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ADDIS ABABA UNIVERSITY
COLLEGE OF BUSINESS AND ECONOMICS
ACCOUNTING AND FINANCE DEPARTMENT

**Determinants of Private Commercial Banks' Deposit Growth in
Ethiopia**

**A thesis Submitted to Addis Ababa University, College of Business and
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Fulfillment of the Requirements for Degree of Master of Accounting and
Finance**

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Declaration

I, Tenaye Gebre Nida declare that, this thesis entitled: the Determinants of private commercial banks' Deposit Growth in Ethiopia is my original work produced under the support of my advisor Dr. Abebe Yitayew. and has never been published for any award of Diploma or Degree in any other University.

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Declaration

This is to certify that this thesis prepared by Tenaye Gebre, entitled: the Determinants of private commercial banks' Deposit Growth in Ethiopia and submitted in partial fulfillment of the requirements for Degree of Master Science Accounting and finance comply with the regulations of the University and meets the accepted standards with respect to originality and quality.

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Abstract

The aim of this study to examine factors of Private commercial bank deposit growth in Ethiopia for the overall context Private commercial banks' in Ethiopia has less contribution for deposit mobilization regarding with government owned bank . Therefore, Private commercial banks to contribute financial support and economic development substantial amount of deposit must be mobilized. In this regard Private commercial bank deposits are to support Private sectors investment and financing government project. In order to achieve this objective, in this study quantitative research approach has been used. Target population was eight Private Banks in commercial activates, out of the sixteen Private commercial banks selected with 10 years back in the industry and registered by NBE under operation in Ethiopia, and selected purposive sampling technique for the study. The panel data set for the study used secondary source consisted of annual data spanning from 2008 to 2017 gathered from the National Bank of Ethiopia. The dependent variable used to this study is deposit growth; explanatory variables used in this study were number of bank branch, loan to deposit ratio, economic growth (GDP), deposit interest rate, net interest margin, and age of company. Different diagnostic tests were conducted to check the appropriateness of the model. Fixed effects technique has been applied to find out the results of explanatory variables. According to the final results achieved by applying panel data techniques, number of bank branches, economic growth (GDP) and age of company had positively and statistically significant influence on private bank deposit growth; whereas, deposit interest rate and net interest margin are negative and statistically significant influence on deposit growth. Whereas loan to deposit ratio had negative and insignificant influence on private commercial bank deposit growth. The study implies that motivation of economic growth and the study recommended to the stockholders and users of the banking industry to expand number of branch and create appropriate awareness mechanisms for the society.

Key Term; *Determinant factors, private commercial bank in Ethiopia and deposit growth*

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Acronyms and Abbreviations

- AB = Abay Bank S.C
- ADIB = Addis International Bank
- AGB = Age of Company
- AIB = Awash Bank S.C
- AWS = Awareness of the Society
- BOB = Bank of Abysinia S.C
- BrIB = Berhan International Bank S.C
- BuIB = Buna International Bank S.C
- COB = Cooperative Bank of Oromia S.C
- DB = Dashen Bank S.C
- DGB = Debub Global Bank S.c
- DGZ = Deposit Growth (explained Variable)
- DIR = Deposit Interest Rate
- EN = Enat Bank S.C
- EXR = Exchange Rate
- GDP = Economic Growth
- IEOD = Interest Expense on Deposit.
- IIOL = Interest Income on loan
- LDR = Loan to Deposit Ratio
- LIB = Lion International Bank S.C
- NBR = Number of branch
- NIB = Nib International Bank S.C
- NIM = Net Interest Margin
- NPL = Non Performing Loan
- OIB = Oromia International Bank S.C
- TOA = Total Asset
- UB = United Bank S.C
- WB = Wegagen Bank S.C
- ZM = Zemen Bank S.C

CHAPTER ONE

INTRODUCTION

1.1. Backgrounds of the study

Banks contribute country growth plan by its various mechanisms. One of the financial institutions (Bank) is rendering services are Mobilizing deposit from their estimate customer and lend to another lending customer, to facilitate finance for business and related projects. So that deposit mobilizations are a back bone of bank to rendering their services, to perform their capacity, wealth's and other related benefits.

Mohan (2012), Mobilization of deposits is one of the important functions of banking business it is an important source of working fund for the bank. Deposit mobilization is an indispensable act or to increase the sources of the banks to serve effectively. Mobilization of deposit plays an important role in providing satisfactory service to different sectors of the economy. The success of the banking greatly lies on the deposit mobilization

Mobilization of deposits is one of the important functions of banking business. It is an important source of working fund for the bank. Deposit mobilization is an indispensable factor to increase the sources of the banks to serve effectively. Mobilization of deposit plays an important role in providing satisfactory service to different sectors of the economy. The success of the banking greatly lies on the deposit mobilization. Performances of the bank depend on deposits, as the deposits are normally considered as a cost effective source of working fund. There are different types of deposits, with different maturity pattern carrying different rates of interests. Deposit mobilization is depending on the cost of deposits. (Dereje, 2017)

Mobilization of deposits for a bank is as essential as oxygen for human being. To enhance profitability, banks take steps to minimize the expenditure and are forced to mobilize low cost deposits. (Sylvester, 2010)

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.

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)

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

In addition to the aforementioned variables, there were a memorandum of understanding signed between the state owned commercial bank (Commercial bank of Ethiopia) and the Addis Ababa City Care-taker Administration signed on November 2006, which states the former would provide credit facility to the later for construction of low cost houses in the city. Subsequently any dwellers who want to benefit from the housing scheme shall deposit his/her money only in Commercial bank of Ethiopia. As per the researcher observation there were mass outflows of money from private banks coffers to the state owned bank.(Andinet 2016)

1.2. Background of Private Commercial Banks in Ethiopia

Private commercial banks are a recent phenomenon in the Ethiopian economy. They came into existence after 1991 two and half decades ago. Before the Dergue, in the imperial era, private commercial banks used to operate in the economy. But after Dergue came to power, private commercial banks were nationalized and amalgamated with the state owned banks, then after that Ethiopian economy was dominated by state owned banks. And in the time of Dergue they were not allowed and not only banks but also there were no other private sector. Surprisingly no one was allowed to have a sum of money more than ETB 500,000.00 in his/her bank account. The regime was follower of command economy. Mauri, (2014) and (Directives No. SBB/50/2011)

After the downfall of the Dergue private commercial banks were allowed to operate and they started to have market share and now they have some growing market share in the Ethiopian economy and are some of the major players in the economy. Their number was also growing from time to time and currently New Ethiopian under formation bank joins the industry. Andinet(2016)

According to the National Bank of Ethiopia (NBE) directives, minimum paid up capital requirement was initially set 75 million and gradually raised to 500 million and within the next 3 years they should raise to 2 billion, which is practically impossible not only for new entrants but also for those who joined lately. (Directives No. SBB/50/2011)

Following the Proclamation of Licensing and Supervision of Banking Business Proclamation No. 84/1994, Awash International Bank S.C was registered as the first private commercial bank in modern Ethiopia banking business. So far 16 private commercial banks are operating in the country. The following table contains years of private commercial banks establishment.

Table 1.1: List of private commercial banks

S.No.	Name of the Bank	Year Established
1	Awash International Bank S.C	1994
2	Dashen Bank S.C	1995
3	Bank of Abyssinia S.C	1996
4	Wegagen Bank S.C	1997
5	United Bank S.C	1998
6	NIB International Bank S.C	1999
7	Cooperative Bank of Oromia	2004
8	Lion International Bank S.C	2006
9	Oromia International Bank S.C	2008
10	Zemen Bank	2009
11	Buna International Bank S.C	2009
12	Berhan International Bank S.C	2009
13	Abay Bank S.C	2010
14	Addis International Bank S.C	2011
15	Dehub Global Bank S.C	2012
16	Enat Bank	2013

Source: National Bank of Ethiopia

1.3. Statement of the problem

In Ethiopia banking business is not developed by estimating capacity for the reason behinds that the banking business performance depending on their resources. One of the bank resources are mobilized deposit this mobilized deposit facilitate for various country level as well as individual level investment at most the chine is very high. Ethiopian commercial banks are great role to support financial gaps of the all business vs Government project but not sufficient the problem that the levels of Ethiopian bank deposit is very low especially private commercial banks of Ethiopia deposits are cover the minimum percentages to the total deposit levels of the country. During fiscal Year 2016/17 the national bank of Ethiopia reported share of private banks are 34.4% of the total deposit and the growth of the deposit Birr 493.3 Billion indicating 23.9% annual growth rate on the backdrop of accelerated expansions of bank branch, improving access finance, growing saving culture for the society and increases in per capital income and the fiscal year 2015/16 also share of private bank 33.6% total deposit liability of the banking system reached Birr 413.6 Billion at the end of 3rd quarter indicating 3.5% Quarterly and 22.6% annual growth rate as bank contributing to expand their branch Network and sustained economic growth.(National Bank of Ethiopia, Quarterly Bulletin 2017 & 2016).

In the Ethiopia contexts the related research has mostly focus public Bank (Commercial Bank of Ethiopia) and some Private commercial Banks. In addition to this, various researcher observation determinants of commercial bank deposit growth factor such as bank expansion, per Capitan income (GDP), lagged branch deposit, loan to deposit ratio, money supply, Inflation, Exchange rate, and other related variable regarding deposit growth. According to Bahiredin(2016)Finding, Branch Expansion has positive and statically Significant. However, according to Tizita(2014)Finding, Branch Expansion have negative effect on Saving and Andinet(2016) Deposit Interest influence Positive and statistically significant on deposit whereas, Bahiredin(2016) report Deposit Interest Rate has positive and statically insignificant effect on deposit in the same variable but different finding

Thus, in this study the researcher saw additional variable and check for existing variable with current situation on Deposit Growth, estimated cause variable such as Branch Expansions, Deposit Interest Rate, Age of the Company, Net Interest margin and Loan to Deposit ratio (Bank

Liquidity), and Economic Growth (GDP), and full fill previous researcher gap and literature gap for determinate factor for private commercial bank deposit growth in Ethiopia

1.4. General Objectives

The general objective of the study will identify factors that influence private Commercial banks deposit growth in Ethiopia.

Specific objectives of the study are:

- ❖ To examine the effects of Number of Branch in private Commercial banks deposits growth in Ethiopia.
- ❖ To examine the effects of Deposit Interest Rate in private Commercial banks deposits growth in Ethiopia.
- ❖ To examine the effects of Age of Company in private Commercial banks deposits growth in Ethiopia.
- ❖ To examine the effects of Net Interest margin in private Commercial banks deposits growth in Ethiopia.
- ❖ To examine the effects of Loan to Deposit ratio in private Commercial banks deposits growth in Ethiopia.
- ❖ To examine the effects of Economic Growth (GDP) in private Commercial banks deposits growth in Ethiopia.
- ❖ Draw relevant policy recommendations

1.5. Research Hypothesis

In this study the following hypothesis are estimated in final results of explanatory variables

- ❖ **H1:** Number of bank branches has positive & significant impact on private commercial banks deposit growth
- ❖ **H2:** Deposit interest rate has positive & significant impact on private commercial banks deposit growth.
- ❖ **H3:** Economic Growth (GDP) has positive and significant impact on private commercial banks deposit growth.

- ❖ **H4:** Loan to Deposit Ratio (Bank's liquidity) has negative and significant impact on bank's deposit.
- ❖ **H5:** Net interest margin (Profitability) has negative and significant impact on private commercial banks deposit growth.
- ❖ **H6:** Age of the Company has positive and significant impact on private commercial bank deposit growth.

1.6. Significance of the study

The main purpose of this study is indentifying determinants factors of deposit growth in private commercial bank of Ethiopia and provides helpful information's to different stakeholders like Bored Members, executive Managements and other concerned participants to increases private commercial bank deposit growth to applying this study finding and recommendations. The study has a great contribution to the body of knowledge by identifying the potential relationship between bank deposit and factors determining it; finally the study also contributes to the researchers who will study on similar and related topics as a guiding martial.

1.7. Scope of the study

The scope the study examining the effects of factors that influences private commercial bank deposit growth in Ethiopia using time sires data from time period 2008-2017. These researches not cover all factors of deposit growth and periods of all private commercial bank from establishment. An analytical framework of existing theory has been done to explain the contribution of variables to mobilization of deposits

1.8. Limitations of the study

Since end of facial year 2017 in Ethiopia there have16 private commercial banks some of they are established in recent time and challenge to collect ten years data so, that limit for the relationship with each bank data volume. This may create difficulties to find out the true relation between dependent variable and independent variables for all private commercial bank deposit growth. The other limitation of this study was the fact that it only uses quantitative approach and secondary data because of some variables are challenges to find only in secondary data.

1.9. Organizations of the thesis

This thesis contains a total of five chapters. Chapter one of the studies focuses on introductory aspects including background of the study area, statement of the problem, objectives of the study, significance, scope and limitation of the study. Chapter two presents the review of related literature. Chapter three presents the research design and methodology including data source and method of data collection, sampling techniques used, and measurement and analysis parts. Chapter Four contains data presentation, analysis and interpretation; Finally Chapter Five concludes the total work of the research and gives relevant recommendations based on the findings.

CHAPTER TWO

2. LITERATURE REVIEW

The literature review consists of two parts, i.e. the theoretical and conceptual review and empirical review. In the theoretical review part the theories that states about the commercial banks deposits and the variables that are claimed to affect it will be discussed. The empirical literature part discusses past studies that were conducted on the area of factors determining commercial banks deposits. In this part the variables that were included, the methodology that is used to undertake the study and the results of the study under review would be discussed

2.1. Theoretical and Conceptual Literature Review

Banks have historically been viewed as playing role in financial markets for two reasons. The first one is that they perform a critical role in facilitating payments. Commercial banks, as well as other intermediaries, provide services in screening and monitoring borrowers; and the other one is by developing expertise as well as diversifying across many borrowers, banks reduce the cost of supplying credit (Katherine, 2004). Thus in their role as lenders, banks are often not merely buying someone's debt, rather they are providing significant financial services associated with extending credit to their customers directly. The main providers of additional financing are domestic commercial banks (Herald et al, 2009). Mckinnon (1973) argues that investment in a typical developing country is lumpy and self-financed and hence cannot be materialized unless adequate savings are accumulated in the form of bank deposits Mckinnon (1973).

According to Stiglitz (1996), the financial sector is the "brain" of the economy since it harnesses savings and reallocates resources to "entrepreneurs" Banks perform various roles in the economy (Franklin and Elena, 2008): They improve the information problem between investors and borrowers by monitoring the latter and ensuring a proper use of the depositors fund They provide inter temporal smoothing of risk that cannot be diversified at a given point in time as well as insurance to depositors against unexpected consumption shocks. Because of the maturity mismatch between their assets and liabilities, however banks are subject to the possibility of runs and systematic risk. Banks contribute to the growth of the economy

2.1.1. Commercial Bank Deposit

Commercial bank deposits are major liabilities for commercial banks. Kelvin (2001) said that deposits of commercial banks account for about 75% of commercial banks' liabilities. Commercial banks keep lending as long as they possess adequate deposit. Therefore, banks will be better off if they are mobilizing more deposits. However, as N. Desinga (1975) indicates deposit mobilization is a very difficult task. The cost of intermediation for mobilizing deposits is also very important part of overall intermediation cost of the banking system as E.A. Shaw (1995) indicates. In spite of the difficulties, deposits play an important role not only to the banking sector but also the overall economy.

Commercial banks are dependent on depositor's money as a source of funds. According to the Keynesian theory of demand for money, there are three main motives why people hold money; transactions, precautionary and investment motives. In order to cater for these motives, commercial banks offer three categories of deposit facilities that are demand, savings and time deposits. Demand deposit facility is most commonly referred to as current account and is designed for those who need money for transaction purposes. This motive can be looked at from the point of view of consumers who want income to meet their household expenditure and from the viewpoint of businessmen who require money and want to hold it in order to carry out their business activities. Hence, the purpose of deposit facility is for convenience or for making daily commitments. (Keynesian theory)

The second category of deposit is the savings account, which caters the need of those who wishes to save money but at the same time want to earn an income. Depositors of savings account hold money because of precautionary motives while are simultaneously induced by their investment motives. Precautionary motive for holding money refers to the desire of people to hold cash balances for unforeseen contingencies. Others are bounded by the speculative motive for holding money. The speculative motive relates to the desire to hold one's resources in liquid form in order to take advantage of market movements regarding the future changes in the rate of interest. The final category of deposit facility is time (fixed) deposits. Such facility is offered by banks to cater for the investment motives of customers who normally have idle funds and are looking for better returns on their money. (Bahredin 2016).

The purpose of all commercial banks is to maximize deposits, since their main task is to intermediate between the surplus spending units and the deficits spending units in the process of mobilizing funds for future investment purpose. For the reason that commercial banks do everything possible in their powers to attract in flow of funds (deposit) from the surplus spending units who wants to deposit in financial institutions. According to the banks purpose to maximize deposit, attempts would be made to discuss various theories regarding to banking activities that discussed by different essayists. According to Ukinamemen (2010), there are three theories of deposits from the commercial banks' perspective.

2.1.2. Importance of Commercial bank deposit

- **Deposits as a source of fund for loan**

Herald (2009) states deposits are the main sources of fund that bank to provide loan. This deposit is mainly provided by the general public as Mohammad and Mahdi (2010). However, business organizations, NGOs, government, cooperatives and so on can also provide deposits. Therefore, whether deposits are provided by individuals, businesses or government they are important financial resources of banks

- **Mobilizing deposit is cheaper than raising equity**

The capital structure of banks likewise other business establishments are composed of debt and/or equity. For banks, raising equity is more expensive than attracting deposits. Lorenzo et al (2010) stated that if the lending channel plays a role, the deposit growth should lead to increase in the supply of loans due to the additional source of financing for banks. As demand for loan increases by individuals, businesses and governments, banks should expand their deposit base to fulfill the demand of borrowing. Most of the time the interest rate applied to deposits is by far cheaper than the dividend payment to the shareholders.

- **Banks make profit using their deposits**

Mahendra (2005) said that deposits provide most of the raw materials for bank loans and thus represent the ultimate source of the bank's profits and growth. Banks make profit by using their deposits, therefore it is said that depositors can discipline banks. Maria and Sergio (2001), found that depositors discipline banks by withdrawing deposits and by requiring higher interest rates.

For depository corporations and deposit money banks, their principal objective is undertaking financial intermediation to make profit and increase their shareholders value (Sheku, 2005). They achieve their objectives mainly by attracting deposits and investing the money on profitable investment portfolio.

- **Fund investment and/or development projects**

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

2.1.3. Commercial bank Deposit Growth Factors

1. Numbers of Branch

Rangarajan (1982) explained that number branch, by spreading the banking habit over a wider geographical area, induced a large number of people to use bank deposit. Besides, a wide network of branches by facilitating transactions across different geographical areas reduced the need for holding larger amount of cash. This prevented the outflow of reserves from the banking system leading to a larger expansion of secondary deposit; therefore, the author observed that one of the structural changes to be expected from a massive branch expansion program was raising deposit

Lewis (1955) noted that people would save more if saving institutions were nearer to them than if they were farther. As a result, a negative relationship is assumed to exist between population per bank branch and household financial saving. However, whether increased financial intermediation itself significantly increases the overall propensity to save depends also on the degree of substitution between financial saving and other items in the household's asset portfolio. Consequently, the expected sign of this relationship in the private saving function is ambiguous.

Murthy and Haresh (1991), explains how branch expansion determines the deposit mobilization. Among many factors affecting for deposit mobilization, to deposit money in a bank depositors first take into consider location of branch (whether bank is rural, urban or semi-rural) and second, they consider the region of bank belongs. The study further reveals that regions with

high income earners and abundant of branches have high deposits per branch while regions with low income earners and also associate with low spread of branches denote low amount of deposits. This study has been concluded by deciding branch expansion is the most effective factor for deposit mobilization

2. Loan To Deposit Ratio(Bank Liquidity)

A LDR can be defined as a measure of the relative amount of asset in cash or which can be quickly converted into cash without any loss in value available to meet short term liabilities. The liquidity measure provides suggestions about the level of liquidity on which the commercial banks are operating. According to Olagunju, Olanrewaju, Olabode and Samuel (2011) Liquidity involves three elements or characteristics namely Marketability, Stability and Conservatism. Liquid assets should be more marketable or transferable. That means, they are expected to be converted to cash easily and promptly, and are redeemed prior to maturity. All assets that cannot be redeemed at maturity are said to be illiquid. the fact that the prices of the former are fixed and have lesser variability than the prices and value of the later that experience considerable fluctuation. Conservatism quality of liquidity refers to the ability of the holders of liquid assets to recover the cost of the asset on the time of resale. On the basis, common stocks are not considered highly liquid asset despite its ready marketability. This can be attributed to the fact that on certain periods, the current prices are lower than their initial or original prices. In consideration of these qualities, people and firms decide to hold cash which is the only perfectly liquid asset. Another quality of liquid asset is price stability. Based on this characteristic, bank deposits and short term securities are more liquid than equity investments such as common stocks and real estate's due to banking liquidity is the ability to meet obligations when they come due without incurring unacceptable losses.

Muhammad & Amir, 2013, Pakistan with the aim of identifying the key determinants of banking liquidity the study examines the bank specific and macroeconomic determinants of commercial bank's liquidity in Pakistan. The sample of the study consists of 26 Pakistani commercial banks. The study period consists of 5 years from 2007 to 2011, which also covers the period of the Asian financial crisis 2008. Bank's liquidity is measured by two ways; one is cash and cash equivalents to total assets (Li) and second is advances net of provisions to total assets (L2). Two models are estimated based on these measures of liquidity. The results of model 1 (Li) indicate that the bank specific fundamentals (NPL and TOA) and monetary policy interest rate positively

determine the bank liquidity whereas inflation has a negative impact. Bank liquidity measured by Li is negatively and significantly affected by the financial crisis. The results of model 2 (L2) indicate that the bank size and monetary policy interest rate positively and significantly determine the bank liquidity.

3. Deposit Interest Rate

The main focus of every financial system is financial intermediary, that is, mobilizing financial resources from the surplus sector and lend to the deficit outlets to facilitate business transactions and economic development based on the monetary and fiscal policy of the nation. The attraction for getting the deposit from the surplus sector is interest payment, which must be reasonable and acceptable to the owner of the money the classical theory of interest otherwise called the demand and supply theory of interest, maintains that the rate of interest is determined by the demand for and the supply of funds by businessmen and households respectively. The supply of funds is governed by the time preference and the demand for capital by the expected productivity of capital.

McKinnon (1973) and Shaw (1973) argue that for the typical developing country, the net impact of a change in real interest rate on saving is likely to be positive. This is because, in the typical developing economy where there is no robust market for stocks and bonds, cash balances and quasi-monetary assets usually account for a greater proportion of household saving compared to that in developed countries. Commercial bank's deposits are interest rate sensitive, therefore as the interest rate changes the deposit of the commercial banks will change (Eustacius and David, 1995).

4. Economic Growth(GDP)

Economic growth is an increase in the capacity of an economy to produce goods and service, compared from one period of time to another. It is generally being measured through GDP (Gross Domestic Product), a variable that has also become the de facto universal metric for 'standards of living (Yanne et al, 2007). The relevant literature generated a mixed view regarding the relationship between savings and Economic growth. Some of the researches explain that savings cause to economic growth; however some other certain works argue that economic growth granger causes savings. Different countries also have different effect of saving; income source of a country does play an important role in determining the direction of causality. In the

light of life-cycle analysis, GDP growth will result in an increase of aggregate savings, because it increases the lifetime earnings and savings of younger age groups relative to older age groups (Athukorala and Sen, 2004). Thus, Countries with higher GDP growth rates are expected to have higher savings than countries with lower growth rates. However, the size of this effect is likely to decline as GDP growth raises and may even become negative for rich countries where investment opportunities and growth are relatively lower (Masson et al, 1998 cited in Epapher2014)

5. Awareness of the society

According to M. A. Baqui et al (1987), some analysts argue that demand for deposits is influenced by education level which in turn increases the awareness of the rural people about banking services (Mauri; Von Pischke). Since the study of M. A. Baqui et al (1987) conducted by taking rural area as its base it is obvious that it considers the awareness as a factor of deposit mobilization. It was also found that literacy as a proxy for awareness about banking, positively influence deposits.

According to the study “Cognizing customer awareness and perception of Islamic banking products in Pakistan” done by Masood et al. (2014), most customers are not aware of Islamic banking products and the study suggests providing awareness to customers by doing seminars and adopting strategies. Moreover, they find that, most of the bank customers are only aware of the savings deposit. However, an important aspect identified by these authors is even some bankers also do not have the appropriate and timely knowledge on bank deposits and bank products.

According to the Ryan (2011), when creating customer awareness relating to deposits, brand position and brand promise is two most important terms to be considered by banks. Brand position is the place of banks that occupies in the customer’s mind while the bank promise is the place banks are intended to build up in customers’ minds after implementing any awareness campaign. when designing awareness strategies there are some important dimensions to be considered as they should be low cost and high quality (Pull-marketing strategy). Advertisements and seminars should be powerful and simple; also social Medias and high popularized Medias should be selected in order to attract more people to deposit more money in their banks.

Awareness is a social component which increases the collective consciousness among the people and generates confidence in the industrial to face problems confidently. However, the success of the banks depends on to which extent people in the particular country aware about the banking activities. When considering about the deposit mobilization, customer awareness is a key element to absorb high amount of deposits. Customer awareness about the services depends upon many factors such as return on investments, promptness, care, security, convenience, growth, flexibility etc. hence integral part of banks is deposit mobilization, therefore banks should pay attention to attract more deposits by giving knowledge and promoting them (Kanthi, Singu, 2015).

6. Age of Company

The age of the company is one of the most influential characteristics in organizational studies. Newly established banks are particularly low deposit in their established years of operation, as they place greater emphasis on increasing their deposit, rather deposit share in other oldest company, on deposit growth older bank expected to be high deposit mobilization recourse due to their longer tradition and the fact that they could build up a good reputation. Athanasoglou et al., (2005). Similarly, Yuqi li (2007)

Age of company (measured as the number of years a company is operating in the market since it was founded) is an important determinant of financial performance.

7. Exchange rate

This was the number of units of foreign currency that can be purchased for one unit of the domestic currency. Exchange rate is also known as the rate between two currencies and specifies how much one currency is worth in terms of the other. An exchange rate quotation is given by stating the number of units of "term currency" or "price currency" that can be bought in terms of 1 unit currency, also called base currency. Bilateral exchange rate involves a currency pair while effective exchange rate is the weighted average of a basket of foreign currencies and can be viewed as an overall measure of the country's external competitiveness.

A market based exchange rate changes whenever the values of either of the two component currencies change. A currency tends to become more valuable whenever its demand is greater

than the available supply. It becomes less valuable whenever demand is less than available supply. This does not mean people no longer want money. It just means that they prefer holding their wealth in some other form, possibly another currency. A rise in exchange rate was expected to reduce deposit held by Commercial banks.

8. Net Interest margin

Net interest margin proxy of measurement of cost of financial intermediation is calculated as the ratio of interest income on loan to total loan minus interest expense on deposits to total deposit (Sibusiso, et al. 2011). It measures the gap between implicit earnings of the bank from interest bearing activities and the implicit costs incurred for attracting interest bearing funds. Thus, the net interest margin represents the charge required by the bank for providing .financial intermediation services. As such, a larger net interest margin may discourage bank clients from using their services, resulting in lower financial deepening. (Sibusiso, et al. 2011).

$$\text{NIM} = \frac{\text{IOL}}{\text{IEOD}}$$

IOL is interest income on loan and IEOD is interest expense on deposit.

2.2. Empirical Review

Determinants of commercial bank deposit growth studied by various Ethiopian authors and other country authors describe factors of deposit growth that have a positive or a negative significant effects on deposit growth.

2.2.1. Empirical Study Review developed continent

Paul and Bhattacharyay (1986) there are other several factors which influence the growth of bank deposits. Some of them are: Higher industrial and agricultural production, increasing savings rate in the economy, Development program of the government to boost rural economy and small scale industries and Factors having adverse effect on deposit mobilization are: Setback in the agricultural sector during poor monsoon years, Rising cost of hiring, Government reducing its budget and restricting money supply, Growing competition from other channels of investment

which offer higher interest rates, Government's control on branch expansion of banks and Non-recovery of loans.

Athukorala et. al (2004) examined the determinants of aggregate saving in India. The study found that saving rate rises with the level and rate of growth of disposal income. Moreover, real interest rate, inflation and banking facilities have positive impact on bank deposits of India. In addition, with special emphasis on rural branches, Khalily et al. (1987) examined the pattern and trend of rural deposit of Bangladesh. To estimate this, the study used simultaneous equations model. They found that, permanent income and inflation indirectly influence deposit through their effect on bank branches whereas availability of roads and vehicles directly influence deposit through their effect on transaction cost.

Humyra (2014) examined Saving Behavior of Bangladesh. He considered time series data to shed light on the saving behaviour of Bangladesh in long run horizon and short run dynamic adjustment by employing co integration test and vector error correction model. Findings of the study suggest that, there is a great deal of diversity between urban and rural sector. Deposit rate is not the only factor that stimulates depositors to save, although it has received noticeable attention. Rather, high volatility regarding income, banking facilities and inflation influence savers to increase interest-bearing deposit.

Keynes (1936) carried out an empirical study regarding bank deposits. In his framework; he examined how the rate of interest and inflation determine bank deposits. In his studies, Keynes argued that in the absence of a rate of interest an individual will hold his savings in the most liquid form. Since there is a cost associated with converting financial assets to cash, an individual will not want to part with his liquidity without the payment of interest, most especially during inflationary periods when the value of money declines over time. Hence, the rate of interest is the premium offered to an individual to part with his liquidity. He asserted that it is that rate of interest that customers consider before saving part of their surplus with commercial banks. Keynes concluded his study by emphasizing that the rate of interest is not the price which brings into equilibrium the demand for resources to invest with the readiness to abstain from present consumption. It is the price which equilibrates the desire to hold money or wealth in the form of cash with the available quantity of cash.

2.2.2. Empirical Study Review in Africa

According to Nathanael (2014) extensive studies have also been conducted with the focus on determinants of commercial bank deposit mobilization for developing countries. The paper empirically examined the macroeconomic determinants of bank deposits in Nigeria using data covering the period between 1980 and 2010. It tried to analyse the effects of various macroeconomic indicators, on the performance of banks within the context of deposit mobilization of banks and its determinants. The parsimonious ECM result showed that in Nigeria, bank investment, bank branches, interest rate and the general price level are important determinant of bank deposit. The Vector Error Correction and Johansen co-integration test indicates a long run relationship among the variables and the ECM result showed a satisfactory speed of adjustment

Tafirei, Rabson and Linda (2014) studied the relationship between banks' deposit interest rates and deposit mobilization in Zimbabwe for the period 2000-2006. They developed an Ordinary Least Squares (OLS) model to show the relationship between the response and explanatory variables and they used Pearson's correlation coefficient to demonstrate the strength of the relationship. The data was first tested for; stationary using the Augmented Dicker-Fuller Test, multicollinearity using correlation matrix and autocorrelation using the Durbin-Watson statistic. The study found a positive relationship between deposit rates and banks' deposits for the period under study and all the other explanatory variables were statistically significant. Also, the coefficient of determination was found to be significantly high showing that the explanatory variables were able to account for the total variation of the dependent variable – deposits.

Lomuto(2008), on commercial banks in Kenya with the aim of identifying and examine the key determinants of Kenyan Commercial Banks Deposit growth. Its main objective was to analyses the factors that influence Commercial banks deposit growth in Kenya. Time series data covering 1968 - 2006 was analyzed. estimated model was a single regression equation with deposit as the dependent variable and explanatory variables as deposit rate, nominal exchange rate, investment income ratio, number of cheques cleared (used as proxy for innovations in the financial sector), real GDP, ratio of monetary GDP to total GDP and Structural Adjustment Programs (SAPs). Estimation was done using Ordinary Least Squares (OLS) technique and Econometric Views (E-views) statistical package. The time series characteristics of the data were assessed using unit

root tests to examine the stationarity of each variable. And then the test for co integration was performed to determine the long run relationship of the non-stationary variables. Analyzed results showed that lagged Commercial bank deposits and all the other variables including Structural Adjustment Programs (SAPs) significantly affect Commercial bank deposit growth in Kenya. Based on these results, several policy implications were drawn that aim at encouraging deposits growth by Commercial banks for the benefit of the domestic deposit mobilization. First, growth enhancing policies promotes deposits growth. Second, the stability of macroeconomic system should be maintained. Lastly, financial sector innovations encourage deposit growth in Commercial banks in Kenya as people reduce their demand for carrying cash.

Epapher (2014) Empirical examine the Determinants of Tanzania's National Savings during the period of 1970-2010. The study reveals that disposable income, real GDP growth and population growth have a positive impact on savings in Tanzania. Regarding to interest rate, Tochukwu E. Nwachukwu and Peter (2009) examines the determinants of private saving in Nigeria during the period covering 1970 – 2007 and suggested that it is positively influences on domestic saving on Nigeria. Similarly Mashamba, Magweva & Linda (2014), study the relationship between banks' deposit interest rates and deposit mobilization in Zimbabwe for the period 2000-2006, found that deposit rate have positive effect on bank's deposit in Zimbabwe. Likewise, the study by Eriemo (2014), on Macroeconomic Determinants of Bank Deposits in Nigeria using data covering the period between 1980 and 2010, suggested that interest rate and bank branches are important determinant of bank deposit. However, Simon & Jolaosho (2013) found real interest rate has negatively impacted on the level of savings mobilization in Nigeria while they undertaking empirical assessment on the impact of real interest rate on savings mobilization in Nigeria using the time series data from 1980 to 2008 by using The Vector- Auto Regression (VAR). On other study in same country, Musa, Iyaji, Success (2014), examines the determinants of private domestic savings in Nigeria during the period covering 1986 – 2010. The study reveals per capita income are strong determinants of private domestic savings but interest rate impotent to drive savings mobilization.

Ukinamemen (2010) focused on factors which affect the deposit mobilization operations of commercial banks in Nigeria, particularly the Union Bank of Nigeria Plc. The study tried to find out the relationship between total volume of commercial bank deposits and interest rate, inflation rate, loans and advances and the number of bank branches. The study relied primarily on

secondary data published by official sources. The diagnostic statistic used in the study was the ordinary least square (OLS). From the study, it was found out that all the independent variables were positively related to bank deposit (dependent variable). The result also shows that there is a positive and moderately significant relationship between bank deposit and loans and advances with a coefficient of 0.53. Hence, loans and advances is inelastic to bank deposit. Number of bank branches has a positive but weak relationship with bank deposit and is also inelastic in nature. Inflation rate has a positive – weak relationship with bank deposit, while real interest rate has a negative – weak relationship with bank deposit with the value of -0.05. From the value of the t-statistic, the coefficients of the four explanatory variables were all significant and the probability

Orji (2012) investigated 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. He adopted two impact models; Distributed Lag-Error Correction Model and Distributed Model. The empirical results showed a positive influence of values of GDP per capita, Financial Deepening, Interest Rate Spread and negative influence of Real Interest Rate and Inflation Rate 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.

2.2.3. Empirical Review in Ethiopia

Bahredin(2016) the determinants of commercial banks deposit growth in Ethiopia. The study used annual data spanning from 2000 to 2014. Random effects technique had been applied to find out the most significant variables. The estimated results suggest, bank branches and per-capita-income growth influence is positively and statistically significant on bank deposit growth; whereas, lagged bank deposit and loan-to-deposit ratio influence is negatively and statistically significant on bank deposit growth. Money supply growth had insignificant negative influence on bank deposit growth; whereas deposit interest rate had insignificant positive influence on bank deposit growth. The study implies that stimulation of economic growth; banks presence and financial intermediation are most important factors that affect bank deposit growth.

Shemsu (2015) focused on determinants of commercial bank deposits: A case of study of commercial bank of Ethiopia. The study aimed to identify and evaluate those factors affecting bank deposit in general by taking Commercial Bank of Ethiopia as evidence. Accordingly, the researcher adopts mixed research approach. Time series data covering 1998 - 2014 was analyzed and questionnaire is used to gather information from the employees of commercial bank of Ethiopia 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 is an important strategy for deposit mobilization, it is highly significant than others. Individual remittances from diasporas is also next to branch opening is significantly affects CBE's deposit. The others are affects positively and can increase CBE's deposit.

Kidane (1989) focused mainly on income and external capital flows as the independent variables in his study of aggregate savings behavior in Ethiopia. he regressed savings on GDP in the same study and concluded that contrary to theoretical belief, GDP had a negative sign. Taking the period of review into consideration, there was the implication that there were no savings from GDP and the national income level was not enough to meet the current consumption. Kidane also observed that one of the determinants of savings in the economy could be structural change. Such change could be a change in monetary policy, investment policy or interest rates. Such changes would constitute minor changes whilst major changes would comprise changes in government or the economic system. Ethiopia experienced the changes in 1974. Breaking the period into two parts – 1960 to 1973 and 1974 to 1985 respectively, Kidane tested for structural breaks using consumption instead of savings to test for the structural break. His conclusion was that a stable government with consistent policies is essential for improving the savings rate.

According to Jembere (2014) determinants of deposit mobilization in private commercial banks of Ethiopia using panel data of six private commercial banks from year 2002 to 2012. The empirical results showed that bank branches, and real gross domestic product affects deposit of

the bank positively whereas, capital adequacy and liquidity affects the deposit of the private banks negatively

2.3. Summary and Knowledge Gap

Regarding the empirical literature review deposit growth studied in country level and outside in Ethiopian. some researcher specially in Ethiopia focus on commercial bank of Ethiopia in the case of public and private bank Bahredin, 2016 to find the determinants of commercial banks deposit growth in Ethiopia., Shemsu (2015) focused on Determinants of commercial bank deposits: and Jembere (2014) Empirical examine determinants of deposit mobilization in private commercial banks of Ethiopia using panel data of six private commercial banks from year 2002 to 2012.

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

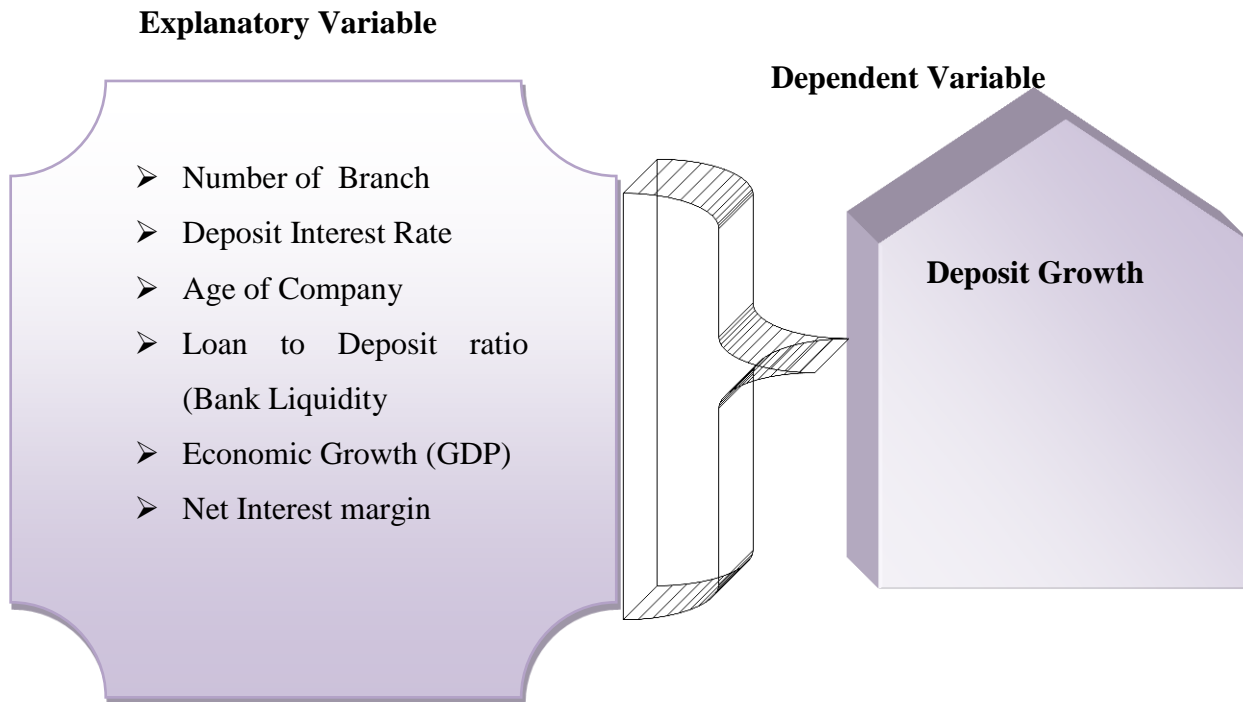
As it was discussed in the literature review part, Most of study undertaken in our country related to the topic of determinates of deposit growth focus on a separately treating the total deposit amount to the private commercial banks and some factors that are reviewed by different researchers indifferent research techniques also showed different effect on Bank deposit. Thus, the inconsistency funding among researchers, the sample size is limited by some private bank or only commercial bank of Ethiopia (CBE), little attention given by researcher on the determinate of deposit growth in private commercial banks of Ethiopia, and macroeconomic policy difference from country to country, motivated the researcher to undertake a research in this particular area by adding new additional variable to fill these gap.

2.4. Conceptual Framework

According to the literature review part the following cause and effect variable are developed in private commercial bank deposit growth of Ethiopia. The independent variables are concern on

the macroeconomic and microeconomic factors of the bank; this is therefore deposit mobilization influences socio economic factors of the country.

Figure 1. Conceptual Framework



Source:- Developed by the researcher

CHAPTER THREE

3. RESEARCH METHODOLOGY

3.1. Research Approach

In this study used quantitative research approach methods according to Kothari, C.R (1992) quantitative form which can be subjected to rigorous quantitative analysis To achieve the objective of in the study for the base determining the research approach for the private commercial bank deposit growth. Therefore, the researcher employed quantitative research approach and explanatory research design to see the regression result analysis with respective empirical literatures on the determinants of bank deposit.

3.2. Research Design

Based on the study methodology using explanatory research design examines the cause and effect relationships between dependent and independent variables. Therefore, since this study examined the cause and effect relationships between determinants of deposit growth, it is an explanatory research.

3.3. Target Population and sample size

In Ethiopia recently have one public commercial bank and 16 private commercial bank such as commercial bank of Ethiopia government owned bank and Awash Bank, Dashen Bank, Nib International Bank, Bank of Abyssina, United Bank, Lion International Bank, Oromia International Bank, Buna International bank, Wegagen Bank, Abay bank, Cooperative Bank of Oromia, Birhan International Bank, Zemen bank, Addis International Bank, Dehub Global bank and Enat bank are private owned bank in this study focus on only private commercial Bank since established ten years ago from 2017 such as Awash Bank, Dashen Bank, Bank of Abyssina, United Bank, Wegagen Bank, Nib International Bank, Cooperative Bank of Oromia and Lion International Bank they have been chosen because examine as an individually private commercial bank deposit growth factor

3.4. Sources of Data

In this study sources of data are secondary data used to assess Determinants factors of private commercial bank deposit growth in Ethiopia collecting 10 years data from all private banks annual report in NBE & Central Statistics Agency(CSA) from a year between 2008 up to 2017, The study examine the cause and effect relationships between growth of deposit and its determinant, therefore it is an explanatory research and the problem identified factors affecting the outcome having numeric value, it is quantitative approach.

3.5. Methods of Data Analysis

To achieve the objectives of the study, data has to be analyses in line with the purpose of the research plan after data collection. Accordingly, secondary data collected from annual financial statements of the sampled private commercial banks in Ethiopia, National Bank of Ethiopia (NBE) and Central Statistics Agency CSA were analyzed to determine its suitability, reliability, adequacy and accuracy. Thus, this study utilized both descriptive and econometric analysis based on a panel data from Ten Years (2008-2017) to examine the relationship between the growth of deposit and its determinant factors in private commercial banks found in Ethiopia. In panel data regression methodology by estimation model was adopted OLS (Ordinary Last Square). The panel regression results were presented in a tabular form evaluated using individual statistical significance test (T-test) and overall statistical significance test (F-test). The goodness of fit of the model would be tested using the coefficient of determination (R-squared). In conducting all the data analysis, the study used EViews 8 software.

3.6. Descriptions of Variables and Hypothesis of the study

3.6.1. Dependent Variable

1. Deposit Growth

In this study they have one dependent variables to examine the relationship between growth of deposit in private commercial bank with explanatory variable. The proxy of variable is percentage of annual total deposit growth.

3.6.2. Independent Variable

The following explanatory variables are wished for the determinant factors for growth of deposit capacity in private commercial bank of Ethiopia

1. Numbers of Branch

Based on the objectives of the study, the following major hypothesis will be tested in the determinant factors of private commercial bank deposit growth. There is a relationship between commercial banks deposits and commercial banks branch expansion. Not only do bank branches influence deposits, but the expansion of bank branches is also influenced by the level of deposits in any area (M. A. Baqui et al, 1987). It is expected that banks make decisions on expanding their facilities by considering factors such as level of competition, deposit potential, regional income and existence of road and vehicles. As deposit potential is one thing that banks consider in expanding its branches, the deposit can also be a reason for branch expansion strategy that the banking sector uses. According to Erna and Ekki (2004), there is a long run relationship between commercial bank branch and commercial banks deposits.

It is often argued that branching stabilizes banking system by facilitating diversification of bank portfolios (Carlson and Mitcheer, 2006). Mark and Kris (2006), found from theoretical literature on banking regulation that branch banking leads to more stable banking systems by enabling banks to better diversify their assets and widen their deposit base (Gart, 1994, Hubbard, 1994). An argument commonly articulated in the literature is that branch banking stabilizes banking systems by reducing their vulnerability to local economic shocks; branching enables banks to diversify their loans and deposits over a wider geographical area or customer base (Mark and Kris, 2006). Restrictions on branching have been linked to the instability of banking systems.

Daniel (2005), suggest that the lack of widespread branching bank networks hindered the development of large-scale industrial firms. It is stated that unit banks become increasingly incapable of receiving deposits from a widespread geographic area. The single office bank is also not able to monitor geographically diffuse debtors as easily as could be done with multiple offices. Moreover, it can be concludes that under branch banking the mobility of capital is almost perfect.

2. Deposit Interest Rate

Interest rate in the banking system is held as investment cost from the investor's point of view and opportunity cost from the depositor's point of view (Mohammad and Mahdi, 2010). Thus, capital market forces balance interest rates. In other words, the just and correct interest rate should be determined through market mechanism, which is interest rate is balanced in supply and demand conditions in proportion with the inflation rate. Deposits are more interest rate sensitive and banks may choose to increase investment in interest rate sensitive assets and to decrease investments in loans. Commercial bank's deposits are interest rate sensitive; therefore as the interest rate changes the deposit of the commercial banks will change (Eustacius and David, 1995).

3. Economic Growth(GDP)

Economic performance is generally being measured through GDP (Gross Domestic Product), a variable that has also become the de facto universal metric for standards of living (Yanne et al, 2007). It is universally applied according to common standards, and has some undeniable benefits mainly due to its simplicity (Yanne et al, 2007). According to Herald and Heiko (2009), growth is one of the determining factors for commercial banks deposits. GDP is calculated by adding up the value-added at each stage of production (deducting the cost of produced inputs and materials purchased from an industry's suppliers (Jim, 2008). Erna and Ekki (2004) find four variables 'GDP' number of Islamic bank's branch offices, profit sharing rate, and interest rate that are thought to have influence on the volume of deposits. So, GDP can influence the growth of commercial banks deposits.

4. Loan To Deposit Ratio(Bank Liquidity)

Managing liquidity is a daily process requiring bankers to monitor and project cash flows to ensure adequate liquidity is maintained. Maintaining a balance between short-term assets and short-term liabilities is critical. For commercial bank, clients' deposits are its primary liabilities, whereas reserves and loans are its primary assets. Bank liquidity can be measured with different

liquidity ratio. For the purpose of this study, Total loan and advance to deposit liquidity ratio is used. The ratio serves as a useful planning and

Control tool in liquidity management since commercial banks use it as a guide in lending and investment decision. Loans & Advances are the major portion of a bank's asset and it is the most earning asset of a bank. This ratio tells us the percentage of funding sources tied up by illiquid asset. It relates illiquid asset with liquid liability. This ratio also indicates the percentage of deposit locked in to illiquid asset. The ratio reflects the proportion of the customers' deposits that has been given out in the form of loans and the percentage that is retained in the liquid forms. As this liquidity ratio decreased, Bank can easily able to respond to their withdrawal needs, thus the following hypothesis is drawn

A high LDR indicates two things, firstly the bank is issuing out more of its deposits in the form of interest bearing loans; secondly the bank generates more income. Here the problem is failure in repayment of loan, in such a case the banks liable to repay the deposit money to their customers, so the ratio is too high puts the bank at high risk. Alternatively, a very low ratio means bank is at low risk, on the same time it is not using assets to generate income. Banks with greater loan to deposit ratios can be considered, from the view point of depositors, better monitored and safer than banks with very low loan to deposit ratios because of the covenants and the resulting external monitoring that credit financing of banks entails. Note that the financing position of banks with high loan to deposit ratios can still be more vulnerable overall, as informed creditors are typically

5. Net Interest margin

Net interest margin proxy of measurement of cost of financial intermediation is calculated as the ratio of interest income on loan to total loan minus interest expense on deposits to total deposit (Sibusiso, et al. 2011). It measures the gap between implicit earnings of the bank from interest bearing activities and the implicit costs incurred for attracting interest bearing funds. Thus, the net interest margin represents the charge required by the bank for providing financial intermediation services. As such, a larger net interest margin may discourage bank clients from using their services, resulting in lower financial deepening.

$$NIM = \frac{IIOL}{\dots}$$

IEOD

IIOL is interest income on loan and IEOD is interest expense on deposit.

6. Age of Company

A Several studies have been conducted to examine the effect of age on firm Deposit growth and it has been suggested that company age is positively related to deposit growth. However, the empirical evidences of the linkage between deposit and firm ages are somewhat inconsistent. Jay Angoff Roger Brown (2007) found that there is a positive and significant relationship between the age of a company and its growth. Similarly, the research conducted on the relationship among firm characteristics including size, age, location, industry group, profitability and growth by Swiss Re (2008) indicated that larger firms are found to grow faster than smaller and younger firms found to grow faster than older firms. In contrast, the older firm more may be deposit mobilization of the firm. This could be justified as experience and efficiency in the operation process may decrease cost of production and he found even that age is the strongest determinant of deposit growth..

Table 3.1 Description of the variables, their expected relationship and Sign

Variable	Symbol	Definition	Expected Sign
Deposit Growth	DGZ	Percentage of the annual growth of the total amount of deposit	NA
Number of Branch	NBR	Ratio of Number of branch expansion on n, bank in time t,.	+
Deposit Interest Rate	DIR	Percentage of Interest Rate on the private Commercial Bank Deposits (DIR) of bank n, at time t,	+
Economic Growth(GDP)	GDP	Percentage of Annual real Growth rate of gross domestic product	+
Loan to Deposit Ratio(bank Liquidity)	LDR	Percentage of total deposit/total loan advance	-
Net Interest Margin	NIM	Percentage of net income /sum of (deposit foreign bank, Treasury bills, other Investment and total loan and advance)	-
Age of Company	AGB	Years of company age bank n, at time t,	+

Sources: - Developed by the researcher

3.7. Model Specifications

The researcher formulate econometrics model, the model is derived on the basis of previous studies of Orji Anthony (2001). McKinnon (1973) for example, argues that investment in a typical developing country is lumpy and self-financed and hence cannot be materialized unless adequate savings are accumulated in the form of bank deposits. The Life cycle hypothesis, the Keynesian absolute income hypothesis, and the permanent income hypothesis and previous studies (Khalily, Meyer and Hushak (1987); Herald and heiko (2009); Teriba (1968); Oyejide and Soyde (1986); Orji (2012) and Athukorala and Sen (2003)) provided a basis to identify the variables that may affect deposit growth. The variable such as: Number of branch, Deposit Interest rate, Economic Growth (GDP), Loan to Deposit ratio, Net interest margin, and Age of Company.

$$DGZ_{n,t} = \alpha_{n,t} + \beta_1 NBR_{n,t} + \beta_2 DIR_{n,t} + \beta_3 GDP_{n,t} + \beta_4 LDR_{n,t} + \beta_5 NIM_{n,t} + \beta_6 AGB_{n,t} + \mu_{n,t} \dots \dots \dots equ(1)$$

Where:

- ✚ α = Intercept, $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6$, are regression coefficients or parameter to be estimated.
- ✚ **DGZ** = Deposit Growth (explained Variable)
- ✚ **NBR** = Number of branch
- ✚ **DIR** = Deposit Interest Rate
- ✚ **GDP** = Economic Growth
- ✚ **LDR** = Loan to Deposit Ratio
- ✚ **NIM** = Net Interest Margin
- ✚ **AGB** = Age of Company
- ✚ μ = Random Destruction error term
- ✚ **n** = private Bank n, 1,2 ... 6 and **t** = time index year t, 1,2,... 6

3.8. Diagnostics Test Analysis

Diagnostic tests were performed to check for the validity of the parameters. The researcher is to test for Heteroscedasticity and Autocorrelation, Multicollinearity and Normality. To maintain the

data validity and robustness of the regressed result of the research, the basic classical linear regression model (CRLM) assumptions must be tested for identifying any misspecification and correcting them so as to augment the research quality (Brooks, 2008). There are different CLRM assumptions that need to be satisfied and that are tested in this study.

3.8.1. Heteroscedasticity

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 heteroskedasticity (Brooks, 2008). To check for this, White test were applied. The white 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 white tests, the researcher develops the following hypothesis to check the presence of heteroskedasticity:

- *H₀: homoscedastic error term*
- *H₁: heteroscedasticity error term*

Decision Rule: Reject H₀ if p-value greater than significance level. Otherwise, do not reject H₀.

3.8.2. Autocorrelation

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 nonzero, this phenomenon is called autocorrelation (Brooks, 2008). To test for autocorrelation, three methods can be used. The researcher apply Breusch-Godfrey test.

Breusch–Godfrey Serial Correlation LM test

The Breusch–Godfrey serial correlation LM test was run. Breusch–Godfrey tests are a joint test for autocorrelation that will allow examination of the relationship between \hat{u}_t and several of its lagged values at the same time. According to Brooks (2008), The Breusch-Godfrey test is a more general test for autocorrelation.

Hypothesis of this test are:-

The following general null hypothesis of Breusch–Godfrey serial correlation LM test, the researcher develops the following hypothesis to check the absence of autocorrelation:

- *H₀: No autocorrelations errors*
- *H₁:Autocorrelations errors*

Decision: Reject H₀ if p-value greater than significance level. Otherwise, do not reject H₀.

3.8.3. Multicollinearity

Multicollinearity is present when VIF values are larger than 10. Furthermore, the critical value can be calculated by 1/VIF. If this value is below 0.1, this would mean that more than 90% of the variation in the variable is explained by the other variables. The variable(s) with VIF values larger than 10 or 1/VIF values below 0.1 should be excluded from the analyses (Rabe-Hesketh and Everitt, 2004)

Different empirical studies show different argument towards the multicolinarity problem. Mashotra (2007) stated that multicolliantory problems exist when the correlation coefficient among variables greater than 0.75. Cooper and Schindler (2009) suggested that a correlation above 0.8 between explanatory variables should be corrected for. Lastly, Hair et al. (2006) argued that also correlation coefficient below 0.9 may not cause serious multicolinary problem. A correlation matrix was used in this study to ensure the correlation between explanatory variables. Then balanced panel data models are applied to control for multicollinearity.

3.8.4. Normality

Normality test was applied to determine whether a data is well-modeled by a normal distribution or not, and to compute how likely an underlying random variable is to be normally distributed. If the residuals are normally distributed, the histogram should be bell-shapes and the Jarque-Bera statistic would not be significant. This means that the p-value given at the bottom of the normality test screen should be greater than 0.05 to support the null hypothesis of presence of normal distribution at the 5% level. Descriptive statistics was undertaken to examine the distribution of data. Upon examination the Bera-Jarque (BJ) test uses to know the property of a normally distributed random variable that the entire distribution is characterized by the first two moments the mean and the variance.

- **H0:** Error term is normally distributed
- **H1:** Error term is not normally distributed

Decision: Reject H0 if p-value of JB smaller than significance level. Otherwise, do not reject H0

CHAPTER FOUR

4. DATA PRESENTATION AND ANALYSIS

4.1. Introduction

In this chapter presented about Determinants of private commercial bank deposit growth from 2008-2017 eight private commercial bank financial statement data interpretations in the given variable average mean, median, maximum, minimum and standard division values and interpret the test result for heteroscedasticity, autocorrelation, multicollinearity and normality based on eviews 8 regression output result

4.2. Descriptive Statistics

The summary statistics of the main variables that have been included in the model and their correlation results. The descriptive statistics presented in Table 4.1 in the appendix include the mean, median, standard deviation, minimum, and maximum. The results showed that the variable deposits had a minimum value of DGZ 3% and a maximum value of DGZ 65% with a mean of DGZ 28% and a median of DGZ 26%. Basically standard deviations of DGZ on average 14.4% in total 80 observations. A small standard deviation means that the values in a statistical data set are close to the mean of the data set, on average, and a large standard deviation means that the values in the data set are farther away from the mean, on average. The standard deviation measures how concentrated the data are around the mean; the more concentrated, the smaller the standard deviation. The general rule stated that the higher value of standard deviation implies greater spread of data, smaller the standard deviation shows the data is consternated around the mean.

Table 4.1 Descriptive statistics

	DGZ	NBR	LDR	GDP	DIR	NIM	AGB
Mean	0.282434	0.246534	0.618431	0.098000	0.047000	0.058255	13.87500
Median	0.261100	0.245650	0.609250	0.100000	0.050000	0.050500	14.00000
Maximum	0.651200	0.666000	0.890100	0.120000	0.050000	0.130000	23.00000
Minimum	0.033500	0.000000	0.401100	0.080000	0.040000	0.026800	2.000000
Std. Dev.	0.144770	0.135323	0.090398	0.011735	0.004611	0.023269	4.953901
Observations	80	80	80	80	80	80	80

Source;- from listed sample 2008-2017 financial statement report eviewa 8 output result

The above table shows descriptive statistics mean, median, maximum, minimum and standard deviation values of six independent variable on average deposit growth(dependent variable) in the collected data for 80 observation. Therefore, the mean value of bank deposit growth was around 28% on average for sampled private commercial banks in Ethiopia. It can be noticed that private commercial banks were achieved 28% average deposit growth with fluctuates between 3 and 65% from depositors for the period between 2008 up to 2017 and the growth of deposit in the stated observation the mean of DGZ 28% and the median of DGZ 26% it implies that the mean was at nearest skewed from left stands for median. The standard deviation among banks in terms of bank deposit growth was 14.4% this confirms that there were lower variations of deposit growth among bank to bank during the study period. Though the performance of deposit among commercial banks conforms to supply the loan-able fund, the trend of deposit is increasing year to year at increasing rate. The reason of this increasing deposit growth may attribute to increase the users of banking services and or intermediation of commercial banks in the country.

The mean value of loan to deposit ratio (LTD) was 61 % it implies that lower amount of volatile liabilities/deposits were tied up with illiquid loans. There was low dispersion of LDR towards its mean value among banks that is shown by the standard deviation of 9% on the bank to bank loan to deposit ratio on average. The maximum value of LDR was 89% which is far above the standard whereas the minimum value was 40% which is far below the standard. This indicates that there were some commercial banks in Ethiopia having extra intermediation (banks around 40% LDR) and others were going to face bank intermediation risk (banks around 89% LDR). Therefore, it can be concluded that loans to deposit ratio was moderate among private commercial banks in Ethiopia.

The mean value of number of bank branches was on average 24% units; the standard deviation was 13.5%, while a maximum 66.6% and a minimum 00 observed values respectively, it implies that higher branch expansions among banks to bank. The impact of banks to expand branching network. However, the number of people to a single bank branch has declined significantly notwithstanding that it is still high by even SSA standard.

The mean value of the bank deposit interest rate over the period under study was on average 4.7% with the maximum values of 5% within study period and 4% minimum values within study period. There was little variation of interest rate towards its mean value over the periods under study with the value of standard deviation 0.004%. This implies that the stability of deposit

interest rate for subsequent years under the study periods in a sense there is a control of minimum and maximum deposit interest rate by the government body. So there was no competition between private commercial banks to attract the customers with a motive of return on deposit under the study period.

Net interest margin (NIM) ratio proxy of measurement of profitability measured by ratio of interest income on loan to total loan minus interest expense to total deposit ranges from 2.6% percent to 13%. It has a mean of 5.8% showing the standard deviation of 2.3% deviation between one another private commercial banks in Ethiopia the median 5% skewed to left from its mean value. This indicates that NIM of private Commercial Banks in Ethiopia has exhibited an increasing trend in interest rate margin within the study period.

The mean value of GDP growth rate of Ethiopia for the last ten years was on average 9%. The maximum GDP growth rate was on average 12% and the minimum GDP growth rate was on average 8%. It implies that, the country has recorded on average a double digit (above 9 percent) growth rate from within the study period 2008 up to 2017. The standard deviation of GDP growth 1% also indicates that there was little dispersion on the real GDP growth rate towards its mean.

The mean value of Age of bank was on average 13.8 year and the median was 14 years it implies that the median skewed to the right from mean value, maximum and minimum year between private commercial bank in Ethiopia 23 years and 2 years respectively within the study period. Standard deviation was 4 years it implies that the fewer deviation among each other.

4.3. Diagnostics Test

Based on proceeding with the discussion of the regression results, the preferred regression model was subjected to a number of diagnostic tests in order to evaluate its validity. These were: autocorrelation, which supplement the DW (Durbin Watson) statistics, the ARCH (Autoregressive conditional heteroscedasticity) test which detects the problem of heteroscedasticity, the Jarque-bera test for normality of the residuals and the Multicollinearity test for perfect or high correlations with independent variable each other's.

4.3.1. Autocorrelation Test

The violation of the basic assumption that residuals are mutually independent results in serial autocorrelation. In time series data the successive residuals tend to be highly correlated.

Autocorrelation can also be extended to cross section data where the residuals are correlated with those of the neighboring units (Maddala, 1977). The Durbin-Watson method is used to test for autocorrelation. A Durbin Watson statistic around two is generally accepted though there are zones of indifference and zones of both positive and negative correlation.

Table 4.2 Rejection and non-rejection regions for DW test

Reject H0: positive autocorrelation	Inconclusive	Do not reject H0: no evidence of autocorrelation	Inconclusive	Reject H0: negative autocorrelation
0	dL	du	2	4-du
				4-dL
				4

R-squared	0.753849	Mean dependent var	0.282434
Adjusted R-squared	0.705365	S.D. dependent var	0.144770
S.E. of regression	0.078582	Akaike info criterion	-2.091733
Sum squared resid	0.407554	Schwarz criterion	-1.674878
Log likelihood	97.66930	Hannan-Quinn criter.	-1.924604
F-statistic	15.54831	Durbin-Watson stat	2.105495
Prob(F-statistic)	0.000000		

Source: Brooks (2008) Durbin Watson statistic

The study used the dL and dU values for 80 observations as approximation of 80 observations. As per the DW table in the figure above for 80 observations with seven explanatory variables at 1% level of significance, the dL and dU values are 1.36 and 1.62 respectively. The values of $4 - dU = 4 - 1.62 = 2.38$; $4 - dL = 4 - 1.36 = 2.64$. The Durbin-Watson test statistic of 2.10 is clearly between the upper limit (dU) which is 1.62 and the critical value of $4 - dU$ i.e. 2.38 and thus the null hypothesis of no autocorrelation is within the non-rejection region of the number line and thus there is no evidence for the presence of autocorrelation.

4.3.2. Heteroscedasticity Test

It is assumed that the error terms are homoscedastic, i.e., it assumed that the error terms have a constant variance otherwise they are said to be heteroskedastic. Validation of the null hypothesis

that the error terms are homoscedastic is required because the presence of heteroskedasticity makes the standard errors wrong and consequently any inferences made could be misleading. To ensure that this assumption is no longer violated, the most popular method, the white test has to be and made Brooks (2008) recommended that not to reject the null hypothesis, the p-value of the F- and χ^2 ('LM') versions of the test statistic and the p-value of the Scaled Explained SS must be higher than 0.05. The detail of this test is provided in the appendix at the end of the paper.

The research employed the Whites test for heteroscedasticity. The problem of continuing to use data that suffers heteroscedasticity is that whatever conclusion or inferences, they will be misleading.

Table 4.3 Heteroscedasticity Test: White

Heteroskedasticity Test: White			
F-statistic	0.895310	Prob. F(26,53)	0.6116
Obs*R-squared	24.41391	Prob. Chi-Square(26)	0.5523
Scaled explained SS	21.12801	Prob. Chi-Square(26)	0.7353

Sours: Eviews 8 output Heteroscedastity Test

In above tables 4.3, presents three different types of tests for heteroskedasticity indicating that the F- and χ^2 ('LM') versions of the test statistic give the same conclusion that there is no evidence for the presence of heteroskedasticity, since the p-values are higher than 0.05. The third version of the test statistic, 'Scaled explained SS', as the name suggests is based on a normalized version of the explained sum of squares and also suggests that there is no evidence of heteroskedasticity as its p-value is reasonably higher than 0.05 and not significant.

4.3.3. Multicollinearity Test

Multicollinearity means the existence of a "perfect" or exact, linear relationship among some or all explanatory variables (Gujarati D. 2004). As noted in (Gujarati D. 2004) if multicollinearity is perfect, the regression coefficients of the explanatory variables are indeterminate and their

standard errors are infinite. If multicollinearity is less than perfect, the regression coefficients, although determinate, possess large standard errors (in relation to the coefficients themselves), which means the coefficients cannot be estimated with great precision or accuracy.

According to Gujarati, (2004,pag 359) stated that High pair-wise correlations among regressors. Another suggested rule of thumb is that if the pair-wise or zero-order correlation coefficient between two regressors is high, say, in excess of 0.8, then multicollinearity is a serious problem. The problem with this criterion is that, although high zero-order correlations may suggest collinearity, it is not necessary that they be high to have collinearity in any specific case.

Table 4.4: Multicollinearity Test

Correlation	NBR	LDR	GDP	DIR	NIM	AGB
NBR	1.000000					
LDR	0.295705	1.000000				
GDP	-0.096688	0.145713	1.000000			
DIR	0.315892	-0.132771	-0.486513	1.000000		
NIM	0.130909	0.207313	-0.088695	0.149249	1.000000	
AGB	0.061674	0.071505	-0.296117	0.465440	-0.006725	1.000000

Source: Eviews 8 output result

Table 4.4 showed that there is no strong pair-wise correlation between the explanatory variables DIR, GDP, LDR, NBR, NIM, and AGB. In this study the highest correlation coefficient is 0.486513 between Economic Growth and Deposit interest rate. Thus, it can be concluded using the books of Gujarati, 2004 page 359 each explanatory variable are high correlation the coefficient values are excess of 0.8 then multicollinearity is a serious problem. In this study based on Gujaratin rule there is no multicollinearity problem in the explanatory variables selected to determinants of pri private vet commercial bank deposit growth.2

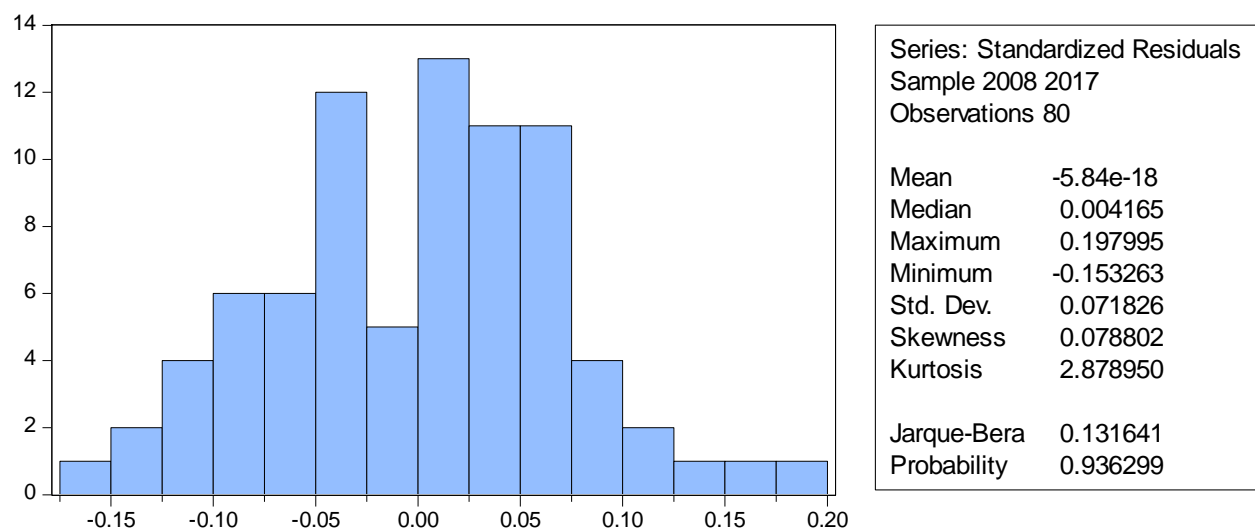
4.3.4. Normality Test

According to (Brooks, 2008) in order to conduct hypothesis test about the model parameter, the normality assumption must be fulfilled. The normality assumption is about the mean of the

residuals is zero. In this study, the normality of the data was checked with the popular Bera-Jarque test statistic.

According to Brooks (2008) a normal distribution is not skewed and is defined to have a kurtosis coefficient of 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. noted that the Jarque-Bera statistic will not be significant for disturbance to be normally distributed around the mean. The hypothesis for the normality test was formulated as follow:

Figure: 2 Normality Test Distributions



Source: Eviewa 8 Histogram output result

As shown in figure 4.1, the Skewness and the Kurtosis are closer to Zero (0.078802) and Three (2.878950) respectively in addition the histogram is bell-shaped and the Bera-Jarque statistic is not significant. This means that the p-value given at the bottom of the normality test screen should be bigger than 0.1 do not reject the null hypothesis of normality even at 10% significant level so that, the residuals are normally distributed in this study and there is no normality problem on Deposit growth model.

4.4. Model Specification Criteria

The collected data were estimated based on panel data model, which includes cross sectional and time series observations for 8 private commercial banks for 10 years .The estimation technique

was carried out on the basis of balanced panel data regression. A balanced panel data have equal time series observations for the study entities. In this study, the cross sectional units are Eight and the time series for ten years. The commonly used models for panel data are fixed effects and random effects model. The random effects model is more appropriate when the entities in the sample can be thought of as having been randomly selected from the population while fixed effect model is more appropriate when the entities in the sample effectively constitutes the entire population (Brooks, 2008). On the other hand, according to Gujarati (2004) cited in Mekbib (2016), if the number of time series data is large and the number of cross-sectional units is small, there is likely to be little difference in the values of the parameters estimated by fixed effect model. So that in this studies the number of Cross Section units (8) less than the number of time series (i.e 10 years). Therefore, fixed effect model is more appropriate than random effect model used for this study

4.5. Regression result analysis and Interpretation

Regression result and interpretation on the private commercial bank deposit growth determinant factors estimated CLRM results of fixed effect model. This regression analysis is based on the collected data from National Bank of Ethiopia. The relationship between one dependent variable and seven independent variables is regressed using econometric software EViews 8 Thus, the model used to examine statistically significant effect on determinants of private commercial banks deposit growth.

The coefficient of explanatory variable and constant variable are interpreted and identify both magnitude and the direction of impact with dependent variable. Under the following regression outputs the beta coefficient may be negative or positive; beta indicates that each variable’s level of influence on the dependent variable. P-value indicates at what percentage or precession level of each variable is significant. R2 values indicate the explanatory power of the model and in this study adjusted R2 value which takes into account the loss of degrees of freedom associated with adding extra variables were indirectly to see the explanatory powers of the models.

$$\begin{aligned}
 \mathbf{DGZ_{n,t} = \alpha_{n,t} + \beta_1NBR_{n,t} + \beta_2DIR_{n,t} + \beta_3GDP_{n,t} + \beta_4LDR_{n,t} + \beta_5NIM_{n,t} + \beta_6AGE_{n,t} +} \\
 \mathbf{\mu_{n,t} \dots\dots\dots equ(1)}
 \end{aligned}$$

Table: 4.5 Regression result for Fixed Effect Model output

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.837091	0.188104	4.450157	0.0000
NBR	0.168129	0.080820	2.080287	0.0414**
LDR	-0.176783	0.121113	-1.459653	0.1491
GDP	1.936154	0.907033	2.134601	0.0365**
DIR	-16.78084	3.478187	-4.824593	0.0000***
NIM	-1.798513	0.851407	-2.112401	0.0384**
AGB	0.015636	0.006024	2.595746	0.0116**
Effects Specification				
Cross-section fixed (dummy variables)				
R-squared	0.753849	Mean dependent var		0.282434
Adjusted R-squared	0.705365	S.D. dependent var		0.144770
S.E. of regression	0.078582	Akaike info criterion		-2.091733
Sum squared resid	0.407554	Schwarz criterion		-1.674878
Log likelihood	97.66930	Hannan-Quinn criter.		-1.924604
F-statistic	15.54831	Durbin-Watson stat		2.105495
Prob(F-statistic)	0.000000			

*, **, and *** Significant impact on 10%, 5% and 1% respectively

Source: Eviewa 8 Estimated Equation output result

Show as to the above table 4.5 estimation results reported for applying panel data techniques the determinants of the private commercial banks deposit growth in Ethiopia are Number of branches, Loan to deposit ratio (Liquidity), Economic Growth (GDP), Deposit Interest rate, Net Interest Margin, and age of company. On the estimation results The Adjusted R-squared values of 0.75 is an indication that the model is a good fit. This means 70% of variations in bank deposit growth were explained by independent variables included in the model. However, the remaining 30% changes in bank deposit growth are caused by other factors that are not included in the

model. Furthermore, the F-statistic was 15.54831 and the probability of p – values 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 bank deposit growth means there is significant relationship between the dependent variable and the independent variables.

➤ **Number of Branch(NBR)**

Number of Branch expansion is one of the Bank specific factors that affect deposit of private commercial banks in Ethiopia and it was measured by annual growth rate of Branch expansion. It was hypothesized that Branch expansion has positive and significant impact on bank's deposit. Based on the regression result, Branch expansion is positive and statistically significant impact on private commercial banks deposit growth in Ethiopian even at 5% significant level. The coefficient of 0.168129 It Implies that, taking other independent variables is constant, number of branch growth rate increases at 1% on average deposit growth of Ethiopian private commercial banks are increases at 0.16%. The result of this study was consistent with the findings of Derje(2017), Andinet(2016), Hibret and Shemsu (2015) on commercial Bank of Ethiopia. Thus, in general, null hypothesis has been accepting and conclude that bank branches have essential relationship with growth of bank deposit; meaning that it is one of the major factors that banks can use to achieve deposit growth via a proper management of branch expansion. The expansions of the branch network not only reduces transaction costs for depositors but also increase accessibility of banking services and provides other important financial services and increases the awareness of people about banking. The expansion of banking facilities is the key factor in deposit growth because easier physical access should reduce transaction costs for depositors.

➤ **Loan To Deposit Ratio (Liquidity)**

Loan to deposit ratio is measured in ratio of annual total loan per total deposit, in this research the result of loan to deposit (LDR) ratios are negative impact on private commercial bank deposits growth. The coefficient of this relationship of -0.176783 indicates that holding other independent variables are constant; loan to deposit ratio increases at 1% private commercial bank deposit growth will lead to at 0.17% reduction and vice versa and statically insignificant even at 10%.

According to Herald and Heiko (2009), states that the liquidity situation of the bank also plays a significant role in determining banks deposit growth. According to Nada (2010), Banks

perceived as risky should have had more difficulty attracting deposits and making loans than banks perceived as safe. When banks fail to pay for its depositors then it faces liquidity risk that makes other depositors not to deposit in that particular bank.

Beside on past study Finding, Devinga, (2010), loans to deposit ratio is inversely related to liquidity and consequently the higher the loans to deposit ratio the lower the liquidity indirectly affect deposit growth and vice versa. 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. Therefore in this study then null hypothesis is rejected insignificant relationship between LDR with private commercial bank deposit growth in Ethiopia but partially meet with correlation coefficient with study hypothesis.

➤ **Economic Growth(GDP)**

Theoretical and empirical evidence suggests that, economic growth is the main source of banks deposit growth. If there is a real growth in the economy, deposit will grow as well. This hypothesis was proved by the chakravarty committee in 1985. The committee reported that the growth of Indian deposit in 1985 at an accelerated pace was attributed to the higher real growth achieved by the economy (chakravarty committee, 1985).

The economic growth of the country has positive and statistically significant impact on deposit growth. When other independent variables are constant Economic growth (GDP) increase at 1 unit private commercial bank deposit growth on average increase at 1.93% statically significant at 5%. In the growing economy, both individuals and companies" corporate income will increase. This increase leads to increase earnings (per-capita income) which will intern increase saving. The finding of Tizita (2014) and Hadush (2012) supports this argument. The study of the chakravarty committee in 1985 clearly indicated that the existence of real growth in the economy, will definitely results in deposit growth. (chakravarty committee, 1985). Indian experience is the same as Ethiopia"s in this regard. This finding is also supported by Alemahehu"s research (Mudaye Neway, 2015). According to Herald and Heiko (2009), growth is one of the determining factors for commercial banks deposits. GDP is calculated by adding up the value-added at each stage of production (deducting the cost of produced inputs and materials purchased from an industry's supplier (Jim, 2008). So, that GDP can influence the growth of private commercial banks deposits and does not reject null hypothesis.

➤ **Deposit Interest rate(DIR)**

Deposit Interest Rate is a fraction of total deposit is taken as a measure for interest rate on deposit. It was hypothesized that deposit Interest rate has positive and significant impact on bank's deposit. The result of the regression shows that, change of DIR at 1%, holding other things constant, and change in private commercial bank deposit growth at 16.78% in opposite direction. The positive relation was consistent with the findings of Bahirdin (2016), Hibret and Shemsu (2015) on commercial Bank of Ethiopia. Although, McKinnon (1973) and Shaw (1973) point out that interest rate is key factor that influences savings of a country, a general implication drawn in this paper is that deposit rate inverse relationship with deposit growth and statically significant. Therefore, the study null hypothesis rejected and the result implies that the investment policy of the country is highly promoted the government so that, the returns of other investment are better than saving account investment and the inflation rate is high with Deposit interest rate for the study period.

➤ **Net Interest Margin(NIM)**

Net interest margin measured by a ratio of net interest income per net interest expenses, result of the regression coefficient values -1.798513 it implies that net interest margin ratio has a significant Negative impact on private commercial bank deposits growth. Thus, the hypothesis does not reject and net interest margin is inverse relationship with deposit growth. Taking other things constant; Net Interest Margin ratio increases at 1% on average private commercial bank deposit growth in Ethiopia Decreases at 1.79% statically significant at 5%. Based on past studies Andinet(2016) finding, Erna and Ekki (2004) finding the long run relationship between commercial banks deposits and the profitability of the banks. 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). In this study finding Net interest margin increases on same time decreases deposit growth. This is consequence of increases landing customers for investment because the investment policy varies privilege to support debit investment (i.e free from stump duty charge from loan) and to expand they own business in the study period net interest rate is lower as compared with other variables.

➤ **Age of Company:**

As presented on table 4.5 the coefficient of age of Company (AGB) is positive with 0.015636 and it is statistically significant impact on determinant of private commercial bank deposit growth in Ethiopian with the probability of 0.0116. Thus based on this research finding age of company is a powerful explanatory variable to determinant of private commercial bank deposit growth in Ethiopia.

Age of bank has great impact on deposit growth in banking industry, although age has importance for creating strong relationship with customers and good governance experience so it has a great impact on deposit. The regression result implies that holding other explanatory variable are constant when Age of Company increases at 1 year on average deposit growth of private commercial bank in Ethiopia increases at 0.015 units and statistically significant impact even at 1% level. The study null hypotheses also fail to reject.

CHAPTER FIVE

5. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1. Introduction

The study established the determine factors for deposit growth in private commercial bank in Ethiopia during the period from 2008-2017. Findings indicated that bank deposit growth are influenced by number of branches (NBR), deposit interest rate (DIR), Loan to Deposit ratio(LDR), Economic Growth(GDP), Net Interest Margin(NIM), and Age of Company(AGB). This chapter outlines the summary and conclusions of the study in accordance with the study results. It also gives an insight on the policy recommendations as well as suggestions for future studies.

5.2. Summary

In this study, the empirical analysis of investigating the determinants of private commercial bank deposit growth in Ethiopia was conducted using a panel data set consisting of financial data of Eight private commercial bank in Ethiopia over the period of 2008 to 2017 and supports the finding with secondary source of data. The results of pooled OLS regression analysis revealed that number of branches (NBR), deposit interest rate (DIR), Economic Growth (GDP), Net Interest Margin (NIM) and Age of Company (AGB) were statistically significant to explain private commercial bank deposit growth. The result of the study also shows that number of branches (NBR), Economic Growth (GDP) and Age of Company (AGB) were positively related to Deposit growth, while Loan to Deposit Ratio negatively and statistically insignificant related impact on deposit growth. The data from Secondary data source also support regression Eviews 8 output; generally three variables are positive and significant impact on deposit growth out five significant factors of six total variable. All determinants selected on the study are concluded as follows:

5.3. Conclusion

In the study determine six explanatory variables five of explanatory variables are microeconomic factors and one of them are macroeconomic factors to examine eight private commercial bank

deposit growth in Ethiopia by constructing an econometric model to study the effect of the factors such as

Number of branches: - the regression result shows that significantly and positively affected by number of bank branches expansions are high. This has caused an increase in the level of deposit in the bank. There is direct relationship with Deposit growth for the study period.

Economic Growth;- it also direct relationship with deposit growth and significant impact when the country economy is increases they also increases saving ability of the individuals the regression result shows that GDP has positive and significant factors on private commercial bank deposit growth in Ethiopia in the study period and powerful factors for deposit growth.

Age of Company: - company age was in this study measured by life time of the company from establishment year up to the study period. Therefore, the regressing result for age of company was positive and statistically significant impact on deposit growth so, that the age of company was strong factors in 10 years period for deposit growth.

Deposit interest rate: - Deposit interest rate is inverse relationship with deposit growth according to regression result deposit interest rate was affected by the inflation rate and availability of other investment option in the study period not applicable for deposit interest rate in the deposit mobilization factors.

Net Interest Margin: - Net interest margin is one of significant factors on deposit while the margin rate increases on the same time decreases deposit growth of private commercial bank in Ethiopia in the study period does not support the growth of private commercial bank deposit in Ethiopian.

Loan to Deposit ratio: - based on the regression result explanatory variable loan to deposit ratio is not considered as powerful variables to define the private commercial bank deposit growth in Ethiopia in the study period.

5.4. Recommendation of study

According to empirical findings for this study the following recommendations are for stakeholders like Bored Members, executive Managements and other concerned participants. As a result all private bank deposit growth in low cost to expand number of branch through all over the society urban area and rural based area. Economic growth of the country is the best

advantages for maximizing bank deposit, and age of the company also has positive influence to increasing banks deposit.

- Number of branch expansion has positive and significant effect on total deposit of private commercial banks; private commercial banks should also expand their branches in order to increase their deposit in both urban and rural sector for accessibility of bank branch and promote overall activities of banking business for the society. Especially private commercial banks in Ethiopia not expand for everywhere in Ethiopia.
- Economic growth (GDP) has a macroeconomic factor that influences positive and statistically significant impact on deposit growth. According to this study finding economic growth to support banks deposit growth also it implies that in order to achieve higher deposit growth towards creating the necessary market conditions for banks to enhance their efficiency. Policy makers; create various banking policy In order to maximizes resource mobilization such as to implement for minimizing/avoiding trends of cash note transaction out of bank in Ethiopia by demonstrate in the best practices of developed country and the government to support E-banking Services to promote various transaction though in bank such as payments of bill, commodity exchange of goods and other related payments.
- Deposit Interest rate has inversely relationship with deposit growth in the study period. The growth of banks deposit do not support deposit interest rate. Thus it affected by external factors because of rising inflation rate and investment opportunity in various sectors there is attractive privilege by the government.

Finally, private commercial bank in Ethiopia focus on maximizing their deposit expand bank branch, by low cost and economic factors shall be oriented in like to policy makers, support investment to enhancing individual economic growth relatively bank deposit increases to creating Awareness for the society using banking services by various awareness mechanisms such as procures, mass media and other communication methods.

5.5. Suggestion for future researcher

In this study taking as a standing point, it could be possible to come up with a better insight and several extensions to this study are possible. Considering the available time and resource the outcome of this study can be more robust, if future researchers conduct a study on this area. To

contribution the literatures due to the findings of the study which will help policy makers to formulate policy, by further investigation and increases sample size of population and included the whole private commercial banks in Ethiopia, other issues that could be covered in future research include additional variable do not included in this research lack of data and correlated variable such as; Exchange rate, Availability of E-banking and number of cheque cleared. However, this study is not beyond limitations. Over the years, number of other mechanisms had been used in promoting deposit growth but they are excluded in this study because of the lack of data to measure those issues such as literacy quality of bank services, inducements provided to employees and depositors etc.

This study focused only by secondary data but other researchers can include primary data for investigating Awareness of the Society.

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Appendix

Appendix I; Raw Data Associated With Regression Analysis

Bank		Year	DGZ	NBR	LDR	GDP	DIR	NIM	AGB
AIB	1	2008	0.2434	0.1777	0.7075	0.12	0.04	0.0426	14
AIB	1	2009	0.2824	0.132	0.5467	0.1	0.04	0.044	15
AIB	1	2010	0.2304	0.0333	0.5152	0.1	0.04	0.029	16
AIB	1	2011	0.2682	0.129	0.5148	0.11	0.05	0.027	17
AIB	1	2012	0.1886	0.228	0.5981	0.08	0.05	0.04	18
AIB	1	2013	0.363	0.3255	0.6146	0.09	0.05	0.044	19
AIB	1	2014	0.1988	0.3333	0.7794	0.1	0.05	0.04	20
AIB	1	2015	0.2314	0.3618	0.674	0.1	0.05	0.043	21
AIB	1	2016	0.2328	0.1835	0.6767	0.08	0.05	0.05	22
AIB	1	2017	0.3398	0.3836	0.738	0.1	0.05	0.052	23
DB	2	2008	0.2655	0.1428	0.7123	0.12	0.04	0.0492	13
DB	2	2009	0.2883	0.125	0.5617	0.1	0.04	0.0458	14
DB	2	2010	0.28	0.092	0.4977	0.1	0.04	0.0268	15
DB	2	2011	0.1673	0.1017	0.5251	0.11	0.05	0.0275	16
DB	2	2012	0.1878	0.154	0.5776	0.08	0.05	0.0369	17
DB	2	2013	0.127	0.4933	0.5591	0.09	0.05	0.0351	18
DB	2	2014	0.1155	0.267	0.5333	0.1	0.05	0.0358	19
DB	2	2015	0.1206	0.155	0.5818	0.1	0.05	0.0395	20
DB	2	2016	0.1486	0.4146	0.5578	0.08	0.05	0.0372	21
DB	2	2017	0.2208	0.3577	0.6509	0.1	0.05	0.0403	22
UB	3	2008	0.5856	0.2	0.7611	0.12	0.04	0.07554	10
UB	3	2009	0.4798	0.1388	0.5952	0.1	0.04	0.07587	11
UB	3	2010	0.3067	0.0243	0.5531	0.1	0.04	0.077	12
UB	3	2011	0.2838	0.1904	0.5399	0.11	0.05	0.08	13
UB	3	2012	0.114	0.38	0.6049	0.08	0.05	0.11	14
UB	3	2013	0.1933	0.086	0.5839	0.09	0.05	0.12	15
UB	3	2014	0.1044	0.32	0.5689	0.1	0.05	0.12	16

UB	3	2015	0.3256	0.343	0.5809	0.1	0.05	0.13	17
UB	3	2016	0.1045	0.278	0.6549	0.08	0.05	0.13	18
UB	3	2017	0.266	0.2705	0.7269	0.1	0.05	0.12	19
BOA	4	2008	0.2781	0.5	0.81	0.12	0.04	0.0511	12
BOA	4	2009	0.2923	0.119	0.6028	0.1	0.04	0.05312	13
BOA	4	2010	0.1434	0	0.6136	0.1	0.04	0.035	14
BOA	4	2011	0.1822	0.212	0.5485	0.11	0.05	0.044	15
BOA	4	2012	0.1146	0.07	0.5756	0.08	0.05	0.047	16
BOA	4	2013	0.2547	0.409	0.5534	0.09	0.05	0.038	17
BOA	4	2014	0.0707	0.267	0.5564	0.1	0.05	0.05	18
BOA	4	2015	0.2222	0.33	0.5311	0.1	0.05	0.049	19
BOA	4	2016	0.2264	0.3448	0.5876	0.08	0.05	0.053	20
BOA	4	2017	0.2501	0.297	0.6728	0.1	0.05	0.051	21
WB	5	2008	0.0892	0.0256	0.7911	0.12	0.04	0.04999	11
WB	5	2009	0.2569	0.225	0.5666	0.1	0.04	0.05895	12
WB	5	2010	0.2012	0.0204	0.6306	0.1	0.04	0.045	13
WB	5	2011	0.2031	0.06	0.4885	0.11	0.05	0.044	14
WB	5	2012	0.0335	0.132	0.6192	0.08	0.05	0.048	15
WB	5	2013	0.3113	0.3166	0.6212	0.09	0.05	0.051	16
WB	5	2014	0.1104	0.2658	0.5492	0.1	0.05	0.081	17
WB	5	2015	0.1773	0.19	0.6151	0.1	0.05	0.053	18
WB	5	2016	0.1223	0.4705	0.6775	0.08	0.05	0.054	19
WB	5	2017	0.2653	0.2742	0.7301	0.1	0.05	0.056	20
NIB	6	2008	0.3145	0.5	0.8558	0.12	0.04	0.06449	9
NIB	6	2009	0.3346	0.0714	0.6736	0.1	0.04	0.07335	10
NIB	6	2010	0.252	0.0666	0.6169	0.1	0.04	0.048	11
NIB	6	2011	0.2496	0.0625	0.54	0.11	0.05	0.06	12
NIB	6	2012	0.132	0.1372	0.64	0.08	0.05	0.06	13
NIB	6	2013	0.14	0.2413	0.68	0.09	0.05	0.08	14
NIB	6	2014	0.1905	0.3055	0.68	0.1	0.05	0.07	15
NIB	6	2015	0.2336	0.2234	0.71	0.1	0.05	0.08	16
NIB	6	2016	0.271	0.3478	0.6011	0.08	0.05	0.09	17

NIB	6	2017	0.3215	0.3096	0.65	0.1	0.05	0.08	18
CBO	7	2008	0.6101	0.25	0.6579	0.12	0.04	0.07989	4
CBO	7	2009	0.6099	0.3	0.7557	0.1	0.04	0.05	5
CBO	7	2010	0.6512	0.423	0.5261	0.1	0.04	0.052	6
CBO	7	2011	0.4436	0.1621	0.4011	0.11	0.05	0.04	7
CBO	7	2012	0.4126	0.186	0.4901	0.08	0.05	0.05	8
CBO	7	2013	0.5961	0.45098	0.4701	0.09	0.05	0.04	9
CBO	7	2014	0.4501	0.2162	0.6701	0.1	0.05	0.07	10
CBO	7	2015	0.3519	0.666	0.8901	0.1	0.05	0.07	11
CBO	7	2016	0.45	0.2	0.7011	0.08	0.05	0.08	12
CBO	7	2017	0.6212	0.2777	0.6801	0.1	0.05	0.06	13
LIB	8	2008	0.6123	0.4166	0.4863	0.12	0.04	0.06178	2
LIB	8	2009	0.5213	0.176	0.6682	0.1	0.04	0.04012	3
LIB	8	2010	0.4462	0.2	0.5739	0.1	0.04	0.043	4
LIB	8	2011	0.275	0.25	0.5199	0.11	0.05	0.05	5
LIB	8	2012	0.3386	0.2	0.5599	0.08	0.05	0.05	6
LIB	8	2013	0.2126	0.25	0.63	0.09	0.05	0.05	7
LIB	8	2014	0.276	0.37777	0.5689	0.1	0.05	0.06	8
LIB	8	2015	0.4012	0.4677	0.64	0.1	0.05	0.05	9
LIB	8	2016	0.4209	0.3626	0.6795	0.08	0.05	0.0574	10
LIB	8	2017	0.3855	0.2741	0.6252	0.1	0.05	0.0641	11

Appendix II; Regression Result out put

DGZ C NBR LDR GDP DIR NIM AGB

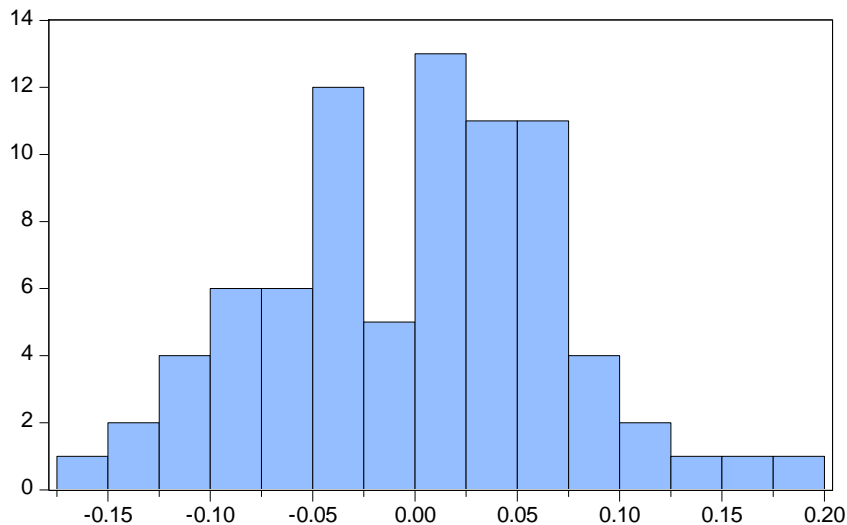
Dependent Variable: DGZ
 Method: Panel Least Squares
 Date: 01/13/19 Time: 22:33
 Sample: 2008 2017
 Periods included: 10
 Cross-sections included: 8
 Total panel (balanced) observations: 80

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.837091	0.188104	4.450157	0.0000
NBR	0.168129	0.080820	2.080287	0.0414
LDR	-0.176783	0.121113	-1.459653	0.1491
GDP	1.936154	0.907033	2.134601	0.0365
DIR	-16.78084	3.478187	-4.824593	0.0000
NIM	-1.798513	0.851407	-2.112401	0.0384
AGB	0.015636	0.006024	2.595746	0.0116

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.753849	Mean dependent var	0.282434
Adjusted R-squared	0.705365	S.D. dependent var	0.144770
S.E. of regression	0.078582	Akaike info criterion	-2.091733
Sum squared resid	0.407554	Schwarz criterion	-1.674878
Log likelihood	97.66930	Hannan-Quinn criter.	-1.924604
F-statistic	15.54831	Durbin-Watson stat	2.105495
Prob(F-statistic)	0.000000		



Series: Standardized Residuals
 Sample 2008 2017
 Observations 80

Mean -5.84e-18
 Median 0.004165
 Maximum 0.197995
 Minimum -0.153263
 Std. Dev. 0.071826
 Skewness 0.078802
 Kurtosis 2.878950

Jarque-Bera 0.131641
 Probability 0.936299

	DGZ	NBR	LDR	GDP	DIR	NIM	AGB
Mean	0.282434	0.246534	0.618431	0.098000	0.047000	0.058255	13.87500
Median	0.261100	0.245650	0.609250	0.100000	0.050000	0.050500	14.00000
Maximum	0.651200	0.666000	0.890100	0.120000	0.050000	0.130000	23.00000
Minimum	0.033500	0.000000	0.401100	0.080000	0.040000	0.026800	2.000000
Std. Dev.	0.144770	0.135323	0.090398	0.011735	0.004611	0.023269	4.953901
Skewness	0.865488	0.384118	0.558827	0.015132	-0.872872	1.469438	-0.405778
Kurtosis	3.222777	2.935632	3.423995	2.536332	1.761905	4.942935	2.506062
Jarque-Bera	10.15302	1.981103	4.763077	0.719679	15.26833	41.37331	3.008661
Probability	0.006242	0.371372	0.092408	0.697788	0.000484	0.000000	0.222166
Sum	22.59470	19.72275	49.47450	7.840000	3.760000	4.660400	1110.000
Sum Sq. Dev.	1.655705	1.446679	0.645574	0.010880	0.001680	0.042775	1938.750
Observations	80	80	80	80	80	80	80

Covariance Analysis: Ordinary
Date: 01/13/19 Time: 22:46
Sample: 2008 2017
Included observations: 80

Correlation	NBR	LDR	GDP	DIR	NIM	AGB
NBR	1.000000					
LDR	0.295705	1.000000				
GDP	-0.096688	0.145713	1.000000			
DIR	0.315892	-0.132771	-0.486513	1.000000		
NIM	0.130909	0.207313	-0.088695	0.149249	1.000000	
AGB	0.061674	0.071505	-0.296117	0.465440	-0.006725	1.000000

Appendix III; Heteroskedasticity Test Whites

Heteroskedasticity Test: White

F-statistic	0.895310	Prob. F(26,53)	0.6116
Obs*R-squared	24.41391	Prob. Chi-Square(26)	0.5523
Scaled explained SS	21.12801	Prob. Chi-Square(26)	0.7353

Test Equation:
 Dependent Variable: RESID^2
 Method: Least Squares
 Date: 01/13/19 Time: 22:49
 Sample: 2008 2087
 Included observations: 80
 Collinear test regressors dropped from specification

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.505007	0.982683	-0.513906	0.6095
NBR^2	0.043934	0.145641	0.301662	0.7641
NBR*LDR	-0.597461	0.256698	-2.327487	0.0238
NBR*GDP	-0.061068	2.124499	-0.028745	0.9772
NBR*DIR	-9.552028	7.332322	-1.302729	0.1983
NBR*NIM	1.684428	1.019258	1.652603	0.1043
NBR*AGB	0.006773	0.005950	1.138323	0.2601
NBR	0.623038	0.445586	1.398246	0.1679
LDR^2	0.387200	0.320093	1.209647	0.2318
LDR*GDP	1.912482	3.446662	0.554879	0.5813
LDR*DIR	5.164247	10.88084	0.474619	0.6370
LDR*NIM	-0.166639	1.506086	-0.110644	0.9123
LDR*AGB	-0.003344	0.008362	-0.399886	0.6908
LDR	-0.633782	0.797394	-0.794817	0.4303
GDP^2	-37.31825	43.01379	-0.867588	0.3895
GDP*DIR	-25.26090	165.4937	-0.152640	0.8793
GDP*NIM	-6.544070	9.752251	-0.671032	0.5051
GDP*AGB	-0.057278	0.053010	-1.080516	0.2848
GDP	8.362870	16.80905	0.497522	0.6209
DIR^2	84.51607	220.6407	0.383048	0.7032
DIR*NIM	-40.59885	45.35794	-0.895077	0.3748
DIR*AGB	-0.272749	0.227494	-1.198928	0.2359
NIM^2	0.482379	3.895809	0.123820	0.9019
NIM*AGB	-0.022008	0.044534	-0.494173	0.6232
NIM	2.543302	2.544105	0.999684	0.3220
AGB^2	-4.07E-05	0.000144	-0.282536	0.7786
AGB	0.020306	0.012613	1.609907	0.1134
R-squared	0.305174	Mean dependent var		0.010995
Adjusted R-squared	-0.035684	S.D. dependent var		0.015952
S.E. of regression	0.016234	Akaike info criterion		-5.140113
Sum squared resid	0.013968	Schwarz criterion		-4.336179
Log likelihood	232.6045	Hannan-Quinn criter.		-4.817793
F-statistic	0.895310	Durbin-Watson stat		1.933237
Prob(F-statistic)	0.611633			

Annex III Violated Regression result

Exchange rate highly correlated with deposit interest rate

Covariance Analysis: Ordinary

Date: 01/27/19 Time: 21:59

Sample: 2008 2017

Included observations: 80

Correlation	DIR	EXR	GDP	LDR	NIM	NBR	AGB
DIR	1.000000						
EXR	0.820698	1.000000					
GDP	-0.486513	-0.483892	1.000000				
LDR	-0.132771	0.026561	0.145713	1.000000			
NIM	0.149249	0.187271	-0.088695	0.207313	1.000000		
NBR	0.315892	0.331558	-0.096688	0.295705	0.130909	1.000000	
AGB	0.465440	0.572432	-0.296117	0.071505	-0.006725	0.061674	1.000000
