rate, and Bank Profitability are positive and statistically significant; whereas, Loan to Deposit ratio (Bank's Liquidity) and Money Supply had negative and statistically significant effect on bank deposit growth. Deposit Interest Rate had insignificant positive effect on bank deposit growth. Finally, Inflation and Government Expenditure had insignificant negative effect on bank deposit growth.

2.2.3 FACTORS AFFECTING DEPOSIT GROWTH OF COMMERCIAL BANKS

Based on the empirical and theoretical reviews the following are factors affecting CBs' deposit growth.

ADVERTISING AND PUBLICITY

According to Etzel, Walker and Stanton (2007) advertising is non-personal communication paid for by a clearly identified sponsor promoting ideas, organizations, or products. The most familiar outlets for advertising are the broadcast (TV and radio) and print (newspapers and magazines) media. However, there are many other advertising vehicles, from billboards to t-shirts and, more recently, the Internet.

Sanayei, Shahin and Amirosadt (2013) tried to evaluate the effectiveness of TV advertisement and analyzing its influence on attraction of saving deposit accounts of Ansar Bank in the city of Isfahan. The results indicate that TV advertisements were effective in absorption deposits of Ansar bank.

Jaber and Manasrah (2017) carried out research with the aim of identifying the factors that Affect deposits attraction in Palestinian Islamic Banks. The research finding revealed that there is a relation between advertising campaign, promotion and attracting deposits in Islamic banks in Palestine.

The increased awareness of the public is one of the prospects for bank deposit (Ephrem, 2016). According to Fisseha (2017) Ethiopian commercial banks have to work on creating of awareness about banking services by recruit sales persons, who have an experience in marketing, in order to advertise the products and services of the commercial banks through door to door activities. Sisay (2013) stated that aggressive promotion and upgrading service deliverance can boost the deposit balance of a bank positively.

BANK BRANCHES

According to NBE the role of bank branches is very important in growing the capacity of banks in deposit mobilization. The possible reason is that when there is an increase in number of branch the accessibility of bank service will increase therefore; the more banks accessible the more customers will increase and as the same time the deposit will increase (Fiseha, 2017).

Fisseha and Mamo (2017), Behredin; Yannet; Andinet (2016), Shemsu and Hibret (2015), Sisay (2013) and Wubitu (2012) carried out researches in order to determine the effect of branch expansion on commercial banks deposit mobilization. The result from their researches revealed that the effect of number of branches on bank deposit is positive and statistically significant.

EXCHANGE RATE BIRR/ USD

As Mishkin and Eakin (2012) stated the price of one currency in terms of another is called the exchange rate. Exchange rates are highly volatile. The exchange rate affects the economy and our daily lives, because when a country's currency appreciates (rises in value relative to other currencies), the country's goods abroad become more expensive and foreign goods in that

country become cheaper (holding domestic prices constant in the two countries). Conversely, when a country's currency depreciates, its goods abroad become cheaper and foreign goods in that country become more expensive. Therefore, by exchange rate fluctuation consumption and saving might be affected.

According to NBE 2016/17 report Ethiopia has maintained managed floating exchange regime to ensure the competitiveness of the local currency. Accordingly, the Birr was allowed to depreciate by 6.2 percent in nominal terms against the USD as a counter measure for the 7.9 percent appreciation of the real effective exchange rate largely due to strengthening of the US Dollar against major currencies and relatively low inflation in Ethiopia's major trading partner countries.

According to Ngula (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. In addition, Ostadi and Sarlak (2014) found that exchange rate has negative effect on bank deposit.

However, Ketema (2017) and Nafkot (2016) found that exchange rate has positive significant effect on bank deposit growth.

INFLATION

The rate of inflation and the inflationary expectations might have some influence on the growth of overall deposits with the banking system. It is generally assumed that the growth of total deposits is to be negatively related with inflationary expectation. As inflation accelerates, deposits become less attractive, depending on the interest rate. In this case, the assumption would be that as deposit interest rates rise, deposits would increase in principle as well. The narrower the spread between deposit rates and inflation, the less attractive it should be to hold deposits above the required level. As the rate of inflation increases, people will be tempted to divert their savings from bank deposits to any other kind of tangible assets because these assets act as hedge against (Behredin, 2016).

According to Ngula (2015) inflation has negative significant effect on deposit growth. Whereas, Ketema (2017) Yannet and Andinet (2016) found that the effect is negative but, statically insignificant. Conversely, Fiseha (2017) found that inflation has positive significant effect on

deposit growth. Finally, Behredin (2016) and Shemsu (2015) found that inflation has positive insignificant effect on bank deposit growth.

LOANS AND ADVANCES

The important thing to be noted is that while advancing a loan, the bank has also created a new deposit in its books. By its experience, the bank knows that the entire amount received as primary deposits is not going to be withdrawn at the same time. And so, after keeping a small percentage of these deposits in cash, the bank advances loans to its customers. The percentage so maintained is known as reserve ratio. The active deposits are created by the bank in a more active manner by opening a deposit account in the name of the borrower. These deposits are created by the bank itself and, therefore, they are known as active or derivative deposits (Hajela, 2009).

According to Mamo (2017) loan and advances has significant positive effect on commercial bank deposit growth. Conversely, Yannet (2016) found the effects of loan disbursement on bank deposit positive but insignificant.

NARROW MONEY SUPPLY

According to NBE narrow money supply is the summation of currency outside the bank and net demand deposit.

According to researches conduct by Ngula (2012), in Ghana money supply has significant negative effect on bank deposit. In addition, Ostadi and Sarlak (2014) found that money supply has positive effect on banks' deposit. However, when we come to researches conducted in Ethiopian commercial banks by Behredin, (2016) money supply has insignificant negative effect on commercial banks deposit. Whereas, the research conducted by Ketema (2017) revealed that money supply has significant negative effect on commercial deposit growth. Kibebe (2016) also found that money supply has most significant effect.

NOMINAL GDP

According to Mohammed (2014) the fundamental assumption of the life-cycle hypothesis is that an individual seeks to maximize the present value of lifetime utility subject to the budget constraint. The theory predicts that consumption in a particular period, and thus the decision to

save, depends on expectations about lifetime income. According to this theory, the lifetime of an individual is divided into working period and retirement period. Individuals are assumed to be net savers during the working period and dissave during the retirement period. In the light of that, growth of per capita income will result in an increase of aggregate savings rate, because it increases the lifetime earnings and savings of younger age groups relative to older age groups. Thus countries with higher NGDP growth rate and so higher per capita growth rate are expected to have higher savings ratios than countries with lower growth rates. However, there is another view indicates that the size of this effect is likely to decline as per capita income rises and may even become negative for rich countries where investment opportunities and growth are relatively lower.

Studies by Fiseha (2017), Andinet (2016), Boadi, Li and Lartey and Hibret (2015) found that GDP has significant positive effect on banks deposit growth. On the other hand, the study by Shemsu (2015) found that GDP has positive insignificant effect on bank deposit growth.

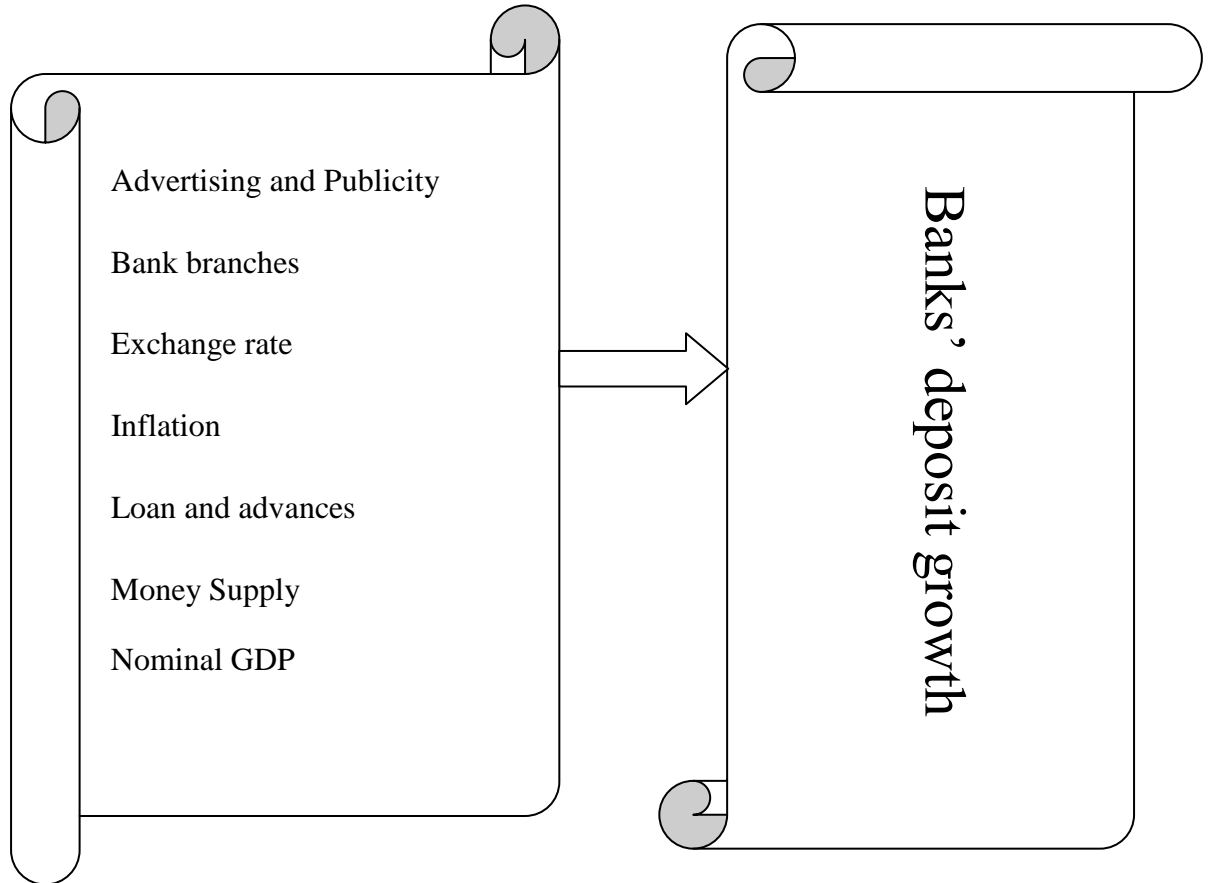
2.3 CONCEPTUAL FRAMEWORK

Different empirical evidences suggested that the deposit growth of commercial banks is determined by bank specific and macro-economic factors. The internal and external factors used in this study included advertising and publicity, bank branch, exchange rate, inflation, loan and advances , money supply and nominal GDP.

FIGURE 1.1 CONCEPTUAL FRAMEWORKS

Independent variables

Dependent variable



SOURCE: DEVELOPED BY THE RESEARCHER

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 INTRODUCTION

This chapter illustrates the research design, sampling technique, type of data, methods of data collection, method of data analysis, notation and expected signs of the variables, diagnostic test procedure and model specification. Generally, it demonstrates all procedures employed in determining the factors affecting deposit growth of CBs in Ethiopia.

3.1 RESEARCH DESIGN

In order to determine the factors affecting deposit growth of CBs in Ethiopia, the appropriate research design was supposed to be used.

Research design can be defined as a framework or blue print for conducting business research project in an efficient manner. It details the procedures necessary for collection, measurement and analysis of information which helps the researcher to solve business research problems (Mohapatra, Anusree and Sreejesh, 2014). Sreejesh (2014) said that, the research design is chosen based on the objectives of the study, the costs involved in conducting the study, the availability of data and finally the importance and urgency of the decision.

According to Cooper and Schindler (2014), causal studies seek to discover the effect that a variable(s) has on another (or others). The concept of causality is grounded in the logic of hypothesis testing, which, in turn, produces inductive conclusions. Since the objective of this study is to determine the cause and effect relationship between bank deposit growth and factors affecting it, the research design is causal (explanatory) research design. The cause and effect relationship between the dependent variable (deposit growth) and independent variables (advertising and publicity, bank branch, exchange rate, inflation, loan and advances, money supply, and nominal GDP) was determined by using multiple linear regression model of CLRM.

3.2 POPULATION, SAMPLE SIZE AND SAMPLING TECHNIQUE

Cooper and Schindler (2014) explained that a more efficient sample in a statistical sense is one that provides a given precision (standard error of the mean or proportion) with a smaller sample size. A sample that is economically more efficient is one that provides a desired precision at a lower dollar cost.

The total populations of this study were all banks that engaged in commercial banking activities and registered by National Bank of Ethiopia. The banking industry comprises one state-owned and sixteen private CBs. Consequently, AB, CBE, DB, NIB, UB and WB were selected for this study. The banks were purposively selected based on the availability of data since 2001 G.C. Moreover, According to NBE report, the total deposit which was mobilized by CBs in 2017 was Birr 568.8 billion. From this deposit mobilized the share of purposively selected commercial banks was Birr 457.2 billion which was 80.3 percent of the total deposit mobilized. For that reason, the study was conducted by taking these six CBs as a representative for all CBs in Ethiopia.

3.3 TYPE OF DATA

As Adams, Khan, Raeside and White (2007) argued that, there are two types of data: qualitative and quantitative. Most statistical analysis is based on quantitative data by using appropriate measurement for variables. For this particular research quantitative data were used. The data were seventeen years (2001-2017) data of six CBs and NBE. Data for the year 2001 is used as starting data for 2002. As per Brooks (2014) argued, there are three types of data which econometricians might use for analysis namely, time series data, cross-sectional data and panel data. In this study panel data were used. By using panel data, we can address a broader range of issues and tackle more complex problems. Also, we can examine how variables, or the relationships between them, change dynamically (over time). By combining cross-sectional and time series data, one can increase the number of degrees of freedom, and thus the power of the test, by employing information on the dynamic behavior of a large number of entities at the same time. The additional variation introduced by combining the data in this way can also help to mitigate problems of multicollinearity (Brooks, 2014).

3.4 METHODS OF DATA COLLECTION

Secondary data were used to determine the factors affecting deposit growth of commercial banks in Ethiopia. The secondary data for this study were extracted from the purposively selected CBs and NBE annual reports. The annual reports were collected from the purposively selected CBs' and NBE's public websites and their research and development offices.

3.5 METHOD OF DATA ANALYSIS

Descriptive and regression analysis were employed to analyze the relationship between the dependent variable (bank deposit growth) and independent variables (advertising and publicity, bank branch, exchange rate, inflation, loan and advances, money supply and nominal GDP). The collected quantitative data were regressed by using OLS multiple regression method and interpret with the help of different financial relationship and statistical description including, mean, minimum, maximum and standard deviation (descriptive statistics) and regression analysis. According to Chu and Illowsky (2013), mean is a number that measures the central tendency. A common name for mean is average. By definition, the mean for a sample is sum of all values in the sample divided by number of values in the sample. The standard deviation provides a measure of the overall variation in a data set. The standard deviation is always positive or 0. The standard deviation is small when the data are all concentrated close to the mean, exhibiting little variation or spread. The standard deviation is larger when the data values are more spread out from the mean, exhibiting more variation. To conduct this, Eviews 9 software was used.

3.6 RESEARCH VARIABLES

DEPENDENT VARIABLE

The dependent variable in this study was deposit growth.

INDEPENDENT VARIABLES

The independent variables were advertising and publicity, bank branch, exchange rate, inflation, loan and advances, money supply and nominal GDP.

3.7 MODEL SPECIFICATION

Different studies determined different factors that affect deposit growth in various countries. This section presented a framework of analysis on the basis of those studies, and involved adopting a model that would help to demonstrate the responsiveness of certain key variables that influence bank deposit growth. The linear equation in order to measure the cause effect relationship between bank deposits growth and the factors affecting it was developed as follow

$$DEP_{it} = \alpha + \beta_1 * ADV_{it} + \beta_2 * BB_{it} + \beta_3 * ER_{it} + \beta_4 * INF_{it} + \beta_5 * LO_{it} + \beta_6 * MS_{it} + \beta_7 * NGDP_{it} + \mu_i + v_{it}$$

Where;

DEP_{it} = Represents percentage of bank deposit growth (Dependent Variable) for period t.

ADV_{it} = Represents natural logarithm of annual advertising and publicity growth for period t.

BB_{it} = Represents percentage of bank branch growth for period t.

ER_{it} = Represents percentage of exchange rate growth for period t.

INF_{it} = Represents annual percentage of inflation for period t.

LO_{it} = Represents percentage of loan and advances growth for period t.

MS_{it} = Represents percentage of money supply growth for period t.

$NGDP_{it}$ = Represents percentage of nominal GDP growth for period t.

μ_i , encapsulating all of the variables that affect DEP_{it} cross sectionally but do not vary over time, v_{it} , that varies over time and entities (capturing everything that is left unexplained about DEP_{it}).

α = Intercept, β_1 , β_2 , β_3 , β_4 , β_5 , β_6 , and β_7 are regression coefficients.

3.8 VARIABLES, NOTATIONS AND EXPECTED SIGNS OF THE VARIABLES

TABLE 3.1 VARIABLES, NOTATIONS AND EXPECTED SIGNS

	Variables	Notations	Expected Signs
Dependent Variable	Deposit Growth	DEP	
Independent Variables	Advertising and publicity	ADV	Positive
	Bank branch	BB	Positive
	Exchange Rate	ER	Positive
	Inflation	INF	Negative
	Loan and Advances	LO	Positive
	Money supply	MS	Negative
	Nominal GDP	NGDP	Positive

SOURCE: DEVELOPED BY THE RESEARCHER

3.9 OPERATIONAL DEFINITIONS

According to Cooper and Schindler (2014) there are four scales to measure quantitative data namely; nominal scale, ordinary scale, interval scale and ratio scale. Based on the nature of the data ratio scale was used in this study. The ratio scale was used to measure the independent variables (ADV, BB, ER, INF, LO, MS and NGDP) and the dependent variable (DEP). Each variable was measured as follow;

$$\text{Change in bank deposit } (DEP) = \frac{(DEP_t) - (DEP_{t-1})}{(DEP_{t-1})} * 100$$

$$\text{Advertising and publicity (ADV)} = \text{LOG (annual ADV expense)}$$

$$\text{Change in bank branch } (BB) = \frac{(BB_t) - (BB_{t-1})}{(BB_{t-1})} * 100$$

$$\text{Change in exchange rate } (ER) = \frac{(ER_t) - (ER_{t-1})}{(ER_{t-1})} * 100$$

Inflation (INF) = average annual inflation rate

$$\text{Change in loan and advances } (LO) = \frac{(LO_t) - (LO_{t-1})}{(LO_{t-1})} * 100$$

$$\text{Change in money supply } (MS) = \frac{(MS_t) - (MS_{t-1})}{(MS_{t-1})} * 100$$

$$\text{Change in nominal GDP } (NGDP) = \frac{(NGDP_t) - (NGDP_{t-1})}{(NGDP_{t-1})} * 100$$

3.10 DIAGNOSTIC TEST PROCEDURE

Diagnostic test is a kind of test in order to check whether the assumptions of OLS are violated or not.

Every estimator of the model should have to meet the OLS assumptions before the estimation is carried out. If the assumptions are violated the coefficient estimates ($\hat{\beta}$'s) are wrong, the associated standard errors are wrong and the distributions that were assumed for the test statistics are inappropriate. Whereas, if the estimators of the model satisfy the OLS assumptions it is possible to say the estimators are BLUE (Best Linear Unbiased Estimators). BLUE stands for

Estimator – $\hat{\alpha}$ and $\hat{\beta}$ are estimators of the true value of α and β

Linear – $\hat{\alpha}$ and $\hat{\beta}$ are linear estimators – that means that the formulae for $\hat{\alpha}$ and $\hat{\beta}$ are linear combinations of the random variables (in this case, DEP)

Unbiased – on average, the actual values of $\hat{\alpha}$ and $\hat{\beta}$ will be equal to their true values

Best – means that the OLS estimator $\hat{\beta}$ has minimum variance among the class of linear unbiased estimators; the Gauss–Markov theorem proves that the OLS estimator is best by examining an arbitrary alternative linear unbiased estimator and showing in all cases that it must have a variance no smaller than the OLS estimator (Brooks.pp91, 2014).

The following are CLRM assumptions

1. Mean value of the error is zero $E(u_t) = 0$
2. Homocedasticity $\text{Var}(u_t) = \sigma^2 < \infty$
3. Autocorrelation $\text{Cov}(u_i, u_j) = 0$ for $i \neq j$
4. The assumption of X matrix is non-stochastic or fixed in repeated samples
5. Normal distribution $u_t \sim N(0, \sigma^2)$

ASSUMPTION 1: ZERO MEAN OF ERROR

The first assumption required is that the average value of the errors is zero. In fact, if a constant term is included in the regression equation, this assumption will never be violated.

ASSUMPTION 2: HETEROSCEDASTICITY

It has been assumed thus far that the variance of the errors is constant, σ^2 – this is known as the assumption of homoscedasticity. If the errors do not have a constant variance, they are said to be heteroscedastic. For this study Breusch-Pagan-Godfrey test for heteroscedasticity was used.

ASSUMPTION 3: AUTO CORRELATION COV $(u_i, u_j) = 0$ FOR $i \neq j$

Assumed that disturbance terms is that the covariance between the error terms over time (or cross-sectionally, for that type of data) is zero. In other words, it is assumed that the errors are uncorrelated with one another. If the errors are not uncorrelated with one another, it would be stated that they are autocorrelated or that they are serially correlated. A test of this assumption is therefore required. This assumption can be tested by Graphical tests for autocorrelation, Durbin-Watson test and Breusch-Godfrey test. For this study Breusch-Godfrey serial correlation LM test was used. This method is desirable to examine a joint test for autocorrelation that will allow examination of the relationship between \hat{u}_t and several of its lagged values at the same time (Brooks, 2014).

ASSUMPTION 4: MULTICOLLINEARITY

Multicollinearity is a phenomenon where the two or more of the explanatory variables used in a regression model are very highly correlated with each other. When there is an existence of correlation of 0.8 or above among independent variables it indicates a problem of multicollinearity.

It is suggested that a correlation above 0.8 should be corrected. We will face different problems if we are using OLS in the presence of multicollinearity. The first problem is, R^2 will be high but the individual coefficients will have high standard errors, so that the regression looks good as a whole, but the individual variables are not significant. This arises in the context of very closely related explanatory variables as a consequence of the difficulty in observing the individual contribution of each variable to the overall fit of the regression. Second, the regression becomes very sensitive to small changes in the specification, so that adding or removing an explanatory variable leads to large changes in the coefficient values or significances of the other variables. Finally, near multicollinearity will thus make confidence intervals for the parameters very wide, and significance tests might therefore give inappropriate conclusions, and so make it difficult to draw sharp inferences (Brooks, 2014).

ASSUMPTION 5: NORMALITY $ut \sim n(0, \Sigma^2)$

A normal distribution is not skewed and is defined to have a coefficient of kurtosis of 3. It is possible to define a coefficient of excess kurtosis, equal to the coefficient of kurtosis minus 3; a normal distribution will thus have a coefficient of excess kurtosis of zero (Brooks, 2014). In this study Bera Jarque Test (BJ test) was used to find out whether the error term is normally distributed or not.

CHAPTER FOUR

RESULTS AND DISCUSSIONS

4.0 INTRODUCTION

The main objective of this paper is to determine the effect of factors affecting deposit growth of CBs in Ethiopia. This chapter deals with the results and analysis of the findings. The chapter has three sections. The first section presents descriptive analysis on variables of the study. The second section presents the choice between fixed effect model and random effect model. Finally, the third section clarifies the regression analyses that constitute the main findings of this study.

4.1 DESCRIPTIVE ANALYSIS

4.1.1 SUMMARY STATISTICS

Table 4.1 provides a summary of the descriptive statistics of the dependent and independent variables for six CBs from the year 2002 to 2017 with a total of 96 observations. The table shows the mean, minimum, maximum, standard deviation and number of observations for the dependent variable (DEP) and independent variables: ADV, BB, ER, INF, LO, MS and NGDP.

TABLE 4.1 SUMMARY STATISTICS OF DEPENDENT AND INDEPENDENT VARIABLES

	DEP	ADV	BB	ER	INF	LO	MS	NGDP
Mean	23.55759	14.87149	16.10257	6.554114	12.68750	25.59281	19.10206	23.38000
Maximum	36.29641	17.09792	34.66667	25.03239	36.40000	45.11628	45.26858	45.10000
Minimum	5.115489	11.71356	3.333333	0.254925	-10.60000	-0.913075	8.32740	-2.200000
Std. Dev.	7.713550	1.29805	9.678077	7.493536	11.30765	11.30765	8.61425	12.11313
Observations	96	96	96	96	96	96	96	96

SOURCE: EViews 9 OUTPUT

Table 4.1 shows the mean, maximum, minimum and standard deviation indicators of variables computed from the purposively selected CBs and NBE annual reports.

As shown in the table 4.1 above, the mean value of bank DEP is 23.6 percent for the period of 2002-2017. This means, CBs were achieved 23.6 percent average deposit growth within the given period of time. It is also noticed that the bank deposit growth was fluctuating between 5.1 and 36.3 percent. The standard deviation for the banks deposit growth is 7.7 percent; this confirms that there were lower variations of deposit growth among CBs during the study period.

In the above table 4.1 the mean value of ADV is 14.87 percent. The minimum and the maximum values are 11.71 and 17.09 percent respectively. The standard deviation is 1.29 percent; this confirms that there were lower variations of ADV among CBs during the study period.

The mean value of BB growth is 16.10 percent. The minimum and the maximum growths are -3.33 and 34.67 percent respectively. The standard deviation among CBs in terms of bank branch growth is 9.68 percent; this confirms that there were lower variations of branch growth among CBs during the study period.

The mean value of ER growth is 6.55 percent. The minimum and the maximum growths are negative 0.25 and 25 percent respectively. The standard deviation in terms of ER growth is 7.49 percent; this implies that exchange rate in Ethiopia during the study period was somewhat unstable.

The average general inflation is 12.68 percent. The minimum and the maximum percentages are negative 10.6 and 36.4 percent respectively. The standard deviation of INF is 11.30 percent; this confirms that there were lower variations of INF in Ethiopia during the study period.

The average growth of loan and advances is 25.59 percent. The minimum and the maximum growths are negative 0.91 and 45.1 percent respectively. The standard deviation is 13 percent; this confirms that there were lower variations of loan and advances growth among CBs during the study period.

The mean value of MS growth for the study period is 19.10 percent. The minimum and maximum values are 8.32 percent and 45.26 percent respectively. The standard deviation is 8.61 percent; this confirms that there were lower variations of MS growth in Ethiopia during the study period.

The mean value of the nominal GDP growth over the period under study is 23.38 percent. The minimum and maximum values are negative 2.2 percent and 45.1 percent respectively. The

standard deviation is 12.11 percent; this confirms that there were lower variations of NGDP growth in Ethiopia during the study period.

4.1.2 CORRELATION ANALYSIS

TABLE 4.2 CORRELATION MATRIX OF DEPENDENT AND INDEPENDENT VARIABLES

	DEP	LOG(ADV)	BB	ER	INF	LO	MS	NGDP
DEP	1							
LOG(ADV)	0.1413926	1						
BB	0.3103292	0.1134596	1					
ER	0.0445546	-0.2289152	-0.1839096	1				
INF	-0.1618125	0.0786614	0.3864919	-0.0411252	1			
LO	0.0694288	-0.0126597	0.2389062	-0.2283167	0.2328316	1		
MS	-0.2554287	-0.2923089	0.1431178	0.6895523	0.2424784	0.2360384	1	
NGDP	0.1200661	-0.1060395	0.1772757	0.2467714	0.6156266	-0.0406759	0.5241468	1

SOURCE: EVIEWS 9 OUTPUT

The correlation matrix in table 4.2 shows that deposit growth (dependent variable) is positively correlated with advertising and publicity, number of branch, exchange rate, loan and advances, and nominal GDP. However, money supply and inflation have negative correlation with deposit growth.

As recalled from the chapter one, there are seven research hypotheses that postulate the relationship between the dependent variable and the independent variables. The research hypotheses predict that there is a positive correlation between CBs' deposit growth and; advertising and publicity, number of branch, exchange rate, loan and advances and nominal GDP. At the same time the hypotheses predict that there is negative relationship between the rest of two variables i.e. inflation and money supply and CBs' deposit growth.

In line with the research hypothesis, the correlation matrix in table 4.2 produced statistical evidence that CBS' deposit is positively correlated with advertising and publicity, number of branches, exchange rate, loan and advances and nominal GDP with correlation coefficient of

0.141, 0.310, 0.044, 0.069 and 0.120 respectively. Also, the result of the correlation matrix indicates that inflation and money supply have negative correlation with CBs' deposit growth with coefficients of -0.161 and -0.255 respectively.

In general, even though the correlation analysis shows the direction and degree of associations between variables, it does not tell us the cause and effect relationship among the identified variables. Thus, in examining the effects of selected independent variables on CBs' deposit growth, the econometric regression analysis which is discussed in the forthcoming section of the paper gives assurance to overcome the shortcomings of correlation analysis.

4.2 CHOOSING RANDOM EFFECT VERSUS FIXED EFFECT MODELS

There are broadly two classes of panel estimator approaches that can be employed in financial research: fixed effects models and random effects models. The simplest types of fixed effects models allow the intercept in the regression model to differ cross-sectionally but not over time, while all of the slope estimates are fixed both cross-sectionally and over time.

An alternative to the fixed effects model described above is the random effects model, which is sometimes also known as the error components model. As with fixed effects, the random effects approach proposes different intercept terms for each entity and again these intercepts are constant over time, with the relationships between the explanatory and explained variables assumed to be the same both cross-sectionally and temporally.

However, the difference is that under the random effects model, the intercepts for each cross-sectional unit are assumed to arise from a common intercept α (which is the same for all cross-sectional units and over time), plus a random variable ϵ_i that varies cross-sectionally but is constant over time. ϵ_i measures the random deviation of each entity's intercept term from the global intercept term α .

Random effects model is more appropriate when the entities in the sample can be thought of as having been randomly selected from the population, but a fixed effect model is more plausible when the entities in the sample effectively constitute the entire population (Brooks, 2014). Hence, the sample for this study was selected purposively instead of randomly, FEM is appropriate.

4.3 ECONOMETRIC ANALYSIS

To determine the factors affecting deposit growth of CBs' in Ethiopia FEM of multiple regression model was run. Before running the regression, the data sets were checked for certain CLRM assumption tests including test for; Zero mean of error term, heteroscedasticity, autocorrelation, normality and multicollinearity. Finally, the tests results revealed that none of the CLRM assumptions was violated.

4.3.1 DIAGNOSTIC TESTS

The diagnostic tests are very important to the model because they validate the parameter evaluation outcomes achieved by the estimated model. This arises because, if there is a problem in the residuals from the estimated model; it is an indication that the model is not efficient such that parameter estimates from the model may be biased. Accordingly, the CLRM assumptions were tested.

TEST FOR ZERO MEAN ASSUMPTION

The first CLRM assumption requires that the average value of the errors is zero ($E(u_t) = 0$). In fact, since constant term was included in the regression equation, this assumption is not violated.

TEST FOR HETROSCEDEASTICITY ASSUMPTION

To test this assumption the Breusch-Pagan-Godfrey was used and following hypothesis was developed to test the absence of hetroskedasticity.

H₀: Residuals are hetroskedastic

H₁: Residuals are homoscedastic

TABLE 4.3 HETEROSCEDASTICITY TEST: BREUSCH-PEGAN-GODFREY

Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	0.824157	Prob. F(7,88)	0.5699
Obs*R-squared	5.906352	Prob. Chi-Square(7)	0.5507
Scaled explained SS	4.998298	Prob. Chi-Square(7)	0.4161

SOURCE: EIEWS 9 OUTPUT

According to the above table both the F - and χ^2 -test statistic give the same conclusion that there is evidence for the absence of heteroscedasticity. Since the p -values in all of the cases were above 0.05, the null hypothesis of heteroscedastic is rejected at 5 percent significance level (See Appendix-1 for the detail).

TEST FOR NO AUTOCORRELATION ASSUMPTION

It is assumed that the errors are uncorrelated with one another. To test this assumption Breusch–Godfrey serial correlation LM test was run and the following hypothesis was developed.

H₀: There is autocorrelation

H₁: There is no autocorrelation

TABLE 4.4 BREUSCH-GODFREY SERIAL CORRELATION LM TEST

Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	2.008303	Prob. F(2,86)	0.1405
Obs*R-squared	4.283589	Prob. Chi-Square(2)	0.1174

SOURCE: EIEWS 9 OUTPUT

As it can be seen in the above table 4.4, the P value of F-statistic is 14.05 percent which is beyond the significance level of 5%. P-value of the Chi-Square 11.74 percent also supports the absence of autocorrelation. Hence, the null hypothesis of autocorrelation is rejected at 5 percent

significance level. This implying that there is no significant evidence for the presence of autocorrelation in this model (See Appendix-2 for the detail).

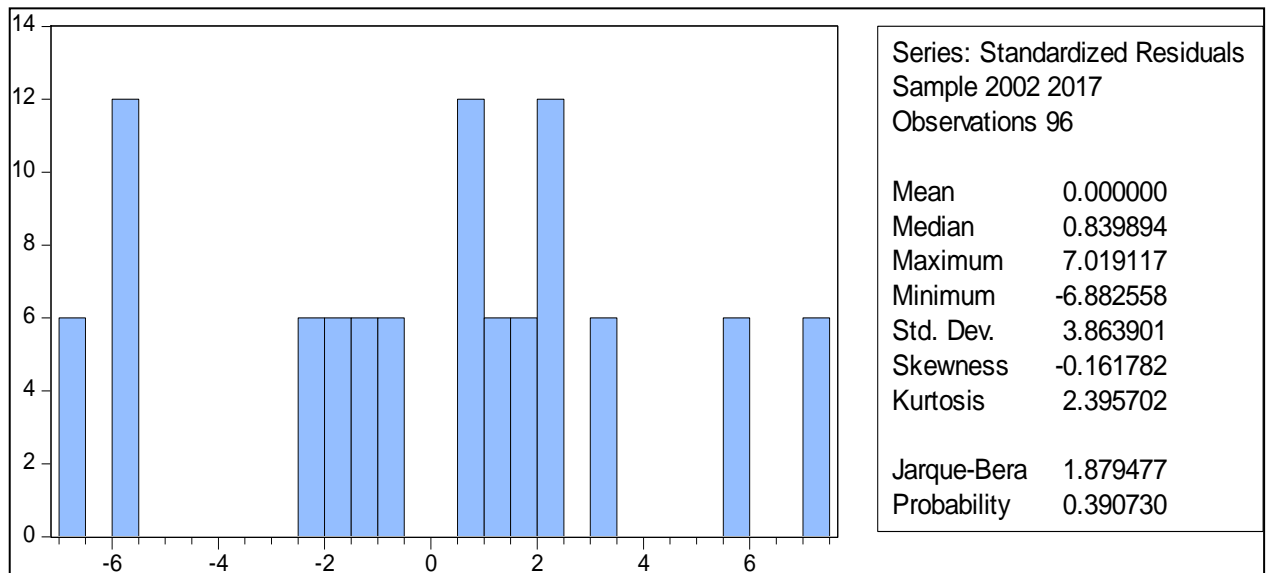
TEST FOR NARMALITY ASSUMPTION

In this study Bera Jarque Test (BJ test) was used to find out whether the error terms are normally distributed or not. The following hypothesis was developed to check this assumption.

H₀: Residuals are not normally distributed

H₁: Residuals are normally distributed

Figure 4.1 Normality Test for Residuals



SOURCE: EVIEWS 9 OUTPUT

As shown in the histogram in the figure 4.1 kurtosis approaches to 3 (i.e.2.395702) skewness approaches to 0 (i.e.-0.161782) and the Jarque-Bera statistics was not significant even at 10% level of significance as per the p-values shown in the above histogram is 0.390730. Hence, the null hypothesis that stated residuals are not normally distributed is rejected at five percent significance level. Therefore, we can conclude that the residuals are normally distributed.

TEST FOR MULTICOLLINEARITY ASSUMPTION

TABLE 4.5 CORRELATION MATRIX OF EXPLANATORY VARIABLES

	LOG(ADV)	BB	ER	INF	LO	MS	NGDP
LOG(ADV)	1						
BB	0.1134596	1					
ER	-0.2289152	-0.1839096	1				
INF	0.0786614	0.3864919	-0.0411252	1			
LO	-0.0126597	0.2389062	-0.2283167	0.2328316	1		
MS	-0.2923089	0.1431178	0.6895523	0.2424784	0.2360384	1	
NGDP	-0.1060395	0.1772757	0.2467714	0.6156266	-0.0406759	0.5241468	1

SOURCE: EViews 9 OUTPUT

The result in the above correlation matrix table shows that the highest correlation is 0.689 which is between MS and ER. Since there is no correlation above 0.8, according to Brooks (2014), it can be concluded that there is no problem of multicollinearity in this model.

4.3.2 RESULTS OF THE REGRESSION ANALYSIS

This section discusses the regression results of FEM that determines factors affecting deposit growth of CBs in Ethiopia. This regression analysis is based on the data collected from National Bank of Ethiopia and six purposively selected CBs from the year 2001 to 2017. The relationship between one dependent variable and seven independent variables was regressed using econometric software called Eviews 9. The following model was developed to show the relationship between the variables.

$$DEP_{it} = \alpha + \beta_1 * ADV_{it} + \beta_2 * BB_{it} + \beta_3 * ER_{it} + \beta_4 * INF_{it} + \beta_5 * LO_{it} + \beta_6 * MS_{it} + \beta_7 * NGDP_{it} + \mu_i + V_{it}$$

TABLE 4.6 REGRESSION RESULT OF FIXED EFFECTS MODEL

Dependent Variable: DEP				
Method: Panel Least Squares				
Date: 11/09/18 Time: 20:03				
Sample: 2002 2017				
Periods included: 16				
Cross-sections included: 6				
Total panel (balanced) observations: 96				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	20.47586	2.016568	10.15382	0.0000
LOG(ADV)	0.000191	0.001866	0.102604	0.9185
BB	0.558381	0.051344	10.87524	0.0000
ER	1.299973	0.106604	12.19438	0.0000
INF	-0.013995	0.001965	-7.122050	0.0000
LO	0.431012	0.045627	9.446432	0.0000
MS	-1.681106	0.128380	-13.09479	0.0000
NGDP	0.428502	0.058554	7.318066	0.0000
Effects Specification				
Cross-section fixed (dummy variables)				
R-squared	0.749075	Mean dependent var	23.55759	
Adjusted R-squared	0.712797	S.D. dependent var	7.713550	
S.E. of regression	4.133793	Akaike info criterion	5.801594	
Sum squared resid	1418.324	Schwarz criterion	6.148849	
Log likelihood	-265.4765	Hannan-Quinn criter.	5.941960	
F-statistic	20.64805	Durbin-Watson stat	2.039987	
Prob(F-statistic)	0.000000			

SOURCE: EVIEWS 9 OUTPUT

The above table 4.6 presents the result of fixed effect regression model that determine the effect of explanatory variables on CBs' deposit growth. DEP was dependent variable whereas ADV, BB, ER, INF, LO, MS and NGDP were independent variables.

The regression results reported in table 4.6 have the Adjusted R-square values of 0.712. This means 71.2 % of variations in banks' deposit growth are explained by independent variables which were included in the model. However, the remaining 28.8 % changes in banks' deposit growth are caused by other factors that are not included in the model. Furthermore, the F-statistic 20.64 and the probability (F-statistic) 0.000000 indicate that the overall model is highly significant at 1% and that all the independent variables are jointly significant in causing variation in CBs' deposit growth. The coefficient intercept (α) is 20.47. This means, when coefficients all explanatory variables took a value of zero, the average value of CBs' deposit growth would be 20.47 percent and it is statistically significant at 1% level of significance. Moreover, the final fitted model and its interpretations look like the following:

$$\text{DEP} = 20.47 + 0.0001*\text{ADV} + 0.5583*\text{BB} + 1.2999*\text{ER} - 0.0139*\text{INF} + 0.4310*\text{LO} - 1.6811*\text{MS} + 0.4285*\text{NGDP} + \mu_i + v_{it}$$

- When all explanatory variables took a value of zero, the average value of CBs' deposit growth would be 20.47 percent and it statistically significant at 1% level of significance
- Holding other factors constant on average when ADV increase by one percent deposit will increase by 0.0001 percent and the relationship is insignificant at 5% significance level.
- Holding other factors constant on average when BB increase by one percent total deposit will increase by 0.55 percent and the relationship is significant at 1% significance level.
- Holding other factors constant on average when ER increase by one percent deposit will increase by 1.29 percent and the relationship is significant at 1% significance level.
- Holding other factors constant on average when INF increase by one percent deposit will decrease by 0.01 percent and the relationship is significant at 1% significance level.
- Holding other factors constant on average when LO increase by one percent deposit will increase by 0.43 percent and the relationship is significant at 1% significance level.
- Holding other factors constant on average when MS increase by one percent deposit will decrease by 1.68 percent and the relationship is significant at 1% significance level.
- Holding other factors constant on average when NGDP increase by one percent deposit will increase by 0.42 percent and the relationship is significant at 1% significance level.

ADVERTISING AND PUBLICITY

According to the regression result in table 4.6 the effect of advertising on banks deposit growth is positive but, statically insignificant. This finding is consistent with the finding of Sanayei, Shahin and Amirosadt and Sisay (2013), Jaber and Manasrah and Fisseha, (2017) saying advertising has positive effect on banks deposit growth. As a result, the finding is consistence with hypothesis saying that advertising and publicity has positive effect on banks deposit growth.

BANK BRANCH

According to NBE the role of bank branches is very important in growing the capacity of banks in deposit mobilization.

The result in table 4.6 shows that number of bank branches has a statistically significant positive effect on banks deposit growth. The possible reason is that when there is an increase in number of branch the accessibility of bank service will increase therefore; the more banks accessible the more customers will increase and as the same time the deposit will increase. The positive and significant coefficient of bank branches is consistent with the findings of Fisseha and Mamo, (2017), Behredin; Yannet and Andinet, (2016), Shemsu and Hibret, (2015), Sisay, (2013) and Wubitu (2012). This implies that banks with many branches in Ethiopia have high deposit growth. Thus, the finding was consistence with hypothesis saying that bank branches has positive and statically significant effect on banks deposit growth.

EXCHANGE RATE

According to the result in table 4.6 above, exchange rate was found to have a positive effect on CBs' deposit growth and the relationship is significant. This could be the attribution of remittance from diasporas to families in home-country is increasing. When exchange rate increases the people who have remittance from abroad will have much money in local currency. According to Shemisu (2014) remittance from Diasporas has positive effect on individual's income and savings. This study finding is consistent with Ketema (2017) and Nafkot (2016). Thus, the hypothesis saying exchange rate has significant positive effect on deposit growth failed to reject.

INFLATION

The result in table 4.6 shows that inflation rate has significant negative effect on bank deposit growth. Higher inflation induces savers to save less. One of the major causes for increase in inflation is inflation expectation by the people. If inflation is expected to increase in the future people (depositors) tend to invest their money on commodities than keep it in bank. This negative effect of inflation is consistent with the findings of Ketema (2017), Andnet, (2016) and Hibret (2015). The finding also consistent with the research hypothesis stating inflation has negative effect on bank deposit growth.

LOAN AND ADVANCES

According to the result in table 4.6 above, loan and advances has positive and stastically significant effect on banks deposit growth. When CBs advance loans, they open accounts in the name of the borrower and do not pay him/her in cash but allow him/her to draw the money by cheque according to his/her needs. The positive effect of loan and advances on banks' deposit growth might arise from that the borrowers just borrow funds from CBs and keep it in banks deposit account for longer time without using it for the intended purpose.

Mamo (2017) found that loan and advances has significant positive effect on commercial bank deposit growth. Conversely, Yannet (2016) found that the effect of loan and advances on bank deposit positive but stastically insignificant.

This finding is consistent with Mamo (2017) finding and the research hypothesis asserting that loan and advances have positive effect on bank deposit growth.

MONEY SUPPLY

According to the result in table 4.6 above, MS has negative and stastically significant effect on banks' deposit growth. According to Nugula (2012), if money supply is high people can easily find cheap funds to finance their needs. Thus, people tend to decrease saving and increase consumption. This finding is consistent with Ketema (2017) and Ngula (2012) findings.

Consequently, the research hypothesis saying money supply has negative effect on deposit growth is failed to reject.

NOMINAL GDP

According to the result in table 4.6 above, NGDP has positive and stastically significant effect on banks' deposit growth. Thus, the positive effect implies that in times of strong economic growth, CBs' deposit is higher, because it increases the earnings of the people.

Studies by Fiseha (2017), Andinet (2016), Boadi, Li and Lartey and Hibret (2015) found GDP to have a significant positive effect on banks deposit growth. On the other hand, the study by Shemsu (2015) found that GDP has positive insignificant effect on bank deposit growth. The finding of this study is consistent with the finding of Fiseha (2017), Andinet (2016), Boadi, Li and Lartey and Hibret (2015). Thus, the hypothesis saying NGDP has positive effect on bank deposit growth is failed to reject.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

5.0 INTRODUCTION

This chapter has three sections. The first section talks about the summary of the study. The second section is conclusion of the study. Finally, in the third section recommendations are included based on the findings of the study.

5.1 SUMMARY

The main objective of this study was determining the factors affecting deposit growth of commercial banks in Ethiopia. A casual research design was adopted to determine the casual relationships between the dependent variable (DEP) and independent variables (ADV, BB, ER, INF, LO, MS and NGDP). The total populations were all commercial banks operating in Ethiopia. Out of the seventeen CBs six banks were purposively selected based on the availability of data. Seventeen years secondary data were collected from the purposively selected commercial banks and NBE annual reports. Regression results from FEM showed that BB, ER, LO and NGDP have positive significant effect on bank deposit growth. ADV has positive insignificant effect on bank deposit growth. However, INF and MS have negative significant effect on bank deposit growth.

5.2 CONCLUSION

Banks play very important roles in the economic development and growth of any nation. As an important component of the financial system, they channel scarce sources from the surplus economic units to the deficit economic units through deposit mobilization. The growth of bank deposit is usually expressed as a function of different factors. Accordingly, the broad objective of this research is to determine the effect of factors affecting deposit growth of commercial banks in Ethiopia. To achieve this broad objective, the study used quantitative research approach. To this end, data were collected from National Bank of Ethiopia (NBE) and six purposively selected commercial banks over the period of 2001 to 2017.

Based on the empirical and theoretical review the researcher selected seven independent variables as factors affecting deposit growth of commercial banks in Ethiopia. The independent variables were ADV, BB, ER, INF, LO, MS and NGDP. Bank deposit growth was taken as dependent variable.

The analysis was conducted using panel data estimation technique of fixed effect model using E-views9 statistical software. The study passed through all diagnostic tests including zero mean of error terms, heteroskedacity, autocorrelation, multicollinearity and normality. Hence, the test result showed that none of the CLRM assumptions was violated. The coefficient of determination, adjusted R^2 , is 0.712. This indicates that the explanatory variables were able to explain 71.2 % of the total variations of the dependent variable, bank deposit growth.

The regression result showed that BB, ER LO and NGDP have positive and statistically significant effect on the banks' deposit growth. ADV has positive but insignificant effect on bank deposit growth. On the other hand, INF and MS have negative and statistically significant effect on the bank deposit growth.

5.3 RECOMMENDATIONS

Based on the research findings the followings are recommendation for CBs in Ethiopia as a way to increase their deposits than before.

Since the main resource for CBs in Ethiopia is deposit the banks should give due emphasis to their deposits and strive to increase them.

Since bank branch has positive and significant effect on deposit growth, CBs in Ethiopia should expand their branches in order to increase their deposits. According to NBE annual reports, the population to branch ratio for the study years has been decreasing and reached 22,164:1 by 2016/17. In order to increase CBs' deposits, the population to bank ratio should be kept decreased by opening more branches across the country based on proper identification of unbanked areas.

Because inflation has negative and significant effect on deposit growth, the government should keep inflation rate single digit by decrease the money supply in the economy.

While loan and advances has positive and significant effect on deposit growth of CBs in Ethiopia, CBs in Ethiopia should also expand their loan providing capacity to customers in order to increase their deposit.

Seeing as money supply has negative and significant effect on deposit growth, the government should decrease the amount of money in the banking system. By selling bonds to the public the government can absorb the excess cash in the circulation.

In view of the fact that GDP has positive and significant effect on deposit growth, the government should try its best to increase the nation's GDP. By adding values on export items and expanding export destinations the government can increase the country's GDP.

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APPENDICES

APPENDIX 1: TEST FOR HETEROSKEDASTICITY

Heteroskedasticity Test: Breusch-Pagan-Godfrey				
F-statistic	0.824157	Prob. F(7,88)	0.5699	
Obs*R-squared	5.906352	Prob. Chi-Square(7)	0.5507	
Scaled explained SS	4.998298	Prob. Chi-Square(7)	0.4161	
Test Equation: Dependent Variable: RESID^2 Method: Least Squares Date: 11/09/18 Time: 20:22 Sample: 1 96 Included observations: 96				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	58.49431	720.1435	0.081226	0.9354
LOG(ADV)	-5.40E-06	6.61E-05	-0.081625	0.9351
BB	21.22729	15.90246	1.334843	0.1854
ER	-20.70901	35.76026	-0.579107	0.5640
INF	0.240426	0.722148	0.332931	0.7400
LO	0.521394	1.164559	0.447718	0.6555
MS	30.33818	42.82199	0.708472	0.4805
NGDP	-23.55614	21.66348	-1.087366	0.2798
R-squared	0.049524	Mean dependent var	401.6867	
Adjusted R-squared	-0.013127	S.D. dependent var	1682.941	
S.E. of regression	1693.951	Akaike info criterion	17.78717	
Sum squared resid	2.53E+08	Schwarz criterion	18.00087	
Log likelihood	-845.7841	Hannan-Quinn criter.	17.87355	
F-statistic	0.824157	Durbin-Watson stat	2.039987	
Prob(F-statistic)	0.569884			

APPENDIX 2: TEST FOR SERIAL CORRELATION

Breusch-Godfrey Serial Correlation LM Test:				
F-statistic	2.008303		Prob. F(2,86)	0.1405
Obs*R-squared	4.283589		Prob. Chi-Square(2)	0.1174
Test Equation: Dependent Variable: RESID Method: Least Squares Date: 11/09/18 Time: 20:23 Sample: 1 96 Included observations: 96 Presample missing value lagged residuals set to zero.				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-2.576936	8.893005	-0.289771	0.7727
LOG(ADV)	0.000000	0.000001	0.192354	0.8479
BB	-0.005365	0.194991	-0.027516	0.9781
ER	-0.153436	0.445595	-0.344341	0.7314
INF	-0.001651	0.009318	-0.177184	0.8598
LO	-0.001589	0.014252	-0.111480	0.9115
MS	0.235846	0.550699	0.428266	0.6695
NGDP	-0.072040	0.277711	-0.259407	0.7959
RESID(-1)	0.032431	0.114917	0.282208	0.7785
RESID(-2)	0.219331	0.110997	1.975999	0.0514
R-squared	0.044621	Mean dependent var		-1.22E-15
Adjusted R-squared	-0.055361	S.D. dependent var		20.14733
S.E. of regression	20.69751	Akaike info criterion		8.996236
Sum squared resid	36841.27	Schwarz criterion		9.263356
Log likelihood	-421.8193	Hannan-Quinn criter.		9.104210
F-statistic	0.446290	Durbin-Watson stat		2.039987
Prob(F-statistic)	0.905855			

APPENDIX 3: DISCRIPTEVE STATSTICS

Mean	87.00149	16.10257	6.554114	-105.7849	25.59281	21.99509	23.38000
Median	24.14049	14.64286	5.072297	-34.79037	25.24963	22.78417	22.40000
Maximum	987.5558	34.66667	25.03239	173.24840	45.11628	39.20677	45.10000
Minimum	-90.48080	3.333333	0.254925	-1223.529	-0.913075	10.13140	-2.200000
Std. Dev.	242.9715	9.678077	7.493536	317.0575	13.09967	7.390766	12.11313
Skewness	3.189116	0.638948	1.564394	-2.733267	-0.277555	0.386727	0.097863
Kurtosis	12.08331	2.380872	4.286904	9.967475	1.974517	2.853433	2.772534
Jarque-Bera	492.7538	8.065351	45.78172	313.7148	5.439046	2.478857	0.360198
Probability	0.000000	0.017727	0.000000	0.000000	0.065906	0.289550	0.835187
Sum	8352.143	1545.847	629.1949	-10155.35	2456.910	2111.528	2244.480
Sum Sq. Dev.	5608337	8898.191	5334.543	9549920	16302.12	5189.226	13939.15
Observations	96	96	96	96	96	96	96