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FACTORS AFFECTING LOAN DISBURSEMENT IN COMMERCIAL BANKS OF ETHIOPIA

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Abstract

The specific objective of this study was to investigate the determinant factors affecting loan disbursement of selected commercial banks in Ethiopia. The research employed a quantitative approach, utilizing descriptive and explanatory research designs, and panel data was collected from the annual financial reports of eight sampled commercial banks from 2010-2022. Secondary data were collected from seven private and one publicly-owned commercial bank in Ethiopia using purposive sampling, and the data were analyzed using descriptive statistics, correlation, and regression analysis. Since the sample was not randomly selected, the study used a fixed-effect regression model, which was determined to be the appropriate model based on Hausman and Wald tests. The results showed that profit, capital, and the number of customers had statistically significant and positive effects on loan disbursement, while deposit, asset, liabilities, and the number of branches had insignificant impacts.

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1. Introduction

Loan disbursement refers to the extension of credit, or the sum of funds lent to borrowers, by commercial banks in exchange for future repayment of the principal amount (Olokoyo, 2011). This lending activity, whether short-term, medium-term, or long-term, is crucial for investment, development, and contributing to the economic growth of a country. Loan disbursement is a primary source of profit generation and financial performance for commercial banks, as they receive deposits from customers and lend those funds to borrowers or investors to earn interest revenue (Comptroller, 1998).

The level of customer deposits directly influences a bank's capacity to disburse loans, both positively and negatively (Natnael, 2017). A decline in liquidity may prompt banks to draw down cash securities to protect their loan collection and position (Leonardo et al., 2001). Deposits are a key determinant of loan provision, as banks have less incentive to lend when liability levels are low (Kashyap & Stein, 2000). Loan performance and collections are the largest benefits and profit sources for most commercial banks (Comptroller, 1998).

In emerging economies like Ethiopia, banks' loan disbursement can have a more significant impact on the implementation of monetary policy compared to developed countries (Alkilani et al., 2015). Commercial banks play a crucial role in mobilizing savings and financial resources to promote economic expansion (Olokoyo, 2011). While some previous studies in Ethiopia have examined factors like deposits, interest rates, GDP, and cash reserve requirements, their results showed these variables had an insignificant impact on loan disbursement (Amano, 2014; Temesgen, 2016; Mitiku, 2014; Berhanu, 2016). Therefore, further research is needed to investigate additional determinants of loan disbursement by commercial banks in Ethiopia, especially given the evolving nature of the banking sector and the economy.

Prior research on the factors affecting loan disbursement by commercial banks in Ethiopia has yielded inconsistent results. Some studies found deposit volume had a significant positive relationship with loan disbursement (Mitku, 2014; Berhanu, 2016; Amano, 2014), while others found cash reserve requirements had a significant effect (Amano, 2014; Berhanu, 2016), contrary to other studies (Mitiku, 2014; Temesgen, 2016). The impact of macroeconomic variables like GDP was also mixed, with some studies finding a significant effect (Berhanu, 2016; Mitku, 2014) and others finding no effect (Amano, 2014; Temesgen, 2016).

This study aims to fill a gap in the literature by examining additional factors that may affect loan disbursement by commercial banks in Ethiopia, including profit, assets, capital, customers, liabilities, and branch network.

The specific objectives are:

1. Examine the effect of profit on loan disbursement
2. Analyze the effect of deposit on loan disbursement
3. Determine the effect of assets on loan disbursement

4. Analyze the effect of capital on loan disbursement

2. Theorethical review and hypotheses

Numerous empirical studies have found a positive and significant relationship between profitability and loan disbursement. For example, a study by Abate (2019) in the Ethiopian banking sector revealed that higher profitability, as measured by return on assets (ROA), had a significant positive impact on banks' loan disbursement. Similarly, Alemu (2015) found that profitability was a key determinant of loan growth in Ethiopian commercial banks.

H1: Profitability has a significant and positive effect on the loan disbursement of commercial banks in Addis Ababa, Ethiopia.

The empirical evidence on the relationship between deposit volume and loan disbursement is well-established. Studies by Tesfaye (2014) and Wondwossen (2017) in the Ethiopian context have consistently shown that banks with higher deposit mobilization tend to have greater loan disbursement capacity.

H2: Deposit volume has a significant and positive effect on the loan disbursement of commercial banks in Addis Ababa, Ethiopia.

Empirical research has generally supported the positive relationship between asset size and loan disbursement. Getahun (2016) and Mengistu (2018) found that larger banks, as measured by their total assets, were able to disburse more loans in the Ethiopian banking industry.

H3: There is a significant positive relationship between the asset size and loan disbursement of commercial banks in Addis Ababa, Ethiopia.

Capital Adequacy and Loan Disbursement

The empirical evidence on the impact of capital adequacy on loan disbursement is mixed. While some studies, such as Demissie (2017), have found a positive and significant relationship, others, like Shimelis (2016), have reported a negative or insignificant effect. This may be due to the various ways in which capital adequacy is measured and the different regulatory environments in which banks operate.

H4: Capital adequacy has a significant positive effect on the loan disbursement of commercial banks in Addis Ababa, Ethiopia.

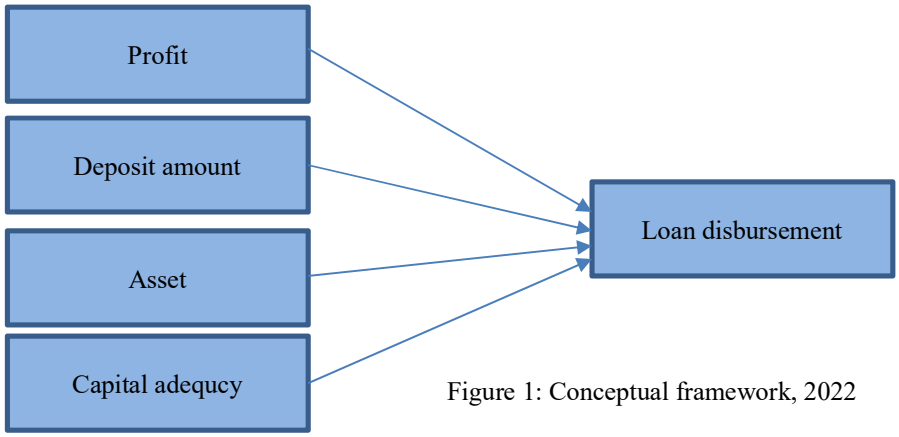

Figure 1: Conceptual framework, 2022

3. Methodology

The research design provides the framework for data collection and analysis. This study used an explanatory research design, which is suitable for analyzing cause-and-effect relationships. The study relied on secondary data obtained from sources like financial reports and websites of commercial banks in Ethiopia.

The target population was the 8 commercial banks in Ethiopia, including 1 public bank and 7 private banks that had been operating for at least 13 years. A non-probability purposive sampling technique was used to select these 8 banks as the sample.

The data were analyzed using descriptive statistics, correlation analysis, and multiple linear regression. Specifically, the study employed panel data analysis techniques like pooled regression, fixed effects, and random effects models to examine the determinants of loan disbursement by the commercial banks.

The multiple regression model was specified with loan disbursement as the dependent variabl4e and factors like profit, deposits, assets, capital, customer base, liabilities, and branch network as the independent variables. The analysis was conducted using the EViews 10 software.

4. Results and Discussion

4.1 Descriptive results

The table provides an overview of key financial and operational metrics for the organization over 104 observations. The mean loan disbursement of 32,816.95 Birr indicates the institution's active role in lending, with the capacity to disburse loans ranging from a minimum of 364.769 Birr to a maximum of 289,878.6 Birr, suggesting it caters to a diverse customer base. The mean profit of 2,236.173 Birr demonstrates the organization's ability to generate surplus, though this figure exhibits high variability with a standard deviation of 4,081.943 Birr, potentially influenced by market dynamics and strategic decisions. The institution's deposit-taking function is highlighted by the mean deposit of 64,133.83 Birr, with the capacity to attract deposits up to 742,648.9 Birr. The substantial mean asset value of 83,631.55 Birr, with a maximum of 1,001,232 Birr, reflects the organization's scale and resource base, while the mean capital of 6,554.565 Birr underscores its financial stability and capacity to support operations. Overall, the statistics paint a picture of a dynamic institution serving a diverse range of customers and operating in a rapidly evolving environment.

Table 1: Decsriptive results

	LOAN_DISB.	PROFIT	DEPOSIT	ASSET	CAPITAL
Mean	32816.95	2236.173	64133.83	83631.55	6554.565

Maximum	289878.6	19470.48	742648.9	1001232	54364.79
Minimum	364.769	21.509	820.933	1118.57	189.001
Std. Dev.	56168.87	4081.943	138696.8	185764.7	11493.25
Observations	104	104	104	104	104

Source: National Bank report, 2022

4.2 Regression Results

The regression model provides insights into the relationship between the dependent variable, Loan Disbursement, and the independent variables of Profit, Deposit, Asset, and Capital. The results indicate that Profit and Capital have a statistically significant positive impact on Loan Disbursement, while Asset has a statistically insignificant negative impact. Specifically, the Profit coefficient of 3.524778 suggests that a one-unit increase in Profit is associated with a 3.525-unit increase in Loan Disbursement, holding all other variables constant. This relationship is highly statistically significant, with a p-value of 0.000, indicating a strong link between the institution's profitability and its ability to disburse loans.

Similarly, the Capital coefficient of 1.356529 implies that a one-unit increase in Capital is associated with a 1.357-unit increase in Loan Disbursement, all else equal. This finding also has a high level of statistical significance, with a p-value of 0.000, underscoring the importance of the institution's capital base in supporting its lending activities. In contrast, the Deposit coefficient of 0.292772 suggests a positive but statistically insignificant relationship between Deposit and Loan Disbursement, with a p-value of 0.2345. This implies that the institution's deposit-taking function may not have a direct, significant influence on its loan disbursement decisions.

Furthermore, the Asset coefficient of -0.093203 indicates a negative but statistically insignificant relationship between Asset and Loan Disbursement, with a p-value of 0.5844. This suggests that the institution's overall asset base may not be a primary driver of its loan disbursement activities. The model's goodness-of-fit is strong, as evidenced by the high R-squared value of 0.978356, indicating that the independent variables explain 97.84% of the variation in Loan Disbursement. The Adjusted R-squared of 0.977018 further confirms the model's high explanatory power.

However, the Durbin-Watson statistic of 0.797761 suggests the presence of positive autocorrelation in the residuals, which may indicate a need to address potential issues related to the model's dynamic structure or the presence of unobserved factors. Moreover, the regression analysis highlights the crucial role of Profit and Capital in influencing the institution's loan disbursement activities, while the relationship with Deposit and Asset appears to be less significant in the context of this particular model.Risks in the banking industry refer to uncertainties that can result in adverse variations in profitability or

losses. The banking sector faces a wide array of risks, many of which are well-known. However, there has been a significant shift in focus from traditional qualitative risk assessment towards the quantitative management of risks, driven by evolving risk practices and strong regulatory incentives.

Table 2: Pooled OLS Regression Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
PROFIT	3.524778	0.792484	4.447759	0.000
DEPOSIT	0.292772	0.244727	1.196319	0.2345
ASSET	-0.093203	0.169822	-0.548826	0.5844
CAPITAL	1.356529	0.313022	4.333661	0.000
Weighted Statistics				
R-squared	0.978356			
Adjusted R-squared	0.977018			
S.E. of regression	8515.183			
Durbin-Watson stat	0.797761			

Note: Dependent Variable: Loan Disbursement

As Table 3 reveasl, the fixed effects panel regression model provides a more nuanced analysis of the relationship between the dependent variable, Loan Disbursement, and the independent variables of Profit, Deposit, Asset, and Capital. This approach accounts for unobserved individual heterogeneity, allowing for a more comprehensive understanding of the underlying dynamics. The results indicate that Profit and Capital have a statistically significant positive impact on Loan Disbursement, while Deposit and Asset have insignificant relationships. The Profit coefficient of 6.122474 suggests that a one-unit increase in Profit is associated with a 6.122-unit increase in Loan Disbursement, holding all other variables constant. This relationship is highly statistically significant, with a p-value of 0.000, reinforcing the importance of profitability in driving the institution's lending activities.

The Capital coefficient of 0.803766 implies that a one-unit increase in Capital is associated with a 0.804-unit increase in Loan Disbursement, all else equal. This finding is also statistically significant, with a p-value of 0.0034, underscoring the role of the institution's capital base in supporting its loan disbursement. In contrast, the Deposit coefficient of 0.205858 suggests a positive but statistically insignificant relationship between Deposit and Loan Disbursement, with a p-value of 0.3012. This implies that the institution's deposit-taking function may not have a direct, significant influence on its lending decisions. The Asset coefficient of -0.016394 indicates a negative and statistically insignificant relationship between Asset and Loan Disbursement, with a p-value of 0.9051. This suggests that the institution's overall asset base may not be a primary driver of its loan disbursement activities.

The model's goodness-of-fit is exceptionally strong, as evidenced by the high R-squared value of 0.987917, indicating that the independent variables explain 98.79% of the variation in Loan Disbursement. The Adjusted R-squared of 0.986017 further confirms the model's high explanatory power. The F-statistic of 519.7785, with a corresponding p-value of 0.000, indicates that the model as a whole is statistically significant, validating the inclusion of the independent variables in explaining the variation in Loan Disbursement. Compared to the Pooled OLS Regression Model, the Fixed Effects Panel Regression Model provides a more robust and reliable analysis, as it accounts for unobserved individual-level factors that may influence the relationships between the variables. This approach helps to address potential omitted variable bias and provides a more comprehensive understanding of the underlying dynamics within the institution.

Table 3: Fixed Effects Panel Regression Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.	
Constant	-28878.88	12621	- 2.2881	0.0245	
PROFIT	6.122474	0.863845	7.08747	0.000	
DEPOSIT	0.205858	0.197966	1.03987	0.3012	
ASSET	-0.016394	0.137144	-0.11954	0.9051	
CAPITAL	0.803766	0.267098	3.00925	0.0034	
	Weighted Statistics				
R-squared	0.987917				
Adjusted R-squared	0.986017				
S.E. of regression	6642.039				
Sum squared	3.93E				
F-statistic	519.7785				
Prob (F-statistic)	0.000				

Note: Dependent Variable: Loan Disbursement

Table 4 reveals the random effects panel regression model provides an alternative approach to analyzing the relationship between the dependent variable, Loan Disbursement, and the independent variables of Profit, Deposit, Asset, and Capital. Unlike the fixed effects model, the random effects model assumes that the unobserved individual-level heterogeneity is uncorrelated with the independent variables. The results indicate that Profit and Capital have a statistically significant positive impact on Loan Disbursement, while Deposit and Asset have insignificant relationships. The Profit coefficient of 2.770889 suggests that a one-unit increase in Profit is associated with a 2.771-unit increase in Loan Disbursement, holding all other variables constant. This relationship is highly statistically significant, with a p-value of 0.0001, reinforcing the importance of profitability in driving the institution's lending activities.

The Capital coefficient of 1.200198 implies that

a one-unit increase in Capital is associated with a 1.200-unit increase in Loan Disbursement, all else equal. This finding is also statistically significant, with a p-value of 0.000, underscoring the role of the institution's capital base in supporting its loan disbursement. In contrast, the Deposit coefficient of 0.279274 suggests a positive but statistically insignificant relationship between Deposit and Loan Disbursement, with a p-value of 0.1239. This implies that the institution's deposit-taking function may not have a direct, significant influence on its lending decisions.

Similarly, the Asset coefficient of -0.06738 indicates a negative and statistically insignificant relationship between Asset and Loan Disbursement, with a p-value of 0.5919. This suggests that the institution's overall asset base may not be a primary driver of its loan disbursement activities. The model's goodness-of-fit is strong, as evidenced by the high R-squared value of 0.978989, indicating that the independent variables explain 97.90% of the variation in Loan Disbursement. The Adjusted R-squared of 0.977457 further confirms the model's high explanatory power. The F-statistic of 638.994, with a corresponding p-value of 0.000, indicates that the model as a whole is statistically significant, validating the inclusion of the independent variables in explaining the variation in Loan Disbursement.

Compared to the Pooled OLS Regression Model and the Fixed Effects Panel Regression Model, the Random Effects Panel Regression Model provides a different perspective on the underlying relationships. While the fixed effects model assumes that the unobserved individual-level factors are correlated with the independent variables, the random effects model assumes that they are uncorrelated. The results of the Random Effects Panel Regression Model are generally consistent with the findings from the Pooled OLS (Table 2) and Fixed Effects model (Table 3) , highlighting the crucial role of Profit and Capital in influencing the institution's loan disbursement activities, while the relationships with Deposit and Asset appear to be less significant.

Table 4: Regression Result of Random Effects Panel Regression Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.	
C	-22124.19	9655.653	-2.29132	0.0241	
PROFIT	2.770889	0.668765	4.143293	0.0001	
DEPOSIT	0.279274	0.179895	1.552428	0.1239	
ASSET	-0.06738	0.125275	-0.537855	0.5919	
CAPITAL	1.200198	0.239882	5.003293	0.000	
	Weighted Statistics				
R-squared	0.978989				
Adjusted R-squared	0.977457				
S.E. of regression	8433.458				
F-statistic	638.994				

Prob (F-statistic)	0.000				

Note: Dependent Variable: Loan disbursement

5 Conclusion and implications

The regression analyses conducted on the data provide valuable insights into the key factors that drive the institution's loan disbursement activities. Across all three models, profitability, as measured by the Profit variable, emerges as a consistently significant and positive determinant of loan disbursement. This suggests that the institution's ability to generate profits is a crucial consideration in its lending decisions, likely reflecting a focus on maintaining a healthy financial position and managing risks effectively. The significance of the Profit variable underscores the importance of the institution's revenue-generating capabilities and cost management strategies in supporting its lending operations. Complementing the role of profitability, the institution's capital base, as captured by the Capital variable, also demonstrates a statistically significant and positive relationship with loan disbursement in both the Fixed Effects and Random Effects models. This finding highlights the importance of the institution's capital adequacy in enabling it to expand its loan portfolio and meet regulatory requirements. The implication is that the institution should maintain a robust capital base, potentially through strategies such as capital raising, efficient capital allocation, and prudent risk management. In contrast, the institution's deposit-taking function, as represented by the Deposit variable, and its overall asset base, as measured by the Asset variable, do not appear to have a direct, significant influence on loan disbursement decisions. This may suggest that factors other than deposit-gathering and asset management, such as risk management and strategic priorities, play a more prominent role in the institution's lending activities. This could incentivize the institution to diversify its funding sources and asset management strategies to better support its lending operations, potentially exploring alternative funding mechanisms and optimizing its asset allocation. The differences in the underlying assumptions and results between the Fixed Effects and Random Effects models also highlight the importance of carefully selecting the appropriate modeling approach when analyzing the drivers of the institution's lending decisions, as the choice of model may depend on the specific characteristics of the institution and the nature of the unobserved individual-level factors that may influence the relationships.

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