

Determinants of Deposit Mobilization of Commercial Banks in Ethiopia

Ifa Akuma Fayisa

Lecture, Department of Accounting and Finance, University of wollega, wollega, Ethiopia

Abstract

The aim of this study is to assess the determinant of deposit mobilization in reference to Commercial banks in Ethiopia. The study adopts explanatory research type. The study was also guide by pure quantitative research approach. The necessary data required for this study was secondary data. The secondary data was the audited financial statement for the period of 2005 to 2017. The data was collected from the National Bank of Ethiopia and ministry of finance and economic development (MOFED). The study used non probability sampling, through purposive method in order to take sample size. Currently, there are 18 Commercial banks with their respective branch operation in Ethiopia. The researcher base on their year of establishment considering that, the bank that operates long life expected to have large number of customer and deposit amount than that of new one. Thus, seven Commercial Banks was taken as sample namely, Commercial bank of Ethiopia, Awash International Bank S.C, Bank of Abyssinia S.C, Wegagen Bank S.C, United Bank S.C, Nib International Bank S.C, and Dashen Bank S.C . Data was analyzed using descriptive statistical techniques like mean, standard deviation, minimum and maximum. The correlation analysis is also used. Fixed effect Econometric model was adopted. The result shows that number of branch (NOBR) had positive and significant effect on deposit mobilization (DM) of Commercial banks in Ethiopia. This result may indicate that increase in number of branch was increase the accessibility of bank service, therefore the more banks accessible the more customers was access and as the same time the more deposits was collected. Saving Deposit Interest Rate (IR) had positive and significant effect on DM of Commercial banks in Ethiopia. Loan to Deposit Ratio (LDR) had positive and significant effect on deposit of Commercial banks in Ethiopia. This result implies that when the amount of loan is high there is high amount of money is circulated in the country. Inflation Rate (INF) had a negative and insignificant effect on DM of Commercial banks in Ethiopia. Gross Domestic Product (GDP) had a negative and insignificant effect on DM of Commercial banks in Ethiopia. This is because of the absence of favorable economic conditions in our country. And also inconsistent increase of GDP in the country during the study period was negatively affect Commercial bank deposit in Ethiopia.

Keywords: Deposit Mobilization, Commercial Banks Operating in Ethiopia

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1. Introduction

According to Zerayehu S. et al., (2013) for a healthy and energetic economy a sound financial system is crucial. The financial system in Ethiopia, which is characterized as highly profitable, concentrated, and moderately competitive is dominated by banking Industry and it is also amongst the major under banked economy in the world (World Bank, 2015). The development of energetic and active banking system that complements with the existing public sector work is considered important to Ethiopia's economic progress according to the professional advice of group of experts working in well-known financial organization like WB, AFDB, and IMF. (Keatinge, 2014) Deposit mobilization is a fundamental part of banking activity. Mobilization of saving through intensive deposit collection has been regarded as the major tasks of banks. Banks have to mobilize their level of deposit since deposit is essential as oxygen for human beings. One of the main functions of banking business is Deposit mobilization and so an important source of working fund for the bank. . Deposit mobilization is the collection of cash or funds by a financial institution from the public through its current, savings, fixed, recurring accounts and other banks specialized schemes Banson, et al, (2012).

Mobilizing deposits from the public is the important activity of the commercial banks in modern economy. It is convenient and safe to deposit the amounts with banks for the people with surplus income and saving. Deposits with the bank grow along with the enhancing interest earned by depositors. Granting of loans and advance and channeling household's savings to corporate sector is mostly possible if the banks have accumulated sufficient deposit from the available market Selvaraj N.et al (2015). Commercial banks are believed to play dominant role of mobilizing financial resource for investment and economic growth (Byusa, 2016). Hence, maximum care should be taken in order to maintain the safety and soundness of commercial banks in Ethiopia. Any failure/incident/ in the banking industry especially in a country where the commercial banks dominate the financial sector will definitely have a contagious effect that can lead to bankruptcy and crises. Hence, it would be mandatory to analyze and take proactive measures to maintain the health of the economy and build up the public confidence.

Financial resources are naturally provided from people's deposit. Therefore, we can say that deposits are the most important resource for commercial banks. Thus the amount of deposit a commercial bank should have at

hand should be enough to make the bank involve in the market in order to satisfy the financial needs of its customers. Given this general facts, therefore, the bank is expected to mobilize its deposit. According to Mohammad S. (2010),

Managing deposits is not possible without knowing the factors affecting it. There are several factors that are claimed to be determinant factors affecting deposit mobilization of banks according to Selvaraj N.et al, (2015), also State that, Banks borrow and lend; they borrow money by accepting deposits from the public including members of the bank.

For Banks, the amount of deposits is very important and therefore all banks compete among themselves for mobilization of deposits. The banks should introduce different deposit strategies so that these can attract a variety of people to go with their taste. The banks offer a number of deposit schemes to the public which include fixed deposit, saving deposit and current deposit. The quantum of deposits and growth rate in deposit figures shows the extent of public confidence that a bank enjoys. It is the size of the deposits that largely decides the lending potential of a bank.

Bahredin A. (2016) conducted study on determinants of Commercial Banks' Deposit Growth- Evidence from Ethiopia revealed that, bank branches and per-capita-income growth influence 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 and inflation 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. Therefore, this study assesses the determinants of Commercial banks in Ethiopia.

2. Statement of the Problem

One of the main objectives of financial institutions is mobilizing resources especially through deposit. Unless the banks can mobilize enough funds from their customers the lending activity is not possible. there are some relationships between the ability of the banks to mobilize deposits and the amount of credit granted to the customers Since commercial banks depend on depositor's money as a source of funds. In Commercial bank in Ethiopia the size of credit granted and the credit that is demanded by the customer or needy individual is not the same. The Commercial bank are not still able to meet this need because they have not yet mobilize a sufficient or required level of deposit. This study assesses this problem gap in assessing Commercial banks determinants of deposit mobilization.

The efficiency of performing the function of mobilizing funds from the surplus economic agents to the deficit economic agents depends on the level of development of the financial system, where Commercial banks in Ethiopia are facing this problem. Banks face problem in an extension of deposit. According to Obamuyi (2013) study provides support for the argument that countries with better/efficient financial systems grow faster, while inefficient financial systems bear the risk of bank failure and will face less deposit mobilization.

Different literature in Ethiopia evidences that, Commercial bank in Ethiopia are aggressively working in mobilizing funds that would be used for different development projects. However, as empirical study evidences commercial banks deposit are still under margin. For instance, study made by Sisay A. (2013) states that in order to increase deposit mobilization banks have to work on bank management, customer service and bank branch. In line with the above study the research study conducted by Bahredin A. (2016) states that banks have to reach unbanked segment in order to increase deposit domain. Seyte Z. et al (2018) loan loss provision and loan to deposit ratio have to be minimized since they have negative impact on deposit mobilization. Kibabe G. (2016) on his study says increase investment so as to promote economic growth to mobilize deposits. There are also other studies conducted in reference of Ethiopian Commercial banks.

Evidence from prior studies indicated that various macro and micro factors affect Commercial bank deposits. However, the significance of each factor differs across continent, countries and time period. The study made by Mohammed M. (2014) in Malaysia by using 7 years panel data and Giragn G. (2015) in Ethiopia using 13 years panel data indicated that GDP has not significant influence on the volume of commercial bank deposits. While, Mohammed S.(2010) in Bahrain using 20 years time series data and Fisseha T.(2017) in Ethiopia using 18 years panel data discovered that GDP has positive effect on the volume of commercial bank deposit. Moreover, the study made by Prema-chandra A. et al, (2001) in India by using 44 years times series data, Wubitu (2012) in Ethiopia using 12 years time series data ,Fisseha(2017) in Ethiopia by using 16 years panel data, researches showed that inflation has significant effect on the deposits of commercial bank. However, Hussein O. et al (2014) in Iran using 10 years panel data, Orji (2012) in Nigeria using 37 years time series data and Ketema (2017) in Ethiopia by using 15 years panel data showed that inflation has a negative influence on the commercial bank deposits. These contradictory findings revealed that there is inconsistency among research findings on factors affecting deposit mobilization.

In Ethiopia as far as the knowledge of the researcher is concerned, there are a few researches related to

determinants of Commercial banks deposit, Kibebe (2016), Fisseha (2017) and Ketema (2017). Among a few studies corresponding with this research is that, the research conducted by Kibebe (2016) on determinants of commercial bank's deposit mobilization in Ethiopia evidence from Commercial banks. Kibebe has used four independent variables through quantitative research approach; Per Capita Income, Investment, Age Dependency Ratio, Money supply and bank deposit as independent variable. However, it couldn't assess the effect of loan loss provision, loan to deposit ratio, profitability and gross domestic product on determinants of Commercial bank deposits mobilization in Ethiopia. Hence, this research incorporates these four important variables. In addition other study conducted by Fisseha (2017) on determinants of commercial banks deposit mobilization in Ethiopia, Fisseha has used six independent variables include number of branch, interest rate, loan to deposit ratio, inflation rate, gross domestic product and midyear population number. However it couldn't assess the effect of loan loss provision and profitability of bank on determinants of commercial bank deposit in Ethiopia. Hence these researches also incorporate these two important variables.

In addition except the study conducted by Kibebe most of the studies are conducted on all commercial bank in Ethiopia including the government bank that is, commercial bank of Ethiopia and other studies are conducted in reference to one specific commercial bank whether it is public or private bank. However, this study is different since it considers only Commercial banks in Ethiopia. Therefore this study fills the literature gap and some finding gap in assessing determinants of Commercial banks deposit mobilization.

3. Objective of the Study

The general objective of this study was to assess determinants of deposit mobilization in Commercial banks in Ethiopia.

Specific objectives of the study are:

1. To determine the effect number of branch on deposit mobilization of Commercial banks.
2. To determine the effect loan loss provision and loan to deposit on deposit mobilization of Commercial banks. .
3. To analyses the effect of interest rate and profitability of bank on deposit mobilization of Commercial banks.
4. To assess the effect of inflation rate on deposit mobilization of Commercial banks.
5. To analyses the effect of gross domestic product on deposit mobilization of Commercial banks.

The study was hypothesized the following hypothesis that is supported by the empirical literature.

- H1: Number of branch has positive and significant impact on banks deposit
- H2: Loan loss Provision ratio has negative and significant impact on bank's deposit
- H3: Loan to deposit ratio has positive and significant impact on bank's deposit
- H4: Interest Rate has positive and significant impact on bank's deposit
- H5: Profitability of bank has positive and significant impact on bank's deposit
- H6: Inflation rate has negative and insignificant impact on bank's deposit
- H7: Gross domestic product has negative and insignificant impact on bank's deposit

4. Empirical literature

Previous empirical studies on the determinants of Commercial banks deposit and related studies in different continent in the world will be reviewed. The literatures indicate that there are various number of factors that critically determine the Commercial banks deposits. However, the significance of each factor differs across countries, and time period. These will help to see where the literature on this area is and how this study will add to the existing literature.

Enhancement in the amount of aggregate savings in the economy is the result of Expansion of bank services. Potentiality of establishing bank branches increases, as a volume of economic activities increases in a community, which ultimately increases the level of voluntary savings of the households Tareq, (2015).

An essential condition of an open and efficient society is unreserved access to public goods and services. The availability of banking services to the whole population without discrimination should be the prime objective of public policy of any country as banking services are in the nature of a public good. Security and safety of deposit, low transaction costs and convenient operating time is Expectations of poor people from the financial system (Tegene, 2012).

Now a day, financial institutions are actively following innovations which show promise of lowering the costs of servicing mass numbers of low-balance deposit accounts. These innovations includes in areas such as agent distribution systems, mobile technology and information management. Over the next several years the microfinance community was likely learn to facilitate greater and more effective use of savings accounts by poor people is used for lowering transaction costs for both savers and providers than only increases access. (Martin 2013).

The real interest rates should be positive in order to encourage private savings. Besides, innovative saving

and investment bonds strategy should be introduced to mobilize resources. And these savings are finally channeled to the productive sectors of the economy and this promotes economic growth. In this countries with repressed financial system it is hard to raise deposits as interest rates on deposits are controlled by the government, hence the need for financial liberalization. These showed that financial liberalization result in higher interest rates which equate the demand and supply of savings. The authors expressed their sight that higher interest rates lead to increased savings and financial intermediation in improving the efficiency of savings and investment. Equal amount of saving and investment is essential to match The growth of any economy and capital accumulation. Mashamba T, et al, (2014)

According to Malhotra et al, (2007) study indicates traditional means of bank deposits limits the adoption of Internet banking which means banks that are dependent on traditional sources funding may pursue a less aggressive in adoption of Internet banking.

Ayalew (2013) conducted study in focusing macroeconomic variable in determining domestic saving in Ethiopia, using time series data from 1970/71- 2010/11 and found that, growth rate of income was positively and significantly influencing as to increase domestic saving , where as deposit interest rate and degree of financial depth variables was statistically insignificant to increase in domestic savings.

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

Shemsu (2015) intended to identify and evaluate those factors affecting bank deposit mobilization in general by taking Commercial Bank of Ethiopia as evidence. Accordingly, the researcher adopted mixed research approach. The ground of using such a mixed approach was to gather data that could not be obtained by adopting a single method. Regarding to the qualitative data; questionnaire was used to gather information from the employees of commercial bank of Ethiopia particularly for those employees who actively participated in deposit mobilization tasks in CBE city branches. Regarding to the secondary data; time series data covering 1998 -2014 was analyzed.

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

Kidane (1989) examine income and external capital flows on aggregate savings behavior in Ethiopia. He argued 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. He 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.

Yitbarek, (2015) investigated short and long run impacts of endogenous and exogenous factors on deposit growth of Commercial Bank of Ethiopia for the period 1974/75 - 2013/14. The paper also established the causal relationships that exist between the antecedents and the consequent. In the empirical VECM model, the control

variables: Economic Growth, Interest Rate, Population Growth and Branch Expansion were used to establish the causal relationship and measure their impact on the outcome variable. The estimated results suggest Interest Rate has positive but insignificant impact on deposit growth both in the long-run and short-run while Branch Expansion significantly increases bank deposit contemporaneously both in the short run and long-run. Moreover, Population and Economic Growth have a positive relationship with deposit growth but significant only in the long-run.

Bahredin (2016) aims to find 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.

Heaster (1966), as quoted by Rasiah (2010), considered number of branches as one of the explanatory variables in their resource mobilization through customer deposit study. They found that the number of branches had a significant effect on Commercial Bank of Ethiopia deposit and also it can be captured by other variables such as the amount of deposit received or the amount of loan provided.

Emery (1971), again as quoted by Rasiah (2010), studied the relationship between the status of the branch categories namely unit branch, limited branch and state –wide branch. Using analysis of variance, Emery (1971) found that there was significant difference in terms of returns among these three categories of branches. There is a relationship between Commercial Bank Ethiopia deposits and Commercial Bank Ethiopia branch expansion. Not only are deposits influenced by bank branches, but the expansion of bank branches is also influenced by the level of deposits in any area (M. A. Baqui K. 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.

Herald F. et al, (2009) also mentioned interest as one of the determining factor for commercial banks deposits. Philip (1968), also states that the offering of attractive interest rate on bank deposits may be considered to have had a beneficial effect. Moreover, Mustafa M. et al, (2009) said that low deposit rates are discouraging saving mobilization. V. V. Bhatt (1970) said that the banking system is unlikely to be in a position to meet the demand for bank credit unless concerted policy is pursued to raise the rate of saving generally and the rate of saving in the form of deposits in particular. 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 S. (2010). Thus, capital market forces balance interest rates. In other words, the just and correct interest rate should be determined through market mechanism, that is, interest rate is balanced in supply and demand conditions in proportion with the inflation rate. David et al, (1995) states that deposits are more interest rate sensitive and banks may choose to increase investments in interest rate sensitive assets and to decrease investments in loans. That is commercial bank deposits are interest rate sensitive, therefore as the interest rate changes the deposit of the commercial banks was change.

5. Knowledge Gap

Deposit Mobilization is one of the vital functions of banking business. It is an important source of working fund for the bank. Deposit mobilization is a crucial issue to increase the sources of the banks to serve effectively. Mobilization of deposit provides satisfactory service to different sectors of the economy. The success of the banking greatly lies on the deposit mobilization. As deposits are normally considered as a cost effective source of working fund, performances of the bank depend on deposits.

As it was discussed in the above literature review part, Most of study undertaken in Ethiopia related to the topic of determinants of deposit mobilization focus on treating the total deposit amount to the commercial banks and some internal and external factors that are reviewed by different researchers indifferent research techniques also showed different effect on Bank deposit mobilization. Thus, inconsistency of finding among researchers and little attention given by researcher on the determinants of the deposit mobilization in Commercial banks of Ethiopia motivated the researcher to undertake a research in this particular area by adding additional variable to fill this gap.

7. Research Design Methodology

Research Design

The study adopts explanatory research type. The purpose of explanatory research describes cause and effect relationship of dependent and independent variables and was make it suitable for this study because the researcher was fairly knowledgeable about the aspects of the phenomenon. And the study was also guide by pure quantitative research approach.

Data Type and Source

The necessary data required for this study was secondary data. The secondary data was the audited financial statement for the period of 2005 to 2017 from the selected Commercial banks. The data was collected from the National Bank of Ethiopia and MOFED as of may, 2019.

Method of Data Collection

The secondary data was gathered from the national bank of Ethiopia by the researcher. The collected data was readily computed to express the study independent and dependent variable from the collected financial statement through the theoretical concept of each variable calculation.

Sampling method and sample size selection

The study used non probability sampling, through judgmental method in order to take sample size. Currently, there are 16 Commercial banks with their respective branch operation in Ethiopia. The researcher base on their year of establishment considering that, the bank that operates long life expected to have large number of customer and deposit amount than that of new one. Thus, seven Commercial Banks was taken as sample namely, Awash International Bank S.C, Bank of Abyssinia S.C, Wegagen Bank S.C, United Bank S.C, Nib International Bank S.C, Dashen Bank S.C and Cooperative Bank of Oromia S.C.

Econometric model

Definition of Operational variables'

The study dependent variables was bank deposit mobilization that was be measured by the total amount of deposit through the natural logarithm concept. The independent variables are categorized as micro (internal or bank specific) variables and macro (external) variables. These are:

Internal Variables

1. Number of Branch (NOBRA)

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

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

H1: number of branch has positive effect on deposit mobilization of Commercial banks

2. Loan Loss Provision Ratio:

According to Vong et al, (2008), if banks operate in more risky environments and lack the expertise to control their lending operations, it was probably result in a higher loan-loss provision ratio. The ratio is calculated by dividing the loan loss provision, to total amount of loan. Literature suggests that increased exposure to loan loss provision is normally associated with decreased bank deposit and, hence, it is expected to have a negative relationship with banks deposit.

$$\text{Loan loss provision ratio} = \frac{\text{loan loss provision}}{\text{Total amount of loan}}$$

H2: loan loss provision has negative effect on deposit mobilization of Commercial banks

3. Loan to deposit ratio: Loan-deposit ratio is a ratio between the banks total loans and total deposits.

If the ratio is lower than 1, the bank relied on its own deposits to make loans to its customers, without outside borrowing. If, on the other hand, the ratio is greater than 1, the bank borrowed money which it relined at higher rates, rather than relying entirely on its own deposits. Banks may not be earning an optimal return if the ratio is too low. If the ratio is too high, the banks might not have enough liquidity to cover any unforeseen funding requirements or economic crises. But the overall amount of deposit of the banks can be increased due to high loan money disbursed to the customers. That means high amount of money is in the hands of the people. According to Vong et al. (2009) study findings exhibits a positive relationship between loan to deposit ratio and deposit. Further Abreu and Mends (2002), found that there is a positive and significant relationship between the ratio of the LDR and bank profits indirectly to bank deposit. And another study by Bahredin (2016) Loan to deposit ratio also has a significant negative impact on commercial bank deposits growth.

The ratio is calculated by dividing the total amount of loans, by total amount of deposits Michael T. et al, (2014).

$$\text{LDR} = \text{Total loan} / \text{Total deposit.}$$

H3: loan to deposit ratio has positive effect on Commercial banks deposit

- 4. Profitability of bank:** The long run relationship between commercial banks deposits and the profitability of the banks (Ekki, 2004). Higher profits would tend is considered as positive signal or soundness of the bank, which could make it easier for such banks to attract other deposits (Heiko, 2008). According to Hassan O. et al, (2003), suggest that bank profitability is best measured by ROA in that ROA is not distorted by high equity multipliers and ROA represents a better measure of the ability of a firm to generate returns on its portfolio of assets. For this study the researcher also used ROA as measurements of profitability and it described by the earnings before interest and tax divided by total asset.

Mathematically, $ROA = \text{Earnings before interest and tax} / \text{Total asset}$

H4: profitability has positive effect on deposit mobilization of Commercial banks

External variable

- 1. Interest Rate:** One of the most effective factors for deciding to deposit in banking system is the interest rate (Mohammad et al, 2010). Moreover, this article shows the impact of interest rate on the performance of the banking system to achieve the goals that are expected from the banking system. Herald F. et al, (2009) also mentioned interest as one of the determining factor for commercial banks deposits. Philip (1968), also states that the offering of attractive interest rate on bank deposits may be considered to have had a beneficial effect. Moreover, Mustafa et al, (2009) said that low deposit rates are discouraging saving mobilization. Bhatt (1970), said that the banking system is unlikely to be in a position to meet the demand for bank credit unless concerted policy is pursued to raise the rate of saving generally and the rate of saving in the form of deposits in particular. According to (Tareq, 2015) Interest rate on deposit has a profound impact on the savings mobilization. People deposit with the banks with the expectation of getting some return. Low interest rates discourage savings. In this model average interest rate has been taken. Interest rate for both urban and rural has been assumed to be the same. According to (Khalai et al, (2014) Low rates of interest on deposits have always been an obstacle to savings mobilization. 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.

Saving rate = as per each bank through time

H5: Saving deposit interest rate has positive effect on deposit mobilization of Commercial banks

Inflation rate: It is defined as the persistent increase in the general prices of goods and services within an economy over a given period. It is generally assumed that the growth of total deposits is to be negatively related with inflationary expectation. As the rate of inflation increases, people were tempted to divert their savings from bank deposits to any other kind of tangible assets because these assets act as hedge against.

H6: inflation has negative effect on deposit mobilization of Commercial banks

Gross domestic product: According to Ongore et al, (2013) Commercial banks play a vital role in the economic resource allocation of countries. They channel funds from depositors to investors continuously. They can do so, if they generate necessary income to cover their operational cost they incur in the due course. In other words for sustainable intermediation function, banks need to be profitable. Beyond the intermediation function, the financial performance of banks has critical implications for economic growth of countries. Good financial performance rewards the shareholders for their investment. This, in turn, encourages additional investment and brings about economic growth. On the other hand, poor banking performance can lead to banking failure and crisis which have negative repercussions on the economic growth. As (Zhang et al, 2013) mentioned GDP is one of the most commonly used macroeconomic variables to measure cyclical output effects within an economy where GDP is expected to influence numerous factors related to the supply and demand for loans and deposits. Favorable economic conditions was affect positively on the demand for banking services, but may have either positive or negative influence on bank profitability levels.

H7: Gross domestic product has positive effect on deposit mobilization of Commercial banks.

Variable Measurement

The following table presents the summery of the variable measurements:

Table 3.1 Measurement of the study variables

Variables	Variables	Measure	Notation
Dependent variable	Bank deposit mobilization	Natural logarithm of total deposit mobilized	BDM
Independent variables	Number of branch	Number of branch as of the year 2018	NoBr
	Loan Loss Provision Ratio	Loan loss provision to total amount of loans	LP
	Loan To Deposit Ratio	Total Loans and Advances/ Total deposit	LTDR
	Interest rate	As per each bank through time	IR
	Profitability of bank measured by return on asset	ROA = Earnings before interest and tax /Total asset	ROA
	Inflation Rate	Average Annual Inflation Rate	INF
	Gross Domestic Product	GDP Growth Percent	GDP

Source: Developed by researcher, (2022)

Model Specification

The nature of data to be used in this study was panel data model which is deemed to have advantages over cross sectional and time series data methodology. Panel data involves the pooling of observations on the cross-sectional over several time periods. As Brooks (2008) stated the advantages of using panel data set; first and perhaps most importantly, it can address a broader range of issues and tackle more complex problems with panel data than would be possible with pure time-series or pure cross-sectional data alone. Second, it is often of interest to examine how variables, or the relationships between them, change dynamically (over time).

To do this using pure time-series data would often require a long run of data simply to get a sufficient number of observations to be able to conduct any meaningful hypothesis tests. But by combining cross-sectional and time series data, one can increase the number of degrees of freedom, and thus the power of the test, by employing information on the dynamic behavior of a large number of entities at the same time. The additional variation introduced by combining the data in this way can also help to mitigate problems of multi-co linearity that may arise if time series are modeled individually. Third, by structuring the model in an appropriate way, we can remove the impact of certain forms of omitted variables bias in regression results.

The study was used fixed effect regression model after the Hausman Test is conducted.

According to Brooks, (2008), the general multiple linear regression models with Y_i independent variables can be written as follows:-

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

Where Y_i is the i^{th} observation of the dependent variable, X_{1i}, \dots, X_{ki} are the i^{th} observation of the independent variables, β_0, \dots, β_k are the regression coefficients, ϵ_i is the i^{th} observation of the stochastic error term, and n is the number of observations. Hence, the determinant of deposits (BDM) can be modeled as described below:-

The study multiple linear regression models were expressed below:

$$BDM = \beta_0 + \beta_1 \text{NoBr} + \beta_2 \text{LLPR} + \beta_3 \text{LDR} + \beta_4 \text{IR} + \beta_5 \text{PB} + \beta_6 \text{INF} + \beta_7 \text{GDP} + \epsilon$$

Where:

BDM - Bank deposit mobilization

The following independent variables are referred as:

NoBr- Number of branch

LLPR - Loan Loss Provision Ratio

LDR - Loan to deposit ratio

IR - Interest Rate

PB - Profitability of bank

I R - Inflation rate

GDP - Gross domestic product

ϵ - Error term

Diagnostic Testing Methods

Every estimator of the model should have to meet the Ordinary Least Squares (OLS) assumptions before the estimation is carried out. According to Brooks, (2008), if the estimators of the model satisfy the OLS assumptions it is possible to say the estimators are blue (best linear unbiased estimator). The econometric estimation technique that was used in this study is ordinary least square (OLS). According to Brooks, (2008), there are five assumptions

made in relation to the classical linear regression model (CLRM). The researcher was test the model if there are violations of these assumptions. The method that was used to test these assumptions by the researcher is described as follows:-

3.1.1.1. The average value of the error is zero

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

Assumption of Homoscedasticity

The variance of the errors should be constant, this assumption known that homoscedasticity assumption. If the errors do not have a constant variance, they are said to be heteroscedasticity. It would be concluded that there is significant evidence of heteroscedasticity, so that it would not be plausible to assume that the variance of the errors is constant.

The Assumption of Autocorrelation

The covariance between the error terms overtime (or cross-sectional for that type of data) is zero. In other word it is assumed that the errors are uncorrelated with one another. If the errors are not uncorrelated with one another, it would be stated that they are auto correlated or they are serially correlated.

The Assumption of Disturbances' are normally Distributed

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

Test of Multicollinearity

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

Method of Data Process and Analysis

After the necessary data was collected, STATA 13.0 software program was used for data process. The data processed was be presented by the use of charts, tables and graphs. Data was analyzed using descriptive statistical techniques like mean, standard deviation, minimum and maximum. The correlation analysis is also used. The hypothesis test and econometric model explained above was also adopted to provide the major finding.

8. Choosing Random effect (RE) or fixed effect (FE) models test

The data collected was processed and estimated based on panel model, which includes cross sectional and time series observations for seven Commercial banks that ranges over 13 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 seven and the time series is 13 years. The commonly used models for panel data are fixed effects and random effects models. According to Brooks, (2008) 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 According to Gujarati (2004), if the number of time series data is large and N (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 and random effect model. Hence the choice here is based on computational convenience. On this score, fixed effect model may be preferable. Since the number of time series (i.e. 13 year) is greater than the number of cross-sectional units (i.e. 7 Commercial banks), fixed effect model is preferable in this case. In addition the researcher hypothesized and conducted Husman test as shown below.

Table 4.8 fixed effect regression model

. hausman fixed ., constant df(5) sigmamore

Note: the rank of the differenced variance matrix (6) does not equal the number of coefficients being tested (8); be sure this is what you expect, or there may be problems computing the test. Examine the output of your estimators for anything unexpected and possibly consider scaling your variables so that the coefficients are on a similar scale.

	Coefficients			
	(b) fixed	(B) random	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
nobr	.0021499	.0024102	-.0002603	.0000722
llpr	-3.22319	-2.97901	-.2441793	.1488039
ldr	.1773945	.3266257	-.1492312	.0419152
ir	.230474	.1934529	.0370211	.0063929
pb	7.817929	17.67381	-9.85588	1.683867
inf	-.0771061	-.1009559	.0238498	.0059179
gdp	-1.400323	-4.424902	3.024579	2.35954
_cons	2.311846	2.312361	-.000515	.1039505

b = consistent under Ho and Ha; obtained from xtreg
 B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

chi2(5) = (b-B)' [(V_b-V_B)^(-1)] (b-B)
 = 54.82
 Prob>chi2 = 0.0000

Source: STATA 13.0 Results, 2019

H₀: Random effect model is appropriate at greater than 5% significance level

H_a: Fixed effect model is appropriate at less than 5% significance level. From the above result since the p value is less than five (p<5%), the null hypothesis which is random effect model is appropriate is rejected and the alternative hypotheses fixed effect model is appropriate. Therefore, fixed effect model is more fit and explain the dependent variable considering the dependent variables.

9. Model specification

The nature of data used in this study enabled to use panel data model which is deemed to have advantages over cross sectional and time series data methodology. Panel data involves the pooling of observations on the cross-sectional over several time periods. As Brooks (2008) stated the advantages of using panel data set; first and perhaps most importantly, it can address a broader range of issues and tackle more complex problems with panel data than would be possible with pure time-series or pure cross-sectional data alone. Second, it is often of interest to examine how variables, or the relationships between them, change dynamically (over time). To do this using pure time-series data would often require a long run of data simply to get a sufficient number of observations to be able to conduct any meaningful hypothesis tests. But by combining cross-sectional and time series data, one can increase the number of degrees of freedom, and thus the power of the test, by employing information on the dynamic behavior of a large number of entities at the same time. The additional variation introduced by combining the data in this way can also help to mitigate problems of Multicollinearity that may arise if time series are modeled individually. The following Classical Linier regression model presented below was used:

$$BDM = \beta_0 + \beta_1 \text{NoBr} + \beta_2 \text{LLPR} + \beta_3 \text{LDR} + \beta_4 \text{IR} + \beta_5 \text{PB} + \beta_6 \text{IR} + \beta_7 \text{GDP} + \epsilon$$

Where:

BDM - Bank deposit mobilization

The following independent variables are referred as:

NoBr- Number of branch

LLPR - Loan Loss Provision Ratio

LDR - Loan to deposit ratio

IR - Interest Rate

PB - Profitability of bank

INF - Inflation rate

GDP - Gross domestic product

11. Model summary result

After checking for all CLRM assumptions, a regression models used to find the determinants of Commercial banks' deposit mobilization. The regression coefficients are analyzed the independent and dependent variables and identify both magnitude and the direction of impact.

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 inferred to see the explanatory powers of the models. The fixed effect regression result was presented in the following 4.11 below.

Table 4.11: Fixed effect Regression Result

Fixed-effects (within) regression	Number of obs	=	91
Group variable: banks	Number of groups	=	7
R-sq: within = 0.9230	Obs per group: min =		13
between = 0.9036	avg =		13.0
overall = 0.7970	max =		13
	F(7,77)	=	131.80
corr(u_i, Xb) = 0.1433	Prob > F	=	0.0000

dm	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
nobr	.0021561	.0002253	9.57	0.000	.0017074	.0026047
llpr	-3.221271	.4480741	-7.19	0.000	-4.1135	-2.329041
ldr	.185213	.070235	2.64	0.010	.0453573	.3250686
ir	.2308047	.0222513	10.37	0.000	.1864967	.2751127
pb	7.524162	1.836123	4.10	0.000	3.867973	11.18035
inf	-.001111	.0010502	-1.06	0.293	-.0032022	.0009801
gdp	-1.318042	3.655792	-0.36	0.719	-8.597653	5.96157
_cons	2.243679	.2015706	11.13	0.000	1.8423	2.645057
sigma_u	.21278062					
sigma_e	.1325661					
rho	.72038267	(fraction of variance due to u_i)				

F test that all u_i=0: F(6, 77) = 24.67 Prob > F = 0.0000

Source: STATA 13.0 Results, 2019

Thus, based on the result above Table 4.11, the following model was developed to examine the determinants of Commercial banks deposit in this study.

$$DM_{it} = 2.24 + 0.0021 NOBR - 3.22 LLPR + 0.18 LDR + 0.23 IR + 7.52 PB - 0.001 INF - 1.31 GDP + \epsilon_{it}$$

According to the final results above by applying panel data to study the determinants of the Commercial banks' deposit mobilization in Ethiopia for the period 2005 to 2017. The R-squared value of 0.79 is an indication that the model is a good fit. This means 79% of variations in Commercial bank deposit mobilization were explained by independent variables included in the model. However, the remaining 21% changes in Commercial bank deposit mobilization are caused by other factors that are not included in the model. Furthermore, the F-statistic was 24.67 and the probability of not rejecting the null hypothesis that there is no statistically significant relationship existing between the dependent variable and the independent variables, is 0.0000. 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 mobilization means there is significant relationship between the dependent variable and the independent variables. From the result the summary shows Number of branch, Loan to deposit ratio, Profitability of bank, interest rate have a positive significant impact on Commercial bank deposit mobilization. Where as, Loan loss provision ratios have a negative significant impact on Commercial bank deposit mobilization. However, gross domestic product and Inflation Rate have negative insignificant impact on Commercial bank deposit mobilization.

12. Interpretations of the result

Number of branch

In regard with number of branch the researcher develop the following hypotheses:

H₀: Number of branch has negative effect on deposit mobilization of Commercial bank

H_a: Number of branch has effect on deposit mobilization of Commercial bank

The results of fixed effect model in the above table 4.7 indicate that there is a positive and statistically significant impact of NoBr on the level of Commercial banks deposit in Ethiopia. The result shows the effect of number of branch measured in terms of NoBr on dm with a coefficient of .002156 and a p-value of 0.00 at 5% significance level. This implies that for one unit change in NoBr, keeping the other things constant had resulted 0.0021 unit changes on the level of DM in similar direction. A positive relationship could mean deposits in banks are necessarily guaranteed by increase in number of branch. Therefore, the researchers have to reject the null the hypothesis that number of branch has a negative effect on Commercial banks deposit. This means, there is no evidence to support the negative relationship between Commercial bank deposit and number of branch. The relationship is positive as expected and this positive relationship between number of branch and Commercial banks deposit could be attributed to the fact that the banks have more number of branches have more deposits. This finding is similar to the finding of fisaha (2017) in Ethiopia, Shemsu (2015) in Ethiopia, Wubitu (2012) in Ethiopia, Nathanael (2014) in Ghana, Giragn (2015) in Ghana and Ekki, (2004) in Indonesia. The possible reason for the significant positive relationship could be increase in number of branch was increase the accessibility of bank service therefore; the more banks accessible the more customers was increase and as the same time the deposit was increase. Smaller bank has to generate less deposit in absolute terms to achieve the same deposit growth than a large bank, thus possibly favoring smaller banks in achieving higher deposit growth. But a larger bank with economies of scale as well as larger branch network might be able to better attract deposits Seyte Z (2018). The lack of widespread branching bank networks hindered the development of large-scale industrial firms Daniel (2005).

Loan Loss Provision Ratio

In regard with loan loss provision ratio the researcher develop the following hypotheses:

H₀: loan loss provision has negative effect on deposit mobilization of Commercial banks

H_a: loan loss provision has positive effect on deposit mobilization of Commercial banks

Loan loss provision is an independent variable who use to measure over all loans. It measure credit quality of bank as well as. If bank is working in risky environment negligence to control their lending operations then bank get the results in a higher loan loss provision to cover this risk. in this study there is significant negative relationship between loan loss provision ratio and bank deposit mobilization i.e The result shows the effect of loan loss provision on deposit mobilization with a coefficient of -3.221 and a p-value of 0.00 at 5% significance level. This implies that for one unit change in loan loss provision ratio, keeping the other things constant had resulted (3.221) unit decrease on the level of Deposit mobilization. And the researcher failed to reject the null hypotheses that loan loss provision ratio has a negative and significant effect on Commercial bank deposit. This means, there is sufficient evidence to support the negative relationship between Commercial bank deposit and loan loss provision ratio. This negative relationship between loan loss provision and Commercial banks deposit could be attributed to the fact that the banks have to minimize the loan loss provision ratio to have more deposit.

Loan to deposit ratio

In regard with loan to deposit ratio the researcher develop the following hypotheses:

H₀: Loan to deposit ratio have negative effect on deposit mobilization of Commercial banks

H_a: Loan to deposit ratio have positive effect on deposit mobilization of Commercial banks

As it presented Table 4.11 above, the coefficient of loan to deposit ratio (LDR) measured by total loan divided by total deposit is .1852 and its P-value is 0.01. Holding other independent variables constant at their average value, when loan to deposit ratio (LDR) increased by one unit, deposit (DM) of sampled private Ethiopian commercial banks would be increased by 0.1852 unit and statistically significant at 5% level of significant. Therefore, the researchers have to reject the null hypothesis that there is negative relationship between loan to deposit ratio and Commercial bank deposit. This means, there is no evidence to support the negative relationship between loan to deposit ratio and Commercial bank deposit. This implies that the more loans we have the more money is in the hands of the customer this may be lead to increase in deposit. The result of the regression output is supported by the previous works of Bahredin, (2016) and Fisseha (2017) in Ethiopia.

Interest Rate

In regard with loan loss provision ratio the researcher develop the following hypotheses:

H₀: Saving deposit interest rate has negative effect on deposit mobilization of Commercial banks

H_a: Saving deposit interest rate has positive effect on deposit mobilization of Commercial banks

One of the macroeconomic variables used in this study was Interest rate on deposit as a saving deposit interest rate is taken as a measure for interest rate on deposit .The coefficient of saving deposit interest rate (IR) is 0.2308047 and its P-value is 0.000. Holding other independent variables constant, when saving deposit interest rate (IR)

increased by one percent, deposit (DM) of sampled Ethiopian Commercial banks would be increased by 23.08% unit and statistically significant at 5% level of significant. Therefore, the researcher rejects the null hypothesis that saving deposits interest rate has a negative impact on Commercial banks deposit. The sign is the same with initial assumption. This means, there is no sufficient evidence to support the negative relationship between saving deposit interest rate and deposit.

One of the most effective factors for deciding to deposit in banking system is the interest rate, Mohammad et al, (2010). Moreover, this article shows the impact of interest rate on the performance of the banking system to achieve the goals that are expected from the banking system. Offering of attractive interest rate on bank deposits may be considered to have had a beneficial effect Philip (1968). Moreover, Mustafa et al, (2009) said that low deposit interest rates are discouraging saving mobilization. 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 et al, (2010). Thus, capital market forces balance interest rates. In other words, the just and correct interest rate should be determined through market mechanism, that is, interest rate is balanced in supply and demand conditions in proportion with the inflation rate.

The quantitative study reveals that the deposit interest rate as having a positive relation with the deposit volume. Savings, according to classical economists, is a function of the rate of interest. The higher the rate of interest, the more money was be saved, since at higher interest rates people was be more wishing to forgo present consumption. Studies results by Nathanael (2014), Oriji (2012) and Wubitu (2012) here in our country agree with the economic theory. In line with this theory, the practical regression results in this research show the similar relation. However, these finding is contradictory to the results of study conducted by (fisaha 2017) in Ethiopia.

Profitability of bank

In regard with profitability of bank ratio the researcher develop the following hypotheses:

Ho: Profitability of bank has negative effect on Commercial bank deposit

Ha: Profitability of bank has positive effect on Commercial bank deposit

Profitability in this study is measured by the return on asset (ROA). The regression result shows 7.5241 that, profitability has positive and statistically significant impact on Bank's deposit. The positive sign of the coefficient indicates a directly relationship between profitability and banks deposit. According to the regression result, a one unit change in the Bank's Profitability, keeping other things constant, has resulted in 7.5241 unit changes on the level of deposit of Commercial banks in Ethiopia. So the researcher reject the null hypothesis that profitability has negative effect on banks deposit because there is no sufficient evidence to accept the null hypothesis and these finding is consistent with the result of study conducted by (Ketema 2016) Erna R. et al, (2004) find 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 F. et, al (2009).

Inflation rate

In regard with inflation rate the researcher develop the following hypotheses:

Ho: Inflation has negative effect on deposit mobilization of Commercial banks

Ha: Inflation has positive effect on deposit mobilization of Commercial banks

Other macroeconomic variables included in this study were Inflation. Based on various literatures, inflation is assumed to affect private or personal saving either positively or adversely that stems from its direct or indirect impact. One line of thinking is that inflation erodes the real value of money and particularly real interest rate. The level of inflation has influenced the rate of interest that banks give to their depositors. This means the level of inflation influences that of deposit interest rate, while deposit interest rate in turn influences bank deposits. Again, inflation been higher than deposit interest rate is a recipe for not holding money especially in banks Shemsu B (2015).

According to the regression result of this study, Inflation has negative and statistically insignificant impact on deposit of Commercial banks. The negative relation of the inflation and Commercial Bank's deposit is consistence with our expectation. The coefficient of this relationship of -.00111 indicates that holding other things constant, a unit change in inflation rate was result in (0.00111) unit decrease on the level of DM. This implies that persistent inflation has a negative insignificant effect on mobilization of bank deposit. So higher inflation induces savers to save less, perhaps households get stable price prediction from deposit. This result is consistent with the precautionary motive, suggesting that increased macroeconomic uncertainty induces people to save a proportion of their incomes. This is particularly true for households in developing countries such as Ethiopia whose income prospects are more uncertain than their counterparts in developed countries. The negative relation was consistent with the findings of (Ketema 2016) on Commercial Banks deposit. Thus, the null hypothesis: inflation has negative and insignificant impact on deposit should be accepted.

Gross Domestic Product

In regard with Gross Domestic Product the researcher develop the following hypotheses:

Ho: Gross Domestic Product has negative effect on deposit mobilization of Commercial banks

Ha: Gross Domestic Product has positive effect on deposit mobilization of Commercial banks
The results of fixed effect regression model indicate that there is a negative and statistically insignificant impact of GDP on the level of deposit mobilization. The result shows the effect of economic growth measured in terms of GDP on DM with a coefficient of -1.3180. This implies that for one unit change in GDP, keeping the other things constant had resulted (1.3180) unit decreases on the level of DM. there was the implication that there were minimum level of savings from GDP and the national income level was not enough to meet the current consumption. Thus the negative sign implies that there were no favorable economic condition Based on the result, null hypothesis is not rejected and we can also conclude that GDP had negative and insignificant effect on Commercial banks deposit. The finding is consistent with the finding of Mohammad A. et al (2014) in Malaysia, Giragn (2015) in Ethiopia and Shemsu (2015) in Ethiopia. The result was contradictory with the previous empirical finding of Mohammed M (2014) in Bahrain, Orji (2012) in Nigeria, Prema-chandra A. et al, (2005) in India, Bahredin (2016) in Ethiopia and Fisseha (2017) in Ethiopia.


13. Conclusion

- Number of branches has positive and significant effect on bank deposit mobilization. Recently banks have been more aggressive towards the expansion in more geographical areas by opening new branches which has caused an increase in number of branches; resulting in deposit mobilization increase.
- Loan loss provision has negative significant impact on bank deposit mobilization. This result indicates Commercial bank need to work over loan management where they going to minimize loan loss in order to increase deposit mobilized.
- Loan to deposit ratio has positive significant impact on bank deposit mobilization. This indicates increasing deposit make Commercial bank to increase their loan provision that helps for different economy supports.
- Related to saving deposit interest rate, it indicate that saving deposit interest rate is a major factor in explaining the Commercial bank's deposit mobilization in Ethiopia meaning that interest rate plays more an important role in deposit growth. This implies the competition between Commercial banks in terms of attraction of using deposits interest rate. The effect of deposit interest rate on Commercial bank deposit mobilization is higher as compared with other variables.
- In regard to profitability measured by return on asset has a significant positive impact on Commercial bank deposits mobilization. Higher bank profits would tend to signal increased bank soundness, which could make it easier for these banks to attract deposits. This indicates the Commercial bank profitability will add customer's reliance on Commercial bank where they going for saving and bank deposit to increase.
- Inflation rate has negative insignificant impact on bank deposit mobilization. This result indicates Commercial bank deposit is directly affected by the rate of inflation where the government required minimizing it at large. The deposit mobilization reacts negatively towards the increase in inflation. The relationship is similar to the expected sign. Since the country has experienced double digits inflation in the study period that results in higher costs of doing business; which leads to decrease in deposit mobilized by Commercial banks.
- Gross domestic product has negative insignificant impact on bank deposit mobilization. This shows increase in GDP causes income level to increase, this cause Commercial bank deposit to increase. However, the inconsistency in increment of economic growth cause as it has negative effect on deposit mobilization.

14. Recommendations

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

For Commercial banks

-  To stay profitable it is well known that deposits are the critical resource for the banks similarly Commercial Banks major activity is mobilizing deposit. Therefore the bank should give due emphasis to its deposit mobilizing tasks by considering mobilizing deposit is a way to survival.
- ✓ Branch expansion has positive and significant effect on deposit mobilization of commercial banks. Thus these banks should also expand their branches in order to increase their deposit especially, for Commercial banks in Ethiopia. Special focus regarding the branch expansion should be given to the rural part since the rural population large enough in Ethiopia and they can save.
- ✓ Understanding the significant positive relationship of number of branch and Commercial banks deposit and also low number of private banks branches: the study suggests that Ethiopian Commercial banks have to open more branches in order to more accessible to the society, as the same time to increase their deposit and to competition with the public banks.

- ✓ The Ethiopian Commercial banks have to give loan by considering their deposit and the risk of high loan to deposit ratio.
 - ✓ They should have to newly introduce various types of special deposit accounts through which they are going to mobilize deposit.
 - ✓ Also they should have to develop deposit mobilization team at all levels where they work consistently and effectively since deposit mobilization is not a onetime activity, it should be done throughout the year.
 - ✓ All Commercial banks should have to hardly bring different bank product like full e -banking service, interest free banking and etc that support for deposit mobilization.
- ✚ **For national banks and government**
- ✓ Since large part of deposit comes from bank sector, the national banks and government should give attention toward this development.

15. Direction for Further Research

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

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