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Deposit mobilization and its determinants: evidence from commercial banks in Ethiopia

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Abstract

Deposit mobilization is the most important service and an integral part of banking operations. In Ethiopia, mobilizing savings through intense deposit collection has been regarded as the major task of banking. However, managing deposits is impossible without understanding and controlling the factors that influence them. Thus, this study examined the bank-specific and macroeconomic determinants of deposit mobilization in Ethiopian banking sectors using balanced panel data of 14 commercial banks from 2011 to 2020. Secondary data sources from sampled commercial bank audited financial statements were used to achieve the stated objective. A quantitative approach and explanatory design were employed. The model result demonstrated that loan to deposit ratio, capital adequacy, economic growth, inflation, population growth, and political stability have a negative and statistically significant effect on commercial bank deposit mobilization. On the other hand, the bank's profitability has a positive and statistically significant impact on commercial bank deposit growth. The study suggests that Ethiopian commercial banks need to improve deposit mobilization by paying more attention to internal factors controlled by management, while keeping in mind the influence of the overall economic and political dynamic. This study provides useful insights for bank managers, owners, analysts, policymakers, depositors, and other stakeholders on the deposit growth of commercial banks and its determinants. Meanwhile, academic researchers and students may use the findings and suggestions to conduct a study in the banking area. Unlike the previous studies, the present study examined the effect of population growth and political stability on deposit mobilization and contributes to the limited stock of existing knowledge in the area.

Keywords: Bank-specific, Commercial bank, Deposit mobilization, Determinants, Ethiopia, Macroeconomic

Introduction

An efficient financial system is essential for sustainable economic growth and building a dynamic economic system, and countries with well-developed financial institutions tend to grow faster [53]. In developing countries where the banking industry dominates the financial sector, such as Ethiopia, commercial banks are the primary controllers of the financial system, performing financial intermediation, and their effective and efficient operation plays a vital role in accelerating economic growth [2]. As a result, the banking system serves as the backbone of financial intermediation by mobilizing and channeling financial resources to the economy [13].

Banks play an intermediary function in a contemporary economy by mobilizing funds from savers (those with surplus income) and then lending them to investors, both individuals and businesses (deficit units) [5, 61]. Granting loans and advances, which is the primary source of income for banks, is usually attainable if the banks have amassed adequate deposits from the available market [54]. Thus, deposits are a vital source of funds for banking operations and are regarded as the essential resource for commercial banks in meeting the needs of banking systems' financial resources [54, 46].

Deposit mobilization is an important source of working capital for banks and is of paramount importance to the banking industry as the size of deposits mobilized by

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the general public through current, savings, fixed deposits, time deposits, and other specialized systems critical to the bank's success [28, 66]. The government has also urged banks to make all possible efforts to mobilize additional deposits, which can only speed up banks' pace of lending activities from surplus units to deficit units for the economy's development [23]. Since a deposit is considered a low-cost source of working capital, the bank's ability to lend more and its success is highly reliant on deposit mobilization [28].

In economic theory, banks are generally regarded as oligopolistic institutions with high competition [34]. However, in this highly competitive business, the bank's capacity to mobilize sufficient cash from the public through various schemes will depend on the systems employed [21]. Deposit mobilization is as important to banks as oxygen is to humans. Banks and other financial institutions may fail to meet their business objectives if they do not have enough deposits (Viswanadham, et al. [66]. The survival of the banking industry was heavily reliant on deposit growth [3]. Banks must be able to raise enough deposits to keep the economy running smoothly [34]. Although deposits are the most important source of operating capital for banks, mobilizing adequate deposits is impossible without first recognizing and controlling the factors that influence them2]. Thus, the issue of bank deposit growth and the factors that influence it is critical to the financial sector of emerging countries like Ethiopia.

Several studies like Bista and Basnet [17], Alemu [3], Thisaranga and Ariyasena [59], Abiodun et al. [1], Yakubu and Abokor [70], Ayene [9], Islam et al. [38], Azolibe [11],Tarekegn [57], and Erna and Ekki [24], examined various external and internal factors that influence deposit growth and found inconsistent results. However, there are still discrepancies in many studies across continents, countries, and periods in identifying which factors have a major impact and the direction of those impacts. Furthermore, studies in Ethiopia have not considered the impact of population growth and political stability on deposit mobilization, and with the composition of the variables considered in this study. Thus, the purpose of this study was to fill this gap by investigating the determinants of deposit mobilization in Ethiopia and contributes to the existing empirical evidence.

The findings of the study demonstrated that loan to deposit ratio, capital adequacy, economic growth, inflation, population growth, and political stability have a significant negative effect on commercial bank deposit mobilization. On the other hand, the bank's profitability has a significant positive impact on commercial bank deposit growth. The results of the study will provide valuable input for banks' managers and policy makers in developing sound policies and strategies to enhance deposit mobilization.

The remainder of the study is organized as follows. Section "Literature reviews" discusses the relevant literature reviewed. Section "Data and methodology" presents the data and methodology used in the study. Section "Results and discussions" indicates the results and discussions and Section "Conclusions" comprises of conclusions, recommendations, and directions for future studies.

Literature reviews

Banks are one of the profitable financial institutions that offer banking and other financial services to their customers by accepting deposits from the depositors and providing loans to the borrowers [38, 51]. Thus, deposits become the most important financial resource for commercial banks to meet the financial needs of their customers, and it requires them to mobilize and accumulate enough deposit amounts [46]. As a result, the financial resources of banking systems are primarily provided by customer deposits. The going concern of every commercial bank is highly dependent on deposits collected from customers [46]. Deposit mobilization is the process of mobilizing funds by financial institutions from the surplus units to the deficit units to create better opportunities for productive investment [12, 39]. A bank's lending capacity is highly dependent on its ability to attract deposits, making it the ultimate source of bank profit and growth [9, 20]. However, deposit mobilization should encourage customers to deposit cash in the bank or have new customers come and open an account in the bank [61]. To be competitive in the banking sector, banks need to have a sufficient share of the deposit market. Deposit mobilization is ineffective unless you know and control the factors that influence it. Thus, it is worthwhile to study determinant factors of deposit mobilization. Empirical evidence documented that the influence factors may be categorized as bank-specific and macroeconomic factors, [11, 38, 70]. Thus, we discussed further the variables considered in the study and how they influence bank deposit mobilization in Ethiopia.

Factors Affecting Deposits mobilization of Commercial Banks

In general, the determinants of bank deposits are divided into micro and macroeconomic aspects. Microeconomic factors are bank-specific variables, but Macroeconomic variables are those, when manipulated, are capable of achieving the nation's macroeconomic objectives [1, 4, 10, 69, 70].

Firm-specific factors

Profitability (ROA) Osei [49] documented that profitability is an important factor determining rural banks' deposit mobilization. Bhalla [15] explained Return on Asset (ROA) as a ratio used to measure the company's efficiency in using its assets to generate profit. It reflects the management's ability to utilize the banks financial and real investment resources to generate profits [35]. Consequently, the more efficient company will generate a higher profit level from a given level of total assets than its less efficient competitor [15]. Thus, higher profit is considered a positive signal or soundness of the bank, making it easier for such banks to attract other deposits [25]. Alemu [3], Tarekegn [57], Getachew [31], and Erna and Ekki [24] found that a bank's profitability has a positive effect on the growth of banks deposit. Since the depositor confidence will increase if the commercial banks are profitable and have adequate asset returns, banks should sustain their profitability to increase their deposit amount.

H1 Profitability has a significant positive effect on deposit mobilization.

Loan to deposit ratio (Bank's liquidity) Loan to deposit ratio (LTD) can be defined as a measure of bank liquidity, which reflects the proportion of customers' deposits that have been given out in the form of loans [29, 71]. It refers to a bank's ability to execute its commitments at any time, including repaying customer deposits or making a payment on the client's order [67] The greater this ratio is, the less liquid the bank is, resulting in a decline in client deposits due to the bank's limited capacity to reimburse depositors. When a bank fails to pay its depositors, it faces liquidity risk, which causes other depositors not to deposit in that particular bank [45]. Amene [4] and Awole [8] found a negative impact of bank liquidity on commercial bank deposits growth. However, Finger & Hesse [25] stated that the bank's liquidity situation plays a significant role in determining banks deposit growth and higher liquidity buffers tend to signal greater bank soundness, which could be a factor favoring deposit demand. Studies by Ünvan and Yakubu [63], and Turhani and Hoda [60] also documented that there is a positive relationship between bank liquidity and deposit.

H2 LTD ratio has a significant negative effect on deposit mobilization

Capital adequacy Capital adequacy is the level of capital that banks must hold to enable them to withstand credit, market, and operational risks they are exposed to Tarekegn [57]. Bank capital plays an important role in maintaining the security of banks and the security of the banking system in general [44] to prevent unexpected losses that banks may face. It turns out that the availability of large amounts of capital increases the risk absorption capacity of banks (Berger and Bouwman [14] and liquidity creation capability [22]. Thus, banks having a higher capital ratio may not necessarily need to mobilize more deposits, "the crowding out of deposits" [33]. Ünvan and Yakubu [63], Amene [4] and Turhani and Hoda [60] also revealed that capital adequacy affects bank deposits negatively. However, the study conducted by Tarekegn [57] established a positive relationship between capital adequacy and band deposit.

H3 Capital adequacy has a significant negative effect on deposit mobilization.

Macroeconomic factors

Inflation Inflation is described as a general and sustained rise in prices of goods and services in the economy [57], and Usman and Adejare [64]. Inflation affects bank deposits in two ways. First, it reduces the purchasing power of money and thus leads to high living costs. This means that households can hardly buy with disposable income and therefore may have little or no deposit in a bank. Second, in situations where hyperinflation occurs, i.e., Cash or bank savings are worthless (Azolibe [11] because the purchasing power of money is so much less than the sudden and excessive runaway price increases in the economy. Therefore, people may choose to convert deposits and cash into storage commodities in anticipation of future price increases and the possibility that they will not be able to deposit money in banks. Namazi and Salehi [46] also argued that when the inflation rate increases, the actual yield rate of money and assets decreases,therefore, deposits are no longer attractive. The effect of inflation on deposits is significantly negative. Maturu [43], Abiodun, et al. [1], Orok et al. [48], Muluken [45], Larbi-Siaw and Lawer [40], and Ostadi and Sarlak [50] have also documented the negative effect of inflation on the commercial bank deposits. However, Thisaranga and Ariyasena [59], Ukinamemen [62] and Athukorala & Sen [6] revealed that the rate of inflation has a positive impact on saving.

H4 Inflation has a significant negative effect on deposit mobilization.

GDP Growth Gross domestic product is the market value of all goods and services produced in a country over one year and are one of the primary indicators used to measure economic performance (Azolibe [11].

According to Stanford [56], changes in real GDP per capita over time are often understood as a measure of changes in the average standard of living. Logically, if households and firms desire to hold more money, deposits will increase. Thus, the relationship between income and deposits is positive, that is, as the income of the society increases, the commercial bank's deposits increase. Empirical studies conducted by Hassan [36], Adem [2], Mashamba et al. [42], and Stanford [56] also revealed that GDP has a positive influence on the volume of commercial bank deposit. Whereas Yakubu, and Abokor [70] and Bikker and Gerritsen [16] found a significant negative effect of GDP on bank deposits. Islam et al. [38] also documented that the GDP growth rate has a negative but insignificant effect on the bank's deposit growth rate.

H5 GDP growth has a significant positive effect on deposit mobilization

Population growth Acquiring deposits and advancing the credit objectives of banks cannot be attained without the good banking habits of the people (Varman [65]. Thus, the deposit amount depends on the number of deposit account holders. Hibret [37] also argued that population growth would mean an increase in the functional labor force that would attract investment, create wealth and positively affect overall economic growth, as a result, the deposit will grow because the more number populations tend to have more number of income generator and saver. Thus, Hibret [37] revealed that population growth had a positive and significant impact on deposits. Teshome [58] also found a positive relationship between population growth and bank deposit. However, Legass et al. [41] and Cincotta and Engelman [19] documented the negative effect of population growth on deposit growth as rapid population growth produces large proportions of children relative to the labor force, resulting in high costs and retard household savings.

H6 Population growth has a significant positive effect on deposit mobilization.

Political stability The country's economic, social and political factors may affect the propensity for depositors to place funds in the banking system, and banks' success in their operation mainly depends on the environment where the business is undertaken (Finger and Hesse [25]. Political stability encourages investment and promotes economic growth, thereby increasing the profitability of a business [55]. Political stability in democratic regimes is positively related to economic freedom indicators because greater economic freedom positively influences investment and economic growth [30]. However, conflicts and political instability can lead to a greater risk of systemic banking crisis and low bank deposits. [52] emphasized that conflicts weaken the performance of the financial sector and deteriorate banks' ability to sustain financial intermediation role. Political instability could increase the volatility of bank deposits [7]. [32] found that the Syrian conflict deeply affected the banking sector by causing deposit and assets runs, and raising non-performing loan.

H7 Political stability has a significant positive effect on deposit mobilization.

Conceptual framework Conceptual framework helps to clearly identify the variables used in the study and shows how particular variables are connected with each other in the study. The conceptual framework presented both internal and external variables used in this study and the independent variable in Fig. 1 below.

Data and methodology

The purpose of this study was to investigate the factors that influence commercial bank deposit mobilization in Ethiopia. This study used a quantitative approach to determine the determinants that influence commercial bank deposit mobilization in light of the inquiry about the purpose, the theories developed, and the quantitative character of the data. This study used an explanatory research approach to investigate the cause and impact of links between bank deposit mobilization and their determining factors.

From the total population of 18 commercial banks in Ethiopia, 14 commercial banks with a long period of audited financial data from 2011 to 2020 are selected as a sample. The analysis relied on secondary data, which included the yearly financial reports, primarily balance sheets and income statements, of the commercial banks

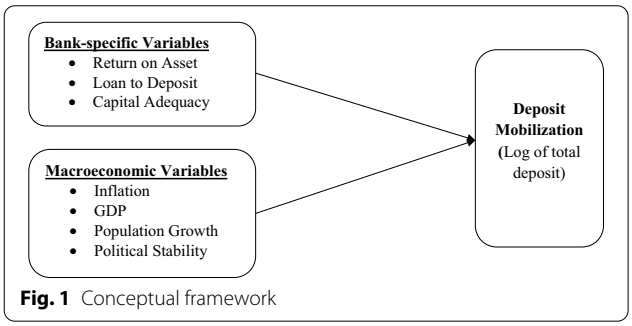

Fig. 1 Conceptual framework

under consideration. The data was a balanced panel data set that captured both cross-sectional and time-series behaviors at the same time.

Methods of data analysis

The data was analyzed using both descriptive measurements and econometric instruments in the study. The preceding contains simple descriptive approaches such as mean, maximum, minimum, standard deviations, and others that enable a higher knowledge of the current situation and examine the data's common patterns.

The descriptive analysis was supported by the study's use of econometric models to determine cause and effect between the explanatory and dependent variables. The Fixed Effect Model was used in the study to identify determinants that have a significant influence on commercial bank deposit mobilization in Ethiopia.

Robustness tests examine how well the estimated effect of the baseline model holds up when the specification of other plausible alternative models is systematically changed. [47] define resilience as the degree to which an additional robustness test model that modifies the model specification logically supports the estimated effect of interest from the baseline model. The accuracy of all estimation techniques is dependent on certain assumptions [27]. Before fully accepting and interpreting our regression result, we attempt to verify the fulfilment of fundamental hypotheses such as no perfect collinearity (multicollinearity test), homoskedasticity (heteroskedasticity test), and model specification (Hausman test) in our manuscript. All of the preceding diagnostic tests demonstrate the reliability of our regression result.

Definition and measurements of variables

Dependent variable

Deposit mobilization (Natural log of total deposit) was used as a dependent variable in this study. Deposit mobilization is one of the most important functions of the banking industry because it is a critical source of working capital for the bank, and the amount of deposits mobilized from the public through current, savings, fixed, and recurring accounts, as well as other specialized schemes, is critical to the bank's fruitful operation [66]. The government has also directed banks from time to time to make all possible efforts to mobilize new deposits, which can only speed up the pace of lending activities by banks from the surplus units to deficit units for the development of the economy [23]. In this study, logarithm of total deposit is used as a proxy for deposit mobilization and used by Firdawek [26] and Teshome [58]. It demonstrated the size of deposits obtained from the general population by banks.

Independent variables

The explanatory variables employed in this study to determine the deposit mobilization of Ethiopian commercial banks are bank-specific factors (such as profitability, liquidity, and capital adequacy ratio) and macroeconomics factors (such as inflation rate, GDP Growth, political stability and population growth) (Table 1). These variables are used in various combinations and have been identified as important factors in determining bank deposit mobilization in a variety of studies [70, 11, 18, 57, 68, 71].

To determine the effect of explanatory variables on Commercial Bank deposit mobilization, the following econometric model was developed:

Table 1 Summary of variables and their expected relationship

Variables			Explanation/Formula	Expected effect
Dependent variable	Deposit mobilization (DM)		Natural log of total deposit	NA
Independent variables	Firm-specific variables	Return on Asset (ROA)	Earnings after interest and tax divided by total asset	+
		Loan to deposit ratio	The ratio of a bank's total loans and advance to its total deposits	−
		Capital Adequacy (CA)	Paid-up capital divided by total assets	−
	Macroeconomic Variables	Inflation (INF)	Annual percentage changes in the consumer price index (CPI) i.e $(CPI_t - CPI_{t-1}) \div CPI_{t-1}$	−
		Gross Domestic Products (GDP)	Annual GDP growth rate	+
		Population Growth (PG)	Population growth rate	+
		Political stability (PS)	World Bank political stability and absence of violence index	+

Source: Developed based on the literature

$$\mathrm{DM_{it}} = \alpha + \beta_1(ROA)_{it} + \beta_2(LTD)_{it} + \beta_3(CA)_{it} + \beta_4(INF)_{it} + \beta_5(GDP)_{it} + \beta_6(PG)_{it} + \beta_7(PS)_{it} + \varepsilon_{it} \quad (1)$$

where DM is the Deposit Mobilization, LTD is the Liquidity, CA is the Capital Adequacy, ROA is the Return on Asset, GDP is the GDP growth and INF is the Inflation, PS is the Political Stability, and PG is the Population Growth and i is the ith Banks, t is the time, β_1 to β_7 are the coefficients for each explanatory variables in the model, ε_{it} is the error term.

Result and discussion

Descriptive analysis

The dependent variable is deposit mobilization measured by the Log of total deposits. According to Table 2, the average value of log of deposit mobilization is 4.031, equal to 10,739.9 Ethiopian Birr, which is the average deposit mobilized by sampled commercial banks from the public during the study period. The maximum and minimum log of deposits mobilized during the study period were 5.855 (716,143.4 Ethiopian Birr) and 2.42 (263 Ethiopian Birr), respectively, with the standard deviation value of 0.598 in its natural logarithm implying that Commercial Banks in the sample varied in the amount of deposit mobilized during the study period.

Regarding explanatory variables, the average liquidity value was 0.620 with a minimum value of 0.142 and a maximum value of 1.029. A standard deviation of 0.112 indicated the existence of variation in the liquidity level of sampled commercial banks in Ethiopia. Profitability has an average value of 0.025 with a minimum value of −0.005 and maximum value of 0.052, and a standard deviation of 0.007, which indicates that there are banks that incurred negative returns from their investment in assets during the study period. The average value of capital adequacy is 0.2015 with a minimum value of 0.056 and maximum value of 0.9252, and a standard deviation of 0.1152, which indicates the presence of variation in the capital adequacy of sampled banks. Likewise, the average value of the GDP growth rate is 9.129, with a minimum value of 6.056 and a maximum value of 11.17 during the study period. The average inflation rate value was 14.791, with a minimum value of 6.628 and a maximum of 33.23 during the study period. Population growth has an average value of 2.758 with a minimum value of 2.579 and a maximum value of 2.879, which indicated that the country's average population growth was consistent during the study period. Finally, the average value of political stability is −1.464 with a minimum value of −1.679 and a maximum value of −1.279, which indicates the presence of political instability in the country.

Diagnostic tests

The results of the diagnostic tests performed to validate that the data satisfies the basic assumptions of the classical linear regression model are shown in this section.

Test for multicollinearity

The Variance Inflation Factor was used to test the multicollinearity assumption (VIF). The result shows that a VIF average of 1.80 indicates that there is no multicollinearity (Table 3).

Test for heteroskedasticity; var(ut) = σ2 < ∞

The result of the Breusch-Pagan / Cook-Weisberg test for heteroscedasticity revealed that the variance of residuals is homoscedastic, implying that there is no heteroscedasticity within the model, as the (p-value = 0.1691) was greater than 0.05 (Table 4).

Model Specification test

The Hausman test was used in the study to select the most convenient estimating method (fixed or random effect). The fixed effect regression model is more appropriate for the study than the random effect model, according to the Hausman test, as the (p-value = 0.0005) is less than 0.05 as of Table 5.

Table 2 Descriptive statistics for the variables

Variable	Obs. = 140	Mean	Std. dev.	Min.	Max.
DM		4.0313	0.5988	2.4206	5.8551
ROA		0.0253	0.0076	-0.0058	0.0525
LTD		0.6205	0.1125	0.1423	1.0293
CA		0.2015	0.1152	0.0565	0.9252
INF		14.7913	8.24	6.6281	33.23
GDP		9.1293	1.5890	6.0566	11.1783
PG		2.7584	0.1038	2.5797	2.8796
PS		−1.4647	0.1246	-1.6796	−1.2796

Source: Own computation

Table 3 Multicollinearity test

Variable	VIF	1/VIF
PG	3.55	0.2813
GDP	2.95	0.3389
CA	1.31	0.7659
LTD	1.30	0.7703
ROA	1.21	0.8237
PS	1.18	0.8458
INF	1.12	0.8938
Mean VIF	1.80	

Source: Own computation

Table 4 Heteroskedasticity test

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
Ho: Constant variance
Variables: fitted values of DM
chi2(1) = 1.89
Prob > chi2 = 0.1691

Source: Own computation

Fixed effect model results

Table 6 shows the model results for identifying the factors of commercial banks' deposit mobilization in Ethiopia. The model's variables explained almost 47.5% of the overall variation in deposit mobilization scores, indicating a reasonably good fit. This means that the factors in the model explained almost 47.5% of the overall variation in the bank's deposit mobilization.

According to the model results profitability has a positive and statistically significant impact on bank deposit mobilization, which demonstrated that by keeping other factors constant; an increase in banks profitability by one percent will increase the banks' deposit mobilization by 7.078. The result is consistent with the earlier expectation that the higher profit is considered a positive flag or soundness of the bank, which could make it easier for banks to attract more deposits [25] and in line with the findings of Alemu 3, Tarekegn [57], Getachew [31], Osei [49] and Erna and Ekki [24] found that bank's profitability has a positive effect on the growth of banks deposit.

Table 5 Model specification test

hausman fe re, alleqs force sigmamore tconsistent("fe") tefficient("re")				
	Coefficients			
	(b)	**(B)**	**(b-B)**	**sqrt(diag(V_b-V_B))**
	fe	re	Difference	S.E
ROA	7.0787	6.8633	0.2154	0.0877
LTD	−0.3695	−0.4227	0.0533	0.0132
CA	−0.7845	−0.8377	0.0532	0.0123
INF	−0.0108	−0.0107	−0.0001	0.00003
GDP	−0.0163	−0.0164	0.00005	0.00005
PG	−3.1529	−3.1545	0.0016	0.0037
PS	−0.1807	−0.1811	0.0005	0.0009
	b = consistent under Ho and Ha; obtained from xtreg			
B =	inconsistent under Ha, efficient under Ho; obtained from xtreg			
Test: Ho:	the difference in coefficients is not systematic			
	chi2(3) = (b − B)'[(V_b − V_B)^(− 1)](b − B)			
	= 18.98			
	Prob > chi2 = 0.0003			

Source: Owns computation

Table 6 Fixed effect model for identifying determinants of DM

Explanatory variables	**Coefficient**	**Std. Err.**	**Z-value**
ROA	7.0786***	1.2813	5.52
LTD	−0.3695***	0.1106	−3.34
CA	−0.7845***	0.1059	−7.41
INF	−0.0108***	0.0009	−10.99
GDP	−0.0164**	0.0081	−2.02
PG	−3.1528***	0.1394	−22.61
PS	−0.1807***	0.0657	−2.75
_cons	12.9808	0.3351	38.73
R2 within	0.9508	sigma_u	0.4433
R2 between	0.5255	sigma_e	.08829
R2 overall	0.4752	Prob > chi2	0.0000

*** and ** imply significance at a 1 and 5% significance level, respectively

Source: Own computation

The study results show that, bank liquidity measured by loan to deposit ratio has a negative and statistically significant impact on bank deposit mobilization. Keeping all other variables constant, a 1% increase in loan to deposit ratio reduces customer deposit by 0.369. Theoretically, the higher this ratio, the less liquid the bank is, resulting in a decline in client deposits due to the bank's limited ability to reimburse depositors. The result confirms previous expectations that a high ratio puts the bank at high risk of not repaying deposit money to clients, and that depositors may perceive the bank as poorly managed and less secure to deposit with. The findings are consistent with those of Muluken [45], Amene [4], and Awole [8], who discovered a negative impact of bank liquidity on bank deposits, as opposed to those of Ünvan and Yakubu [63] and Turhani and Hoda [60], who found a positive relationship between bank liquidity and deposit.

The capital adequacy ratio has a negative and statistically significant impact on bank deposit mobilization, revealing that a rise in bank capital adequacy by one percent results in a 0.785 decrease in bank deposit mobilization when all other factors remain unchanged. The result is in line with the prior expectation that banks having a higher capital ratio may not necessarily mobilize more deposits, "the crowding out of deposits" [33], and consistent with the findings of Ünvan and Yakubu [63], Amene [4] and Turhani and Hoda [60] who revealed capital adequacy affects banks deposit negatively as an increase in bank capital adequacy may not necessarily translate into deposit growth. However, the result is against the findings of Tarekegn [57], who established a positive relationship between capital adequacy and bank deposit.

Regarding the macroeconomic variables inflation has a negative and statistically significant impact on bank deposits. This result is in line with previous expectations that when inflation rate increase, purchasing power of the money would decrease and a huge amount of money would be required to consume or to do a business which leads to a decrease in deposit mobilization. Higher inflation causes savers to save less as a result, deposits are no longer attractive and the impact of inflation on deposits is significantly negative [46]. The result is in line with the findings of Abiodun et al. [1], Maturu [43], Orok et al. [48], Larbi-Siaw and Lawer [40], and Ostadi and Sarlak [50] found a negative impact of inflation on the commercial bank deposits. However, it is against the findings of Thisaranga and Ariyasena [59], Ukinamemen [62], and Athukorala & Sen [6] who revealed positive impact of inflation on saving.

The model result appeared that GDP growth has a negative and statistically significant influence on bank deposit mobilization at a 5% level. The outcome showed that an increase in GDP leads to lower bank deposit mobilization, which was contrary to expectations. The result is supported by the findings of Yakubu and Abokor [70], Islam et al. [38], and Bikker and Gerritsen [16] found a negative effect of GDP on bank deposits. However, it is against the findings of Hassan [36], Adem [2], and Mashamba et al. [42] found that GDP has a positive influence on the volume of commercial bank deposits.

Population growth has a negative and statistically significant impact on bank deposit mobilization, demonstrating that an increase in population leads to a decrease deposit mobilization, contrary to what was previously expected. The result is consistent with the finding of Legass et al. [41] and Cincotta and Engelman [19] found a negative impact of population growth on deposit growth as rapid population growth produces large extents of children relative to the labor force which may result in high cost and impede family savings. However, the result is against the findings of Teshome [58] and Hibret [37] found a positive relationship between population growth and bank deposit.

At long last, contrary to the prior expectations, political stability has a negative and statistically significant impact on deposit mobilization. The findings demonstrated that political soundness had a detrimental effect on commercial banks' deposit mobilization in Ethiopia. It can be contended that under stable political conditions, investors favor spending their cash on other venture opportunities instead of keeping it in a bank, resulting in a decrease in bank deposit mobilization. The result is against the finding of [55], who documented that political stability promotes economic growth, thereby increasing profitability and their deposit.

Conclusion and recommendations

The banking sector is one of Ethiopia's fastest-growing industries, and it is critical to the country's economic development. Recognizing the fundamental factors influencing deposits is critical for banks in developing viable deposit mobilization policies and procedures. Based on a test of 14 commercial banks, this study inspected both firm-specific variables and macroeconomic variables affecting deposit mobilization in Ethiopia from 2011 to 2020.

The study's findings show that loan to deposit ratio, capital adequacy, economic growth, inflation, population growth, and political stability all had a negative and statistically significant impact on commercial banks' deposit mobilization in Ethiopia over the study period. However, a bank's profitability has a positive and statistically significant impact on deposit growth, implying that the higher the profitability, the more deposits are mobilized.

The study provided the following operational and policy suggestions to improve commercial bank deposits based on the findings.

Banks should mobilize more deposits by managing their liquidity because a lack of liquidity can put an end to a bank's efforts to mobilize deposits and, in the worst-case scenario, cause it to collapse. As profitability has a positive and significant effect on deposit mobilization; the management ought to work to improve the bank's profitability by reducing costs and utilizing invested asset efficiently. The country has to ensure its political stability to increase the activities of commercial banks as well as to boost its deposit mobilization effort. Moreover, the government has to educate the citizens about family planning and saving to reduce the negative effect of larger family with poor saving habit on deposit mobilization.

The study is also recommended for further study: As the present study identifies only limited bank-specific and macroeconomic variables due to the data availability, there have to be further researches that include more bank-specific, regulatory, and macroeconomic and governance variables that affect the deposit growth of Ethiopian commercial banks. A study can be also carried out using other deposit measurement ratios such as deposit to total asset and bank deposit growth rate which are not considered in this study.

Abbreviations

CA: Capital adequacy; CPI: Consumer price index; DM: Deposit mobilization; GDP: Gross domestic product; INF: Inflation; LTD: Loan to deposit; NA: Not applicable; PG: Population growth; PS: Political stability; ROA: Return on asset; VIF: Variance inflation factor.

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MK compiled, summarized, and analyzed the data. MK and NK both made contributions to the research hypothesis and design. NK drafted the manuscript and finally reviewed the content. Both authors read and approved the final manuscript.

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Declarations

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