

# DETERMINANTS OF DEPOSIT MOBILIZATION OF COMMERCIAL BANKS: THE STUDY ON SELECTED PRIVATE COMMERCIAL BANKS IN ETHIOPIA

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## Abstract

The general objective of this study was to examine the determinants of deposit mobilization in Ethiopian private commercial banks, based on balanced panel data collected from audited annual reports of 12 banks and the NBE, covering ten years (2010-2019). The study adopted an explanatory research approach and employed descriptive statistics, correction, and a random effects panel data regression model. The results show statistically significant positive effects of branch expansion, the bank's profitability (ROA), and the average deposit interest rate on deposit mobilization in private commercial banks in Ethiopia. Conversely, the inflation rate, loan loss provision rate, broad money supply, and liquidity ratio have negative and significant effects. However, capital adequacy and government expenditure have statistically insignificant effects on deposit mobilization. Based on these findings, the government should balance the money supply within the economic circulation and take measures to control inflation, thereby enhancing the deposit mobilization capacity of private commercial banks. Additionally, Ethiopian private commercial banks should develop different mechanisms to encourage customers to save their money.

**Keywords:** Deposit Mobilization, Private Commercial Banks, Random Effect Model, Ethiopia.

## 1. INTRODUCTION

At all levels of the national economy, a high level of saving increases the amount of national resources. It reduces the need to resort to foreign indebtedness to cover domestic investment and consumption demand. Numerous countries with low internal saving rates must borrow from abroad, which results in a debt service burden. This clearly underlines the importance of saving mobilization in sustaining economic growth with national financial resources (Payne, 2006).

Mobilization of domestic financial resources requires a country to have a proper institutional framework that encourages and mobilizes financial savings on one hand, and channels the mobilized funds for capital formation, leading to productive investment on the other. This role is best suited for commercial banks, which are a fundamental component of financial institutions that promote stability in the economic system. Household savings and those of other agents are collected to finance the investment needs of firms and the consumption needs of individuals. The growth of any economy depends on capital accumulation, and this requires investment and an equivalent amount

of savings mobilized through bank deposits to match it. Savings, mobilized through deposits, is a necessary engine of growth in any economy (Lomuto, 2008).

In the banking sector, deposit mobilization is a scheme intended to encourage customers to deposit more cash with the bank. This money, in turn, will be used by the bank to disburse more loans and generate additional revenue for them. Furthermore, the key role of the loans is that banks offer more profit. However, the success of the deposit mobilization process depends on the development of the financial system as well as the strategic practices adopted by banks (Richard, 2015).

According to Selvaraj & Kumar (2015), banks borrow and lend money. They borrow money by accepting deposits from the public, including bank members. For banks, the amount of deposits is very important, and therefore, all banks compete among themselves to attract deposits. The banks should introduce various deposit schemes to attract a diverse range of people, catering to their individual preferences. The banks offer a variety of deposit schemes to the public, including fixed deposits, savings deposits, and current accounts. The mobilization of resources through deposits helps the bank meet the growing demands from various sectors of the economy, including agriculture, small-scale industry, weaker sections of the community, and others.

The success of banking greatly lies in deposit mobilization. The performance of the bank depends on deposits, as they are normally considered a cost-effective source of working funds. Mobilization savings help to expand banking operations. Commercial Banks must tap deposits from both urban and rural areas. This enables banks to allocate a substantial amount of funds to priority sectors for development. Deposits are the lifeblood of banking companies. Deposits constitute a vital source of funds required for the banking business. There are different types of deposits, with varying maturity patterns and different rates of interest (Dereje, 2017).

Banks, all over the world, thrive on their ability to generate income through their lending activities. The lending activity is made possible only if the banks can mobilize enough funds from their customers. Commercial banks constitute a significant portion of the financial sector in many countries. Commercial banks mainly depend on depositors' money as a main source of funds. This implies the apparent relationships between the deposit mobilization ability of the banks and the amount of credit supplied to their customers. This makes the fact that deposit mobilization is the main function of banks. The finance literature supports the argument that countries with efficient financial systems grow faster, while inefficient financial systems permit the risk of bank failure. The efficiency of a financial system is measured by how speedily and cheaply the financial system is able to channel funds from the surplus economic units to the deficit units for productive investments, while ensuring reasonable returns for the financial intermediaries (Enon, 2015).

In Ethiopia, commercial banks are the main controllers of the financial system, performing financial intermediation. They control a greater portion of the investment funds from domestic deposits and are the main creditors of the corporate bodies, small and micro

enterprises, and individual investors. That is why the traditional banking business of supplying funds to the economy is still of importance. For example, most business organizations, especially in Ethiopia, are highly dependent on bank loans as a source of capital, and the ability of banks to give loans depends much on their ability to attract deposits.

Even though mobilizing deposits is the major activity of all commercial banks, managing and identifying the determining factors of deposits is a mandatory task for banks. Mobilizing deposits is not possible without knowing and controlling the factors affecting them (Shemsu, 2015).

According to Abay (2010), the rate of domestic saving in Ethiopia has been very low, even by sub-Saharan Africa standards, Ethiopia 's. From 1997 to 2010, the average saving rate in low-income countries of the region was about 9 per cent, while it was about 19 per cent for middle-income countries. In the same period, the average saving rate of sub-Saharan African states was 11.5 per cent, still significantly higher than Ethiopia 's rate of 4 per cent.

The fast-growing economy of the country, which is proactively investing in road infrastructure, building hydropower dams, constructing thousands of housing condominiums, and expanding agricultural and other investments in the country, are hugely relying on the commercial banks for loans and credits.

Moreover, there have been multiple small enterprises incubated in the last decades and an increasing number of import and export companies, heavily relying on commercial banks for loans, foreign currency, and trade assurances.

This calls for an increased demand for deposit mobilization from public institutions, the private sector, and other potential contributors (Hibret, 2015).

Reviews of previous studies indicated that various external and internal factors affect private commercial bank deposits. However, the significance of each factor differs across continents, countries, and the time of the study.

The study made by Islam, *et al* (2019) in Bangladesh by using 7 years of panel data and (Robenas, 2020) in Ethiopia using 10 years of panel data indicates that broad money supply has positive effects and a significant influence on the deposit mobilization of commercial banks in the two countries.

Whereas, Likyeleshe (2019) in Ethiopia, using 10 years' panel data, revealed broad money supply negatively influences the deposit mobilization of private commercial banks in the country.

Moreover, the study made by (Prema-chandra & Sen, 2001) on determinants of saving in India by using 44 years' times series data, Wubitu, (2012) in Ethiopia using 12 years' time series data, Shemsu, (2015) conducted study on commercial bank of Ethiopia (CBE) by using 17 years' time series data, showed that inflation has positive significant effect on the deposits of commercial bank.

However, Hussein O. et al (2014) in Iran, using 10 years' panel data, Ketema (2017) in Ethiopia by using 15 years' panel data, and Likyeleshe (2019) in Ethiopia, using 10 years' panel data, showed that inflation has a negative influence on the commercial bank deposits. These contradictory findings revealed that there is an inconsistency among research findings on factors affecting deposit mobilization.

## 2. RESEARCH GAP

A study conducted by Likyeleshe (2019) on the determinants of deposit mobilization in private commercial banks in Ethiopia has used six independent variables, including the inflation rate, interest rate, loan-to-deposit ratio, growth per capita GDP, broad money supply, and return on equity, for seven private commercial banks.

However, it couldn't assess the effect of branch expansion, loan loss provision, government expenditure, capital adequacy, and profitability of banks, measured by return on assets, on determinants of commercial bank deposits in Ethiopia. Therefore, this research also incorporates these five important variables into the study.

Other research conducted by Firdawek (2019) on determinants of deposit mobilization in private commercial banks of Ethiopia, the researcher used eight independent variables, including disposable income, interest rate, loan to deposit ratio, real GDP, branch expansion, capital adequacy, bank's profitability, and population growth, on a sample of six private commercial banks. However, it couldn't assess the effect of loan loss provision, broad money supply, and government expenditure as determinants of private commercial bank deposits in Ethiopia.

Hence, this research incorporates these three important variables into the study. Additionally, Robenas (2020) conducted a study on determinants of deposit mobilization in private commercial banks of Ethiopia. The researcher has used six independent variables, including interest rate, liquidity ratio, government expenditure, inflation rate, banks' profitability, and broad money supply, on six private commercial banks.

However, it couldn't assess the effect of loan loss provision, capital adequacy, and branch expansion as determinants of private commercial bank deposits in Ethiopia. Hence, this research incorporates these three important variables in the study.

Moreover, except the studies conducted by Kibebe, (2016), Likyeleshe, (2019), Firdawek, (2019) and Robenas, (2020), most of the studies are conducted on all commercial bank in Ethiopia including the government bank, commercial bank of Ethiopia and other studies are conducted in reference to one specific commercial bank specially focusing on branches in one single city whether public or private bank.

However, this study is different availing that it considers only private commercial banks in Ethiopia. Therefore, this study fills the area coverage gap and some finding gaps in assessing the determinants of private commercial banks' deposit mobilization by incorporating two newly established banks, namely Berhan International Bank and Buna International Bank.

The main objective of the study is to examine the determinants of deposit mobilization of private commercial banks in Ethiopia.

The specific objectives of the study are as follows:

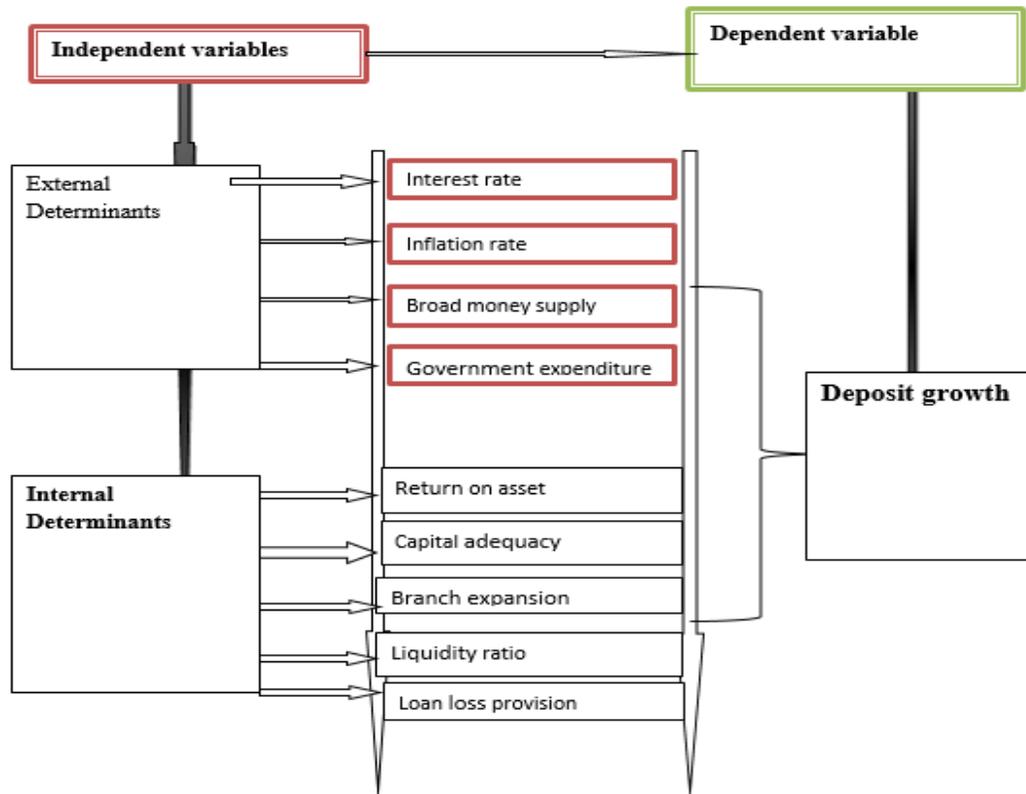
1. To assess trends of deposit growth of private commercial banks in Ethiopia.
2. To identify the internal determinants of deposit mobilization in Ethiopian private commercial banks.
3. To identify the external determinants of deposit mobilization of private commercial banks in Ethiopia.

### **Hypothesis of the Study**

To achieve the study's objective, the following hypotheses are developed based on a review of relevant and related literature on the determinants of deposit mobilization by private commercial banks, which will be tested. Eight testable hypotheses formulated in this study are as follows:

- H1:** Branch expansion has a positive and significant effect on private commercial banks' deposits.
- H2:** Inflation has a negative and significant effect on private commercial banks' deposit.
- H3:** The deposit interest rate has a positive and significant effect on private commercial banks' deposits.
- H4:** The money supply has a positive and significant effect on private commercial banks' deposits.
- H5:** Government expenditure has a positive and significant effect on private commercial bank deposit.
- H6:** Liquidity ratio has a positive and significant effect on private commercial banks' deposit.
- H7:** Bank's profitability has a positive and significant effect on private commercial banks' deposit
- H8:** The Loan loss provision ratio has negative and significant effect on private commercial banks' deposits.
- H9:** Capital Adequacy has a positive and significant effect on private commercial banks' deposit

## Conceptual Framework



**Figure 2.1: Conceptual Framework**

Source: Developed based on literature review, 2025

### 3. RESEARCH METHODOLOGY

The primary objective of this study was to assess the determinants of deposit mobilization of private commercial banks in Ethiopia. To achieve this objective, the researcher selected the explanatory research design. To achieve the mentioned objective, the study adopted a quantitative research approach, as the methodology to provide a quantifiable statistical analysis by using balanced panel data to realize a stated objective. The target population of the study was all 16 private commercial banks registered by NBE and in operation in the country during the study period (2010-2019).

Currently, in Ethiopia, there are sixteen private commercial banks that are operating throughout the country (NBE, 2019). But because of a lack of complete 10-year data that is required for the analysis purpose, some of the recently established private banks were excluded from the study, so the number of sample banks was reduced to twelve (12) private commercial banks. Accordingly, the twelve private commercial banks, namely, Dashen Bank, Awash International Bank, Abyssinia Bank, Wegagen Bank, United Bank, Lion International Bank, Cooperative Bank of Oromia, Nib International Bank, Zemen

Bank, Oromia International Bank, Berhan International Bank, and Bunna International Bank, were selected for the study.

The sampling technique employed for the study was purposive. Because the study applied the panel data set and the length of time in this study was 10 years from 2010-2019. The main objective in choosing the particular sample period and its respective data is to utilize the most recent year-end financial data that are available at the National Bank of Ethiopia (NBE) and to incorporate the recently established private commercial banks in Ethiopia.

The necessary data for this study were collected from secondary sources.

After the panel data were collected, the data were analyzed by using descriptive statistics (especially mean and standard deviation), correlation matrix, and random effects panel data regression model (based on the result of the Hausman test). The data was analyzed via descriptive statistics by using mean, standard deviation, frequency, and percent. While in the case of the econometric model, the result was estimated by applying correlations and multiple linear regression analysis. The correlation coefficient was employed to test the relationship between the variables. The analysis of the secondary data was computed through STATA software version 14.

### 3.1 Description and Measurements of Variables

**Dependent Variable:** In this study, the researcher used deposit growth as the dependent variable. The primary function of commercial banks is the maximization of deposits. It helps to expand banking operations by providing a subsidy for branch expansion. The successful functioning of commercial banks depends on the extent of funds mobilized. Deposits constitute a vital source of funds required for the banking business.

**Independent Variables:** This paper used the major determinants of a bank's deposit mobilization: capital adequacy, liquidity ratio, return on assets, deposit interest rate, branch expansion, inflation rate, broad money supply, government expenditure, and loan loss provision ratio.

**Deposit interest Rate:** The main focus of every financial system is the financial intermediary, that is, mobilizing financial resources from the surplus sector and lending 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 the interest payment, which must be reasonable and acceptable to the owner of the money.

**Inflation:** Inflation is the general increase in the level of prices of goods and services in an economy over a period of time. When the general price level changes, each unit of our currency is down and therefore buying fewer goods and services. The day-to-day increase in prices of commodities, especially of non-food items like oil and gas, snatch money from the savings of consumers, and the uncertainty of prices for both food and non-food items, generates eagerness among people to earn more and more. Hence, it affects deposit mobilization negatively.

**Money Supply:** According to Al-Qudah & Jaradat (2013), Money supply is a measure of the total amount of money in an economy. Money supply is the summation of currency in circulation, demand deposits, time deposits, and savings deposits.

Money supply is the amount of money within a specific economy available for purchasing goods or services. The broad definition of money supply is adopted, which includes currency in circulation, demand deposits, quasi-money, and foreign currency deposits. The money-creating activities of the deposit money banks impact on money supply, and given that the central bank is responsible for controlling money supply in an economy, it is important to evaluate the role of these banking institutions in the convergence process. Excess money supply, whether created through the direct or indirect channels, influences economic activity (growth) and may provide downside risks on macroeconomic stability, impacting negatively on inflation, interest rates, and the exchange rate.

**Government Expenditure:** Government expenditure includes all government consumption, investment, and transfer payments to create future benefits. All monetary expenditure on goods and services made by the government on behalf of the community is named as capital expenditure. It includes both recurrent and capital expenditure on items like health, education, administration, and so on. The recurrent expenditure refers to the expenditures that occur at regular intervals in the annual budget of the government. These expenses include expenditure on defense, administration, and debt servicing, particularly payment of interest on loans, road maintenance, and the cost of health and education services.

**Branch Expansion:** Banks usually make decisions on expanding their branch by considering different factors. Some of the factors could be: level of competition, deposit potential, regional income, and the existence of infrastructure and transport facilities. As deposit potential is one thing that banks consider in expanding their branches, the deposit can also be a reason for the branch expansion strategy that the banking sector uses.

An increase in the number of bank branches will affect getting many customers, particularly those in far remote areas who are unbanked. As more and more people have access to the banking system, more people would be willing to deposit their idle cash holdings or at least a part of their wealth into deposits. More recently, the branch expansion by the existing banks has been increasing rapidly to reach out to remote locations to seize the resources available, particularly deposits. This practice shows that branch expansion has a positive and significant relationship with deposit volume, then draws the following hypothesis.

Branch expansion rate =

**Bank's Liquidity:** Liquidity can be defined as a measure of the relative amount of assets in cash or that can be quickly converted into cash without any loss in value available to meet short-term liabilities. Liquidity ratio is the ratio between the liquid assets and the liabilities of a bank or other institutions. Liquidity ratios measure a firm's ability to meet its

maturing financial obligations. The focus is on short-term solvency as if the firm were liquidated today at book value. The most common financial ratios that reflect the liquidity position of a bank are customer deposits to total assets, total loans to customer deposits, and to deposit-to-loan ratio (Ongore and Kusa, 2013).

The current ratio is the most common liquidity measure and provides an indication of a firm's ability to pay short-term claims with short-term assets. The liquidity ratio measures the liquidity of a bank, assuming that the bank cannot borrow from other banks in case of liquidity need.

This is a relatively strict measure of liquidity, but it enables the researcher to capture at least part of the market liquidity risk. This ascertains whether the bank's short-term assets are readily available to pay off its short-term liabilities. The bank can meet its obligations in terms of funding (the volume of liquid assets is high enough to cover volatile funding) if the value of this ratio is 100% or more (Vodova, 2013). For this study, the ratio of liquid assets to current liabilities is used as a liquidity ratio.

**ROA:** Most commonly, profitability is measured by return on assets (ROA) and return on equity (ROE).

For this study, the proxy of profitability is return on assets, which measures the overall financial performance of banks, and the return on assets (ROA) is measured by the ratio of net profit after tax to total assets. (Bhalla, 2006) In his book, ROA is a ratio that is used to measure the company's efficiency in the use of its assets to generate profit.

It means that a more efficient company will generate a higher level of profit from a given level of total assets than its less efficient competitor.

**Capital Adequacy:** Capital of a bank includes paid-up capital, undistributed profit (retained earnings), legal reserve or other reserves, and surplus fund, which are kept aside for contingencies.

Though the capital adequacy ratio is measured by the ratio of total capital to risk-weighted assets, in some literature, it can also be measured by the ratio of capital to total assets, and then, in this study, the proxy for capital adequacy is the ratio of total capital of the bank to total loans and advances of the bank.

Capital adequacy refers to the extent to which the assets of a bank exceed its liabilities, and is thus a measure of the ability of the bank to withstand a financial loss.

**Loan Loss Provision Ratio:** According to Vong et al (2008), if banks operate in riskier environments and lack the expertise to control their lending operations, it will probably result in a higher loan-loss provision ratio. The ratio is calculated by dividing the loan loss provision by the total amount of loans.

Literature suggests that increased exposure to loan loss provision is normally associated with decreased bank deposits, and, hence, it is expected to have a negative relationship with bank deposits.

**Table 3.1: Descriptions and measurements of variables.**

Variable	Acronym	Measurements	Expected sign
Deposit growth	DEPG	Annual increase in the total deposits of the bank	
Inflation rate	INFR	Annual general inflation rate	-
Bank's liquidity	LR	The ratio of liquid assets to current liabilities (deposit)	+
Branch expansion	BREXP	Annual branch expansion rate	+
Deposit interest rate	INT	Average deposit rate paid in the year	+
Capital adequacy	CAR	The ratio of capital to loan and Advance	+
Loan loss provision ratio	LLP	The ratio of loan loss to total loans of the banks	-
Return on assets	ROA	Net profit before tax and interest to total asset rate	+
Money supply	M2	Broad money supply rate	+
Government expenditure	GOEXP	the total government expenditure	+

### 3.2 Model Specification

A panel regression model is used to determine the relative importance of each independent variable in determining a bank's deposit mobilization. The p-values of explanatory variables were tested for the hypotheses at a 1% and 5% significance level. Hence, to estimate the impact of determining factors on deposit mobilization of private commercial banks, the following general empirical model served as the basis for multiple regression analysis.

$$Y_{it} = \beta_0 + \sum \beta_K X_{it} + \epsilon_{it}$$

Where:

i denotes banks ranging from 1 to 12 (cross-sectional dimension).

t denotes years ranging from 2010 to 2019 (time-series dimension).

$Y_{it}$  represents the mean value of the dependent variable (DEPG), deposit growth

$\beta_0$  is the intercept

$\beta_K$  represents the coefficients of the X variable

$X_{it}$  represents the explanatory variables (INT, INFR, LR, M2, ROA, GOEXP, CAR, LLP, and BREXP).

$\epsilon_{it}$  is the error term.

The above general empirical research model can be changed into the study variables to analyze the effect of those internal and external factors on the deposit mobilization of private commercial banks as follows:

### 3.3 Ethical Considerations

As suggested by Trochim (2000); Sekaran (2006), the researcher has ensured the strict adherence to the following ethical conduct: The data were collected based on the consent of the National Bank of Ethiopia. The purpose of the research was clearly explained to the National Bank of Ethiopia through a cooperation letter from the Accounting and Finance department head. Information collected from the bank was treated with strict confidentiality throughout the study. There was no misrepresentation or distortion of the actual data, which were collected from the National Bank of Ethiopia.

## 4. RESULTS AND DISCUSSION

**Table 4.1: Summary of descriptive statistics**

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. sum DEPG CAR ROA INT LR INFR BREXP M2 GOEXP LLP,
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Variable	Obs	Mean	Std. Dev.	Min	Max
DEPG	120	.3787292	.2133609	0	.8953
CAR	120	.2809898	.2883146	.003717	.983234
ROA	120	.0339725	.0107144	0	.0501
INT	120	.0589	.0113563	.04	.075
LR	120	.5714969	.1421431	.165493	.973961
INFR	120	12.216	8.669278	2.7	34.04
BREXP	120	.3444449	.2306911	.0169	.9991
M2	120	.258	.0586916	.17	.39
GOEXP	120	.222	.0641112	.08	.32
LLP	120	.2659917	.1622426	.014	.987

Source: STATA 14 output, 2024

According to Table 4.1 above, all variables comprised 120 observations, and the deposit mobilization measure used in this study, namely, deposit growth (DEPG), indicates that the Ethiopian banks mobilized, on average, a positive deposit growth over the last ten years from 2010-2019. For the total sample banks, the mean of DEPG was 37.87% with a minimum of 0% and a maximum of 89.53%. That means the highest deposit mobilization achieved among the sampled banks was 89.53% during the study period. On the other hand, the least deposit mobilized bank of the sampled banks scored 0% of deposit growth by a newly established bank during the study time. The standard deviation result of 21.34% indicates that banks' deposit growth for the sample private commercial banks varies by 21.34 percent from the average value of 37.87 percent. This confirms that there were high variations in deposit growth among private commercial banks during the study period. Though the performances of deposit growth among private commercial banks

confirm the supply of loanable funds, the trend of deposits is increasing year to year at an increasing rate. The result implies that selected private commercial banks of the study need to optimize different strategies to mobilize more and more deposits from customers.

Regarding the explanatory variables, the ratio of total capital to total loans and advances (CAR), capital adequacy within this study reported a mean value of 28.09% and the maximum value of 98.32% during the study periods. The standard deviation of Statistics for capital adequacy was 28.83 percent, which shows the existence of relatively moderate variation of capital to capital-to-asset ratio between the selected private commercial banks of Ethiopia.

Return on assets (ROA) is measured by the net income divided by total assets. The table noted that return on assets has a mean value of 3.39 percent. This indicates that the sample private commercial banks earned, on average, a net income of 3.39 percent of the total assets during the study period. Since return on assets indicates the efficiency of the management of a company in generating net income from all the resources of the institution, the higher ROA shows that the company is more efficiently utilizing its resources. The maximum value of ROA was 5.01 percent, and the minimum value of 0 percent. The standard deviation of 1.071 percent from the average value of 3.39 percent suggests that there is no wide dispersion in the return on assets of the sampled private commercial banks in Ethiopia.

The average annual interest rate (INT) of the country over the period under study is 5.89 percent. Since the annual interest rate was measured by the annual interest rate of the country on customer deposits, the maximum attained average interest rate is 7.5 percent, whereas the lowest recorded average interest rate is 4 percent, with the standard deviation of 1.14 percent.

On the other hand, the outputs of the descriptive statistics indicate that the ratio of liquid assets to total deposits (LR) was 57.15 percent, on average, with a minimum of 16.55 percent and a maximum of 97.3 percent. This means that despite the inverse relationship that exists between liquidity and deposit growth, the liquidity measure indicates that the Ethiopian private commercial banks have, on average, a higher liquidity position, which was somewhat higher than the statutory requirement of 15% for the period of 2010-2019. The standard deviation was reported in liquidity, which is 0.142, and shows the existence of relatively high variation among the selected private commercial banks of Ethiopia in changing the assets to utilize deposits.

As per the results from the table above that the average general inflation (INFR) of the country over the sample period is 12.62 percent. The annual inflation rate was measured by the percentage change in the consumer price index of the country; the maximum attained average inflation rate is 34.04 percent, whereas the lowest recorded average inflation rate is 2.7 percent. This shows that the average there was an increase in price of goods and services increased within the economy during the study period. The rate of inflation was highly dispersed which exhibiting higher dispersion than its mean value over the periods under study towards its mean with a standard deviation of 8.67.

Another explanatory variable, the mean value of the branch expansion rate, was 34.44 percent. The minimum value of 1.69 percent branch expansion rate was recorded, whereas the maximum value of 99.91 percent branch expansion rate was recorded during the period of study. The standard deviation for Branch expansion rate was 23.1 percent; this implies that high variation in Branch expansion rate from its mean value during the period of 2010 to 2019.

The mean growth rate of broad money supply by the government (M2) is 25.8 percent, and the maximum and the minimum growth rates of broad money supply are 39 percent and 17 percent, respectively. The growth rate of dispersion is 5.87 percent, which is approximately moderate.

As noted from the above table average growth rate of government expenditure (GOEXP) is 22.2 percent, with a minimum growth rate of 8 percent and a maximum growth rate of 32 percent. The result indicates that the government expenditure increases from year to year at an increasing rate. The dispersion of the government expenditure growth is 6.41 percent, which is moderate. The increase in government expenditure is related to the increase in the budget and the increase in capital expenditure for different mega projects being built by the government.

Regarding the loan loss provision ratio, the mean score shows 0.2659 from the period of 2010 to 2019. The descriptive statistics result also shows the minimum and maximum values of 0.014 and 0.98, respectively. This indicates the private commercial banks' loan loss provision ratio during the period is from 0.014 to 0.98. The standard deviation in terms of loan loss provision was 0.162 during the study period.

#### **4.1 Classical Linear Regression Model Assumptions and Diagnostic Test**

This section discusses the test of the Classical Linear Regression Model (CLRM) assumptions. The topic of this study was examining determinants of deposit mobilization of private commercial banks using different panel data modeling techniques. The characteristics of the model and proposed variables in the equation of this research did not violate the classical assumptions underlying the OLS model. These are checked by testing each assumption as follows:

#### **4.2 Test for Normality**

Among the important diagnostic tests of the Classical Linear Regression Model (CLRM) assumption, one is normality checking. Normality tests are used to determine if a data set is well-modeled by a normal distribution. With the normality assumption, ordinary least squares estimation can be easily derived and would be much more valid and straightforward. If residuals are normally distributed, the histogram should be bell-shaped (Brooks 2008).

The Shapiro-Wilk  $W$  test is another mechanism for a normality test. According to the Shapiro-Wilk  $W$  test, if the p-value is greater than 5%, it indicates that the residuals are normally distributed. So, the result of the test, i.e., Prob.>z, is 0.06295 or about 6.295%

which indicates that this result is greater than 0.05 of the confidence intervals. This implies that the error terms of the model are normally distributed.

**Table 4.2: Result of normality test**

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. swilk e,
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Shapiro-Wilk W test for normal data

Variable	Obs	W	V	z	Prob>z
e	120	0.97942	1.980	1.530	0.06295

Source: STATA 14 output, 2024

### 4.3 Heteroskedasticity Test

According to Gujrati (2004), if the variances of the error term of the different observations are not the same, there is our Heteroskedasticity problem present in the model. The variance of the error term should be constant in regression results to reject the alternative hypothesis. The Breusch-Pagan or Cook-Weisberg test was considered to identify any linear form of heteroskedasticity. As can be observed from Table 4.4 below, the Breusch-Pagan or Cook-Weisberg test for heteroskedasticity resulted was found P-value of 0.6166, which is more than 5% of the level of significance. This reveals that there is no evidence for the existence of a heteroskedasticity problem with the data, because the correlation coefficients between independent variables are fairly small and the p- p-value 0.6166 was above the significance level, which is 61.66%.

**Table 4.3: Heteroskedasticity test result**

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. hettest
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Breusch-Pagan / Cook-Weisberg test for heteroskedasticity

Ho: Constant variance

Variables: fitted values of DEPG

chi2(1)	=	0.25
Prob > chi2	=	0.6166

Source: STATA 14 output, 2024

#### 4.4 Test for Absence of Autocorrelation Assumption

Another basic assumption of the regression model says that the covariance between error terms should be zero. This means that the error term should be random and it should not exhibit any kind of pattern. If there exists covariance between the residuals and it is non-zero, this phenomenon is called autocorrelation (Brooks, 2008). The Ordinary Least Squares method assumes no serial correlation (also called autocorrelation), which means that the errors in subsequent periods are not correlated (Wooldridge, 2006). The Breusch–Godfrey serial correlation LM test was run. Breusch–Godfrey tests the area joint test for autocorrelation that will allow examination of the relationship between  $\hat{u}_t$  and several of its lagged values at the same time.

**Table 4.4: Test for serial autocorrelation result**

Breusch-Godfrey LM test for autocorrelation

lags (p)	chi2	df	Prob > chi2
1	3.463	1	0.0627

H0: no serial correlation

Source: STATA 14 output, 2024

Results in Table 4.5, the P value of the F-statistic is 0.0627, which is greater than the significance level of 5%. And researcher failed to reject the null hypothesis of no autocorrelation at a 5 percent significance level. This implies that there is no significant evidence for the presence of autocorrelation in this model. The Chi-Square P-value of the model also supports the absence of autocorrelation. Therefore, it can be concluded that the covariance between the error terms is zero, the data is normal, and the absence of autocorrelation problem was found conclusively from the LM test.

#### 4.5 Testing for Multicollinearity

Multicollinearity exists when the independent variables are highly correlated with each other. This was tested through the correlation coefficient and VIF. Variance inflation factor VIF is a widely used method to test for multicollinearity; it measures the increase in the variance of a coefficient as a result of collinearity. More than 10 for VIF values indicates high degrees of collinearity or multicollinearity among the independent variables (Hair et al., 2006).

Having guidance from the correlation matrix, variables are tested for multicollinearity using STATA software version 14 for each relationship, testing the values of the variance inflation factor (VIF). As a result of the following VIF results, all variables are less than 10.

Based on this result, the researcher concluded that there is no problem of multicollinearity within the data.

**Table 4.5: Multicollinearity test result**

```
. vif
```

Variable	VIF	1/VIF
GOEXP	5.56	0.179755
M2	3.06	0.326427
INT	2.76	0.362032
INFR	2.03	0.492668
BREXP	1.49	0.670904
ROA	1.44	0.696803
CAR	1.32	0.758370
LLP	1.15	0.868058
LR	1.05	0.949839
Mean VIF	2.21	

Source: STATA 14 output, 2021

#### 4.6 Test for Choosing Random effect (RE) versus Fixed effect (FE) Models

According to Brooks (2008), Verbeek (2004), and Wooldridge (2006), it is often said that 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, but a fixed effects model more appropriate when the entities in the sample effectively constitute the entire population or sample frame.

Hence, the sample for this study was selected randomly, and the sample frame random effects model is appropriate.

The collected data were estimated based on a panel model, which includes cross-sectional and time series observations for twelve private commercial banks that range over 2010 to 2019.

The commonly used models for panel data are fixed effects and random effects models. In order to employ either a fixed or random effect model, a formal test, the so-called Hausman test, is used.

The Hausman test is based on the null hypothesis in favor of the random effect model estimator. If the p-value is higher than 0.05 (insignificant), random effects are preferable, and if the p-value is lower than 0.05(significant), fixed effects are preferable.

According to the Hausman test, shown in the following table, the model is better off if the random effect model is used since the p value for model 1.000, which is greater than 0.05 (insignificant).

**Table 4.6: Hausman test result**

Test: Ho: difference in coefficients not systematic

```

chi2(9) = (b-B)'[(V_b-V_B)^(-1)](b-B)
          =      0.38
Prob>chi2 =      1.0000
(V_b-V_B is not positive definite)
    
```

Source: STATA 14 output, 2024

#### 4.7 Results of Regression Analysis

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 precision level each variable is significant. R<sup>2</sup> values indicate the explanatory power of the model, and in this study adjusted R<sup>2</sup> value, which takes into account the loss of degrees of freedom associated with adding extra variables, was inferred to see the explanatory powers of the models.

The general proposed model was: *is*

Based on the results of Table 4.8, the following model was presented as follows:

$$DEPG_{it} = 0.209 - 0.0662CA + 4.38ROA + 5.787INT - 0.214LR - 0.008INFR + 0.227BREXP - 0.855M2 + 0.529GOEXP - 0.194LLP + \epsilon_{it}$$

**Table 4.7: Random effect model regression result**

```

. xtreg DEPG CAR ROA INT LR INFR BREXP M2 GOEXP LLP, re

Random-effects GLS regression                    Number of obs   =      120
Group variable: banks                          Number of groups =      12

R-sq:                                           Obs per group:
    within = 0.6761                               min =           10
    between = 0.5733                               avg  =          10.0
    overall  = 0.6470                               max  =           10

Wald chi2(9) =      215.75
Prob > chi2   =      0.0000

corr(u_i, X) = 0 (assumed)
    
```

	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]
CAR	-.0662165	.0473319	-1.40	0.162	-.1589852 .0265523
ROA	4.38118	1.327432	3.30	0.001	1.779461 6.982899
INT	5.78768	1.674479	3.46	0.001	2.505762 9.069598
LR	-.2148046	.0890995	-2.41	0.016	-.3894364 -.0401729
INFR	-.0084543	.0018451	-4.58	0.000	-.0120706 -.004838
BREXP	.2277575	.0624249	3.65	0.000	.105407 .350108
M2	-.8552646	.3342385	-2.56	0.011	-1.51036 -.2001691
GOEXP	.5294076	.4121313	1.28	0.199	-.2783549 1.33717
LLP	-.1940448	.078327	-2.48	0.013	-.347563 -.0405267
_cons	.2099336	.134188	1.56	0.118	-.0530699 .4729372
sigma_u	.04500055				
sigma_e	.12034634				
rho	-.12266861				(fraction of variance due to u_i)

Source: STATA 14 output, 2024

**Table 4.8: Regression result Summary**

S.NO	Variable	Expected impact on deposit mobilization (DEPG)	Actual impacts on deposit mobilization (DEPG)
1.	CAR	Positive & significant	Negative & insignificant
2.	ROA	Positive & significant	Positive & significant
3.	BREXP	Positive & significant	Positive & significant
4.	INT	Positive & significant	Positive & significant
5.	LR	Positive & significant	Negative & significant
6.	M2	Positive & Significant	Negative & significant
7.	GOEXP	Positive & significant	Positive & insignificant
8.	INFR	Negative & significant	Negative & significant
9.	LLP	Negative & significant	Negative & significant

Source: Researcher's own computation, 2024

## 5. CONCLUSION AND RECOMMENDATIONS

### 5.1 Conclusion

To conclude, this study has been conducted on determinants of deposit mobilization of private commercial banks in Ethiopia. The study was used panel data for the sample of twelve private commercial banks in Ethiopia which had ten years complete data over the period (2010-2019). The study targeted on identifying the internal and external determinants of deposit mobilization of private commercial banks in Ethiopia. Even though determinants of deposit mobilization has been many factors as of different scholars, this study concentrated on the capital adequacy, bank's profitability, average interest rate, branch expansion, liquidity ratio, broad money supply, government expenditure, inflation rate and loan loss provision ratio.

In regard to profitability measured by return on asset has a significant positive impact on private 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 private commercial bank profitability will add customer's reliance on private commercial bank where they going for saving and bank deposit to increase.

Branch expansion 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.

Regarding to average deposit interest rate, it indicates that average deposit interest rate is a major factor in explaining the private commercial bank's deposit mobilization in Ethiopia meaning that interest rate plays more an important role in deposit growth. This implies the competition between private commercial banks in terms of attraction of using deposits interest rate. The effect of deposit interest rate on private commercial bank deposit mobilization is higher as compared with other variables.

In relation with liquidity, the study indicated that the deposit growth decreases when the bank liquidity increases or reduces liquidity risk. Liquidity arises mainly from the inability/reluctance of commercial banks to extend risky loans at competitive rates or credit selling set by NBE, which leads banks to invest in short term liquid investments that yield lower interest revenue. During the period where banks are liquid, they averse to deposit mobilization.

Inflation rate has negative significant impact on bank deposit mobilization. This result indicates private 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.

Broad money supply has negative effect on deposit growth. In this case people increase consumption and reduce savings and thus money supply will have an inverse relationship with deposits growth. From the finding, it can be concluded that broad money supply decreases deposit growth.

Loan loss provision has negative significant impact on bank deposit mobilization. This result indicates private commercial bank need to work over loan management where they have to minimize loan loss in order to increase deposit mobilized.

## 5.2 Recommendations

The researcher believes that findings of the study are valuable for private commercial banks, policy makers, regulators like NBE and academicians. The recommendations are given based on the regression result output; for seven independent variables (return on assets, branch expansion, broad money supply, inflation, liquidity ratio, average deposit interest rate and loan loss provision ratio) those are found to be significant determinants of deposit growth of sampled private commercial banks during the study period.

Therefore, based on the major findings as discussed above, the researcher drawn the following recommendations to concerned body which have vital role on issues related to deposit mobilization.

- Domestic resource mobilization is the crucial issues in the economy of one country. Because foreign aids and debts may come with hidden agendas like political interest as well as cultural influences on borrower country. Therefore, regulatory body of government and private financial institution should make policies and regulations this favor (support) deposit mobilization of commercial banks.
- According to regression results of the study return on assets has positive effects on deposit growth of sampled private commercial banks. Considering the positive and significant influence of return on asset on deposit mobilization of private commercial banks of Ethiopia, these banks should enhance their profit through diversified investment and at the same time increase their profitability and deposit level.

- Branch expansion has positive and significant effect on deposit mobilization of commercial banks. Hence, commercial banks in Ethiopia should also expand their branches in order to promote their deposit especially, for private commercial banks in Ethiopia. Regarding to the branch expansion special outlets should be open in the rural area since the rural population large enough in Ethiopia and they can save.
- Broad money supply affects deposit mobilization of private commercial banks in Ethiopia negatively and statistically significant as it can be observed from regression results. To enhance deposit mobilization of private commercial in Ethiopian, the government should be careful money supply. Amount of money supplied by government should be balanced with number of projects and job opportunities created by supplied money to resist inflation and increase saving of the people.
- According to the regression result of this study, inflation has negative and statistically significant impact on deposit growth of private commercial banks in Ethiopia. Therefore, to enhance deposit mobilization of private banks, the researcher suggests that government should control inflation specially via providing necessity goods for the public to increase their saving capacity.
- Regarding to liquidity ratio regression result shows that negative and statistically significant influence of the ratio on deposit mobilization of private commercial banks in Ethiopia. These banks should invest their liquid assets into different investment area especially in long-term investment to generate more profit and to attract more depositors.
- Deposit interest rate positively and statistically significantly affects deposit mobilization of private commercial banks. The researcher suggests that National Bank of Ethiopia should increase percent of deposit interest rate to attract more customers to save their money in the banks than buying real assets like car and others. Additionally, these banks themselves should use deposit types those have more interest rate than average deposit interest rate set by NBE to increase their deposit growth.
- As per regression result of the study, loan loss provision has negative and statistically significant influence on deposit mobilization of private commercial banks in Ethiopia. To escape from this influence these banks should properly investigate ability of the borrowers to repay amount of loans they requested before providing loans.

### 5.3 Direction for Further Research

It is recommended if other factors that might have a greater impact on deposit mobilization of private commercial banks in Ethiopia like political instability, customer's satisfaction and other variables should be included for further research. Because, additions of other variables could be another potential extension of this study. Therefore, other researchers are recommended to include other variables by broadening its base and updated situations.

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