



Determinants of Commercial Banks Deposit in Ethiopia

By:

Fisseha Teshome (ID No. GSE/0178/07)

A Thesis Submitted to:

The Department of Accounting and Finance

College of Business and Economics of Addis Ababa University

Presented in Partial Fulfillment of the Requirements for the

Degree of Master of Science in Accounting and Finance

January, 2017

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Advisor: Laxmikantham P. (PHD)

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Declaration

I, Fisseha Teshome, hereby declare that the thesis work entitled “**Determinants of Commercial Banks Deposit in Ethiopia**” submitted by me for the award of the degree of Master in Accounting and Finance of Addis Ababa University at Addis Ababa Ethiopia, is original work and it hasn’t been presented for the award of any other Degree, Diploma, Fellowship or other similar titles of any other university or institution.

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This is to certify that the thesis prepared by Fisseha Teshome entitles: **Determinants of Commercial Banks Deposit in Ethiopia** and submitted in partial fulfillment of the requirements for the degree of masters of Science in accounting and finance compiles with the regulations of the university and meets the accepted standards with respect to originality and quality.

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Abstract

This paper is an effort to reveal the insight dynamics that determine commercial banks deposit with reference to Ethiopian commercial banks. In order to achieve this objective the study adopts 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 and the data was gotten from the reports of the regulatory body of the banks in Ethiopia i.e. the National Bank of Ethiopia (NBE), Central Statistical Authority, Ministry of Finance and Economic Cooperation and from others that are as secondary data sources from the eight commercial banks of Ethiopia. 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, have purposively been selected for the study. Result from using 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 were significant relationship with commercial banks deposit. Results from interview social awareness and regulation of anti money laundry and counter financial terrorism have an effect on commercial banks deposit. Finally the study suggests that Ethiopian commercial banks specifically private owned banks have to open more branches in order to more accessible to the society, as the same time to increase their deposit and competition with the public banks. And also The 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.

Key Words: Commercial Banks, Deposit, Ethiopia

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List of Acronyms and Abbreviations

AAIR:	Average Annual Inflation Rate
ADIR:	Average Deposit Interest Rate
AIB:	Awash International Bank
AML:	Anti Money Laundry
ATM:	Automated Teller Machine
ARDL:	Auto Regressive Distributive Lag
BOA:	Bank of Abyssinia
CBE:	Commercial Bank of Ethiopia
CFT:	Counter Financial Terrorism
CLRM:	Classical Liner Regression Model
CSA:	Central Statistics Agency
DB:	Dashen Bank
DEPO:	Deposit
ECM:	Error Correction Methodology
EVIEWS8:	Econometric Views Software Version 8
ETB:	Ethiopian Birr
FDRE:	Federal Democratic Republic of Ethiopia
FIC:	Financial Intelligence Center
GDP:	Gross Domestic Product
GTP I:	Growth Transformation Plan 1

GTP II:	Growth Transformation Plan 2
IMF:	International Monetary Fund
LTDR:	Loan to Deposit Ratio
M2:	Money Supply
MOFED:	Ministry of Finance and Economic Cooperation
MYPOP:	Mid Year Population Number
NBE:	National Bank of Ethiopia, the Central Bank of the Country
NIB:	Nib International Bank
NOBRA:	Number of Branch
POS:	Point Of Sale
RGDP:	Real Gross Domestic Product
UB:	United Bank
USD:	United States Dollar
VAR:	Vector Auto Regression
VECM:	Vector Error Correction Model
WEB:	Wegagen Bank

Chapter One: Introduction

1.1. Background of The Study

The role of banks in a financial market is that of a financial intermediary, which makes use of loan and deposit services to effectively channel the idle funds of the general public into valuable production and other investment projects helping people to reach their goals. It enables people to save for the future, invest in profitable business opportunities and to protect themselves against unpredictable shocks.

Richard et al. (2014) stated financial system is a function as an intermediary and facilitates the flow of funds from the areas of surplus to the areas of deficit. In other words, a financial system is a system that aims at establishing and providing a regular, smooth, effective and efficient linkage between depositors and investors. Economic growth and development of any country depends upon the strength of its financial system. Thus, a financial system can be said to play a significant role in the economic growth of a country by mobilizing the surplus funds and utilizing them effectively for productive purposes.

Companies have two alternatives for financing their organization, i.e. debt and equity. The equity financing is used only by share companies. The debt financing required by the creditor is providing by the financial system like financial market and financial institutions. (Peter and Keith, 2007)

Financial institutions are organization that provides financial services for its clients, whose primary business and function is to collect money from the public and invest it in financial assets such as stocks and bonds, loans and mortgages, leases, and insurance policies. They can also business organizations that act as mobilizes and depositors of savings and as suppliers of credit or finance. Commercial Banks, Investment Banks, Insurance Companies and Brokerages are common example of financial institutions. (Peter and Keith, 2007)

One of financial institutions in the world that give financing services is commercial banks. Commercial banks are banks whose main functions are to accept deposits and to make loans, thereby facilitating the transfer of funds in the economy. Therefore, deposit provides most of the

raw materials for bank loans and thus represents the ultimate source of bank profits and growth. . (Peter and Keith, 2007)

Mobilization of commercial bank's deposit plays an important role in providing satisfactory service to different sectors of the economy. The success of the banking greatly lies on the deposit. Deposit is the chief source of funds to undertake lending operations and also for profitable operation, the amount of deposits is very important. Mobilization of deposits for a bank is as essential as oxygen for human being. (Richard, Dr. Florence and Dr. Zénon, 2015)

Currently according to CSA Ethiopia is the second most populated country in Africa with more than 90 Million people. The annual report of NBE 2014/15 shows the Ethiopian economy recorded 10.1 percent average growth rate per annum during the GTP period (2010/11-2014/15). The preparation and launch of the First Growth and Transformation Plan (GTP I) and Second Growth and Transformation plan (GTP II) marked a key point of departure on the road of Ethiopia's growth and transformation. Therefore, these things are a good opportunity for the commercial banks in Ethiopia.

According to National Planning Commission (2015), recently the government of Ethiopia has launched second growth and transformation plan (GTP II) (2015/16-2019/20). The overarching objective of the Second Growth and Transformation Plan (GTP II) is the realization of Ethiopia's vision of becoming a lower middle income country by 2025.

The above GTP II plans will not achieve without strong involvement of commercial banks. Therefore, first the commercial banks must mobilize resources in order to achieve the GTP II plan. Based on this reason we can expect how the feature years are strong for commercial banks.

According to NBE 2014/15 report at the end of 2014/15, domestic liquidity, as measured by broad money supply (M2), reached birr 371.2 billion reflecting a 24.7 percent annual growth out of 371.2 billion money supply. Out of the 371.2 billion broad money supply 60.5 billion is outside of banks. These shows that still the resources are not sufficiently mobilized.

Currently, in Ethiopia it is not a new thing to see the staff's of the banks' participating in deposit mobilization through door to door service to open accounts. This implies that how the commercial banks are highly needed the deposit because it is the question of survival. So in

order to survive or to increase their deposit first the commercial banks know the factors that affect the deposit and then implement strategies or techniques to mobilize various deposits. The essential for knowing such factors and to exert maximum effort on investigation of determinants of commercial banks deposit in Ethiopia were forces the study to undertake.

Thus the banking sector in Ethiopia must increase their deposits by overcoming the existing challenges; hence they need to know the factors that determine deposit. This study was look at the broad set of possible determinants of commercial banks deposit in Ethiopia.

1.2. Statement of the Problem

One of the main objectives of financial institution is mobilizing resources and channeling these to investors. This intermediation role of financial institution takes different forms in different economic systems. Deposits play the most important role in any banking system, whether cooperative or commercial. Deposits provide limits to the working capital of the bank concerned. The higher the deposit, the higher will be the funds at the disposal of a bank to lend and earn profits.

The total investment expenditure at the final year of Ethiopian Growth and Transformation Plan II is expected to be worth 2.281 trillion birr. Out of the total expenditure 0.968 trillion birr will be for recurrent expenditure to be for capital expenditure. The financing plan is divided in to two as usually comprising the budgetary and non-budgetary sources. Based on the forecast of government's revenue and expenditure, internal revenue including foreign donation will cover 86 percent of the total GTP II expenditure over the course of the 5 year period. Meanwhile, the remaining 14 percent will be the deficit. Some 38.8 percent of the deficit will be covered by foreign loans while the remaining 62.2% through borrowing from internal sources (Ethiopian Reporter, 2015).

The Ethiopian government is expected to feature an 11 percent yearly economic growth in GTP II plan. Gross Inland Revenue is expected to account for 18.8 percent of the GDP, the share of domestic savings which currently stands at over 22% of the GDP will also growth to 29.6 percent. Since literatures suggest that deposits are necessary if investment, economic growth and development are to be stimulate. Hence the state banks are the main instruments that facilitate the mobilization effort of such deposits. As a result, the country banks are currently under

pressure to collect deposit on behalf of the government to finance the huge Growth and Transformation Plan II of the country. Therefore, factors influencing deposit, investment and growth need to be conducted efficiently; otherwise the targeted rate of growth in any economy, Ethiopia included, may not be achieved and sustainable in the long term. Therefore, the purpose of this paper is to look at the possible determinants of commercial banks deposit.

Evidence from prior studies indicated that various external and internal factors affect commercial bank deposits. However, the significance of each factor differs across continent, countries and time period. The study made by Erna & Ekki (2014) in Indonesia by using 11 years' time series data, Mohammed & Mansur (2014) in Malaysia by using 7 years panel data and Giragn (2015) in Ethiopia using 13 years panel data indicated that GDP has not significant influence on the volume of commercial bank deposits. While, Mohammed (2014) in Bahrain using 20 years time series data and Shemsu (2015) in Ethiopia using 17 years time series data revealed that GDP has positive influence on the volume of commercial bank deposit. Moreover, the study made by Ngula (2012) in Ghana by using 31 years time series data, Prema-chandra and Kunal (2001) in India by using 44 years times series data, Shemsu (2015) in Ethiopia using 17 years time series data, Wubitu (2012) in Ethiopia using 12 years time series data and Giragn (2015) using 13 years panel data, researches showed that inflation has significant effect on the deposits of commercial bank. However, Hussein & Ali (2014) in Iran using 10 years panel data and Orji (2012) in Nigeria using 37 years time series data showed that inflation has a negative influence on the commercial bank deposits. O. Kororpecky (1989) found that awareness of the society was positive influence on the commercial bank deposit. While, the study made by Vasquez (1986) was found a negative influence of society awareness on commercial bank deposit. Shemsu (2015) and Wubitu (2012) in Ethiopia found that deposit rate was a significant influence on commercial bank deposits. On the other hand study made in the same country by Giragn (2015), Hibret (2015) using 40 years time series data and Bahredin (2016) using 15 years panel data showed that deposit rate has insignificant influence on the commercial bank deposits. These contradictory findings revealed that there is inconsistency among research findings on factors affecting deposit. Furthermore, most researchers were focused on the quantitative variables.

In Ethiopia as far as the knowledge of the researcher is concerned, there are very few researches related to determinants of commercial banks deposit, Wubitu (2012), Shemsu, (2015), and

Hibret, (2015), all conducted a study on determinants of commercial bank deposit of single Ethiopian government bank only, which is Commercial Bank of Ethiopia. All of the three researches are conducted only by taking one government bank but this research is quite different in its industry selection, type of data and incorporates the commercial bank deposit variable.

A single study corresponding with this research is that, the research conducted by Bahredin, (2016) on determinants of commercial bank's deposit growth in Ethiopia from year 2000 to 2014 using single research approach (multiple regression technique). Bahredin has used seven independent variables; bank branches, deposit interest rate, loan to deposit ratio, lagged bank deposit, money supply growth, inflation rate, per capital income growth and bank deposit growth as dependent variable. However, it couldn't assess the effect of number of population, regulation (AML and CFT) and social awareness on determinants of commercial bank deposits in Ethiopian. Hence, this research incorporates these three important variables.

As there is no comprehensive study on the various determining factors of deposit in the country, this study is filling the research gap by incorporating a more complete list of variable determining the factors that affect commercial banks deposit in Ethiopia.

1.3. Research Question

Base on the above statement of the problems the researcher develops the following research questions.

- What are the internal factors that influence deposit of Ethiopian commercial banks?
- What are the external factors that influence deposit of Ethiopian commercial banks?

1.4. Objective of the Study

1.4.1. General Objective

The main objective of the study is to examine the internal and external determinants of commercial banks deposit in Ethiopia.

1.4.2. Specific Objective

Specifically, the study is intended to address the following objectives;

For internal determinants of commercial banks deposit the study examines the effect of;

- i. Number of branch on Ethiopian commercial banks deposit.
- ii. Deposit interest rate on Ethiopian commercial banks deposit.
- iii. Loan to deposit ratio on Ethiopian commercial banks deposit.

For external determinants of commercial deposit;

- i. To examine the effect of inflation rate on Ethiopian commercial banks deposit.
- ii. To assess the effect of real GDP on Ethiopian commercial banks deposit.
- iii. To examine the effect of number of population on Ethiopian commercial banks deposit.
- iv. To examine the effect of regulation (AML and CFT) on Ethiopian commercial banks deposit.
- v. To describe the effect of social awareness on Ethiopian commercial banks deposit.

1.5. Research Hypotheses

The study was done based on the following research hypothesizes which were derived from the specific objectives and tested throughout the analysis of the study:

Hypothesis 1: *Number of Branch has a positive effect on deposits of Ethiopian commercial banks.*

Hypothesis 2: *Deposit interest rate has a positive effect on deposits of Ethiopian commercial banks.*

Hypothesis 3: *Loan to deposit ratio has a positive effect on deposits of Ethiopian commercial banks.*

Hypothesis 4: *Inflation rate has a negative effect on deposits of Ethiopian commercial banks.*

Hypothesis 5: *RGDP has a positive effect on deposits of Ethiopian commercial banks.*

Hypothesis 6: *Number of population has a positive effect on deposits of Ethiopian commercial banks.*

Hypothesis 7: *Regulation (AML and CFT) has an effect on deposits of Ethiopian commercial banks.*

Hypothesis 8: *Social awareness has effect on deposits of Ethiopian commercial banks.*

1.6. Significance of the Study

The research work on the title of determinants of commercial banks deposit is expected the following significances;

- The study may help commercial banks to manage their deposit by letting them know what affects it and which variable is the most important and also the banks to be alert to collect many deposits then take decision on loan disbursements.
- It may serves for further study in the sector and may help as additional input for concerned policy makers and future researchers.
- The study may add knowledge on the field of finance. The studies that are conducted on the factors affecting commercial banks deposit are rare; therefore the study may be an important reference material on the field of finance.

1.7. Scope of the Study

This study was delimited to:

- i. Internal and external factors affecting commercial banks deposit in Ethiopia.
- ii. The variable used were delimited to one dependent and eight independent variable i.e. the dependent variable was deposit and eight independent variable were number of branch, deposit interest rate, loan to deposit ratio, inflation rate, GDP, number of population, regulation (AML and CFT), and social awareness.
- iii. The area of this study was delimited to the only Ethiopian commercial banks for the period of 1999/2000-2014/2015.

- iv. The methodology which was used interview analysis for the primary type of data and; descriptive, correlation and panel least square regression analysis for secondary type of data.

1.8. Limitation of the Study

1. The study was used sixteen years (1999/00-2014/15) secondary data collected from sampled eight Ethiopian commercial banks. In addition, the study focuses on three internal and five external variables only.
2. When the interview was made to staffs, the study may be biased by the interviewees' responses.

1.9. Organization of the Study

This research paper is organized in five chapters. Chapter one provided the general introduction about the whole study. Chapter two described the review of related literatures. Chapter three provided detail description of the methodology. Chapter four is contained data presentation, analysis and interpretation. Finally, the last chapter is concluded the total work of the research and give relevant recommendations based on the findings.

Chapter Two: Literature Review

This chapter, literature on commercial banks deposit aspects was reviewed. The views of other authors and previous researches on deposit were discussed. The first sub part discussed about the theoretical framework so as to have greater understanding on aspects of deposit. The second sub part present review of empirical studies. The gaps in existing literature described in the third part.

2.1. Theoretical Review

In this chapter, theoretical have been reviewed. Potential theories that stated about commercial bank deposit and different factors which are believed to affect total deposit are briefly discussed. Besides, past studies that were empirically conducted on factors determining commercial bank deposit were also reviewed and explained with related to the theoretical concepts.

2.1.1. The Role of Banks in Financial System

Financial institutions play important role in the development process by transferring funds from surplus units to deficit units within the economy. The cost of their operations is very important to the efficiency of the financial intermediation process. Financial markets are allocated efficient when they channel surplus funds to the most productive and profitable uses. They further noted that if the intermediation costs of transferring funds from investors to users are low then, the markets are described as operationally efficient. Financial intermediation costs refer to the spread between the gross costs of borrowing and the net returns on lending. If the resource cost of information, travel, and time have relatively low variance or vary in a way unrelated to intermediation costs, the spread between gross borrowing costs and net lending returns vary with the transaction costs of financial intermediaries (O.B.Oyewole, 1994).

According to Christopher (1995), one country economies require well-developed financial systems to function properly. Properly articulated financial systems contain at least three elements, corresponding to their broad functions within the economies:

1. A payments system which allows the transfer of assets and commodities, and the discharge of debts to proceed smoothly. The system has to allow for the non-synchronization of receipts and

expenditures, and hence for various forms of trade and consumer credit and it must utilize money forms which are easily recognizable and widely acceptable. Modern systems need institutions which will furnish these services to households, merchants, and producers. Banks and central banks have to develop efficient clearing systems.

2. Financial intermediation is another essential element of an economy. Intermediaries provide several interrelated services important for an economic development: they match the preferences of ultimate borrowers (usually enterprises) with ultimate lenders (usually household savers) with respect to time, liquidity, and amounts by pooling funds and lending them out, thus reducing the search and information costs of transferring funds from savers to borrowers as well as the risk to savers. Indirect, intermediated finance increases the efficiency of the flow of funds and reduces the cost of external funds to the borrowers while raising the effective risk-adjusted rate of return to lenders and ultimate savers. As a consequence, financial constraints on economic growth are relaxed and both savings and investment are encouraged. Equally important, one class of financial intermediaries ("banks") can create credit-money when they lend, given the requisite institutional arrangements (fractional reserve banking), which loosens the linkages between saving and investment: savings are not the effective constraint on investment finance in modern capitalist economies with well-developed systems of financial intermediation since the net creation of new bank money by loans represents a source of loan-able funds independent of the current savings flow. The flow of finance for investment is then constrained by the ability and willingness of banks (and to a lesser extent, other financial intermediaries) to extend credit, both of which can be influenced by central bank policy with the proper institutional set.

3. A third essential element is a system of financial markets in which all classes of financial intermediaries (bank and nonbank) as well as ultimate borrowers and lenders can participate in issuing, redeeming, and secondary trading of financial assets. Money markets for short-term securities like bills of exchange, government treasury bills, and commercial paper allow nonbank financing of revenue shortfalls and provide access to interest-bearing liquid financial assets for surplus economic units. Since the actors in these markets compete with banks as both sources and uses of funds, they increase the efficiency of financial systems, and also enhance the liquidity of all financial institutions since banks as well as other units can sell short-term assets for cash if they need to meet cash demands. Another useful attribute of such markets is that they

provide a way for central banks to adjust the liquidity of the banking system through open market operations.

4. Modern financial systems also include a fourth element: a set of regulatory institutions a "central bank" in the broad use of the term. Which are seen as necessary for the stability and efficient operation of the financial sector within the larger economy. Central banks were originally created in most countries to assist the state in its finances, but their responsibilities have increased in scope and complexity over time and time. Most observers argue that modern central banks should not assist governments directly in financing deficits, and in fact most no longer do. Central bankers and most monetary economists argue that the primary responsibility for central banks should be the conduct of monetary policy, independent of fiscal policy, with an emphasis on the need to constrain inflationary pressures and keep real interest rates positive (although the emphasis on constraining inflation is not universally accepted, some economists give equal importance to constraining speculation and promoting growth), and that central banks should be independent of their governments and free to conduct policy.

A related responsibility is providing liquidity to commercial banks and other types of depository institutions, and very importantly, being willing and able to function as a lender of last resort for individual banks and the system as a whole; although various arrangements can meet these requirements, most modern central banks use open market operations (which require well-organized markets for suitable securities such as treasury bills), discount window lending, or some combination of the two. In addition, central banks in most countries have assumed responsibility for overall financial market stability, as well as for the stability of the payments system.

A third obvious responsibility is to operate a regulatory system which will encourage sound and prudent operation of intermediaries and develop public confidence; financial intermediaries and their customers need a safety net, due to the peculiarities of this industry. Such a system requires some type of deposit insurance, constraints over asset and liability compositions of the intermediaries (including reserve and capital requirements), and a monitoring system. The important principle to emphasize in the design of the central bank/regulatory system is the necessity to implement institutional constraints which will promote and ensure equity and

impartiality in access to funds, as well as stability, efficiency, and confidence in the financial system.

Intermediation is the main macroeconomic function of commercial banks. Commercial banks are financial intermediaries because of their intermediation role. Intermediation is defined as the process of mediation through institutions and instrument, between primary savers and lenders and ultimate borrowers. It is the process of collecting savings by financial institutions and their channeling of the savings to investors. At the rudimental level of financial development, where savers are users of their own funds, capital formation can take place without generating financial assets at a very limited extent thereby limiting very seriously the rate of economic development. But with the development of borrowing in the stage of financial development, decisions to save and invest became separated. Thus the mechanism to bridge this dichotomy becomes essential. This mechanism can take two forms: (i) the creation of financial liabilities on primary securities whereby funds of the surplus economic units are transferred to deficit economic units. This is the direct channeling of funds of surplus spending units to deficit spending units (ii). Indirect financial claims consisting of demand and savings deposits via the commercial banks or other financial intermediaries from where funds of the surplus economic units are made available to those wanting to spend on real capital investment(Cletus, 1984).

Commercial banks through their intermediation role between savers and investors affect the volume as well as mobilization of savings, by providing the market with the diversification of instruments that will meet the precise liquidity needs of savers and at the same time making financial resources available to the investors over a relatively long period in accord with their needs. Since they operate with larger portfolios than individuals, commercial banks are less exposed to the effects of default or variation in income or capital value. These advantages they pass on to their depositors so that the liabilities they issue, deposits are less risky than the individual loans or investments the banks hold in their asset portfolios (Cletus, 1984).

2.1.2. Commercial Bank Deposit

Deposits are foundations upon which banks thrive and grow. They are unique items on a bank's balance sheet that distinguish them from other types of business organizations. The ability of a bank's management and staff to attract checking and savings accounts from business and individuals is an important measure of the bank's acceptance by the public. Deposits provide most of the raw materials for bank loans and thus represent the ultimate source of bank profits and growth (Mahindra, 2005). Important indicators of management effectiveness in any bank are whether or not deposited funds have been raised at the lowest possible cost and whether enough deposits are available to fund those loans the bank wishes to make. This last point highlights the two key issues that every bank must deal with in managing its deposits: (i) where can the bank raise funds at the lowest possible cost, (ii) how can management ensure that the bank always has enough deposits to support the volume of loans and other financial services demanded by the public.

There are three types of deposits, namely saving, demand deposit and term or fixed time deposits accounts services. All these deposit accounts are provided by all the commercial banks of the Ethiopia. Although the forms of the three deposits and how they are being opened and used differ, they are all installed to mobilize deposits to the banks. The definitions of the three deposit typas are mentioned as follows.

➤ Saving Accounts

A savings bank account is means for the people of the lower and middle classes who wish to save a part of their current incomes to meet their future needs and also intend to earn an income from their savings. The banks therefore impose certain restrictions on the savings bank account and also offer a reasonable rate of interest; the need of keeping cash reserves against such deposits is comparatively larger than the fixed deposits but smaller as against the current deposits because of the restrictions on the number of the restrictions on the number of withdrawals.

➤ Demand or Current Accounts

A Current Account is a running and active account, which may be operated upon any number of times during a working day usually through use of cheques. There is no restriction on the number

and the amount of withdrawals from a current account. Current accounts suit the requirements of big businessman, joint stock companies, institutions, public authorities and public corporation, etc., whose banking transactions happen to be countable on every working day.

➤ Time or Term Deposit Accounts

In this category are included the deposits with the bank for a fixed period which is specified at the time of making the deposit. Such deposits are, therefore, called Fixed Deposits or Term Deposits. A Fixed Deposit is repayable on the expiry of a specified period, chosen by the depositor to suit his purpose and to enable him to get back the money as and when he needs it.

2.1.3. The Purpose of Commercial Bank Deposit

Banks are a part of the mechanism of capital formation, for they collect the savings of the community and place them in long-term investments. In the exercise of this function, however, banks are not the only or major agency. Their chief and unique function is the creation of deposits through the extension of credit, either in the form of loans or of investments. This is the principal specific duty of banks from the economic point of view because deposits are the country's principal medium of exchange (E.A. Goldenweiser, 1938).

Financial intermediation basically involves deposit mobilization from the surplus units of an economy and channeling those funds as loans and advances to the deficit units of the economy thus, allowing for efficient allocation of financial resources in the financial system. For the banking sector to remain profitable, Obamuyi (2014) argues that banks must efficiently mobilize more deposits to enable them grant more loans and advances. This means that there exist an association between deposits mobilization and bank lending. Furthermore, the ability of banks to perform this function efficiently has implications for their profitability. The finance literature additionally provides another strand of argument in support of the view that countries with efficient financial systems grow faster, while inefficient financial systems stand the perils of bank failures and lags behind in economic growth and development. The authors further observe that the efficiency of a financial system is determined by the cost and speed with which deposits are mobilized and credit facilities extended to customers (Richard and Gladys, 2014).

A bank's success in finding depositors consequently plays a critical role in its ability to satisfy customer credit demands and perform other banking functions. Moreover, much of a bank's profitability is derived from gathering deposits at one set of interest rates and then lending or investing these funds at higher rates. These key roles that deposits play in overall bank performance have thus drawn much attention to bank funding practices and the ability of individual banks to maintain or expand their deposit base.

2.1.4. Factors Affecting Commercial Banks Deposit

Due to the importance of the banking system and effective macroeconomic situation in each country and banks have undeniable role in the economy of any country that you will make a dent in their role in the economy of any country will rise to crises; therefore, careful planning and management system for the banking sector in terms of liquidity and volume of bank deposits and check sources and their impact on the market share of banks is important. The main source of financing is the savings of the people in each community. The banking system is the main task of mobilizing resources. Banks hold excess funds collected and paid to the applicant's facility, its traditional task of mediation between depositors and borrowers play facilities. The activities of a bank's financial resources are very important; because success in this area can be a factor for success in other areas. Financial resources for each bank and banking system to external factors and internal factors are related. Therefore, the influence of these factors and each of them is essential to success in this field. An Important point is how well the system can efficiently and provides economic development in a country. (Bahmand and Bahmani, 2014 quoted in Hossein & Ali, 2014)

Therefore, financial intermediaries are able to increase savings and loans in the economy and, hence, may provide aggregate demand and also benefit from serving borrowers receive more money to depositors; they gain (Faraji, quoted in Hossein & Ali, 2014). Basically, the "nature of the intermediary banks, funds are being tried a larger proportion of their money market accounts. Briefly it can be said with respect to the first and strongest step to achieving profitability and increased activity in the granting facility, and a focus on attracting more funds to any bank, increasing its resources, especially the low-cost resources; therefore, when the banks will be able to continue to maintain its share of currencies basket percentage increase and the resultant why this is important (Jafapour and Fayazi, quoted in Hossein & Ali, 2014). In this study, the

researcher wants to study the factors affecting bank deposits in order to increase the relative share of Bank Sepah in Isfahan; therefore, main research question is whether the increase in the relative share of bank deposits of Isfahan Sepah Bank is effective? (Hossein & Ali, 2014)

These are factors that are from internal and external that can affect the growth of commercial banks deposits. These are discussed as follows:-

Financial technologies

In the banking sector innovations such as electronic money transfer terminals, Automatic Payment, Virtual Banking, Internet Banking moment, a great development in this sector have created and improve performance, efficiency, speed, communication, and reduce operating costs for banks, so banks to gain competitive advantage in the field of financial markets to raise new funds should make use of electronic banking and related technologies (Hossein & Ali, 2014).

Dogarawa (2005) quoted in Ahmadu Abubakar (2014) also revealed that electronic banking offer bank customers'' services at a much lower cost and empowers them with unprecedented freedom in choosing vendors for their financial service need. Maiyaki and Mokhtar (2010) quoted in Ahmadu Abubakar (2014) however, argued that availability of electronic banking facilities such as ATM, online operation and telephone banking do not have significant influence in customer''s decision to choose banks. This according to them could perhaps be explained by the fact that presently, almost all the players in the Nigerian banking sector do have electronic facilities.

Study made by Ahmadu, 2014 examined the effects of electronic banking on growth of deposit money banks in Nigeria. Specifically, the study investigated internet banking; mobile banking; total deposits and total asset of entire deposit money banks in Nigeria for the period 2006- 2012. A total deposit was regressed on internet and mobile banking while total asset was regressed on internet and mobile banking using multiple regression models. The study also revealed that there is significant relationship between mobile banking and total deposits, internet banking and total asset of deposit money banks in Nigeria. However, the study also revealed that there is no significant relationship between internet banking and total deposits, mobile banking and total asset of deposit money banks in Nigeria.

Variety of banking services:

Banks need to offer new services and new products; new marketing staffs recognize the diverse needs of their clients with innovative marketing possible. In modern banking, banks to identify customers and their needs into marketing himself based on the data, appropriate marketing strategies can be used with the scientific and the right product at the right time with the right tools to the customer offer (Hosseini & Ali, 2014).

Utility and indoor seating banks:

A good environment can affect the value of their employees and increase productivity is affected with the diversification of banking services, organization working to create a relaxed and productive environment in organizations, leading to activation of additional manpower, their freshness, reducing antidepressants, positive and ultimately achieve productivity growth in services is considered necessary. Place of banks and financial institutions are an important incentive in attracting customers. So banks to establish branches require careful scientific evaluation and feasibility of a bank's branches are located in distance of time and place, establishment of bank branches in key areas such as industrial estates, residential and commercial buildings and the establishment of branches in nearby public car parks are among the parameters that influence Depository bank customers. It concerns the new banking executives and senior managers of the bank. Banks and financial resources attract more customers to the appropriate workplace environment that includes indicators of physical, psychological and social, as well (Delaware, quoted in Hosseini & Ali, 2014).

Quality of banking services:

Quality services are services that can fulfill the needs and demands of customers. In banks and financial institutions on a variety of factors affect the quality of banking services, including interest rates, regulatory and complaints systems, accurate information to customers quickly and accurately service, politeness and courtesy in dealing with employees, customers, and privacy being confidants to the customer information, all employees are attracting more funds (Hosseini & Ali, 2014).

Customer Satisfaction:

Employees are the most important asset of any organization. The staffs are the bridge between the organization and the customer. Banks and financial institutions are also required fund s with the tools that most employees are getting from customers. There is a bank's survival depends on the customer's bank. If customers do not exist, no bank will be. But what is important is the impact of these characteristics on bank customers increasingly effective in attracting customers to the Bank. Individual characteristics such as appearance, good fit and tidy; According to customer reviews. Integrity, honesty, confidentiality, respect and humility are to be considered employees. In a summary of the most influential factors that were mentioned, including human resources, diversity of services, quality of service, satisfaction of customers, employees, subsidiaries and indoor seating equipment finance branches, Branches success to attract financing and bank financing is very important and effective role, so that each bank to give important factors In mobilization of resources the more successful the bank will be less due to the above factors (Delaware, quoted in Hossein & Ali, 2014).

Income and Growth:

Keynes (1936) quoted in Kalebe (2015) claims that consumption and hence savings are related to the current income. Keynes introduced a short -run consumption function that shows that as income increases people tend to save an increasing percentage of income (Branson, 1988 quoted in Kalebe (2015)). According to Fry (1980) both savings and investment are determined by the rate of economic growth. Jongwanich (2010) found out that increases in economic growth influence household and private saving rates positively (Kalebe M., 2015).

Terms of Trade:

According to Harberger- Laursen – Metzler (HLM) effect, temporary deterioration in the terms of trade is associated with a decline in saving and vice-versa. This is because households attempt to smooth their consumption following shocks in terms of trade. The effect of a permanent change in terms of trade on saving by households is ambiguous depending on whether or not the change was anticipated (Kalebe M., 2015)..

Economic Activities

Theoretically, economic activity may have both positive and negative impact on deposit. The positive impact indicates that with increasing level of economic growth, income of the economic agents increases which in turn increases transactional demand for money, hence causing a rise in currency in circulation, and vice versa. The negative impact implies that when income of the economic agents increases on the back of improvement in economic activity, currency deposit ratio declines as economic agents tend to save more than consume, which increases bank deposits. On the other hand, when income declines due to a slowdown in economic activity, the currency deposit ratio moves upward as economic agents utilize their savings to meet economic transactions, which increases currency in the system and declines deposits (G.H,Aqeel & Kalim, 2013).

Remittance Inflow

Remittance from Diasporas to families in home-country has become another significant determinant of household saving and domestic private savings (Prema-chandra & Kunal Sen, 2001). Remittance is part of the disposable income of recipient households, and as their combined income increases, saving is expected to do so. It is, however, alleged that remittance makes households rather loose in their spending and pressurize families to Western life-style. According to this pessimistic view, remittance is spent on conspicuous consumption, and unproductive investment when viewed in terms of the economy. On the optimistic side is that remittances allow poor households to invest on durable goods and human capital improving children's education and health, and should therefore be encouraged and facilitated (Shemsu, 2015).

Education

Education is also vital to increasing average household saving. Educational level of the household head is also another important determinant of household saving. From the paper made by Halefom, 2015, education is positively and significantly determined household saving. In order to see the impact of education on saving he is categorized in to four (illiterate, primary school, secondary school and university level). Therefore, being illiterate (EDUL1) and household saving are negatively and significantly related. But, as the level of education increases

household saving also increases. Thus, EDUL3 (secondary school) and EDUL4 (tertiary school) positively and significantly determine household saving.

Profitability (measured by the return on equity, ROE, and the net interest margin)

Similarly, higher bank profits would tend to signal increased bank soundness, which could make it easier for these banks to attract deposits (Herald and Heiko, 2009).

Size of the bank

A smaller bank has to generate less deposit in absolute terms to achieve the same deposit growth than a large bank, thus possibly favoring smaller banks in achieving higher deposit growth. But a larger bank with economies of scale as well as larger branch network might be able to better attracts deposits, so a priori, the sign of the coefficient is not certain. (Herald and Heiko, 2009)

Degree of financial intermediation (peroxide by the loans-to-assets ratio)

A higher degree of intermediation may signal a bank's success in generating income as well as a need for it to attract more deposits to support its increased lending activities. (Herald and Heiko, 2009)

Liquidity buffers (measured by the ratio of liquid assets to deposits)

Higher liquidity buffers tend to signal greater bank soundness, which could be a factor favoring deposit demand (Herald and Heiko, 2009)

2.2. Empirical Review

Under this section, previous empirical studies on the determinants of commercial banks deposit and related studies in different continent in the world will be reviewed. The literature suggests that there are a number of factors that crucially determine the commercial banks deposits. The significance of each factor, however, differs across group of countries, countries, and time period. These will help to see where the literature on this area is and how this study will add to the existing literature.

2.2.1. Related Empirical Evidence on Worldwide Base

This following study was made by Erna and Ekki (2004) in Indonesia. The aim of this study was to figure out the factors affecting mudaraba deposits in Indonesia using a well known econometrics cointegration method. It uses quarterly time series in the period of 1993 – 2003. Four variables, GDP, number of Islamic bank's branch offices, profit sharing rate, and interest rate are thought to have influence on the volume of mudaraba deposits. The cointegration test indicates that the number of Islamic bank's branch offices and profit sharing rate are significantly affects the volume of mudaraba deposits in Indonesia in the long run, while GDP and interest rate are not.

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

An empirical study made by Hossein and Ali (2014), on Isfahan Sepah Bank in Iran with the aim of effective factors on the absorption of bank deposits in order to increase the relative share of Isfahan Sepah Bank. The purpose of this research was applied and in terms of research methods, the branch of the field is descriptive survey. Data collection and statistical was 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 has been used. The research population was consisted of Sepah Bank deposits in the province during the period 1379 to 1389. Independent variables of volume of high powered money, inflation, interest rate, rate of exchange, electronic banking index, GDP growth and stock index was used by the researchers. The results were indicating that the effect of e-banking parameters like the relative contribution of POS and ATM on bank deposits is positive and significant. The effect of variable

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

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

The study made by Dr Mohamed (2014) in Bahrain aimed at investigating the effect of Real Gross Domestic Product (GDP), interest rate, and inflation rate on national saving rate in kingdom of Bahrain over the last twenty years. The study adopts Augmented Dickey-Fuller unit root test and cointegration test to examine the long run relationship between the variables under

study. The dependent variable was the national savings rate while the independent variables were real GDP, nominal interest rate and inflation. The findings indicate that the Real GDP growth rate has positive effect on national saving in the short run and significant at 5% level in the long run. Nominal interest rate has positive and significant effect on national saving rate at 1% level on the short run; however, its effect in the long run appears to be positive but insignificant, while the inflation rate (as a measure of macroeconomic uncertainty) has positive and significant effect on national saving rate in both the short run and the long run.

The paper made by Mohammed and Mansur (2014) in Malaysia attempted to investigate the impact of selected macroeconomic variables on the level of deposits in the Islamic banking system. The data used was the month in the period January 2007 to December 2013. They apply „Auto Regressive Distributive Lag“ model which has taken care of a major limitation of the conventional cointegrating tests in that they suffer from pretest biases. Based on above rigorous methodology, they try to measure both long and short run relationships among the dependent variable (total saving deposit of Islamic banks in Malaysia) and dependent variables (GDP, inflation and Kuala Lumpur composite Index). By applying ARDL techniques, we find that the determinants such as Inflation has strong impact on deposits of Islamic banking system while other macroeconomic variables GDP and Kuala Lumpur composite Index do not have significant impact.

2.2.2. Related Empirical Evidence in Africa

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

An empirical study made by Eric, Yao & Victor (2015), on commercial banks in a developing country Ghana with the aim of examines the effect of interest rate liberalization on bank deposits

in a developing country Ghana. The study used secondary data on deposits, interest rates and inflation based on the consumer price index (year-on-year) obtained from Bank of Ghana (BOG) and Ghana Statistical Service website (GSS) respectively. The analysis covers adjusted quarterly data from periods 1991 to 2012 to be seasonal. Research papers from the International Monetary Fund (IMF) publications, the World Bank publications and other scholarly peer re-viewed journals were also considered. 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 data were input into a spreadsheet and exported into Econometric View 7 which was used for processing the data.

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

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

shown that exchange rate, inflation rate and money supply (M2) significantly affect the mobilization of financial savings (deposit) in Ghana. Deposit interest rate however, proved to be a weak determinant of bank deposit mobilization. This is because of the lack of confidence that people had in the banking system.

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

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

The study investigated by Pael and Omosefe (2014) in Nigeria was the effect of interest rates on customer savings behavior in the Nigerian banking sector using times series data for the period of 1989 to 2012 a period of twenty three years. After identifying a host of factors that are likely

to influence customer confidence in commercial banks such as average income, commercial lending, legal rights strength, central bank monetary policy and total annual commercial bank losses, using quantile regression estimation method, a non parametric estimation process that is based on the premise that the sample median will tend to that of the distribution and addresses issues of heteroscedasticity errors and data stringency associated with the data used in the study under question. The bank deposit was dependent variable while interest rate, income, legal rights strength, bank lending, losses and money supply was independent variables. They found interest rates were having a positive effect on customer savings; income was also affecting customer's savings, other factors such as bank lending was exerting a negative effect on bank deposits and money supply also exerted a strong effect on customer savings. Since the impact of money supply on bank deposits were not robust and exerting no significant effect on savings and bank lending was found not to be commensurate with the current level of savings.

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

2.2.3. Related Empirical Evidence in Ethiopia

The study made by Halefom (2015) examines the factors contributing for low rate of saving: the case of Gedeo zone Ethiopia. The study employed both descriptive and econometric method of data analysis. He employed censored regression model that is the Tobit model to investigate the main determinants of household saving in Gedeo zone. The determinants or the variables used by the researcher were sex, age, location, education, and income. Accordingly, he was found that income, education, gender (being female), availability of financial institutions such as Banks and

Microfinance institutions positively and significantly affects household saving. However, people in the early age and saving are negatively and significantly related. The study also found that other determinants of household saving like location of the household head (Households reside in the rural area) and household size negatively and significantly affects household saving. That is, households reside in the urban area save more than households reside in the rural area and as household size increase household saving changes in the opposite direction.

Giragn (2015) explored the theoretical as well as empirical analysis of those factors having an impact on deposit volume in commercial banks in Ethiopia and even assesses which ones are more significant or less significant. To do the practical investigation in terms of commercial banks in Ethiopia, the researcher collected the relevant data from annual reports of twelve years (2001/2-2012/13) and from questionnaires and interviews made to senior bank officers of seven banks. The banks included in the survey were Commercial Bank of Ethiopia, Awash International Bank, Dashen Bank, Bank of Abyssinia, Nib International Bank, Wegagen Bank and United Bank. The data was analyzed through the econometric analysis using SPSS software. The study reveals that the branch expansion, the money supply, the exchange rate of Birr to USD and general inflation are the most significant factors of deposit mobilization activity. The other variables deposit rate and real per capita GDP growth rate have insignificant power to influence the dependent variable. In this research, as opposed to the conventional economic theory, the deposit rate was found to have negative relation against the deposit volume for the period under study. The study also exposed that the deposit mobilization activity was becoming challenging, its associated costs are escalating and the competition was also becoming stiff-the outcome of the competition favoring the big size state banks. Beyond that the government policies were also favoring the latter in an effort to mobilize huge fund for a national development activities. The research recommended that banks have to do much in branch expansion studying potential deposit areas.

Shemsu (2015) 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. The rationale of using such a mixed approach was to gather data that could not be obtained by adopting a single method. Regarding to the qualitative data; questionnaire was used to gather information from the employees of commercial bank of Ethiopia particularly

for those employees who actively participated in deposit mobilization tasks in CBE city branches. Regarding to the secondary data; time series data covering 1998 -2014 was analyzed. First, the time series data were assessed using descriptive statistics for the variables as well as the test for heteroscedasticity, autocorrelation and normality testing to know if the assumptions of CLRM violated or not. Second, estimated model was a single regression equation with deposit as the dependent variable and explanatory variables as deposit interest rate, overall inflation rate, number of branch opening, gross domestic product, individual foreign remittance and dummy variable. Estimation 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 is highly significant than others. Individual remittances from diasporas was also next to branch opening was significantly affects CBE's deposit. The others were affects positively and can increase CBE's deposit.

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

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

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

The study by Bahredin (2016) aimed to find the determinants of commercial banks deposit growth in Ethiopia. In order to achieve this objective quantitative research approach has been used. 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 as at 2014, have purposively been selected for the study. The panel dataset for the study used secondary source consisted of annual data spanning from 2000 to 2014 gathered from the National Bank of Ethiopia time series database and commercial banks financial database. The dependent variable used to this study was bank deposit growth. Explanatory variables used in this study were inflation, deposit interest rate, loan to deposit ratio, bank branches, money supply growth, per capita income growth, and lagged bank deposit. Different diagnostic tests were conducted to check the appropriateness of the model. The random effects

technique had been 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 was positively and statistically significant on bank deposit growth; whereas, lagged bank deposit and loan to deposit ratio influence was negatively and statistically significant on bank deposit growth. Money supply growth had insignificant negative influence on bank deposit growth; whereas deposit interest rate and inflation had insignificant positive influence on bank deposit growth. The study implies that stimulation of economic growth; banks presence and financial intermediation were most important factors that affect bank deposit growth.

2.3. Literature Conclusion and Knowledge Gap

Evidence from prior studies, various external and internal factors has affect on commercial bank deposits. However, the significance of each factor differs across continent, countries and time period. The study made by Erna & Ekki (2014) in Indonesia, Mohammed & Mansur (2014) in Malaysia and Giragn (2015) in Ethiopia indicated that GDP has not significant influence on the volume of commercial bank deposits. While, Mohammed(2014) in Bahrain and Shemsu (2015) in Ethiopia revealed that GDP has positive influence on the volume of commercial bank deposit.

Moreover, the study made by Ngula (2012) in Ghana, Prema-chandra and Kunal (2001) in India, Shemsu (2015) in Ethiopia, Wubitu (2012) in Ethiopia and Giragn (2015) researches showed that inflation has significant effect on the deposits of commercial bank. However, Hussein & Ali (2014) in Iran and Orji (2012) in Nigeria showed that inflation has a negative influence on the commercial bank deposits. O. Kororpecky (1989) found that awareness of the society was positive influence on the commercial bank deposit. While, the study made by Vasquez (1986) was found a negative influence of society awareness on commercial bank deposit. Shemsu (2015) and Wubitu (2012) in Ethiopia found that deposit rate was a significant influence on commercial bank deposits. On the other hand study made in the same country by Giragn (2015), Hibret (2015) and Bahredin (2016) showed that deposit rate was insignificant influence on the commercial bank deposits.

These contradictory findings revealed that there is inconsistency among research findings on factors affecting deposit. Many literatures consider mainly quantitative factors other qualitative factors are not yet investigated well. As there is no comprehensive study that include various

determining factors of deposit in the country, this study is initiate to fill the research gaps by taking appropriate variables which can go with the condition and situation in Ethiopian banking industry role on deposit to come up with concrete result.

Chapter Three: Research Methodology

This chapter deals with research design and methodology used to carry out the research. The chapter is organized in nine sub sections .In its introduction part highlight the research paradigms. Then the chapter concisely presents research design, data and data source, population and sampling technique, variable selection, method of data analysis and presentation and model specification. The final two sub parts present diagnostic testing methods and measurement of study variables.

3.1. Research Method (Approach)

There are three main research paradigms; quantitative research method, qualitative research method and mixed approach Creswell, (2009). The quantitative research is objective in nature that involves analysis of numerical data by applying statistical tests. But the qualitative research is much more subjective in nature, concerned with understanding of applicable knowledge and can be generalized in understanding of the phenomenon (Collis and Hussey, 2003). The mixed approach is in which the researcher tends to base knowledge claims on pragmatic grounds and it employs strategies of inquiry that involve collecting data either concurrently or sequentially to best understand research problem Creswell, (2009).

The aim in this study is to measure the responsiveness of commercial banks deposits to the internal and external factor elements. The study collected numeric data of variables from NBE, CSA, and MOFED of sixteen consecutive years from eight Ethiopian commercial banks. And also the study collected the non numeric data of variable from the personal interview of responsible department sampled staff's. The study followed mixed approach; a quantitative approach method used so as to analyze those external and internal factors, which have determined by numerical data that appear to affect the commercial bank deposits, EViews 8 statistical software and panel least square regression method has used to analyze the data. And also the study followed qualitative data for the determinants of commercial banks deposit variables, which has not determined in numerical computation.

3.2. Research Design

The main objective of the study as pointed out in chapter one is to investigating the internal and external determinants of commercial banks deposit in Ethiopia. To achieve the objective explanatory type of research design with both quantitative and qualitative approach method is employed. The explanatory type of research design helps to identify and evaluate the causal relationships between the different variables under consideration (Creswell, 2009). So that, in this study the explanatory research design is employ to examine the relationship of the dependent and independent variables. The rationale of using such a mixed approach in this is; some of the qualitative data for some variables in this study are not be described and manipulated numerically, that is why the study applied mixed research approach.

3.3. Population and Sampling Technique

The study population/participants are all commercial banks in Ethiopia including private as well as public that exist in the fiscal year 2014/15. According to NBE (2014/15) annual report, there are two public commercial banks (Commercial Bank of Ethiopia (CBE) and Construction and Business Bank (CBB) and sixteen private commercial banks (Awash International Bank S.C (AIB), Bank of Abyssinia S.C (BOA), Dashen Bank S.C (DB), Wegagen Bank S.C (WB), United Bank S.C (UB), Nib International Bank S.C (NIB), Cooperative Bank of Oromia S.C (CBO), Lion International Bank S.C (LIB), Oromia International Bank S.C (OIB), Buna International Bank S.C (BUIB), Zemen Bank S.C (ZB), Abay Bank S.C(AB), Berhan International Bank S.C (BIB), Addis International Bank(ADIB), Debub Global Bank S.C (DGB) and Enat Bank S.C(EB)) in the year 2014/15. Based on Federal Negarit Gazeta of the FDRE (2008), Excluding the specialized Development Bank of Ethiopia (DBE) and National Bank of Ethiopia (NBE) from the population because they have not fulfill the criteria of proclamation number 591/2008 article 55(1) of the National Bank of Ethiopia to be commercial banking business.

To make inference about the population a large sample size is important. Hence, out of the currently operational eighteen commercial banks in Ethiopia the study select eight commercial banks. The sampled commercial banks existence in both macro and micro environmental change of the country is the basic sample selection criteria. For instance some of commercial banks

started operation recently like Cooperative Bank of Oromia S.C (CBO) in the year 2005, Lion International Bank S.C (LIB) in the year 2006, Oromia International Bank S.C (OIB) in the year 2008, Buna International Bank S.C (BUIB) in the year 2009, Zemen Bank S.C (ZB) in the year 2009, Abay Bank S.C(AB) in the year 2010, Berhan International Bank S.C (BIB) in the year 2010, Addis International Bank(ADIB) in the year 2011, Debub Global Bank S.C (DGB) in the year 2012 and Enat Bank S.C(EB) in the year 2013.

Hence, the researcher selected eight commercial banks based on the under listed criteria;

1. Ownership:- both public and private commercial banks are included as they are expected to collect deposit,
2. Operation period:- only commercial banks who have fully served for more than the past sixteen years in the banking industry,
3. Representativeness to the population: the sampled commercial banks represent 90% of the industry total deposit. Which means the study sampled commercial banks of Ethiopia were represent 90 percent of the study dependent variable.

Table 3.1 Representation of the Sampled Commercial Banks

In Millions of Birr for deposit			
Name of The Bank	Establishment Date	Amount of deposit @June 30,2015	Representation of total Industry Deposit
CBE	1963	244,456.33	90% of the Industry
CBB	1983	5,411.91	
AIB	1994	18,520.42	
BOA	1996	11,118.17	
DB	1996	19,814.11	
WB	1997	9,870.94	
UB	1998	11,804.36	
NIB	1999	9,774.11	
CBO	2005	7,367.89	10% of the Industry
LIB	2006	4,457.00	
OIB	2008	7,290.00	
BUIB	2009	3,501.04	
ZB	2009	3,823.26	
AB	2010	3,623.81	
BIB	2010	3,067.90	
ADIB	2011	1,109.60	
DGB	2012	819.34	
EB	2013	1,565.22	
Total Amount of Deposit in the Industry		367,395.40	

Source: NBE

Therefore, commercial banks fitting the above selection criteria's are as follows;

1. Commercial Bank of Ethiopia
2. Construction and Business Bank
3. Awash International Bank S.C
4. Bank of Abyssinia S.C
5. Dashen Bank S.C
6. Wegagen Bank S.C
7. United Bank S.C
8. Nib International Bank S.C

For the all quantitative variable analysis the study used all the sample commercial banks secondary data. For the qualitative variable, the study used interview question for the responsible department sampled employees of sampled commercial banks. The sampling technique that is used under this qualitative analysis is non random purposive or judgmental sampling. In this type of sampling, items for the samples are selected deliberately; the researcher choice concerning the items remains supreme. In other words, under purposive or judgmental sampling the organizers of the inquiry purposively choose the particular units of the universe for constituting a sample on the basis that the small mass that they so select out of a huge one will be typical or representative of the whole (C.R. Kothari, 2004). This enables to select samples which will suitable to achieve the study objective.

Hence, for the analysis of qualitative variable (social awareness), semi structured personal interview was made to the sampled marketing department employees. This department was purposively selected by the study because the department has full responsible for creating awareness about its bank to the society. All the sampled commercial banks have 4 professional employees in their marketing department. The study randomly selected two employees from the marketing department of each sampled commercial banks. Therefore, $2 \times 8 = 16$ employees out of 32 marketing department employees were interviewed. This means 50% their response is express the effect of variable (social awareness) on commercial banks deposit.

Hence, for the analysis of qualitative variable (regulation of AML and CFT), semi structure personal interview was made to the sampled risk and compliance department employees. This

department was purposively selected by the study because the department have responsible to collect information, investigate cases of money laundry and financing terrorism, ensure compliance and reporting to FIC. All the sampled commercial banks have 3 employees in their risk and compliance department. The study randomly selected two employees from the risk and compliance department of each sampled commercial banks. Therefore, $2 \times 8 = 16$ employees out of 24 risk and compliance department employees were interviewed. This means 66.67% of their response is express the effect of variable (regulation of AML and CFT) on commercial banks deposit.

3.4. Data and Data Sources

The types of data used in this study are quantitative and qualitative. For the quantitative data type in nature it can be best fit to the panel data analysis. The Panel data involves the pooling of observations on a cross section of units over several time periods and provides results that are simply not detectable in pure cross sections or pure time series studies Brooks, (2008). In addition Hsiao, (2003) described panel or a longitudinal data set is one that follows a given sample of individuals over time, and thus provides multiple observations on each individual in the sample.

Brooks (2008), states that, panel date set has two major advantages; first, it can address a broader range of issue and tackle more complex problem than pure time series or pure cross sectional data alone and by structuring the model in appropriate way, the researcher can remove the impact of certain forms of omitted variable bias in the regression result. Second, it is often examined how the relationships between variables change. Hence, by combining cross-sectional data and time series data, the researcher can increase the number of degree of freedom, and thus the power of test, by employing information on the dynamic behavior of a large number of entities at same time.

To comply with the research objectives, the researcher is focus on both primary and secondary data. The study was got the secondary data for the numerical expressed variables from the annual reports of the regulatory body of the banks in Ethiopia i.e. the National Bank of Ethiopia (NBE), the reports of the Central Statistical Authority, Ministry of Finance and Economic Development and from others that are as secondary data sources from the eight commercial banks of Ethiopia

for the period of sixteen years (1999/00-2014/15) The expected total number of observation is 128 (8*16).

The study was got primary data for the non numerical expressed variables from semi structured personal interview. Semi structured interview means that there is a set of predetermined questions and the interviewer is allowed much greater freedom to ask, in case of need, supplementary questions or at times he may omit certain questions if the situation so requires. According to C.R. Kothari 2004 in case of descriptive studies, we quite often use the technique of semi structured interview because of its being more economical, providing a safe basis for generalization and requiring relatively lesser skill on the part of the interviewer.

The personal interview responses from the responsible departments of the sampled commercial banks were also included as primary data source for qualitative variable determinant of commercial banks deposit aspects.

3.5. Variable Selection

Different studies classified factors that affect commercial bank deposit in different. For example the study made by Bruce & George (1965) classifies the factors in to structural factors and economic factors whereas the study by Harald & Heiko (2009) divides the factors as macroeconomic and bank specific factors. Another study by Hilde Vink (2010) categorizes the in to factors related to the market which called market related factors and factors related to the bank which called bank related factors. Yet again other study by Olga & Rim (2013) divides the factors in to 3 subcategories bank specific factors, internal factors (factors related to the economy of the country of the bank), external factors(factors related to the countries of non-resident deposits). And finally the study made by N. Desinga (1975) groups the factors in to exogenous and endogenous factors.

This study is categorized the variables that affect the commercial bank deposit in to two, namely internal and external variables. The internal factors are those factors that are manipulated and controlled by the Ethiopian commercial banks themselves where as the external factors are factors operating beyond the control of banks. The internal factor variables for this study are included number of branch, deposit interest rate, and loan to deposit ratio. Whereas the external factor variables are inflation rate, RGDP, population number, social awareness and, anti-money

laundry (AML) and countering financing terrorism (CFT) regulations. Some of the factors had both the internal and external nature in which case the researcher is categorized those factors based on subjective judgment as to where they put in the Ethiopian context.

Though many factors can be raised under this category that have influence on deposit of commercial banks as illustrated in the literature review part, but the researcher is focused on the following major internal and external factors for analysis.

3.5.1. Internal Factors

Number of Branch (NOBRA)

Banking is primarily a service industry. Consequently, a major factor influencing decisions of whether to hold commercial bank deposits is convenience of bank office. It is argued that population growth and shifts necessitate corresponding growth and shifts in banking offices if banks are to both continue servicing their old customers and attract new ones. New bank offices are believed to increase total deposits in an area by capturing some funds which otherwise would have either been placed in banks outside the area or escaped the banking system altogether. Other things being equal, deposit growth may be expected to be positively associated with increases in the number of banking offices.

More recently the branch expansion by the existing banks is fast increasing to reach out distant locations in order to snatch or mobilize the resources available particularly deposits. This practice shows that branch expansion has positive and significant relation with deposit volume. The studies made by Giragn(2015) in Ethiopia, Shemsu(2015) in Ethiopia, Wubitu(2012) in Ethiopia, Erna & Ekki(2004) in Indonesia and Nathanael(2014) in Nigeria shows that the number of branches available has positive and significant effect on commercial bank deposit.

Hypothesis 1: Number of Branch has a positive effect on deposits of Ethiopian commercial banks.

Deposit Interest Rate (ADIR)

The higher the rate of interest, the more money will be saved, since at higher interest rates people will be more willing to forgo present consumption. Low interest rates on savings forced

depositors to take their money out of banks and seek out Higher-yielding investments. In other word when the rate is too high, it damages the margin of the bank. However, when the rate is too low, customers will take their saving money somewhere else and volume will decline.

The study made by Paul, Daniel and Deborah(2013) interest rate were affecting customer bank saving (bank deposits) in the Nigeria banking sector in a positive manner and driving up saving deposits in banks. And another study made by Nathanael (2014) concluded that interest rate is positively and significantly influence bank deposits in Nigeria. And again another study by Bruce and George (1965) revealed that deposits are related positively to changes the rate of interest paid. Hence, the deposit rate and deposit volume at banks have a positive relationship.

Hypothesis 2: Deposit interest rate has a positive effect on deposits of Ethiopian commercial banks.

Loan to Deposit Ratio (LTDR)

The formula for the loan to deposit ratio is exactly as its name implies, total loans divided by total deposits. The loan to deposit ratio is used to calculate a lending institution's ability to cover withdrawals made its customers. A lending institution that accepts deposit must have a certain measure of liquidity to maintain its normal daily operations. Loans given to its customers are mostly not considered liquid meaning that they are investments over a longer period of time. Although a bank will keep a certain level of mandatory reserves, they may also choose to keep a percentage of their non-lending investing in short term securities to ensure that any monies deeded can be accessed in the short term loan-deposit ratio, known as the LTDR, is a ratio between the banks total loans and total deposits.

If the ratio is lower than 1, the bank relied on its own deposits to make loans to its customers, without any outside borrowing. If, on the other hand, the ratio is greater than 1, the bank borrowed money which it reloaded at higher rates, rather than relying entirely on its own deposits. Banks may not be earning an optimal return if the ratio is too low. If the ratio is too high, the banks might not have enough liquidity to cover any unforeseen funding requirements or economic crises. But the overall amount of deposit of the banks can be increased due to high loan money disbursed to the customers. That means high amount of money is in the hands of the people.

According to Vong et al. (2009) study findings exhibits a positive relationship between loan to deposit ratio and deposit. Further Abreu and Mends (2002), found that there is a positive and significant relationship between the ratio of the LDR and bank profits indirectly to bank deposit. And another study by Bahredin (2016) Loan to deposit ratio also has a significant negative impact on commercial bank deposits growth.

Hypothesis 3: Loan to deposit ratio has a positive effect on deposits of Ethiopian commercial banks.

3.5.2. External Factors

Inflation Rate (AAIR)

Inflation is the general increase in prices and corresponding fall in value of money. There are several causes for inflation. It might be a result of having too much money injected in the market either by the government through a purchase of bonds, or from the commercial banks issuing loans. Another cause may be a considerable increase in the aggregate demand for money in the market, while the aggregate supply is lagging. Moreover, there are situations when the firm faces an increase in input costs (such as raw material, wages, utility etc.) and this is passed on to the customer by increasing output prices (Samer Jabr, 2016).

In the standard life-cycle model the only impact of inflation on savings is through its role in determining real returns to savings (the real interest rate). This postulate is based on the implicit assumptions of inflation neutrality (the absence of money illusion) in saving behavior and the absence of the real balance effect of inflation. There are, however, good reasons for doubting the validity of these assumptions. First, inflation brings about uncertainty in future income streams and can thus lead to higher saving on precautionary grounds. This may be particularly true for households in developing countries whose income prospects are much more uncertain than their counterparts in developed countries. Second, inflation could influence savings through its impact on real wealth. If consumers attempt to maintain a target level of wealth or liquid assets relative to income, savings will rise with inflation (Dr. Mohamed, 2014). On the other hand, high level of inflation discourages people from saving their money with the banks. This implies that the bank deposit will decrease.

During inflation, central banks employ monetary policy that would increase the cost of debt and decrease the availability of funds in banks. When the cost of borrowing increases and borrowing slows, the banks demand for fund decreases obviously the deposits will decrease. Hence, the direction of the relation between inflation and deposit volume is situational.

Different studies show that there is a varying results regarding the relationship between inflation and deposit. For example, the studies made by Hossein & Ali (2014) and Orji (2012) showed that inflation rate has a negative influence on the volume of deposit. Whereas, the studies made by Ngula (2012), Prema-chandra and Kunal (2001), Mohammed(2014), Bahredin (2016), Shemsu (2015), Wubitu (2012) and Giragn (2015) revealed that inflation rate has a positive influence on the growth of deposit.

Hypothesis 4: Inflation rate has a negative effect on deposits of Ethiopian commercial banks.

Real Gross Domestic Product (RGDP)

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 RGDP 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.

Different studies show varying results regarding the directional relationship between GDP and deposit volumes. For instance, GDP is found to have insignificant relation with deposit in a study made in Malaysia by Mohammad & Mansur (2014) and made in Ethiopia by Giragn

(2015) whereas, another study in Bahrain by Mohammed(2014) and in Nigeria by Orji (2012) has shown the reverse direction.

Hypothesis 5: RGDP has a positive effect on deposits of Ethiopian commercial banks.

Midyear Population Number (MYPOP)

According to Hibret (2015) population growth would mean an increase in functional labor force that would attract investment and create wealth which would positively affect overall economic growth. As a result deposit will grow because of the more number of populations tend to have more number of income generator and also a more number of saver.

The result of Hibret (2015) revealed that Population growth had positive and significant impact on deposit. And also this is supported by the study of Modigliani (1986).

Hypothesis 6: Number of population has a positive effect on deposits of Ethiopian commercial banks.

Anti-Money Laundry and Financing Terrorism Regulations

The integrity of the banking and financial services marketplace depends heavily on the perception that it functions within a framework of high legal, professional, and ethical standards. A reputation for integrity is one of the most valuable assets of a financial institution. If funds from criminal activity can be easily processed through a particular institution either because its employees or directors have been bribed or because the institution ignores the criminal nature of such funds the institution could be drawn into active complicity with criminals and become part of the criminal network itself. Evidence of such complicity will have a damaging effect on the attitudes of other financial intermediaries, and of regulatory authorities, as well as ordinary customers (Asian Development Bank, 2003).

As for the potential negative macroeconomic consequences of unchecked money laundering, the International Monetary Fund (IMF) has cited inexplicable changes in money demand, prudential risks to bank soundness, contamination effects on legal financial transactions, and increased volatility of international capital flows and exchange rates due to unanticipated cross-border asset transfers (Asian Development Bank, 2003).

It is critically important that governments include all relevant voices in developing a national anti-money laundering program. They should, for example, bring law enforcement and financial regulatory authorities together with the private sector to enable financial institutions to play a role in dealing with the problem.

Money laundering and the financing of terrorism as it not only threaten security, but also compromise the stability, transparency, soundness and efficiency of the financial system; the effort to combat money laundering and the financing of terrorism is being undertaken internationally and since Ethiopia is part thereof; it has become imperative to legislate special law to have an effective implementation of the provisions of the Criminal Code criminalizing money laundering as an offence.

In accordance proclamation no 657/2009 with Article 55 sub article (1) of the Constitution of the Federal Democratic Republic of Ethiopia cited as the “Prevention and Suppression of Money Laundering and the Financing of Terrorism Proclamation No. 657/2009.” Some of the directives to be issued under sub-article (2) of this Article shall include customer’s identification and due diligence, foreign and local transfers, account monitoring, recording and reporting of cash transactions, and suspicious transaction reports. (Federal Negarit Gazeta of the FDRE, 2009)

Financial Intelligence Center has established by regulation issued by the Council of Ministers in order to collect information, investigate cases of money laundry and financing terrorism, ensure compliance and other (Federal Negarit Gazeta of FDRE, 2009). From these especially all Ethiopian financial institutions have a responsibility to report cash transaction and suspicious transactions. The cash transactions reports are transactions greater than 300,000.00 birr or equivalent 15,000.00 USD dollars are reported to FIC. These reports have impact on the depositors because every transaction of the depositor above three hundred thousand will report to FIC these lead to create question for the depositor to ask him/herself ” Is a problem to transact above the threshold”. Therefore, the threat, risk, consequences and other reasons will the depositor worry to deposit in bank in order to unanswered the question arise by themselves.

According to Michael E. et al (2006) regulations on bank activities tend to reduce performance of commercial banks and also Rosalind Rima (2013) there is an effect of anti-money laundering regulation implementation on the financial performance of commercial banks in Kenya.

Hypothesis 7: Regulation (AML and CFT) has an effect on deposits of Ethiopian commercial banks.

Awareness of Society

Some analysts like J. D. Von Pischke, 1978 and Mauri, 1983 argue that demand for deposits is influenced by education levels which, in turn, increase the awareness of people about banking services. Literacy or awareness of banking services is the least emphasized factor in the study of deposits. The available empirical evidence is inconclusive. Vasquez (1986) found a negative elasticity of deposits with respect to education in the Dominican Republic but O.Koropecky (1984) found a positive relationship in Bangladesh. As people become more knowledgeable about banking and banking services, they develop confidence in banking institutions and their employees and a sense of security in bank deposits. This is expected to increase demand for deposits.

Hypothesis 8: Social awareness has effect on deposits of Ethiopian commercial banks.

3.6. Method of Data Analysis and Presentation

To comply with the objective of this research, the paper is primarily based on quantitative research, which adopted an econometric model to identify and measure the factors influence commercial banks deposit. The researcher adopted multiple linear regression models to identify and measure possible factors that could affect the commercial banks deposit as measured by Deposit (DEPO). Furthermore, descriptive analysis, diagnostics test, the Pearson correlation matrix analysis, F-test and the regression analysis were conducted.

Regression is concerned with describing and evaluating the relationship between a given variable (usually called the dependent variable) and one or more other variables (usually known as the independent variables) (Brooks, 2008).

Descriptive statistics including minimum, mean, maximum and standard deviation is used to describe and provide detailed information about selected variables; diagnostics tests of CLRM assumptions including Multicollinearity, Heteroscedasticity and autocorrelation tests were conducted to ensure safe application of least square method; this study also conducted correlation analysis, specifically Pearson correlation to measure the degree of association between the variables under considerations; F-test is used to test more than one coefficient

simultaneously different from zero and to check the significance level of all explanatory variables in this research models; and panel data regression analysis (panel least square method) is used to examine the relationship between dependent and independent variables in order to conclude based on the collected data about the influential determinants of commercial bank deposits in Ethiopian; the P-value was used to determine the significance of the constant term and the coefficients terms for the regressions. The importance of each of the regressions was determined by carrying out the F-test at 95% confidence level. The coefficient of determination R^2 was used to measure the strength to which independent variables explain the variations in the dependent variables.

The data collected for the study has the dimension of both time series and cross sections. Therefore, panel data regression technique is used to conduct the analysis and EViews 8 statistical software has employed.

On the other hand the paper is secondly based on qualitative data, which is from the interview question, was also described and summarized. The researcher was summarized the information gained through interview questions responded from the bank staffs in the manner that gives the necessary information.

3.7. Model Specification

The nature of data used in this study enabled to use panel data model which is deemed to have advantages over cross sectional and time series data methodology. Panel data involves the pooling of observations on the cross-sectional over several time periods. As Brooks (2008) stated the advantages of using panel data set; first and perhaps most importantly, it can address a broader range of issues and tackle more complex problems with panel data than would be possible with pure time-series or pure cross-sectional data alone. Second, it is often of interest to examine how variables, or the relationships between them, change dynamically (over time). To do this using pure time-series data would often require a long run of data simply to get a sufficient number of observations to be able to conduct any meaningful hypothesis tests. But 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 that may arise if time series are modeled individually. Third, by structuring the model in an appropriate way, we can remove the impact of certain forms of omitted variables bias in regression results.

According to Brooks, (2008), the general multivariate regression model with K independent variables can be written as follows:-

$$Y_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \dots + \beta_k X_{ki} + \varepsilon_i \quad (i = 1, 2, 3, \dots, n)$$

Where Y_i is the i^{th} observation of the dependent variable, $X_{1i}, \dots, X_{ki}$ are the i^{th} observation of the independent variables, $\beta_0, \dots, \beta_k$ are the regression coefficients, ε_i is the i^{th} observation of the stochastic error term, and n is the number of observations. Hence, the determinant of deposits (DEPO) can be modeled as described below:-

$$\begin{aligned} \text{DEPO}_{it} = & \beta_0 + \beta_1(\text{NOBRA})_{it} + \beta_2(\text{ADIR})_{it} + \beta_3(\text{LTDR})_{it} + \beta_4(\text{AAIR})_{it} + \beta_5(\text{RGDP})_{it} \\ & + \beta_6(\text{MYPOP})_{it} + \varepsilon_{it} \end{aligned}$$

Where;

- β_0 is an intercept,
- $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$, and β_6 , represent estimated coefficient for specific bank i at time t ,
- NOBRA it : Number of branch for bank i at time t ,
- ADIR it : Average deposit interest rate for bank i at time t ,
- LTDR it : The ratio of total loans to total deposit for bank i at time t ,
- AAIR it : Annual average inflation rate for bank i at time t ,
- RGDP it : real gross domestic product for bank i at time t ,
- MYPOP it : Midyear population number for banks i at time t ,
- t : Time (1999/2000-2014/2015).
- ε_{it} : Represents error terms for intentionally/unintentionally omitted or added variables. It has the characteristics of zero mean, constant variance and non- auto correlated.

3.8. Diagnostic Testing Methods

Every estimator of the model should have to meet the Ordinary Least Squares (OLS) assumptions before the estimation is carried out. If the estimators of the model satisfy the OLS

assumptions it is possible to say the estimators are blue (best linear unbiased estimator) (Brooks, 2008). The econometric estimation technique that was used in this study is ordinary least square (OLS). According to Brooks, 2008 there are five assumptions made in relation to the classical linear regression model (CLRM). The researcher was test the model if there are violations of these assumptions. The method that was used to test these assumptions by the researcher is described as follows:-

The average value of the error is zero

This assumption states that the average value of the error is zero. For no intercept the regression line is forced through the origin. This assumption is not violated if the regression line does not intercept through the origin. This assumption is violated if the model does not have constant term since the line intercepts.

Assumption of Homoscedasticity

The variance of the errors should be constant, this assumption known that homoscedasticity assumption. If the errors do not have a constant variance, they are said to be heteroscedasticity. It would be concluded that there is significant evidence of heteroscedasticity, so that it would not be plausible to assume that the variance of the errors is constant. The researcher was used Breush Pagan Godfrey test (BPG) or white test to test homoscedasticity.

The Assumption of Autocorrelation

The covariance between the error terms overtime (or cross-sectional for that type of data) is zero. In other word 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 auto correlated or they are serially correlated. The researcher was used Breusch Godfrey Serial Correlation LM Test to test correlation.

The Independent Variables are Non Stochastic

OLS estimator is consistent and unbiased in the presence of stochastic regressors, provided that the regressors are not correlated with the error term of the estimation equation. However, if one

or more of the explanatory variables is contemporaneously correlated with the disturbance term, the OLS estimator will not even be consistent. The regressors (independent variables) are not correlated with error term of the estimation equation is the assumption that is violated if the constant term does not exist.

The Assumption of Disturbances' are Normally Distributed

Linearity defines the dependent variable as a linear function of the predictors or the independent variables. The mean values of the outcome variable for each increment of the predictor(s) lie along a straight line. If we model a non-linear relationship using a linear model then this obviously limits the generality of the findings. The researcher was used Bera Jarque(BJ) normality test for testing non normality.

Test of Multicollinearity

When using the OLS estimation method is that the explanatory variables are not correlated with one another. If there is no relationship between the explanatory variables they would be said to orthogonal to one another. If the explanatory variables were orthogonal to one another adding or removing a variable from regression equation would not cause the values of the coefficients on the other variables to change. Therefore, there should be no any perfect linear relationship between two or more of the explanatory variables. So, the explanatory variables should not correlate too highly. If there is perfect collinearity between explanatory"s it becomes impossible to obtain unique estimates of the regression coefficients because there are an infinite number of combinations of coefficients that would work equally well.

3.9 Measurement of Study Variables

Table 3.2 Definition, notation, measurement and expected sign of the study variables.

	Variables	Notation	Measure	Expected Result
Dependent Variables	Deposit	DEPO	Natural logarithm of total deposit	
Independent Variables	Number of Branch	NOBRA	Number Of Branch At The End Of Year	+
	Deposit Interest Rate	ADIR	Average Deposit Interest Rate Of The Year	+
	Loan To Deposit Ratio	LTDR	Total Loans and Advances/ Total deposit	+
	Inflation Rate	AAIR	Average Annual Inflation Rate	-
	Real Gross Domestic Product	RGDP	Real GDP Growth Percent	+
	Number of Population	MYPOP	Natural Logarithmic Of Mid - Year Population Number	+
	Regulation (AML and CFT)	-	In Qualitative	Has effect
	Awareness of Society	-	In Qualitative	Has effect

Chapter Four: Data Analysis and Interpretation

This chapter deals with the results and analysis of the findings. The chapter contains four sections. The first section presents descriptive analysis on variables of the study; the second section; presents correlation analysis between dependent and independent variables; the third section; presents the result of the fulfillment of the classical linear regression model (CLRM) assumptions; the fourth section lays down the results of regression; the fifth section presents interpretation of the regression result; the sixth section; presents the analysis of qualitative data.

4.1. Descriptive Analysis

Table 4.1 provides a summary of the descriptive statistics of the dependent and independent variables for eight commercial banks from the year 1999/2000 to 2014/2015 with a total of 128 observations. The table shows the mean, minimum, maximum, standard deviation and number of observations for the dependent variable deposit (DEPO) and independent variables number of branch (NOBRA), average deposit interest rate (ADIR), loan to deposit ratio (LTDR), annual average inflation rate (AAIR), real gross domestic product (RGDP) and midyear population number (MYPOP).

Table 4.1 Descriptive Statistics

	Mean	Median	Maximum	Minimum	Std. Dev.	Observations
DEPO	9.5279	9.5650	11.3800	7.6800	0.6794	128
NOBRA	1.6748	1.6200	2.9900	0.7800	0.4393	128
ADIR	0.0419	0.0400	0.0600	0.0300	0.0108	128
LTDR	0.6717	0.6250	1.2100	0.1000	0.2287	128
AAIR	0.1159	0.0810	0.3640	(0.1060)	0.1181	128
RGDP	9.0537	10.2550	13.5300	(2.1000)	4.0361	128
MYPOP	7.8669	7.8700	7.9500	7.7800	0.0544	128

Source: EViews Out Put

Table 4.1 shows the average indicators of variables computed from the financial statements,

NBE annual report, Central Statistics Agency report, Ministry of Finance Trade and the standard deviation that shows how much dispersion exists from the average value. According to Brooks, (2008), a low standard deviation indicates that the data point tend to be very close to the mean, whereas high standard deviation indicates that the data point are spread out over a large range of values.

As shown in the table 4.1 above, the logarithm of commercial bank deposit was used for regression and its minimum and maximum value was 7.68 and 11.38 respectively and also a mean of 9.52. It can be noticed that the commercial bank deposit fluctuates between 7.68 and 11.38. This means, commercial banks were achieved on average 9.52 from deposit for the period of 1999/2000-2014/2015. The standard deviation among banks in terms of bank deposit was 67.9 percent; this confirms that there were high variations of deposit among commercial banks during the study period. The reason of this variation of deposit may attribute to high amount of deposit collected by Commercial Bank of Ethiopia compared to other commercial banks.

The mean value of logged number of branch was 1.67; the standard deviation was 43.93 percent, while the maximum and minimum was 2.99 and 0.78. As shown in the result, there were medium differences among banks regarding branch expansion. This implies that the effort of all banks to expand branching network was approximately the same. But from NBE report the government banks have 41.92% from the industry branch. This implies that the private banks have still in a difficult situation regarding to competition of public banks of Ethiopia. Over all from the data the branch opening competition leading to high growth of deposit and high single bank branch to the number of people.

The average value of Ethiopian commercial banks interest rate was 4.19% with the standard deviation of 1.08%. This implies that on average, Ethiopian commercial banks pay interest of 4.19 birr per year for deposit of 100 birr. This result indicates that on average all Ethiopian commercial banks interest rate was the same with low growth rate to deposit. The maximum interest rate was 6% and the minimum interest rate was 3%. Therefore, there was no competition between commercial banks to attract the customers with a motive of return on deposit under the study period.

The mean value loan to deposit ratio was 67.17% with the maximum and minimum of 121% and

10%. This implies that on average 67.17% of the Ethiopian commercial banks deposit is converted to loan and also the maximum 121% and minimum 10% shown that some banks was given high amount of loan over their deposit and some commercial banks was given small amount of loan compare to their deposit. There was low dispersion of LTDR towards its mean value among banks that is shown by the standard deviation of 22.87%.

Inflation rate measures the variability of the price level in the economy. The average general inflation rate was 11.59% of the country over the past sixteen years. The maximum inflation was 36.4% and the minimum was -10.6%. The rate of inflation was less dispersed over the periods under study towards its mean with standard deviation of 11.81%. This implies that inflation rate in Ethiopia during the study period remains somewhat unstable.

GDP measures the economic growth of the country. The annual GDP of the country ranges from a minimum of -2.1% to a maximum of 13.53%. The mean value of GDP was 9.05% with 4% up and down. The mean value of 9.05% GDP indicates the average real economic growth of the country. Also the standard deviation was 4 times varied; this implies that economic growth in Ethiopia during the period of 1999/2000 to 2014/2015 remains unstable.

The mean value of log midyear population included in this study is 7.8669. The minimum and maximum value of log midyear population is 7.7800 and 7.9550 respectively. Furthermore, log midyear population of Ethiopia shows volatility of 5.44% ups and downs. This implies that the growth of population in Ethiopia during the period of 1999/2000 to 2014/2015 remains stable.

4.2. Correlation Analysis

Table 4.2 Correlation Matrix

	DEPO	NOBRA	ADIR	LTDR	AAIR	RGDP	MYPOP
DEPO	1.00000						
NOBRA	0.96905	1.00000					
ADIR	0.11819	0.19767	1.00000				
LTDR	-0.24500	-0.33351	-0.01953	1.00000			
AAIR	0.31124	0.24466	0.05355	-0.24048	1.00000		
RGDP	0.36716	0.30184	0.06646	-0.19959	0.31762	1.00000	
MYPOP	0.70463	0.68610	0.22505	-0.31516	0.43682	0.50855	1.00000

Source: EViews Out Put

Table 4.2, shows the correlation between the explanatory variable and deposit in this study. As noted in Brooks (2008), Correlation between two variables measures the degree of linear

association between them. To find the association of the independent variables with the leverage, Pearson product moment of correlation coefficient was used. Values of the correlation coefficient are always ranged between positive one and negative one. A correlation coefficient of positive one indicates that a perfect positive association between the two variables; while a correlation coefficient of negative one indicates that a perfect negative association between the two variables. A correlation coefficient of zero, on the other hand, indicates that there is no linear relationship between the two variables. The correlation matrix in Table 4.2 shows that deposit (dependent variable) was positively correlated with number of branch, average deposit interest rate, average annual inflation rate, real gross domestic product RGDP and midyear population. Which indicates that firm with higher deposit have high; number of branch, average deposit interest rate, average annual inflation rate, real gross domestic product RGDP and midyear population. However, only loan to deposit ratio have negative correlation with deposit.

As recalled from the chapter three, there are six research hypotheses that postulate the relationship between the dependent variable of commercial banks deposit and the independent variables. The research hypothesis predicts that there is a positive correlation between commercial bank deposit and; number of branch, deposit interest rate, loan to deposit ratio, real gross domestic product and number of population. At the same time the hypothesis anticipates a negative relationship with the rest variables i.e. inflation rate.

In line with the research hypothesis, the correlation matrix in Table 4.2 produced statistical evidence that commercial banks deposit is positively correlated with number of branch, deposit interest rate, real gross domestic product and number of population with correlation coefficient of 0.969, 0.118, 0.3671, and 0.7046 respectively. Also in contrary to the research hypothesis, the result of the correlation matrix in Table 4.2 above indicates that loan to deposit ratio is negative and inflation rate is positive correlation with commercial banks deposit with a coefficient of -0.245 and 0.3112 respectively.

In general, even though the correlation analysis shows the direction and degree of associations between variables, it does not allow the study to make cause and effect inferences regarding the relationship between the identified variables. Thus, in examining the effects of selected independent variables on commercial banks deposit, the econometric regression analysis which

is discussed in the forthcoming section of the paper gives assurance to overcome the shortcomings of correlation analysis.

4.3. Testing Assumptions of Classical Linear Regression Model (CLRM)

In this study as mentioned in chapter three diagnostic tests were carried out to ensure that the data fits the basic assumptions of classical linear regression model. Consequently, the results for the model assumptions test are presented as follows:

❖ **Test for average value of the error term is zero ($E(u_t)=0$)**

According to Brooks (2008), if a constant term is included in the regression equation, this assumption will never be violated. Thus, since the regression model used in this study included a constant term, this assumption is not violated.

❖ **Test for Homoscedasticity assumption ($Var(u_t)=\sigma^2<\infty$)**

The condition of classic linear regression model implies that there should be homoscedasticity between variables. This means that the variance should be constant and same. Variance of residuals should be constant otherwise, the condition for existence of regression, homoscedasticity, would be violated and the data would be heteroscedasticity Brooks, (2008). To check for this, Breusch-Pagan-Godfrey test were applied. The Breusch-pagan tests of the null hypothesis that the error variances are all equal versus the alternative that the error variance are a multiplicative function of one or more variables.

Hence, following the general null hypothesis of Breusch-pagan tests, the study develops the following hypothesis to check the presence of heteroscedasticity:

- H_0 : homoscedasticity
- H_1 : heteroscedasticity

Table 4.3 Heteroscedasticity Test: Breusch-Pagan-Godfrey

Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	1.309167	Prob. F(6,121)	0.2582
Obs*R-squared	7.802882	Prob. Chi-Square(6)	0.2529
Scaled explained SS	4.652238	Prob. Chi-Square(6)	0.5891

Source: EViews Out Put

Both F-statistic and chi-square (χ^2) tests statistic were used. As can be presented in the above Heteroscedasticity test both the F - and χ^2 -test statistics give the same conclusion that there is no significant evidence for the presence of Heteroscedasticity. Since the p -values in all of the cases were above 0.05, the null hypothesis of homoscedasticity is failed to reject at 5 percent of significant level. This implying that there is no significant evidence for the presence of heteroscedasticity in these research models. Generally, in all of the regression models used in this study it was proved that the variance of the error term is constant or homoscedasticity.

❖ Test for absence of autocorrelation assumption ($\text{cov}(u_i, u_j) = 0$ for $i \neq j$)

Another basic assumption of regression model says that the covariance between error terms should be zero. This means that error term should be random and it should not exhibit any kind of pattern. If there exists covariance between the residuals and it is non-zero, this phenomenon is called autocorrelation Brooks, (2008).

The Breusch–Godfrey serial correlation LM test was run. Breusch–Godfrey tests area 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. Following the general null hypothesis of Breusch–Godfrey serial correlation LM test, the study develops the following hypothesis to check the absence of autocorrelation:

$H_0 = \text{No autocorrelations errors}$

$H_1 = \text{Autocorrelations errors}$

Table 4.4 Breusch-Godfrey Serial Correlation LM Test:

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.851376	Prob. F(2,118)	0.4294
Obs*R-squared	1.806553	Prob. Chi-Square(2)	0.4052

Source: EViews Out Put

As can be seen in the above table 4.4, F test result and the P value of F-statistic is 0.4294 which is way beyond the significance level of 5%. Hence, the null hypothesis of no autocorrelation is failed to reject at 5 percent of significant level. This implying that there is no significant evidence for the presence of autocorrelation in this model. The Chi-Square P-value of the model also supports the absence of autocorrelation. Therefore, can be concluded that, the covariance between residuals is zero, data is normal and absence of autocorrelation problem was found conclusively from the LM test.

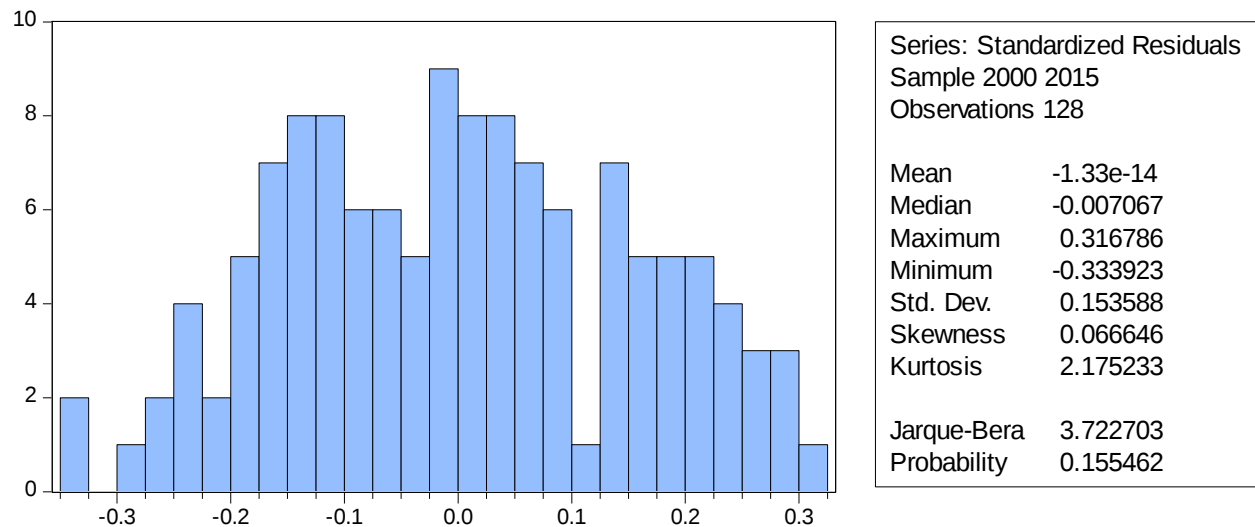
❖ Test for Normality assumption ($U_t \sim N(0, \sigma^2)$)

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

H0 = Normally Distributed

H1 = Not normally Distributed

Figure 4.1 Normality Test



Source: EViews Out Put

As shown in the above Histogram, kurtosis approaches to 3 (i.e. 2.175233) and the Jarque-Bera Statistics was not significant even at 10% level of significance as per the P-values shown in the histogram (i.e. 0.155462). Hence, the null hypothesis of normally distributed is failed to reject at 5 percent of significant level. This implying that there is no significant evidence for the presence of not normality distribution in this model. The Jarque Bera P-value of the model also supports the absence of non normality. Therefore, can be concluded that, the data is normal distributed.

❖ Test for Absence of Series Multicollinearity Assumption

This assumption is concerned with the relationship between explanatory variables. If an independent variable is an exact linear combination of the other independent variables, then we say the model suffers from perfect Collinearity, and it cannot be estimated by OLS (Brooks, 2008).

Multicollinearity indicates a linear relationship between explanatory variables which may cause the regression model biased (Gujarati, 2004). If an independent variable is an exact linear combination of the other independent variables, then we say the model suffers from perfect collinearity, and it cannot be estimated by OLS Brooks (2008). When independent variables are multicollinear, there is overlap or sharing of predictive power. This may lead to the paradoxical

effect, whereby the regression model fits the data well, but none of the explanatory variables (individually) has a significant impact in predicting the dependent variable Gujarati, (2004). According to Lewis-Beck, (1993) suggestion in order to find out the Multicollinearity problem, the bivariate correlations among the independent variables should be examined and the existence of correlation of about 0.8 or larger indicates a problem of Multicollinearity. Also, Cooper and Schendlar, (2003) suggested that a correlation above 0.8 should be corrected.

Table 4.5 Correlation Matrix of Explanatory Variables

	NOBRA	ADIR	LTDR	AAIR	RGDP	MYPOP
NOBRA	1.00000					
ADIR	0.19767	1.00000				
LTDR	0.33351	0.01953	1.00000			
AAIR	0.24466	0.05355	0.24048	1.00000		
RGDP	0.30184	0.06646	0.19959	0.31762	1.00000	
MYPOP	0.68610	0.22505	0.31516	0.43682	0.50855	1.00000

Source: EViews Out Put

The Pearson correlation, which varies between -1 and 1, if the p-value is 0, there is no linear correlation, and if the p-value is -1 or 1 we have a perfectly negative or positive relationship between the variables. According to Pallant (2005), the results in the above correlation matrix table 4.5 show that the highest correlation of 0.68610 which is between number of branch and population number. Since there is no correlation above 0.8 in this study according to Cooper and Schendlar (2003) and Lewis-Beck (1993), it can be concluded in this study that there is no problem of Multicollinearity, thus enhanced the reliability for regression analysis.

❖ Choosing Random effect (RE) Vs. fixed effect (FE) models

The results so far indicate that all CRLM assumptions are not violated, so the ordinary least square regression can be safely applied. However, since this study uses a panel data, there are two types of panel estimator approaches that can be employed, namely: fixed effects models (FEM) and random effects models (REM) Brooks, (2008).

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. 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 Brooks, (2008). To examine whether individual effects are fixed or random, a Hausman specification test was conducted providing evidence in favor of the REM model Baltagi (2005). The null hypothesis for this test is that unobservable heterogeneity term is not correlated or random effect model is appropriate, with the independent variables. If the null hypothesis is rejected then we employ Fixed Effects method. (Brooks, 2008)

The Hausman test hypothesis is

H0= Random effect model is appropriate

H1= Fixed effect model is appropriate

Table 4.6 Hausman Test

Correlated Random Effects - Hausman Test

Equation: EQ01

Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	0.000000	6	1.0000

Source: EViews Out Put

Table 4.6 above shows Hausman specification test, the P-value of a model is 1.00, which is more than 5% level of significance. Hence, the null hypothesis of the random effect model is appropriate is failed to reject at 5 percent of significant level. This implying that, random effect model is more appropriate than fixed effect model and gives more comfort that random effects model results are valid.

4.4. Regression Result

This section presents the regression result of random effect model that made to examine the determinants of deposit of commercial banks in Ethiopia. Accordingly, the regression result was made and coefficients of the variables were estimated via E-view version 8 software. As stated earlier in model selection part, random effect regression model is an appropriate model used in this study. Thus, in this study the model used to examine the determinants of commercial banks deposit in Ethiopia was:

$$\text{DEPO}_{it} = \beta_0 + \beta_1(\text{NOBRA})_{it} + \beta_2(\text{ADIR})_{it} + \beta_3(\text{LTDR})_{it} + \beta_4(\text{AAIR})_{it} + \beta_5(\text{RGDP})_{it} + \beta_6(\text{MYPOP})_{it} + \varepsilon_{it}$$

Where;

- β_0 is an intercept,
- $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$, and β_6 , represent estimated coefficient for specific bank i at time t ,
- NOBRA it : Number of branch for bank i at time t ,
- ADIR it : Average deposit interest rate for bank i at time t ,
- LTDR it : The ratio of total loans to total deposit for bank i at time t ,
- AAIR it : Annual average inflation rate for bank i at time t ,
- RGDP it : real gross domestic product for bank i at time t ,
- MYPOP it : Midyear population number for bank i at time t ,
- t : Time (1999/2000-2014/2015).
- ε_{it} : Represents error terms for intentionally/unintentionally omitted or added variables. It has the characteristics of zero mean, constant variance and non- auto correlated.

The coefficients of explanatory variable were estimated by the use of ordinary least square (OLS) technique. The regression result in Table 4.7 demonstrates both coefficients of explanatory variables and corresponding p-values.

Table 4.7 Random effects model regression results

Dependent Variable: DEPO
Method: Panel EGLS (Cross-section random effects)
Date: 12/29/16 Time: 03:29
Sample: 2000 2015
Periods included: 16
Cross-sections included: 8
Total panel (balanced) observations: 128
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-9.079858	3.384489	-2.682785	0.0083*
NOBRA	1.209309	0.069880	17.30543	0.0000*
ADIR	-4.960162	0.729542	-6.799004	0.0000*
LTDR	0.337087	0.037708	8.939482	0.0000*
AAIR	0.351332	0.073911	4.753446	0.0000*
RGDP	0.009191	0.002226	4.129012	0.0001*
MYPOP	2.089734	0.444820	4.697930	0.0000*
R-squared	0.971869	Mean dependent var	1.827168	
Adjusted R-squared	0.970474	S.D. dependent var	0.506754	
S.E. of regression	0.087076	Sum squared resid	0.917454	
F-statistic	696.7162	Durbin-Watson stat	1.622005	
Prob(F-statistic)	0.000000			

The starred coefficient estimates are significant at the 1 % (*)

Source: EViews out put

Thus, based on the result above Table 4.7, the following model was developed to examine the determinants of commercial banks deposit in this study.

$$\text{DEPO}_{it} = -9.07 + 1.21 \text{ NOBRA} - 4.96 \text{ ADIR} + 0.34 \text{ LTDR} + 0.35 \text{ AAIR} + 0.01 \text{ RGDP} \\ + 2.09 \text{ MYPOP} + \varepsilon_{it}$$

EViews regression output is divided into three panels. The top panel summarizes the input to the regression, the middle panel gives information about each regression coefficient, and the bottom panel provides summary statistics about the whole regression equation. The two most important numbers, “R-squared” (the one who answered how much percent of the variance in the dependent variable in the regression accounted for) and “S.E. of regression.” and the one that shows how far is the estimated standard deviation of the error term. Five other elements, “Sum squared residuals,” “Log likelihood,” “Akaike info criterion,” “Schwarz criterion,” and “Hannan-Quinn criter.” are used for making statistical comparisons between two different regressions. The

next two numbers, “Mean dependent var” and “S.D. dependent var,” report the sample mean and standard deviation of the left hand side variable Brooks, (2008).

“Adjusted R-squared” makes an adjustment to the plain-old to take account of the number of right hand side variables in the regression. Measures what fraction of the variation in the left hand side variable is explained by the regression. The adjusted, sometimes written, subtracts a small penalty for each additional variable added.

“F-statistic” and “Prob(F-statistic)” come as a pair and are used to test the hypothesis that none of the explanatory variables actually explain anything. Put more formally, the “*F*-statistic” computes the standard *F*-test of the joint hypothesis that all the coefficients, except the intercept, equal zero. “Prob (F-statistic)” displays the *p*-value corresponding to the reported *F*-statistic.

The final summary statistic is the “Durbin-Watson,” the classic test statistic for serial correlation. A Durbin-Watson close to 2.0 is consistent with no serial correlation, while a number closer to 0 means there probably is serial correlation Brooks, (2008). Hence, as concluded in the Hausman test (Table 4.6) above the fixed effects model is appropriate regression analysis to this study.

4.5. Interpretation on Regression Result

This section discusses in detail the analysis of the results for each explanatory variable and their importance in determining deposits in Ethiopian commercial banks. Furthermore, the discussion analyzes the statistical findings of the study in relation to the previous empirical evidences. Hence, the following discussions present the interpretation on the random effects model regression results and relationship between explanatory variables and deposit.

The estimation results reported in Table 4.7 also depicted that, The R-squared and Adjusted R-squared values of 0.971 and 0.970 respectively is an indication that the model is a good fit. This means more than 97% of variations in determinants of commercial banks deposit in Ethiopia were explained by independent variables included in the model. However, the remaining 13% changes in determinants of commercial banks deposit of Ethiopian are caused by other factors that are not included in the model. Furthermore, the F-statistic was 696.72 and the probability of not rejecting the null hypothesis that there is no statistically significant relationship existing between the dependent variable (DEPO) and the independent variables, is 0.000000 indicates

that the overall model is highly significant at 1% and that all the independent variables are jointly significant in causing variation in determinants of commercial banks deposit.

The panel random effect estimation regression result in the above table 4.7 shows that, coefficient intercept (α) is -9.079858. This means, when all explanatory variables took a value of zero, the average value DEPO would be take -9.079858 unit and statistically significant at 1% level of significance.

Number of Branch (NOBRA)

The results of fixed effect model in the above table 4.7 indicate that there is a positive and statistically significant impact of NOBRA on the level of commercial banks deposit. The result shows the effect of number of branch measured in terms of NOBRA on DEPO with a coefficient of 1.209 and a p-value of 0.00 at 1% significance level.

This implies that for one unit change in NOBRA, keeping the other things constant had resulted 1.20 unit changes on the level of DEPO in similar direction. A positive relationship could mean deposits in banks are necessarily guaranteed by increase in number of branch. Therefore, the researcher failed to reject the null hypothesis that number of branch has a positive effect on commercial banks deposit. This means, there is no sufficient evidence to support the negative relationship between commercial bank deposit and number of branch.

The relationship is positive as expected and this positive relationship between number of branch and commercial banks deposit could be attributed to the fact that the banks have more number of branches have more deposits. This finding is similar to the finding of (Hibret, 2015) in Ethiopia, Shemsu (2015) in Ethiopia, Wubitu (2012) in Ethiopia, Nathanael (2014) in Ghana, Giragn (2015) in Ghana and (Erna and Ekki, 2004) in Indonesia.

The possible reason for the significant positive relationship could be increase in number of branch will increase the accessibility of bank service therefore; the more banks accessible the more customers will increase and as the same time the deposit will increase. And also based on the NBE 2014/15 report the public banks have a branch of 41.92% out of the industry branches. This implies that the private banks have still a big challenge on computation of public banks.

Average Deposit Interest Rate (ADIR)

Table 4.7 also presented that, the coefficient of average deposit interest rate (ADIR) is -4.960 and its P-value is 0.0000. Holding other independent variables constant at their average value, when average deposit interest rate (ADIR) increased by one percent, deposit (DEPO) of sampled Ethiopian commercial banks would be decreased by 4.96 unit and statistically significant at 1% level of significant. Therefore, the researcher reject the null hypothesis that deposits interest rate has a positive impact on commercial banks deposit. The sign differs from the initial assumption. This means, there is no sufficient evidence to support the positive relationship between deposit interest rate and deposit.

It is surprising that the quantitative study reveals the deposit rate as having a negative relation with the deposit volume. Savings, according to classical economists, is a function of the rate of interest. The higher the rate of interest, the more money will be saved, since at higher interest rates people will be more willing to forgo present consumption. Studies results by Nathanael (2014), Oriji (2012) and Wubitu (2012) here in our country agree with the economic theory. However, practically the regression results in this research show the opposite relation. For this variable to put implication since there is no base to say so, it is better to let this variable for further research.

Loan to Deposit Ratio (LTDR)

As it presented Table 4.7 above, the coefficient of loan to deposit ratio (LTDR) measured by loan divided by deposit is 0.337087 and its P-value is 0.0000. Holding other independent variables constant at their average value, when loan to deposit ratio (LTDR) increased by one birr, deposit (DEPO) of sampled Ethiopian commercial banks would be increased by 33.70% and statistically significant at 1% level of significant. Therefore, the researcher failed to reject the null hypothesis that there is positive relationship between loan to deposit ratio and commercial bank deposit. This means, there is no sufficient evidence to support the negative relationship between loan to deposit ratio and commercial bank deposit.

As expected, the relationship between loan to deposit ratio and commercial bank deposit is positive. This implies that the more loans we have the more money is in the hands of the

customer this may be lead to increase in deposit. The result of the regression output is supported by the previous works of (Bahredin, 2016) in Ethiopia.

Average Annual Inflation Rate (AAIR)

The regression result of random effect model in the above table 4.7 is inconsistent with the hypothesis developed by the study. The study hypothesized that there is a negative association between Inflation and commercial banks deposit. Contrary to the hypothesis, the result shows the effect of inflation measured in terms of consumer price index on DEPO with a coefficient of 0.3513 and a p-value of 0.0000. This implies that for one unit change in AAIR, keeping the other things constant had resulted 0.3513 unit change on the level of DEPO in same direction. The positive coefficient of inflation indicates that there is direct relationship between AAIR and DEPO. The direct relationship implies that, at the time of high inflation, the commercial banks deposit is increased. The p –value of inflation show that inflation of banks was significant even at 1%of level of significance. This result indicates that the effect of inflation on the commercial banks deposit is higher.

Based on the result, we can reject the hypothesis or the data did not support the hypotheses and we can conclude that annual average inflation rate had positive and significant effect on DEPO of commercial banks. Therefore, positive significant effect of AAIR on the DEPO was also consistent with the finding of Ngula (2012) in Ghana, Prema-chandra and Kunal (2001) in India, Mohammed (2014) in Bahrain, Bahredin (2016) in Ethiopia, Shemsu (2015) in Ethiopia, Wubitu (2012) in Ethiopia and Giragn (2015) in Ethiopia. And also the result was contradictory with the finding of Hossein & Ali (2014) in Iran and Orji (2012) in Nigeria.

The positive sign contrary to the expected negative relationship between inflation and commercial banks deposit implies the theory of standard life cycle model inflation could influence savings through its impact on real wealth. If customers attempt to maintain a target level of wealth or liquid assets relative to income, they will increase their savings as the same time commercial banks deposit will raise with inflation.

Real Gross Domestic Product (RGDP)

The results of random effect model in Table 4.7 indicate that there is a positive and statistically significant impact of RGDP on the level of DEPO. The result shows the effect of economic growth measured in terms of RGDP on DEPO with a coefficient of 0.0091 and a p-value of 0.0001 at 1% significance level. This implies that for one unit change in RGDP, keeping the other things constant had resulted 0.0091 unit change on the level of DEPO in same direction. Thus the positive sign implies that in times of strong economic growth, commercial banks deposit is higher, because it increases the lifetime earnings of the people.

Based on the result, hypothesis is not rejected and we can also conclude that RGDP had positive and significant effect on commercial banks deposit. The finding is consistent with the previous empirical finding of Mohammed(2014) in Bahrain, Orji (2012) in Nigeria, Prema-chandra and Kunal (2001) in India, Mahendra (2005) in India, M. A. Baqui et al, (1987) in Bangladesh and Bahredin (2016) in Ethiopia. And the result was contradictory with the finding of Mohammad & Mansur (2014) in Malaysia, Giragn (2015) in Ethiopia and Shemsu (2015) in Ethiopia.

Mid Year Population Number (MYPOP)

The results of random effect model in the above table 4.7 indicate that there is a positive and statistically significant impact of MYPOP on the level of DEPO. The result shows the effect of MYPOP on DEPO with a coefficient of 2.08 and a p-value of 0.00 at 1% significance level. This implies that for one unit change in MYPOP, keeping the other things constant had resulted 2.08 unit changes on the level of DEPO in similar direction. This positive sign implies that the more number of population tend to have more number of income generator and also a more number of saver.

Based on the result, the hypothesis is not rejected and we can conclude that MYPOP had positive and significant effect on commercial banks deposit of Ethiopia. The finding was consistence with the previous empirical finding of Modigliani, (1986) and Hibret, (2015) in Ethiopia.

4.6 Analysis of Qualitative Data

Some of the variables in this study cannot be described and manipulated numerically. Based on this the study used personal interview to collect qualitative data about the variables of social

awareness and the regulation of AML and CFT on the commercial banks deposit. The interview was made to the employees of marketing department and risk & compliance department, who have direct relationship to the variables, of the sampled commercial banks of Ethiopia. Accordingly the data was collected from the interviews of 32 employees out of 32 sampled employees are analyzed as follows.

Social Awareness

From the interviewees response the commercial banks use advertising in different media, newspaper, banners (like interest free banking service is started), and by sponsoring events to create banking awareness for the society. According to the information gained from the interview, some of the commercial banks are recruitment sales persons to create awareness to the people how to use bank service and the importance of using it. The most banks had also extended their service by providing electronic cash to the customers (Automatic Teller Machine), mobile banking, internet banking and agent banking (like hello cash).

The awareness of the society about the banking service is affecting the total deposit of the commercial banks from the responses of the most interviewees . Based on the interviewer responses we can conclude that as people become more knowledgeable about banking and banking services in order to develop confidence in banking institutions, their employees, sense of security in bank deposits and this lead to the society to come its income to deposit in the commercial banks. So that the commercial banks deposit is increase gradually.

Based on the interview result, the hypothesis is not rejected and we can also conclude that social awareness had effect on commercial banks deposit of Ethiopia. The finding was consistence with the previous empirical finding of O.Koropeccky (1984).

AML and CFT Regulations

From the interviewer response most Ethiopian commercial banks are reported any cash transaction greater than 300,000.00 birr or equivalent 15,000.00 USD dollars and suspicious transactions. Based on the most interviewee response the reports to financial intelligence center affect most commercial banks deposit. Based on my understanding from the interviewee response that in Ethiopia most traders have not legal license so that these reports lead to create

question for the depositor to ask him/herself” Is a problem to transact above the threshold?” And also reference to interviewees the customer reason fearing the report was they pay tax to government based on the statement of their account. Therefore, the threat, risk, consequences and other reasons will the depositor worry to deposit in bank in order to unanswered the question arise by themselves. Therefore, if the depositor is worry to deposit because of the reports then the commercial banks deposit will decline.

Based on the interview result, the hypothesis is not rejected rather accept the regulations on AML and CFT had effect on commercial banks deposit of Ethiopia. The finding was consistence with the previous empirical finding of Michael E. et al (2006) in cross-countries and Rosalind Rima (2013) in Kenya.

Table 4.8 Comparison of Test Result with Expectation

Independent Variables	Expected Sign With DEPO	Actual Result	Statistical Significance Test	Hypothesis Status
Number Of Branch (NOBRA)	+	+	Significant at 1%	Failed to Reject
Average Deposit Interest Rate(ADIR)	+	-	Significant at 1%	Reject
Loan To Deposit Ratio (LTDR)	+	+	Significant at 1%	Failed to Reject
Annual Average Inflation Rate (AAIR)	-	+	Significant at 1%	Reject
Real Gross Domestic Product (RGDP)	+	+	Significant at 1%	Failed to Reject
Mid Year Population Number(MYPOP)	+	+	Significant at 1%	Failed to Reject
Social Awareness	Effect on Deposit	Effect on Deposit	-	Failed to Reject
Regulations of AML and CFT	Effect on Deposit	Effect on Deposit	-	Failed to Reject

Source: Researcher Working Out

Chapter Five: Conclusion and Recommendation

The previous chapter presented the analysis results and their interpretation. This chapter would present the conclusions and recommendations made based on the findings of the study. Section 5.1 presents the conclusion and Section 5.2 would present the recommendations made based on insights of the findings.

5.1 Conclusion

The aim of the study was to identify the determinants of commercial banks deposit. To attain the objectives, previous studies have been reviewed. Based on the previous literature three internal explanatory variables and five external explanatory variables are selected in line with the research objectives, availability of data and explanatory power of variable. Accordingly, from internal variable number of branch (NOBRA), average deposit interest rate (ADIR) and loan to deposit ratio (LTDR) were selected. From bank external factor annual average inflation rate (AAIR), real gross domestic product (RGDP), mid-year population number (MYPOP), social awareness and regulation of anti money laundry (AML) and counter financial terrorism (CFT) were selected.

To comply with the research question and research objectives, quantitative research approach was used for the variables of NOBRA, ADIR, LTDR, AAIR, RGDP and MYPOP and Secondary data were collected. The secondary data were collected from National bank of Ethiopia (NBE), from Ministry of finance and economic development office (MoFED), Central Statistics Agency (CSA) and eight (8) commercial banks in Ethiopia. Multiple regression analysis was adopted to measure the effect of 6 explanatory variables on dependent variable i.e., commercial banks deposit with the help of E-views software. To test the research hypothesis empirically, all necessary data were collected for the period of 1999/2000 to 2014/15. On the other hand qualitative research approach was used for the variable of social awareness and regulation of AML and CFT and primary data were collected from the personal interview made to 16 employees of marketing department for social awareness variable and 16 employees of risk and compliance department for regulation of AML and CFT.

The study found out that NOBRA, ADIR, LTDR, AAIR, RGDP, MYPOP, and RGDP had statistically significant effect on the level of DEPO. And also the results of the interview revealed that social awareness and regulation of AML and CFT have effect on the level of DEPO of commercial banks in Ethiopia for the period under consideration.

The conclusion made regarding to determinants of commercial banks deposit in Ethiopia were given as follows:

The result shows that number of branch (NOBRA) had positive and significant effect on DEPO of commercial banks in Ethiopia. This result may indicate that increase in number of branch will increase the accessibility of bank service, therefore the more banks accessible the more customers will access and as the same time the more deposits will collected. And also based on the NBE 2014/15 report the public banks have a branch of 41.92% out of the industry branches. This implies that the private banks have still a big challenge on computation of public banks

Average Deposit Interest Rate (ADIR) had negative and significant effect on DEPO of commercial banks in Ethiopia. For this variable to put implication since there is no base to say so, it is better to let this variable for further research.

Loan to Deposit Ratio (LTDR) had positive and significant effect on deposit of commercial banks in Ethiopia. This result implies that when the amount of loan is high there is high amount of money is circulated in the country. Therefore, this high amount of money in the country may leads to increase the deposit of commercial banks.

Average Annual Inflation Rate (AAIR) had a positive and significant effect on DEPO of commercial banks in Ethiopia. It implies the theory of standard life cycle; inflation could influence savings through its impact on real wealth. If customers attempt to maintain a target level of wealth or liquid assets relative to their income, they will increase their savings, as the same time commercial banks deposit will raise with inflation.

Real Gross Domestic Product (RGDP) had a positive and significant effect on DEPO of commercial banks in Ethiopia. It implies that in times of strong economic growth, commercial banks deposit is higher, because it increases the lifetime earnings of the people.

Midyear Population Number (MYPOP) had a positive significant effect on DEPO of commercial banks in Ethiopia. The finding showed that the increasing of population number in the country will lead to increase high number of income generator and this leads to high number of saver.

The awareness of the society about the banking service is affecting the total deposit of the commercial banks in Ethiopia. It implies that as people become more knowledgeable about banking and banking services, they develop confidence in banking institutions, their employees, sense of security in bank deposits and this lead to the society to come its income to deposit in the commercial banks. So that the commercial banks deposit is increase gradually.

Regulation of AML and CFT is affecting the total deposit of the commercial banks in Ethiopia. From the result the study concluded that in Ethiopia most traders have not legal license so that these reports lead to create question for the depositor to ask him/herself” Is a problem to transact above the threshold?” And also reference to some interviewees the customer reason out fearing the report was they pay tax to government based on the statement of their account. Therefore, the threat, risk, consequences and other reasons will the depositor worry to deposit in bank in order to unanswered the question arise by themselves. Therefore, if the depositor is worry to deposit because of the reports then the commercial banks deposit will decline.

5.2 Recommendation

Based on the research findings, the study makes the following recommendations:

For all Commercial Banks of Ethiopia

- Understanding the significant positive relationship of number of branch and commercial banks deposit and also high number of public banks branches: the study suggests that Ethiopian commercial banks specifically private owned banks have to open more branches in order to more accessible to the society, as the same time to increase their deposit and to competition with the public banks.
- The Ethiopian commercial banks have to give loan by considering their deposit and the risk of high loan to deposit ratio.
- The 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.
- The Ethiopian commercial banks have to due diligence for the information gathered from the customer and the information given to the customer for the anti money laundry and countering financial terrorism reports in order to minimize the threat created on the commercial banks customers when the information's are gathered.
- For the branch operation managers, it's a serious implication that, branch operation managers of Ethiopian commercial banks should give consideration to number of branch and loan to deposit ratio when they set deposit mobilization techniques as they are found to be the most significant internal variables that affect commercial banks deposit. This will help them to make their deposit increased in the long run.

For the Government

The government should have to give clear information about the reason why they need AML and CFT reports in order to solve frighten created by the reports on the commercial banks customers.

For Further Research

It is possible that include other factors might have a greater impact on the determinants of commercial banks deposit in Ethiopia. Inclusion of other variables would be another potential extension of this research. Therefore, other researchers are suggested to include other variables by broadening its base and updated situations.

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Appendixes

Appendix A: Heteroskedasticity Test: Breusch-Pagan-Godfrey

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	1.309167	Prob. F(6,121)	0.2582
Obs*R-squared	7.802882	Prob. Chi-Square(6)	0.2529
Scaled explained SS	4.652238	Prob. Chi-Square(6)	0.5891

Test Equation:

Dependent Variable: RESID^2

Method: Least Squares

Date: 01/18/17 Time: 04:30

Sample: 1 128

Included observations: 128

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.484502	0.368326	-1.315415	0.1909
NOBRA	-0.013129	0.005171	-2.538759	0.0124
ADIR	0.063064	0.153840	0.409933	0.6826
LTDR	-0.003499	0.007604	-0.460190	0.6462
AAIR	-0.011375	0.015405	-0.738364	0.4617
RGDP	-0.000367	0.000467	-0.784443	0.4343
MYPOP	0.066931	0.047826	1.399475	0.1642
R-squared	0.060960	Mean dependent var		0.015704
Adjusted R-squared	0.014396	S.D. dependent var		0.018212
S.E. of regression	0.018080	Akaike info criterion		-5.134879
Sum squared resid	0.039554	Schwarz criterion		-4.978909
Log likelihood	335.6323	Hannan-Quinn criter.		-5.071507
F-statistic	1.309167	Durbin-Watson stat		1.466181
Prob(F-statistic)	0.258166			

Appendix B: Breusch-Godfreyserial Correlation LM Test

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.851376	Prob. F(2,118)	0.4294
Obs*R-squared	1.806553	Prob. Chi-Square(2)	0.4052

Test Equation:

Dependent Variable: RESID

Method: Least Squares

Date: 01/18/17 Time: 04:31

Sample: 2 128

Included observations: 127

Presample missing value lagged residuals set to zero.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.000129	0.008384	-0.015358	0.9878
D(NOBR)	-0.009022	0.096115	-0.093866	0.9254
D(ADIR)	-0.190990	1.201348	-0.158980	0.8740
D(LTDR)	0.008186	0.035821	0.228532	0.8196
D(AAIR)	0.006190	0.068772	0.090013	0.9284
D(RGDP)	0.000336	0.002364	0.141956	0.8874
D(MYPOP)	0.031830	0.702783	0.045292	0.9640
RESID(-1)	-0.083596	0.098476	-0.848894	0.3977
RESID(-2)	0.084633	0.096422	0.877737	0.3819
R-squared	0.014225	Mean dependent var	7.05E-18	
Adjusted R-squared	-0.052607	S.D. dependent var	0.091398	
S.E. of regression	0.093771	Akaike info criterion	-1.827696	
Sum squared resid	1.037570	Schwarz criterion	-1.626139	
Log likelihood	125.0587	Hannan-Quinn criter.	-1.745806	
F-statistic	0.212844	Durbin-Watson stat	2.002512	
Prob(F-statistic)	0.988127			

Appendix C: Correlated Random Effects - Hausman Test

Correlated Random Effects - Hausman Test

Equation: EQ01

Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	0.000000	6	1.0000

* Cross-section test variance is invalid. Hausman statistic set to zero.

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
NOBRA	1.079961	1.209309	0.001976	0.0036
ADIR	-4.744098	-4.960162	0.005530	0.0037
LTDR	0.332235	0.337087	0.000009	0.1090
AAIR	0.321560	0.351332	0.000105	0.0037
RGDP	0.008432	0.009191	0.000000	0.0036
MYPOP	2.847411	2.089734	0.067787	0.0036

Cross-section random effects test equation:

Dependent Variable: DEPO

Method: Panel Least Squares

Date: 01/18/17 Time: 04:32

Sample: 2000 2015

Periods included: 16

Cross-sections included: 8

Total panel (balanced) observations: 128

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-14.81923	3.916982	-3.783330	0.0002
NOBRA	1.079961	0.082823	13.03932	0.0000
ADIR	-4.744098	0.733323	-6.469316	0.0000
LTDR	0.332235	0.037829	8.782566	0.0000
AAIR	0.321560	0.074620	4.309278	0.0000
RGDP	0.008432	0.002241	3.762349	0.0003
MYPOP	2.847411	0.515414	5.524512	0.0000

Effects Specification

Appendix D: Random Effects Test Result

Dependent Variable: DEPO

Method: Panel EGLS (Cross-section random effects)

Date: 01/18/17 Time: 04:34

Sample: 2000 2015

Periods included: 16

Cross-sections included: 8

Total panel (balanced) observations: 128

Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-9.079858	3.384489	-2.682785	0.0083
NOBRA	1.209309	0.069880	17.30543	0.0000
ADIR	-4.960162	0.729542	-6.799004	0.0000
LTDR	0.337087	0.037708	8.939482	0.0000
AAIR	0.351332	0.073911	4.753446	0.0000
RGDP	0.009191	0.002226	4.129012	0.0001
MYPOP	2.089734	0.444820	4.697930	0.0000
Effects Specification				
			S.D.	Rho
Cross-section random			0.108545	0.6208
Idiosyncratic random			0.084837	0.3792
Weighted Statistics				
R-squared	0.971869	Mean dependent var		1.827168
Adjusted R-squared	0.970474	S.D. dependent var		0.506754
S.E. of regression	0.087076	Sum squared resid		0.917454
F-statistic	696.7162	Durbin-Watson stat		1.622005
Prob(F-statistic)	0.000000			
Unweighted Statistics				
R-squared	0.948901	Mean dependent var		9.527891
Sum squared resid	2.995836	Durbin-Watson stat		0.565103

Appendix E:

Addis Ababa University
College of Business and Economics
Master of Science in Accounting and Finance
Interview Questions

For the variable of Social Awareness

1. What are the main duties of your department?
2. What are you doing to the society to become more knowledgeable or aware about banking and banking services?
3. Do you think that social awareness can affect your bank deposits?
4. What is the effect of social awareness on your bank deposits?

For the variable of Regulation of AML and CFT

1. Does your bank implement AML and CFT regulations?
2. What are the main duties of your department regarding to AML and CFT?
3. Do you think that the AML and CFT regulations affect your bank deposit?
4. What is the effect of the regulations of AML and CFT on your bank deposit?