

Research Article

Determinants of Deposit Growth in Selected Private Commercial Banks in Ethiopia

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Abstract

This study examines the factors affecting deposit growth in selected private commercial banks in Ethiopia. An explanatory research design was applied using secondary panel data from 2013 to 2022, covering 12 private commercial banks selected through purposive sampling. Data were collected from the National Bank of Ethiopia, the World Bank, and banks' annual reports. Panel regression techniques are employed, with fixed-effects models and clustered standard errors used as the preferred specification. The results show that customer growth and capital adequacy have a strong and statistically significant positive effect on deposit growth ($p < 0.01$), while foreign remittance growth is also positively associated with deposits ($p < 0.05$). Treasury-bill rates exhibit a positive effect in some model specifications ($p < 0.10$), whereas government expenditure is found to be negatively and significantly related to deposit growth ($p < 0.05$). In contrast, GDP growth, inflation, and branch expansion do not show robust effects across models. Robustness checks using alternative estimators and diagnostic tests confirm the reliability of the findings. The study contributes to the limited empirical literature on deposit dynamics in Ethiopian private banks by employing a decade-long panel dataset and incorporating additional macroeconomic variables, notably Treasury-bill rates and government expenditure, while providing policy-relevant insights for banks and monetary authorities.

Keywords

Deposit Growth, Private Commercial Banks, Panel Data, Ethiopia, Remittances

1. Introduction

Deposit mobilization remains one of the most critical functions of commercial banks, particularly in developing economies where alternative savings instruments and capital markets are limited. Deposits constitute the primary and most stable funding source for banks, influencing their liquidity profile, lending capacity, profitability, and resilience to macroeconomic volatility [21]. In Ethiopia, the rapid expansion of private commercial banks over the past decade has been accompanied by significant increases in branch networks, customer acquisitions, and intensified competition for deposit

mobilization National bank of Ethiopia [23]. Despite this progress, deposit growth has remained uneven across banks, highlighting the need to better understand the determinants of deposit performance.

Both macroeconomic and bank-specific factors are essential in explaining deposit behavior. International evidence suggests that GDP growth, inflation, government expenditure, Treasury-bill rates, capital adequacy, remittances, and branch expansion all influence deposit dynamics through multiple theoretical channels [4]. However, the direction and magnitude of these effects differ

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across financial systems, regulatory environments, and stages of economic development. Prior Ethiopian studies have examined selected determinants of deposits, but often with limited samples, short time periods, and incomplete macroeconomic variables [27, 22].

This study investigates the macroeconomic and bank-specific determinants of deposit growth in twelve Ethiopian private commercial banks for the period 2013–2022. Its contributions are threefold. First, it expands the scope of determinants by incorporating variables that have received little empirical attention in Ethiopia, including Treasury-bill rates, government expenditure, and remittance inflows. Second, it uses a decade-long balanced panel of private banks, which enhances reliability by capturing long-term variation in deposit behavior. Third, the study employs rigorous and transparent econometric approach fixed-effects estimation with clustered standard errors supported by systematic diagnostic testing to ensure robustness.

2. Literature Review and Research Gap

2.1. Macroeconomic Determinants of Deposit Growth

Macroeconomic conditions play a central role in shaping deposit mobilization by influencing income, savings behavior, and portfolio allocation. Economic growth, commonly measured by GDP growth, affects deposits primarily through increases in household income and business activity. According to the permanent income hypothesis, sustained income growth encourages long-term savings [15]. Empirical evidence from developed and emerging economies generally reports a positive relationship between GDP growth and bank deposits [5]. However, other studies suggest that rapid economic expansion may redirect funds toward non-bank financial assets, weakening the deposit response [24]. These mixed findings indicate that the effect of GDP growth on deposits is context-dependent.

Inflation is widely recognized as a critical determinant of deposit behavior. Higher inflation erodes the real value of savings and discourages deposit holding unless nominal returns adequately compensate depositors. Most empirical studies report a negative association between inflation and deposit mobilization, particularly in economies with limited inflation-indexed financial instruments [10]. Fiscal policy also affects private savings and deposits. Government expenditure may stimulate income and savings through expansionary effects, but it can also crowd out private savings when financed through deficits or domestic borrowing [17]. Empirical evidence from emerging markets remains inconclusive, with both positive and negative effects documented [7] suggesting the need for country-specific analysis.

Treasury-bill (T-bill) [1] rates influence the relative attractiveness of government securities versus bank deposits.

Higher T-bill yields may divert funds away from banks toward government instruments [4]. Conversely; some studies argue that higher yields improve bank profitability and liquidity management, indirectly supporting deposit growth [14]. Theoretical and empirical ambiguity therefore characterizes the relationship between T-bill rates and deposits [16].

Foreign remittances represent an important external source of liquidity in developing economies. By increasing household disposable income and promoting financial inclusion, remittance inflows are consistently found to have a positive effect on bank deposits [6].

2.2. Bank-specific Determinants of Deposit Growth

Beyond macroeconomic conditions, bank-specific characteristics significantly shape deposit mobilization. Branch expansion enhances geographic outreach and reduces transaction costs, thereby encouraging households and firms to use formal banking services. Empirical studies in African banking systems confirm the positive role of branch density in attracting deposits [3].

Capital adequacy is another key determinant, as well-capitalized banks signal financial strength and lower default risk. Depositors are more likely to place funds in banks perceived as stable and resilient, leading to higher deposit inflows [9].

Customer-base growth directly expands the pool of potential depositors. Prior studies show that banks with a growing customer base and improved service accessibility experience stronger deposit mobilization, particularly in competitive markets [2].

2.3. Research Gap and Contribution of the Study

Although the literature on deposit mobilization has expanded, several important gaps remain, particularly in the Ethiopian context. First, existing studies often focus on a narrow set of macroeconomic variables, overlooking the role of government expenditure, remittance inflows, and Treasury-bill rates, despite their growing relevance in emerging economies. Second, many studies rely on limited samples, short time horizons, or unbalanced panels, which restrict the robustness and generalizability of their findings. Third, there is limited integration of theory and empirical evidence, as some studies present hypotheses without adequately addressing theoretical ambiguities or conflicting results in prior research. Finally, methodological rigor remains uneven, with insufficient use of advanced panel-data techniques, diagnostic testing, and robustness checks [8].

This study addresses these gaps by combining macroeconomic and bank-specific factors within a unified framework, analyzing a balanced panel of twelve private commercial banks over a ten-year period, and employing rigorous panel-data methods supported by comprehensive diagnostic and sensitivity

analyses. By incorporating underexplored macroeconomic variables and clarifying methodological choices, the paper provides more robust and policy-relevant evidence on the determinants of deposit growth in Ethiopian private banks.

2.4. Theoretical Framework and Hypotheses (Condensed and Aligned)

Guided by financial intermediation theory [11], the permanent income hypothesis [15], and deposit-demand models, this study develops testable hypotheses linking macroeconomic and bank-specific factors to deposit growth. GDP growth, Treasury-bill rates, and government expenditure are expected to have theoretically ambiguous effects due to competing income, substitution, and crowding-out channels [12]. In contrast, branch expansion, capital adequacy, customer growth, and remittance inflows are hypothesized to positively influence deposit growth, while inflation is expected to exert a negative effect by reducing the real value of savings.

3. Research Methodology

3.1. Research Design and Data

This study adopts a quantitative explanatory research design using a balanced panel dataset of twelve Ethiopian private commercial banks covering the period 2013–2022 with annual observations. The panel structure allows for controlling unobserved bank-specific heterogeneity and examining both cross-sectional and time-series variations in deposit growth.

Bank-level data, including total deposits, number of branches, customer accounts, and capital adequacy ratios, were obtained from audited annual financial reports and publications of the National Bank of Ethiopia (NBE). Macroeconomic variables GDP growth, inflation, government expenditure, foreign remittances, and Treasury-bill (T-bill) rates were

sourced from the NBE and the World Bank databases. The dependent variable, deposit growth (LOGDGR), is measured as the first difference of the natural logarithm of total deposits, defined as: $LOGDGR = \ln(\text{Deposit}_t) - \ln(\text{Deposit}_{t-1})$. This transformation captures proportional changes in deposits and reduces heteroscedasticity. Independent variables are measured as either growth rates or levels, consistent with prior empirical studies, and are summarized in Table 1. The baseline estimation employs fixed-effects (FE) panel regression with bank-clustered robust standard errors, which controls for time-invariant bank characteristics and within-bank correlation. To assess the robustness of the results and address potential endogeneity concerns, additional estimations using random effects (RE), pooled OLS, and system GMM are conducted.

3.2. Sample Size and Sampling Techniques

The study focuses on Ethiopian private commercial banks operating during the 2013–2022 period. Out of the 28 private commercial banks active during this timeframe, 12 banks were selected based on the following criteria: (i) availability of continuous annual financial reports for the entire study period, and (ii) disclosure of key bank-level variables, including branch numbers, customer accounts, and capital adequacy ratios [18]. This purposive sampling approach based on data availability is widely used in panel-data banking studies where balanced datasets are required for consistent estimation. The resulting dataset forms a balanced panel, enhancing the reliability of coefficient estimates and facilitating rigorous panel-data analysis.

To mitigate concerns regarding sample selection bias, robustness checks were performed by excluding banks with incomplete disclosures and by validating results using alternative macroeconomic data sources. The findings remain stable across these checks, indicating that the results are not driven by sample selection.

3.3. Variable Definitions

Table 1. Variables, codes, and measurement.

Variable	Code	Definition and measurement	Expected effect
Deposit growth	LOGDGR	$\ln(\text{Deposits}_t) - \ln(\text{Deposits}_{t-1})$	Dependent variable
GDP growth	RGDP Growth	Annual real GDP growth rate (%)	±
Inflation	IFR	Annual CPI inflation rate (%)	–
Treasury-bill rate	TBR	Annual average Treasury-bill yield (%)	±
Government expenditure growth	GOVEX	Real government expenditure growth (%)	±
Remittance growth	FRMGR	Annual growth rate of remittance inflows (%)	+
Branch expansion	BR	Annual growth rate of branches (%)	+

Variable	Code	Definition and measurement	Expected effect
Capital adequacy	CAP	Regulatory capital ÷ risk-weighted assets (%)	+
Customer growth	CGR	Annual growth of customer accounts (%)	+

3.4. Model Specification

The study uses a multiple linear regression model to analyze the past effects of different quantitative factors on bank deposits. It's important to note that the factors must be stationary and the residuals must be homoscedastic and not auto correlated to use the linear regression model. Therefore, the regression model was specified as follows:

The regression model

$$\text{LOGDGR} = \alpha + \beta_1 (\text{CAP})_{nt} + \beta_2 (\text{RGDP})_{nt} + \beta_3 (\text{GEX})_{nt} + \beta_4 (\text{BR})_{nt} + \beta_5 (\text{FRMGR})_{nt} + \beta_6 (\text{TBR})_{nt} + \beta_7 (\text{CGR})_{nt} + \beta_8 (\text{IFR})_{nt} + \varepsilon_i$$

Where:

LOGDGR = Logarithm of Deposit Growth Rate (Dependent Variable)

A = Intercept Of the Regression Line

B1 to β_8 = Slope Coefficient of the Regression Line

n = 1...2...12 (Private Commercial Banks of Ethiopia)

t = 1...2...10 years (2012/13---2021/22 years)

CAP = Capital Adequacy (Independent Variable)

GDP = Real Gross Domestic Product Growth Rate (Independent Variable)

IFR= Inflation Rate (Independent Variable)

GEX= Government Expenditure (Independent Variable)

TBR=Treasury Bill Rate (Independent Variable)

BR=Branch expansion rate (independent variable)

CGR= Customer growth rate (independent variable)

ε_i = is the error term associated with the observation

4. Results

4.1. Descriptive and Diagnostic Results

Descriptive statistics indicate substantial variation in deposit growth and its determinants across the twelve private commercial banks during the 2013–2022 periods. Correlation analysis shows no evidence of multicollinearity; consistent with the VIF test where all values remained below the critical threshold of 10 (Those tables are listed under [Tables 2, 3, and 7](#)).

Table 2. Summary of descriptive statistics.

Variable	Obs	Mean	Std. dev.	Min	Max
Log dgr	120	0.4984342	0.2774933	0.0113	1.2816
Br	120	0.2608	0.1509123	0.0242	0.9421
Cap	120	0.2896467	0.1265322	0.51	0.8502
Cgr	120	0.2903417	.184112	0.0291	0.8624
Frmgr	120	.2378892	.0737799	.0266	.4243
Tbr	120	.03318	.0289946	.0142	.0946
RGDP	120	.0686	.0345717	.008	.104
Govex	120	.2027917	.0584489	.075674	.3006516
Ifr	120	.15086	.0862064	.074	.3716

Source: from STATA 14 output results 2023

Based on [Table 2](#) the descriptive statistics for the study variables reveal substantial variation across the twelve private commercial banks during 2013–2022. The average annual deposit growth (LOGDGR) is 49.8%, with a standard deviation

of 27.8%, ranging from 1.1% to 128.2%, indicating heterogeneous deposit mobilization across banks. Branch expansion (BR) averaged 26.1% per year, reflecting moderate geographic outreach, while capital adequacy (CAP) averaged

28.9%, suggesting generally strong capitalization and potential depositor confidence. Customer growth (CGR) shows an average of 29.0% with considerable variation, highlighting its likely influence on deposit mobilization. Foreign remittance growth (FRMGR) averaged 23.8%, demonstrating its importance as an external source of liquidity for banks. Treasury-bill rates (TBR) are relatively low at 3.3% on average, which may affect the opportunity cost of holding deposits.

Macroeconomic conditions during the period were characterized by an average GDP growth (RGDP) of 6.9%, government expenditure growth (GOVEX) of 20.3%, and a relatively high inflation rate (IFR) of 15.1%. The observed variation in these variables underscores the heterogeneity in both bank-specific operations and macroeconomic conditions, justifying the use of a panel data approach. The ranges and standard de-

viations further indicate the need for robust estimation techniques, such as fixed-effects regressions with clustered standard errors, to account for heteroscedasticity and unobserved individual effects. Overall, the descriptive statistics suggest that customer growth, capital adequacy, and remittance inflows are likely key drivers of deposit growth, while macroeconomic factors such as government expenditure and inflation may exert variable effects.

4.2. Correlation

Correlation is the degree to which two or more variables are related to each other [13]. The sample size is the most important factor in determining whether or not the association coefficient is distinct from zero or statistically significant.

Table 3. Correlation table.

Variable	LOGDGR	BR	CAP	CGR	GDP	FRMGR	TBR	GOVEX	IFR
LOGDGR	1.0000								
BR	0.1097	1.0000							
CAP	0.1866	0.3505	1.0000						
CGR	0.4555	0.0841	0.1367	1.0000					
GDP	-0.0101	-	0.1967	0.0325	1.0000				
		0.0841							
FRMGR	0.2024	-	-	-	0.2283	1.0000			
		0.0639	0.0344	0.1547					
TBR	0.1831	-0.2347	-0.2331	-0.0195	-0.1237	-0.0026	1.0000		
GOVEX	0.0049	-0.1572	0.0186	-0.0082	0.2106	0.2003	0.5638	1.0000	
IFR	0.1428								
	-0.2674	-0.3022	-0.0131	-0.1900					
	-0.0633	0.7658	0.4111	1.0000					

Source: from S TATA 14 output results 2023

Based on Table 3 Correlation analysis among the study variables indicates no evidence of severe multicollinearity. The Variance Inflation Factor (VIF) values for all independent variables are below the critical threshold of 10, with a mean VIF of 2.72, confirming that multicollinearity is not a concern. Correlation coefficients show that customer growth (CGR) is positively correlated with deposit growth (LOGDGR, $r = 0.456$), as is capital adequacy (CAP, $r = 0.187$) and remittance growth (FRMGR, $r = 0.202$), suggesting these factors may have meaningful impacts on deposits. In contrast, macroeconomic variables such as GDP growth (RGDP), government expenditure (GOVEX), and inflation (IFR) exhibit weak or mixed correlations with deposit growth, indicating potential

context-specific effects.

Panel diagnostic tests further support the suitability of the fixed-effects model. The Hausman test ($\chi^2 = 667.56$, $p < 0.001$) rejects the random-effects specification, confirming that unobserved bank-specific effects are correlated with explanatory variables. Unit root tests, including Levin-Lin-Chu, Harris-Tzavalis, and Hadri LM tests, indicate that most variables are stationary at levels or first differences, justifying panel regression estimation. Tests for classical linear regression assumptions reveal that residuals have a mean close to zero and follow a normal distribution (Jarque-Bera $p = 0.27$), while the Breusch-Pagan/Cook-Weisberg test confirms homoscedasticity. The Pesaran cross-sectional dependence test suggests mild

interdependence across banks, which is addressed through bank-clustered standard errors, and the Wooldridge and Modified Wald tests detect first-order autocorrelation and group wise heteroscedasticity, respectively. These diagnostic results collectively validate the reliability of the fixed-effects regression with clustered standard errors for examining deposit growth determinants.

4.3. Fixed Effects Versus Random Effects Model

Random effect model

The random effects approach treats the above individual-specific effect as randomly varying, whereas the fixed effects approach treats it as fixed for each individual. H_a : Individual effects in the model are correlated with explanatory variables (fixed effects) [28]. To perform this, the Hausman test null and alternative hypotheses were formulated as follows:

H_o : Individual effects in the model are not correlated with explanatory variables (random effect).

Table 4. Fixed effect Hausman test.

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	P value
Cross-section fixed	667.56	8	0.0000

Source: from STATA 14 output results 2023

Applications of panel unit root tests have become common place in empirical economics, yet there are ambiguities as how best to interpret the test results [26]. According to this test method, the acceptance of the null hypothesis recommended that there is a common unit root. Testing For Stationary. The logarithm value of the panel data of deposit growth rate was taken before Ordinary Least Square (OLS) techniques are used for estimating a model.

Table 5. Levin-Lin-Chu unit-root test.

Variable	Method	Unit root at	Statistic	p-value
Log DGR	Levin-Lin-Chu unit-root test	Level	-3.9649	0.0000
BR	Levin-Lin-Chu unit-root test	Level	-4.3098	0.0000
CAP	Levin-Lin-Chu unit-root test	Level	-1.6549	0.0490
CGR	Levin-Lin-Chu unit-root test	2nd difference	-3.1433	0.0008
RGDP	Levin-Lin-Chu unit-root test	Level	-7.7630	0.0000
FRMGR	Levin-Lin-Chu unit-root test	Level	-2.9444	0.0016
TBR	Levin-Lin-Chu unit-root test	2nd difference	-5.3857	0.0000
GOVEX	Harris-Tzavalis unit-root test	Level	0.3088	0.0000
IFR	Hadri LM test	Level	9.6090	0.0000

Source: from STATA 14 output results 2023

Based on Table 5, Panel unit root tests were conducted to assess the stationary of the variables prior to estimation. The Levin-Lin-Chu (LLC) test indicates that LOGDGR, BR, CAP, RGDP, and FRMGR are stationary at levels, with p-values below 0.05, while CGR and TBR become stationary after first differencing, confirming their integrated order of one. The Harris-Tzavalis test suggests that GOVEXR is stationary at levels, whereas the Hadri LM test for IFR confirms stationery with a p-value below 0.01. Overall, these results indicate that the majority of the variables are stationary at levels or first differences, supporting the use of fixed-effects panel regression and ensuring valid inference for the determinants of deposit growth.

4.4. The Mean Value of the Residual Term Is Zero

One of the Classical linear regression model assumptions is that the mean value of the residual term should be zero. The null hypothesis for this test is that the variable is normally distributed. Test for Normality The normality assumption also plays a crucial role in the validity of inference procedures, specification tests, and forecasting [20].

Table 6. Normality test.

Variable	Obs	Pr(skewness)	Pr(kurtosis)	adj chi(2)	Prob>chi2
Logdgr	120	0.2509	0.2637	2.62	0.2695

Source: from STATA 14 output results 2023

The normality of the residuals was assessed using the Jarque–Bera test, which combines skewness and kurtosis measures [19]. For deposit growth (LOGDGR), the test yields a chi-square statistic of 2.62 with a p-value of 0.27, indicating that the null hypothesis of normality cannot be rejected at conventional significance levels. This result confirms that the residuals are approximately normally distributed, satisfying a key assumption of the classical linear regression model and supporting the validity of statistical inference in the fixed-effects panel regression.

4.5. Test for Heteroscedasticity

The other assumption of CLRM is that the variance of the residual terms should be constant. In simpler terms, the residual terms showed constant variance and there was homoscedasticity in the model 0.6979. Based on stata output the tests of Heteroscedasticity by Breusch-Pagan /Cook-Weisberg test there is no heteroscedasticity that means homoscedasticity [25].

Table 7. Multicollinearity test.

Variable	VIF	1/VIF
TBR	7.43	0.134598
IFR	6.38	0.156765
GOVEX	1.86	0.539081
CAP	1.32	0.756113
BR	1.27	0.790472
RGDP	1.25	0.798126
FRMGR	1.16	0.862386
CGR	1.06	0.942977
Mean VIF	2.72	

Source: from STATA output results 2023

Multicollinearity among the independent variables was assessed using the Variance Inflation Factor (VIF). The VIF values range from 1.06 for customer growth (CGR) to 7.43 for the Treasury-bill rate (TBR), with a mean VIF of 2.72. Since all VIF values are well below the commonly used threshold of 10, there is no evidence of severe multicollinearity among the predictors [25]. This suggests that the

estimated coefficients in the panel regression are reliable and not inflated due to linear correlation between explanatory variables.

Table 8. Regression results.

Source	SS	Df	MS	Number of observations = 100
F(8, 111)				=17.40
Model	5.16831798	8	.646039747	Prob > F = 0.0000
Residual	4.12053041	111	.037121896	R-squared = 0.5564
Adj R-squared				= 0.5244
Total	9.28884839	119	.078057549	Root MSE = .19267
Variable	Coefficient	Std. Err.	T P> t	[95% Conf. Interval]
Constant	-1.204571	.118891	-10.13	0.000 -1.440161 -.9689802
BR	.2418594	.1320001	1.83	0.070 -.0197077 .5034264
CAP	.5950271	.154476	3.85	0.000 .2889227 .9011316
FRMGR	1.447004	.257782	5.61	0.000 .9361922 1.957817
IFR	-.1865257	.5174602	-0.36	0.719 -1.211908 .8388562
CGR	.9588151	.1088595	8.81	0.000 .7431028 1.174527
GDP	-.291003	.5718546	-0.04	0.967 -1.157003 1.109333
TBR	4.847194	1.660371	2.92	0.004 1.557057 8.13733
GOVEX	-1.416195	.4115641	-3.44	0.001 -2.231737 -.6006534

Source: from STATA output results 2023

Based on Table 8, The fixed-effects regression model was statistically significant ($F(8, 111) = 17.40$; $p < 0.0000$) and explained 55.64% of the variation in deposit growth (LOGDGR), with an adjusted R^2 of 0.5244, indicating strong explanatory power of the selected predictors. Among the bank-specific determinants, customer growth (CGR) had the largest and most significant impact on deposit growth ($\beta = 0.9588$; $t = 8.81$; $p < 0.001$), highlighting that expansion in the customer base is a primary driver of deposit mobilization in Ethiopian private commercial banks. Capital adequacy (CAP) also exhibited a positive and highly significant effect ($\beta = 0.5950$; $t = 3.85$; $p < 0.001$), suggesting that well-capitalized banks are more successful in attracting deposits, likely due to increased depositor confidence in their financial stability.

Among macroeconomic determinants, foreign remittance growth (FRMGR) displayed a strong and statistically significant effect ($\beta = 1.4470$; $t = 5.61$; $p < 0.001$), emphasizing the critical role of external financial inflows in supporting deposit growth. The treasury-bill rate (TBR) had a positive and significant impact ($\beta = 4.8472$; $t = 2.92$; $p = 0.004$), suggesting a complementary relationship between T-bills and bank deposits, possibly through enhanced liquidity for banks investing in T-bills or improved perceptions of financial-sector stability. In

contrast, government expenditure (GOVEX) showed a significant negative effect on deposit growth ($\beta = -1.4162$; $t = -3.44$; $p = 0.001$), indicating that increases in government spending may crowd out private-sector liquidity and reduce funds available for deposit mobilization. Other determinants, including branch expansion (BR), GDP growth (RGDP), and inflation (IFR), were positive or negative but statistically insignificant (BR: $\beta = 0.2419$, $p = 0.070$; RGDP: $\beta = -0.2910$, $p = 0.967$; IFR: $\beta = -0.1865$, $p = 0.719$), suggesting that these macroeconomic factors did not play a meaningful direct role in explaining deposit variations across private banks during the study period.

Generally, The descriptive statistics indicate substantial variation in deposit growth and its determinants across the twelve Ethiopian private commercial banks during 2013–2022. Average annual deposit growth (LOGDGR) is 49.8%, with a standard deviation of 27.8%, reflecting heterogeneous deposit mobilization across banks. Branch expansion (BR) averaged 26.1%, customer growth (CGR) 29.0%, and capital adequacy (CAP) 28.9%, suggesting that bank-specific factors vary considerably and may significantly influence deposit growth. Among macroeconomic variables, foreign remittance growth (FRMGR) averaged 23.8%, GDP growth (RGDP) 6.9%, government expenditure growth (GOVEX) 20.3%, Treasury-bill rates (TBR) 3.3%, and inflation (IFR) 15.1%, highlighting a dynamic macroeconomic environment that may affect deposit mobilization.

Correlation analysis reveals positive associations between deposit growth and key bank-specific factors, notably CGR ($r = 0.456$), CAP ($r = 0.187$), and FRMGR ($r = 0.202$), while correlations with macroeconomic variables such as RGDP, GOVEX, and IFR are weak or mixed. Multicollinearity is not a concern, as VIF values range from 1.06 to 7.43 with a mean of 2.72, well below the threshold of 10. Panel unit root tests confirm the stationarity of most variables at levels, while CGR and TBR are stationary after first differencing, supporting the validity of fixed-effects panel regression. Normality of residuals is satisfied (Jarque–Bera $\chi^2 = 2.62$, $p = 0.27$), and classical linear regression assumptions are met, including homoscedasticity and mean-zero residuals. Cross-sectional dependence is mild, and first-order autocorrelation is accounted for using bank-clustered standard errors. The Hausman test ($\chi^2 = 667.56$, $p < 0.001$) favors the fixed-effects estimator, indicating correlation between unobserved bank-specific effects and explanatory variables.

The fixed-effects regression model is statistically significant ($F(8, 111) = 17.40$, $p < 0.001$), explaining 55.6% of the variation in deposit growth (adjusted $R^2 = 0.5244$). Among bank-specific determinants, customer growth (CGR) has the strongest positive effect ($\beta = 0.959$, $t = 8.81$, $p < 0.001$), followed by capital adequacy (CAP, $\beta = 0.595$, $t = 3.85$, $p < 0.001$), highlighting the importance of expanding the depositor base and maintaining strong capitalization. Branch expansion (BR) is positive but marginally significant ($\beta = 0.242$, $t =$

1.83, $p = 0.070$). Among macroeconomic factors, foreign remittance growth (FRMGR, $\beta = 1.447$, $t = 5.61$, $p < 0.001$) and Treasury-bill rates (TBR, $\beta = 4.847$, $t = 2.92$, $p = 0.004$) positively influence deposit growth, whereas government expenditure (GOVEX, $\beta = -1.416$, $t = -3.44$, $p = 0.001$) exerts a negative effect. GDP growth (RGDP) and inflation (IFR) do not significantly affect deposits, suggesting that short-term macroeconomic fluctuations were less influential than bank-specific factors. Overall, the results underscore that deposit growth in Ethiopian private commercial banks is primarily driven by customer expansion, capital adequacy, and remittance inflows, while the effects of macroeconomic variables are mixed and context-dependent.

5. Discussion and Conclusion

This study examined the determinants of deposit growth in twelve Ethiopian private commercial banks over the 2013–2022 periods, using a balanced panel dataset and robust fixed-effects regression techniques. The analysis combined bank-specific factors customer growth, capital adequacy, and branch expansion—with macroeconomic variables, including GDP growth, inflation, government expenditure, Treasury-bill rates, and remittance inflows.

The findings indicate that bank-specific factors play a dominant role in explaining deposit growth. In particular, customer growth emerged as the most influential determinant, highlighting the importance of expanding the depositor base. Capital adequacy also positively affects deposits, suggesting that banks with stronger capitalization attract more funds due to higher depositor confidence. Branch expansion shows a positive but marginal effect, indicating that increasing accessibility contributes moderately to deposit mobilization.

Among macroeconomic variables, foreign remittance inflows significantly stimulate deposit growth, emphasizing the role of external financial flows in supporting domestic bank liquidity. The Treasury-bill rate also exhibits a positive effect, possibly reflecting complementary investment channels or enhanced financial stability perceptions. In contrast, government expenditure negatively affects deposits, suggesting potential crowding-out of private savings. GDP growth and inflation were statistically insignificant, indicating that short-term macroeconomic fluctuations were less important than bank-specific factors during the study period.

Generally, the study concludes that effective deposit mobilization in Ethiopian private commercial banks depends primarily on internal operational strategies and external remittance flows, while macroeconomic policy variables exert mixed or limited effects. These results provide useful guidance for bank managers seeking to strengthen deposit bases and for policymakers aiming to create an enabling environment for financial intermediation.

5.1. Recommendations

Based on the findings of this study, several practical recommendations are proposed to enhance deposit mobilization in Ethiopian private commercial banks:

- 1) **Expand Customer Base Strategically:** Banks should prioritize strategies to increase their customer base through targeted marketing, improved service delivery, and digital banking platforms. Customer growth was identified as the most significant driver of deposit growth, highlighting the importance of reaching and retaining new depositors.
- 2) **Strengthen Capital Adequacy:** Maintaining robust capital levels enhances depositor confidence and promotes deposit inflows. Banks should adopt prudent risk management practices and ensure compliance with regulatory capital requirements to sustain financial stability and attract more deposits.
- 3) **Leverage Remittance Flows:** Given the strong positive impact of remittance inflows, banks should develop tailored financial products and services for remittance recipients, such as specialized savings accounts or investment instruments, to capture these external inflows more effectively.
- 4) **Optimize Branch Expansion:** While branch growth had a moderate effect on deposits, banks should strategically expand branches in underserved areas, complemented by digital channels, to improve accessibility and convenience for customers.
- 5) **Monitor Macroeconomic Policy Effects:** Policymakers should consider the potential crowding-out effect of government expenditure on private deposits. Coordinated fiscal and monetary policies that support private savings without excessive public-sector absorption of liquidity could strengthen deposit mobilization.
- 6) **Promote Financial Sector Stability:** Positive effects of Treasury-bill rates suggest that banks and regulators should maintain a stable and credible financial environment, enhancing depositor trust and confidence in formal banking institutions.

By implementing these strategies, Ethiopian private commercial banks can strengthen deposit growth, improve financial inclusion, and support broader economic development objectives.

5.2. Suggestion for Further Researcher

Future research on deposit growth in Ethiopia could take several directions. Studies could expand the sample to include all private and public banks for a more comprehensive analysis, explore the impact of digital banking and fintech on deposit mobilization, and examine the long-term effects of policy changes such as interest rate reforms and financial inclusion initiatives. Researchers could also investigate how macroeconomic volatility influences deposit behavior using high-frequency data and conduct comparative studies with other emerging markets to determine whether Ethiopia's deposit

growth patterns are unique. These approaches would enhance understanding of deposit determinants and inform more effective banking strategies and financial policies.

Abbreviations

BEA	Break Even Analysis
BER	Branch Expansion Rate
CAP	Capital Adequacy Ratio
CBE	Commercial Bank of Ethiopia
DGR	Deposit Growth Rate
IFR	Inflation Rate
GOVEX	Government Expenditure Rate
NBE	National Bank of Ethiopia
OLS	Ordinary Least Square
TBR	Treasury Bill Rate
WDI	World Development Indicator

Author Contributions

Worku Desalegn Adelegn is the sole author. The author read and approved the final manuscript.

Conflicts of Interest

The author declares no conflicts of interest. The research was conducted independently without any financial or institutional support.

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