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Drivers of Bank Loans and Advances: Evidence from Ethiopian Banking Business

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Abstract

This article examines determinants of Ethiopian commercial banks' loan and advances. Seventeen commercial banks' audited financial reports from 2005-2022 and National Bank of Ethiopia and the World Bank data are used. Results from descriptive analysis indicate that commercial banks' loans and advances have increased over the years and their liquidity level continuously declined. Government-owned bank dominates the private banks in assets, loans, and deposits. Fixed Effects model discovers deposit interest rates, bank size, market concentration, and exchange rate have a positive significant effect on commercial bank loans and advances. Lending interest rate, bank liquidity, Treasury bill rate, country's political risk index and change in banks' minimum capital requirement exerted negative and significant effect on bank loan and advances. The findings have important policy implications for commercial banks and regulatory authorities. Regardless of its relation to loans and advances, it is of paramount importance for commercial banks as players and National Bank of Ethiopia as a policy maker to give its due consideration to liquidity position for the sustenance of public confidence and to have a sound banking sector. It is better that the commercial banks reduce their lending rates to increase the number of borrowers and be beneficiaries of economies of scale. A peaceful and secure political system is necessary to create enabling operating environment for the commercial banks to extend loans and contribute to economic development.

Keywords*: Loans, advances, bank, concentration, lending rate, liquidity*

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Introduction

The financial system is one of the building blocks that hold together an economy with a central function in financial reallocation among economic agents (Mokaya, 2018). In the financial system, financial institutions carry out a plethora of activities within the intermediation process. The banking sector is one of the fundamental parts of the financial system due to its capacity to stimulate capital accumulation and economic processes through effective financial intermediation (Diamond & Rajan, 2001).

Banks are classic financial intermediaries in transforming deposits into productive investments to accelerate economic growth (Adzis et al., 2018). By bridging the gap between economic agents, banks extend loans and advances to customers by taking into consideration profitability, liquidity and solvency for their operations (Olokoyo, 2011). Commercial banks are the central position of driving the economy by unprecedented growth of the private sector in the long term and play a crucial role in running an economy (Andres & Vallelado, 2008; Sahile et al., 2015) and Maonga (2016). According to Beck et al (2004), without bank credit, growth in productive investments is impossible. Credit is vital to the economy and rapid growth in domestic credit supply drives economic expansion, enabling savings to be channeled into investment.

But care should be exercised so that rapid credit growth should not create financial instability issue, which may result in systemic banking crises (Alessi & Detken, 2014). Bank loans are the central products offered by commercial banks to customers and typically the greatest bank asset and primary source of income for banks (Boot & Thakor, 2000) and (Adzis et al., 2018). The view of Grodzicki et al (2009) is based on the hypothesis that bank lending channel is dependent upon monetary policy decision assumptions that affect the liquidity status of banks and this varies in supply of loan. The economy needs adequate rather than excess money supply, which might cause inflation to be high. If money supply lags behind production levels, the economy can experience deflation with the same unfavorable impacts (Celikoz et al., 2011).

Bad loan management is the main cause of bank failure and liquidity crises worldwide. Although credit growth will boost investment and economic activities, excessive credit growth will impact financial system stability through increased prudential risks (Timsina, 2016). That is why banking lending decisions are bedeviled by numerous risks, which need ample care (Yitayaw,

2021). The policymakers use credit data as an initial source of information regarding the state of their economy. Monetary policy instruments by the government therefore try to give best money supply proportional to the nation's objectives of price stability, good economic growth and full employment. Monetary policy is asserted to have a direct relationship with commercial banks' ability to issue new loans and credit price carried by borrowers who are heavily dependent on bank financing (Bernanke & Blinder, 1992). The Keynesian model advances the thesis that monetary policy actions have a pivotal role in bank loan supply and demand conditions.

Bernanke and Gertler (1995) point to the interest rate and credit as the transmission channels through which monetary policy actions influence loan supply and demand forces. Various reforms were undertaken by the government of Ethiopia, following the change in government in 1991 (where there was weak and inefficient state-controlled banking sector). However, the performance of the financial sector is not so anticipated. A majority of people who live within the rural zone are not of considerable benefit of the sector as they could not have access to the financial sector for either formal credit or storing money because coverage by the financial sector is still at infancy and the inclusiveness of the financial sector is thin (Dido, 2020; Solomon, 2011). However, Ethiopia is the country which is distinguished by bank-based financial system and depends on the role of banks for financing its economic growth. Bank lending is influenced by different factors; some are bank specific factors, and others are industry and macroeconomic related factors. Olokoyo (2011) noted that volume of deposits, level of domestic and foreign investment; interest rate, reserve requirement and liquidity ratio were the primary determinants of bank lending. Amidu (2014) based on Sub-Saharan Africa study, found that size of bank, growth and efficiency positively influence bank credit. High concentration of banks suggests low level of bank lending.

Chileshe (2018) analyzed Zambian banks and found that loan supply is negatively affected by policy rate and bank size but positively influenced by liquidity and market power under contractionary monetary policy. The author concluded that banks with greater market power, better capital and liquidity are less sensitive to contractionary monetary policy. Imran and Nishat (2013) found foreign liabilities, domestic deposits, economic growth, exchange rate, and monetary conditions as the main determinants that significantly influence bank credit to the private sector. Obstfeld and Rogoff (2009) revealed that good growth in domestic credit supply

can be a significant determinant to predict the subsequent financial or economic crises while a sharp decline in domestic credit can result in a recession and financial instability. Bank size, liquidity, capital adequacy, and exchange rate have positive effects on bank loans. Conversely, profitability, cash reserve ratios, and money supply have a negative and significant effect on lending by banks even though asset quality ratio was insignificant (Roba & Legass, 2023). Studies by Bhattarai (2019), Akinlo and Oni (2015), Baoko et al (2017), Awdeh (2017), Olumuyiwa et al (2012) indicate that lending rates have negative effect on bank lending and interest rates have effect on public demand to borrow money from banks.

Kingsley and Clem (2020) finding indicated that deposit interest rate has significant and positive effect on banks' credit ratio. Deposit rate had no effect on loan and advances (Busayo & Akinwale, 2018). Magoma et al (2022), Bhattarai (2019), Gnawali (2022), Funyina (2020), in their research, discovered bank size to significantly and positively affect bank lending. But the finding of Matousek and Solomon (2018) discovered bank size to significantly and negatively affect loan supply. Arintoko (2021), Adzis et al. (2018), Alkhazaleh (2017), Ayodele (2014), provided evidence that liquidity had a negative significant impact on lending decision by commercial banks since the high ranking of liquidity by the banks diminishes the potential of the banks to lend to the public, but Goet (2021), Matousek and Solomon (2018), Kim and Sohn (2017) provided evidence that liquidity had a positive significant influence on lending. Laidroo (2014) discovered that concentration in the banking sector was positively correlated with lending growth. Conversely, Pham (2015) discovered that bank concentration has negative and statistically significant impact on bank lending.

Empirical studies by Ayodele (2012), Onaolapo and Shomade (2017), Olumuyiwa et al (2012), Ajayi and Atanda (2012) tested that foreign exchange had positive and significant effect on banks' lending. However, the research of Bhattarai (2019) and Sarath and Pham (2015) concluded that credit supply is negatively correlated with exchange rate. Treasury bill rate has a significant negative effect on credit, which means treasury bills have crowding out effect on private sector credit (Awdeh (2017), Akpan et al (2022), Krishnamurthy and Vissing-Jorgensen (2015) and Choi and Robatto (2022). Political risk is the risk commercial banks face that includes political decision events conditions or statements that significantly affect their commercial banks' profitability.

Porta et al (1997) explain that political instability and governance significantly affect the cost of doing business due to its risk and uncertainty element. This raises the cost of doing business, introduces uncertainty and, therefore, discourages investment due to its distortionary nature. In Ethiopia, several authors tried to study the determinants of commercial bank loan and advances. Temesgen (2016) revealed that liquidity ratio, credit risk, bank capital and foreign exchange annual have negative and significant impact whereas deposit volume and average lending rate have positive and significant impact on the lending behavior of banks. Getachew (2017) shows that bank asset, deposit amount, and growth in GDP positively and liquidity requirement and cash reserve negatively affect the bank loan in Ethiopia, but credit risk, lending interest rate and inflation had no effect. Getahun (2014) found volume of deposit, cash reserve ratio, inflation and bank size had positive effects, but liquidity ratio including interest rate had negative and significant impact on loan and advance. Bank lending has a positive influence from volumes of deposit, capital adequacy and bank size and a negative influence from cash reserve requirement, bank concentration and average lending rate. The GDP has a negative and statistically significant effect on bank lending (Yitayaw, 2021). The research by Shifalo (2021) revealed that market share, lending interest rate and volume of deposit have a positive and significant impact on bank lending behavior but liquidity ratio, and cash reserves requirement and non-performing loan have a negative effect on banks' lending.

In this study, we discuss the effects of operating expense, exchange rate, deposit interest rate, provision for non-performing loan, broad money supply, Treasury bill, political risk, market concentration, profitability of banks, and policy change in the finance industry at different moments which the previous authors have not covered in their study. On the other hand, the National Bank of Ethiopia (Directive No. SBB/50/201) raised the minimum capital requirement of banks from 75 million to 500 million. It also revised directive (No. SBB/78/2021) and raised capital requirement to five billion for newly opened banks and existing banks with paid up capital below the requirement. The policy change has its effect on the credit decision of banks. In addition, this study covers broader sample period than the previous researchers to have robust result over time. The underlying reason for this study as a whole is that the banking industry of Ethiopia is in its infancy and weak state.

Most of the banks were established and segmented based on region, religion and some other group orientations instead of being Big and act as one viewing synergy. It is small, relatively under-developed, and dominated by an enormous share of state control (World Bank, 2009), and possesses small assets compared to other countries' gigantic banks (Dessie, 2022). As post 1991, although domestic private banks allowed to venture into banking business, government banks re-structured and National Bank of Ethiopia empowered, even then coverage and magnitude of financial sector on which Ethiopian economy heavily relies is extremely poor. Only in 2014, only 10% households have been covered by formal credit (NBE, 2015). According to World Bank's study (2019), credit markets in Ethiopia are relatively underdeveloped, with domestic credit as a share of GDP at less than 40 percent, compared to 150 percent in South Africa. Sennoga (2018) believed that the level of financial intermediation in Ethiopia is low because the financial sector is shallow and disintermediation trends follow trends in Sub-Saharan African countries.

The authors affirm that it is due to government intervention into the credit allocation of private banks, credit is likely to be rationed for larger and more mature firms. Also, the World Bank's assessment demonstrated that state-owned companies have far greater access to credit than private firms (World Bank, 2009). Sennoga (2018) corroborated this statement with the GDP share of domestic credit to the private sector has declined steadily from 64.2% in 2007 to 45.6% in 2015. This corroborated by the statement of Asratie (2021) that in Ethiopia, the majority of the funds by banks have gone to the public sector. As indicated by data shown by Cepheus (2019), in 2012 private sector credit constituted 36% of the total credit but dropped to 32% in 2018 and continued to drop to 11% in 2021. Apart from the little credit provided to private sectors in Ethiopia, the particular types and lending features are also not commensurate with the demand of private business firms (Cepheus, 2019). The government officials in Ethiopia told media at different times that the number of all commercial banks borrowers in Ethiopia are less than half million (Dessie, 2022). The borrowers are extremely insignificant in comparison with approximately 120 million Ethiopian populations, the second largest in Africa.

The Sennoga (2018) review also discovered that credit is one of the obstacles to business expansion in Ethiopia and access to credit is restricted; acquiring a loan requires high collateral so that smaller and younger firms are at disadvantage. Ethiopia ranks 175th out of 190 in the

getting credit indicator of the doing business report of (World Bank, 2009) and there was little improvement to 159 out of 190 nations in 2020 according to the report of World Bank in 2020. Therefore, it is critically important to know and understand what drives the loan and advances of commercial banks in Ethiopia. This is important in the realization of the sustainable financial system and the nation's ambition in creating capital market, which is already underway. This paper makes contributions to knowledge in this field, raises questions for future research, and makes recommendations for policy makers like National Bank of Ethiopia, the government of Ethiopia and the banking businesses.

Methods of the Study

Quantitative research design and explanatory design are employed for this study to analyze the relation between variables (Creswell, 2009) with unbalanced data. The data include audited financial reports collected from seventeen commercial banks for 18 years (2005 -2022) and macroeconomic and other data collected from National Bank of Ethiopia and the World Bank. The political risk index of Ethiopia is collected from World Banks Rating of countries' political risks.

Panel data models are used in econometrics to analyze data with both cross-sectional and time-series dimensions. Model specification involves choosing the appropriate structure and estimator based on the data and research objectives for 17 commercial banks over the period of 2005-2022. The following equation indicates the general model for Fixed Effect estimation of the study according to (Gujarati, 2004).

$$Y_{it} = \alpha + \sum_{m=t}^{M} \beta X_{it} + \mu_i + \lambda_t + \epsilon_{it} \quad (1)$$

Where: Yit: Dependent variable for unit i at time t, Xit: Vector of explanatory variables, μi: Unit-specific, time-invariant effects, λt: Time-specific effects, and ϵit: Idiosyncratic error term.
For the inclusion of dummy variable in the fixed effect model, it is reformulated as below:

$$\gamma_{it} = \alpha_1 + \alpha_2 D_{2t} + \beta_2 X_{2it} + \beta_3 X_{3it} + \mho_{it} + \epsilon_{it} \quad (2)$$

$$LA_{it} = \alpha_1 + \alpha_2 D_{2t} + \sum_{m=t}^{M} \beta X_{it} + \sum_{k=1}^{K} \beta X_t + \mho_{it} + \epsilon_{it} \quad (3)$$

Where $LA_{it}$is the bank lending of Ethiopian Commercial Banks i, at time $_t$. The first set of independent variables X_{it} , include the mth commercial bank's specific characteristics of bank i at time t, while the second set of independent variables $\boldsymbol{X_t}$, the kth macroeconomic variable while ϵ_{it}, is the error term and finally β_0, is the constant term. Therefore:

$$logLA_{it} = \alpha_1 + \alpha_2 DCMCR_t + \beta_1 logLIR_{it} + \beta_2 logDIR_{it} + \beta_3 OC_{it} + \beta_4 BS_{it} + \beta_5 LR_t + \beta_6 logPNPL_{it} + \beta_7 SDR_{it} + \beta_8 HHI_{it} + \beta_9 logRR_t + \beta_{10} logGDP_t + \beta_{11} ExR_{it} + \beta_{12} logBMS_t + \beta_{13} logTB_t + \beta_{14} PRI_t + u_i + \varepsilon_{it} \quad (2)$$

Where LA_{it} refers to loan and advance of ith bank at year t. i= 1, 2… 17. t= 2005…2022. $DCMCR_t$ refers to change in minimum capital requirement, $logLIR_{it1}$ is logarithm of lending interest rate, $logDIR_{it}$ refers to logarithm of deposit interest rate, OC_{it} indicates the operating cost, BS_{it} is the bank size, LR_t shows the liquidity ratio, $logPNPL_{it}$ shows logarithm of provision for non-performing loan, SDR_{it} is size of deposit ratio, HHI_{it} refers to market concentration, $logRR_t$ is logarithm of reserve requirement by National Bank of Ethiopia, $logBMS_t$ refers to logarithm of broad money supply, $logGDP_t$ indicates logarithm of gross domestic product, $logTB_t$is logarithm of treasury bill, PRI_t indicates political risk index, Єit = error term. u_i is the bank specific fixed effect, $\epsilon_{it} \sim N(0, \sigma^2)$ is the random term, u_i and ϵ_{it} are independently and identically distributed.

Table 1: Measurements and descriptions of variables

Variables	Measurement	Expected Signs
Bank loan and advances *(Dependent Variable)*	*Logarithm of Loan and Advances*	
Operating cost ratio	Total operating cost to total asset	-
Bank size	Logarithm of total asset	+
Liquidity ratio	Current asset to current liability	-
Provision for NPL	Provision for loan loss to total assets	-
Size of deposit ratio	Total deposit to total asset	+
Reserve ratio	Percentage required by NBE	-
Market concentration	Degree of competition (HHI)	+
Lending interest rate	Average annual lending rate	-
Deposit interest rate	Average annual deposit rate	+
Gross domestic product	Real GDP	+
Broad money supply	Ratio of M2 to GDP	+
Treasury bill	Rate offered by govt. for 91 days	-
Exchange rate (Birr/USD)	Real effective exchange rate	-
Political risk	Political risk index	-
Change in minimum capital requirements	Time dummy	-

Source: Based on Literatures (2023)

Results and discussion

Table 2, indicates that the minimum loan and advance commercial banks lent to their borrowers shows Birr 3,028,931 by Cooperative Bank of Oromia in 2005 and the maximum amount of loan Birr 293,652,891,643 extended by commercial bank of Ethiopia in 2022. The average amount of loan banks lent revealed Br. 4,623,195,528 over the study period. As the data depicts, the minimum amount was at the beginning of this study period and the maximum amount observed at the end of the study period. There is a wider variation between the minimum and maximum amount of loan over the study year. This shows that how much the credit amount injected by commercial banks to the economy is steadily increasing relatively.

Table 2: Summary of descriptive statistics

Variables	**Mean**	**Std. Dev.**	**Min**	**Max**
Loan and Advance	4.623 bln	152.393	3.03 mln	293.653 bln
Lending Interest Rate	12.5691	1.1411	10.50	14.25
Deposit Interest rate	5.8396	1.6964	3	8
Operating cost ratio	0.0394	0.0150	0.0087	0.0974
Bank Size (Total Assets)	23.0232	1.6102	18.6695	27.7773
Liquidity Ratio	0.3626	0.2431	0.0051	1.3187
Provision for NPL	0.7772	4.5323	0	51.9215
Size of Deposit Ratio	0.7326	0.1170	0.0095	0.8656
Market Concentration	0.0205	0.0700	0	0.3900
Reserve Ratio	7.7695	3.8752	5	15
Gross Domestic Product	9.2155	1.8988	6.0609	12.6442
Exchange Rate	22.2931	10.6648	8.6518	48.5674
Broad Money Supply	0.3214	0.0336	0.27	0.42
Treasury Bill	2.3790	2.8981	0.044	10.433
Political Risk Index	-1.56	.2304	-2.07	-1.28

Source: Authors' computation (2023)

To support this result, the trend of loan and advances of banks is presented in Figure 1 over the study period. As Figure 1 reveals, there was high variation in loan provision from 2005 to 2022. Loan and advances provided in the form of credit to borrowers showed significant changes even though still the economy demands more credit from financial system specially the private sector being an engine for the economic growth but left without adequate finance.

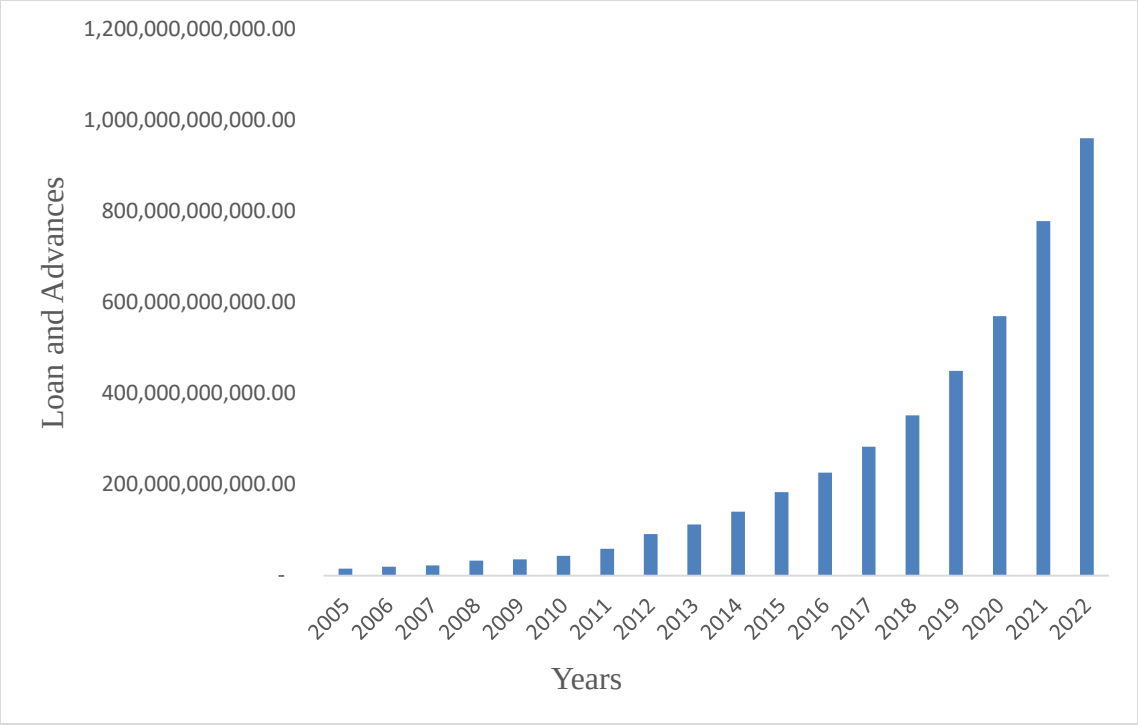

Figure 1: Trend of loan and advances over the study period
Source: Author's computation (2023)

The trend in Figure 1 also shows loan and advances of commercial banks increasing at an increasing rate especially starting from 2010 – 2022 after recovering from slight fluctuation between 2005 and 2009. It shows relative growth but it does not tell us the fair distribution of the loan among the 120 million Ethiopian population.

To see the loan performance of commercial banks individually in the banking industry, Figure 2 is worthwhile and compares the loan and advance given by individual bank. So, the trend depicts that the largest credit provider was Commercial Bank of Ethiopia followed by Awash Bank and Dashen bank during the study period. On the same token, Debub Global Bank and Abay Bank showed the lowest credit performance respectively during the study period.

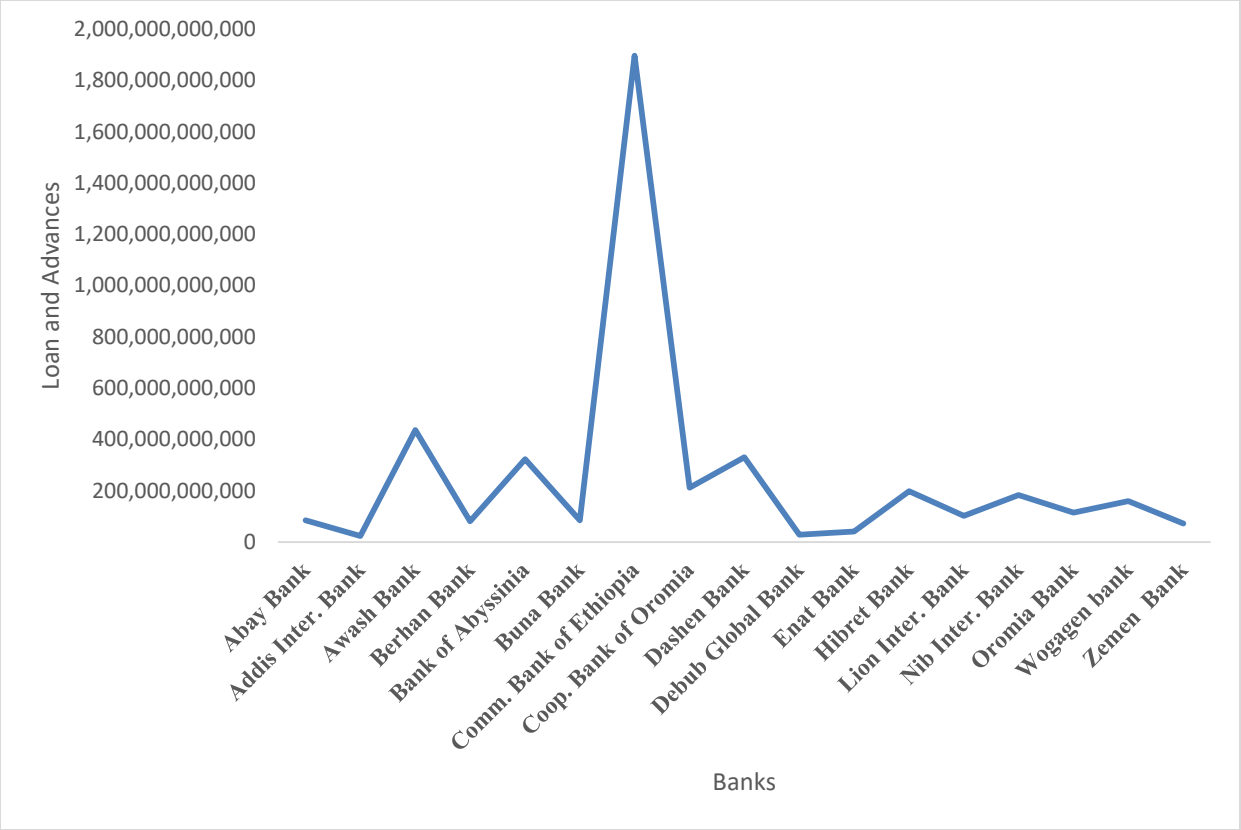

Figure 2: Average status of each bank in loan provision during the study period
Source: Authors' computation (2023)

Table 2 shows that the average lending interest rate is 12.57%, with a range of 10.50% to 14.25%. Comparatively, average deposit rate is 5.84% and ranges from 3% to 8%. These are based on data compiled over 18 years.

The operating cost of the commercial banks on average was 3.94 % during the period with a minimum of 0.87% and a maximum of 9.74%. The cost of operating bank increased over time with increase in total asset. The more the asset built by the banks, the more the cost for operation because they expand their banking operation in both primary and secondary services. Since the loan and advances of commercial banks increase from time to time at an increasing rate, it is inevitable that the operating cost increases with their performance. The higher the credit and other performances of banks to their customers, the higher the operating cost.

Cross-sectional liquidity ratio of banks ranges from 0.24 to 1.32 times with an average the ratio of 0.36 times. Liquidity ratio is an indication of the ability to meet short term obligation for banks. The reported liquidity ratios of banks is low. Some banks have the lowest liquidity ratio

and others have the high liquidity ratio. Also, Table 2 indicates that mean of the deposit to total assets ratio was 0.73. The minimum and maximum size of deposit ratio also indicated that 0.009 and 1.16. This indicates that the deposit size of commercial banks increased over time. The higher the volume of deposits, the greater the bank's ability to extend credits to their customers. On the other hand, more volume of deposit implies that commercial banks are building more confidence to overcome liquidity shocks. But, since deposit is a liability to these banks, care should be taken in managing these money and requires minimizing the risk from uncollectible loan. This may demand requirement for deposit insurance to manage risks emanating from different directions for guaranteeing the depositors.

The mean value for market concentration is 0.021 and the standard deviation is 0.07. The Ethiopian banking business has high concentration. Because there is a great difference between the public and the private banking business. As it is observed from Figure 3, over 18 years, the public bank still takes the highest share of asset of the industry.

The public bank has long history in banking business but private banks in Ethiopia have no more than 30 years of banking business experience. Sixteen of the private banks were established in the last fifteen years. Although the government controlled Commercial Bank of Ethiopia dominates, its shares are declining overtime due to competition from the private banks.

Figure 3 depicts the proportions of total bank assets under the CBE and the private banks combined. In 2005, CBE's share was over 70%, and in 2022, it declined to less than 55%. The gap between the share of CBE and the private banks narrowed.

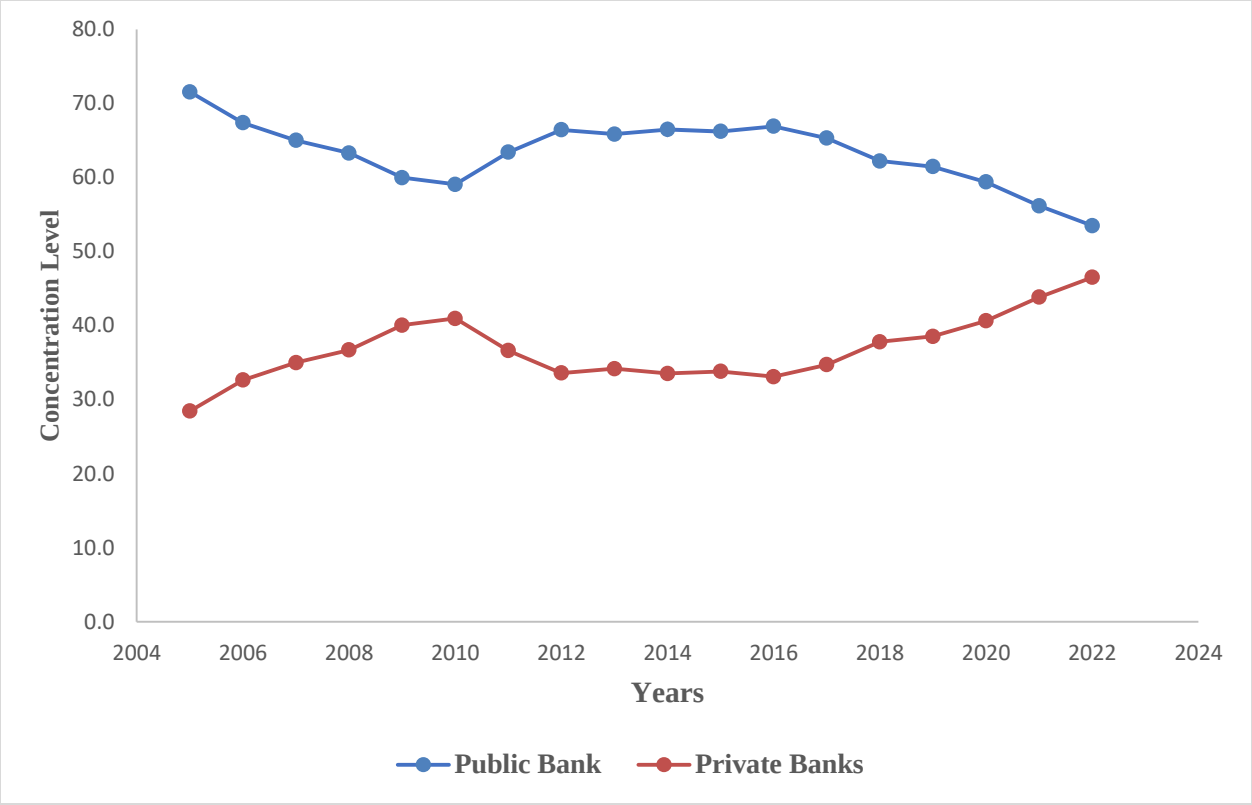

Figure 3: Concentration level of public and private commercial banks in Ethiopia
Source: Authors' computation (2023)

The dominance of the public bank is due to its long life of establishment and advantage of the government affiliation (sometimes it seems a policy bank than purely commercial bank). But over time, the concentration level of the public bank is declining and almost approaching to be equal with all private banks' concentration level. This is due to increase in number, coverage of the market through branches and technology and the capital requirement private banks should hold for entry or to sustain as a bank. Currently both the existing banks or the new bank proposing to join the banking industry is expected to have 5 billion Ethiopian Birr capital. This made the private banks build more asset, collect more deposit and give more loan than before.

From both Table 3 and Figure 4, it is observed that there is high concentration in Ethiopian banking industry in assets, loans and deposit collections. The public bank still takes the loins share of the asset, loan and deposit of the banking industry.

Table 3**:** Bank concentration level (average). The figures are shares in percent.

	Banks	**Total Asset**	**Total Loan**	**Total Deposit**		**Banks**	**Total Asset**	**Total Loan**	**Total Deposit**
	Public Bank				9	Lion Inter. Bank	1.6	2.3	1.69
1	Com. Bank of Ethiopia	60.0	43.4	58.85	10	Oromia Bank	2.2	2.6	2.16
	Private Banks				11	Zemen Bank	1.3	1.6	1.35
2	Awash Bank	6.8	10.0	7.02	12	Bunna Bank	1.3	1.9	1.23
3	Dashen Bank	5.5	7.6	5.79	13	Berhan Bank	1.3	1.9	1.39
4	Bank of Abyssinia	4.7	7.4	4.58	14	Abay Bank	1.3	1.9	1.41
5	Wegagen bank	2.7	3.6	2.75	15	Addis Inter. Bank	0.4	0.5	0.40
6	Hibret Bank	3.2	4.5	3.14	16	Debub Global Bank	0.4	0.6	0.43
7	NIB Inter. Bank	3.0	4.2	3.17	17	Enat Bank	0.7	0.9	0.67
8	Coop. Bank of Oromia	3.6	4.9	3.99		**Total share of private banks**	**40.0**	**56.6**	**41.15**

Source: Authors' computation (2023)

In Table 3 and Figure 4, the share of all banking business in the industry is presented and the concentration in public bank compared with the major four private banks (Awash Bank, Dashen Bank, Bank of Abyssinia and Cooperative Bank of Oromia) is shown. The public bank has high share of 60% of assets, 43.4% of loans and 58.85% of deposits. The rest are the shares of the private banks. This indicates Commercial Bank of Ethiopia is still highly dominant in the banking business in asset building, loan market share and size of deposit. This is due to government unlimited intervention and policy direction in economy like saving for condominium building among others and loan issuance especially to large state-owned enterprises in which private banks do not take part.

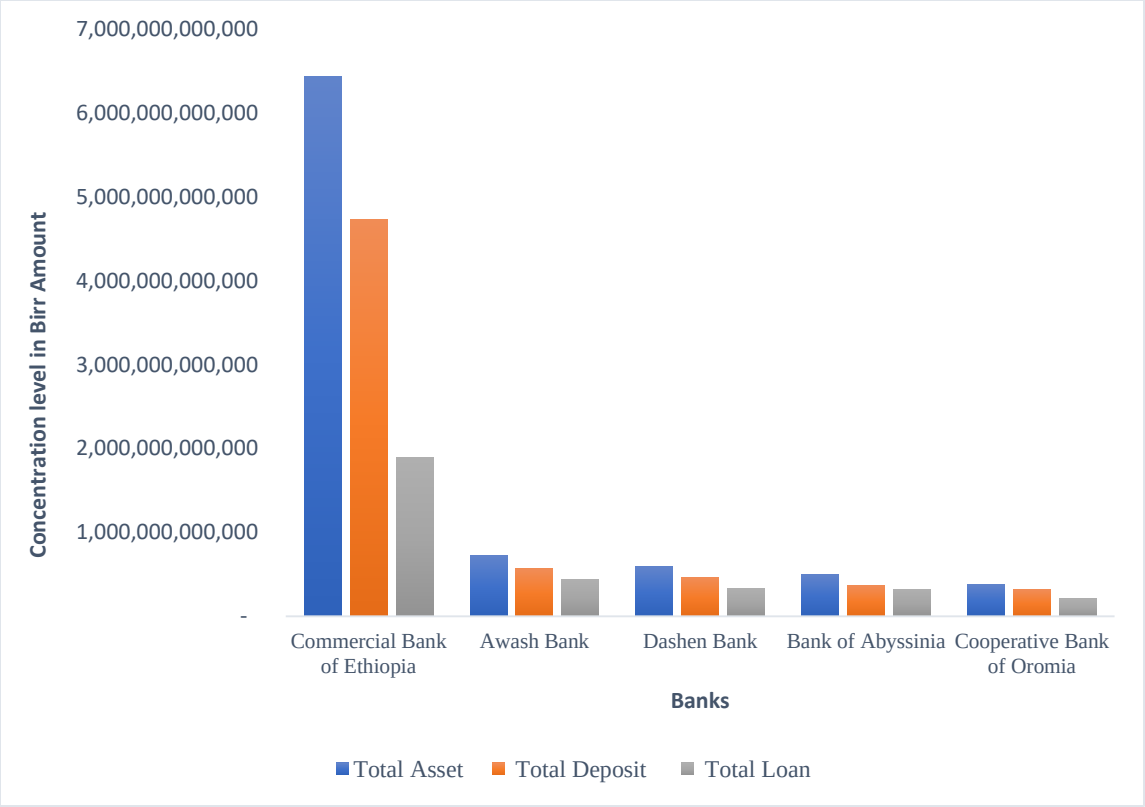

Figure 4: Concentration level of major commercial banks
Source: Authors' computation (2023)

Table 2, revels the average exchange rate of Birr 22.2931 to a US dollar during the study period with the minimum and maximum of Birr 8.6518 and Br. 48.5674 to a US dollar respectively. This indicates a dramatic depreciation of the Birr over time.

Figure 5 reveals that the exchange rate movement in Ethiopia was dramatic especially since 2008 where the exchange rate was 9.2441 Birr/USD. In 1999, to get 1 US dollar, it required Birr 7.5111. But after a year, the Ethiopian Birr depreciated to Birr 8.1426 to get 1 US dollar. From millennium year (2000) to 2008 almost for 9 years, the exchange rate in Ethiopia was almost constant between 8 Birr and 9 Birr. Since then, because of different reason, the value of Ethiopian Birr is declining against US dollar. In 2010, the Ethiopian Birr was devaluated from Birr 12.8909 to 16.1178 in relation to US dollar by government action. Due to market force, from 2011 to 2017 it grew from 16.1178 to 22.4137. In 2017, Ethiopian government again devalued Birr to 26.1082 for policy reason. The Ethiopian Birr continued to depreciate till 2022 when it reached 48.5674 against US dollar.

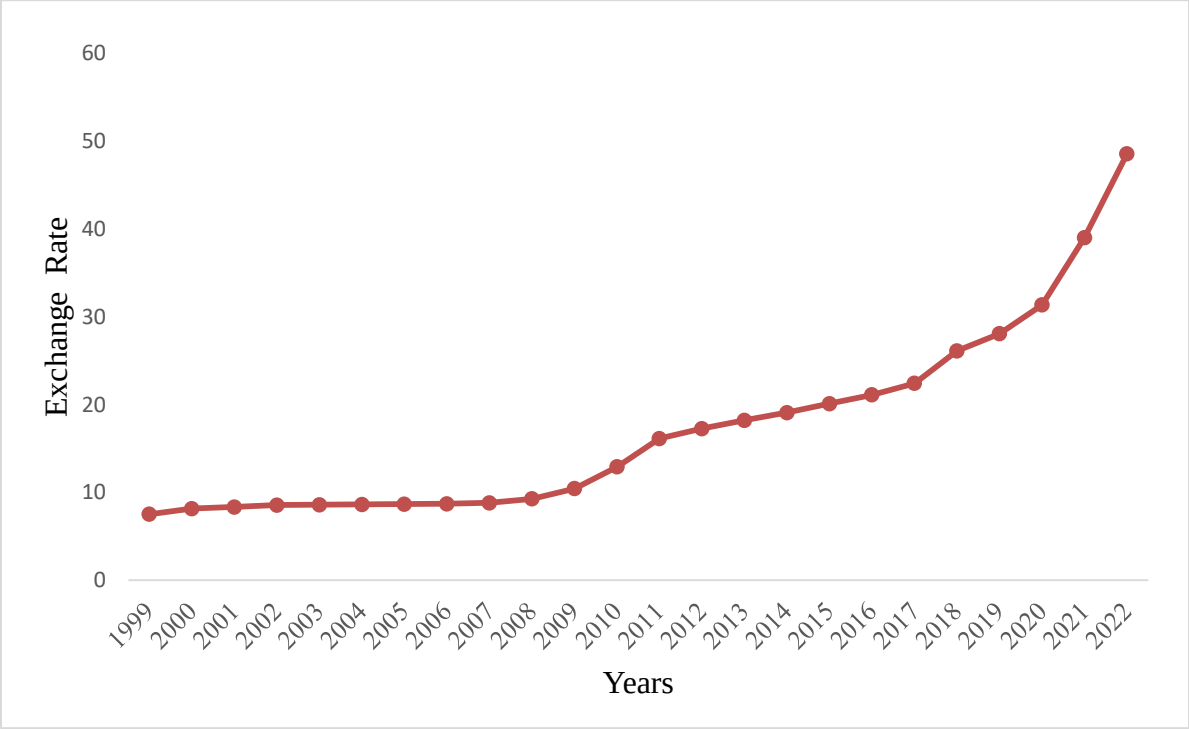

Figure 5: Trend of exchange rate movement in Ethiopia (ETB vs USD)
Source: Authors' computation (2023)

This has many implications for Ethiopia. The country exports raw materials and very few semi-processed goods at low price and imports finished goods from the small needle to the large aircraft at high cost. For the country with low domestic production and high dependence on import, this decline in value of domestic currency has negative consequences on the economy which opens the door for inflation. On the other side, though this decline in value of Birr encourages exports, what is to be exported is always unprocessed or semi-processed and sold at low price in international markets. This created large negative trade imbalance for Ethiopia. This made inflation to remain high for long period in Ethiopia.

It has its own impact on the loan and advance to be provided to borrowers in many ways. When foreign currency (USD) appreciates and the local currency (Birr) depreciates, it puts pressure on the economy. Decline in value of domestic currency results in large amount of payment in domestic currency for a single foreign currency (USD). In long-run, this results in shortage of foreign currency as the economy experiences periodically. Banks also face such challenges. Shortage in foreign currency results in decline of imports. When imports decline, the income

that banks generate from processing letter of credit and other secondary facilities decline. The effect of such depreciation creates illegal foreign currency transaction like black market for foreign currency exchange. Such activity attracts dollar holders to get high domestic currency for a single dollar. This negatively affects the flow of foreign currency to legal banks. When banks face shortage of foreign currency, they are unable to support importers and their revenues from foreign currency transactions decline. This reduces their non-interest income and finally results in decline in their total profit and hence loans.

On the other hand, when Birr depreciates, the values of outstanding loans of commercial banks decline and they would be unable to collect their loans plus interest. Even the interest income they collect might not compensate their loss in value. The depreciation in Birr directly results in inflation because many essential products are imported. Then, the real interest rate is negative in Ethiopia. This makes challenging for commercial banks to compensate the value they lose because of decline in value of their outstanding loan. This also leads them to have a smaller number of borrowers. In normal circumstance (when there is no high depreciation), they can allocate their money to different borrowers (loan diversification), which can even help in minimizing uncollectible loans since the value of Birr is in normal situation. After high decline in value of Birr, they cannot diversify as usual. They lose many borrowers due to high cost of living and difficulty starting new business. The number of borrowers also shrinks. This leads to lose in the interest they can collect and other commission they earn.

The GDP of the country over the study period grew by an average of 9.2%, with the minimum and maximum of 6.1% and 12.6% respectively. The economic growth showed dramatic change (positive change) even though there was a decline in the recent years. The GDP growth of 12.6% was at the beginning of the study period and the minimum result showed at the end of the study period. Ethiopian economy showed remarkable growth for the last decade. But later, the covid-19 effect and the war in the northern part of the country lead growth to decline to 6.1%, which is a remarkable growth considering the unstable situations that Ethiopia faced since 2019. Even though the GDP growth slowed, the loan provisions by commercial banks remained high at the industry level.

The broad money supply showed the average annual growth of 32.14% with minimum and maximum of 27% and 42% respectively over the study period. Increase in broad money supply has its bidirectional effect on loans and advances. When broad money supply increases, loans and advances increase. But when excessive money supply is injected to the market, it causes inflation and policy change may affect the loans and advances through credit ceiling, credit directions and restrictions on the amount that commercial banks extend in the form of loan.

Political risk index is expressed in terms of political stability and absence of violence which is measured on annual basis according to World Bank development indicator. From Table 2, the minimum and maximum political stability index for Ethiopia showed -2.07 and -1.28 respectively with the average of value of -1.56. As the result indicates, the country lacked political stability which affects the normal banking business activities and the general economic environment. Unstable political environment, hinders normal business activities. This results in decline in investment and then decline in loan demand. Banks also fear to provide loan and advance, because of fear of non-performing loan and this negatively affects the loan issuance. Such situation brought Ethiopia at the back in the world rank for political stability because of the ongoing conflicts.

Trends of variables during study period

Operating costs of commercial banks increased over the study period, although not monotonously. showed an increasing though slight fluctuations observed. The operating cost reached at peak in 2016 and then showed decline again in 2017, 2018, 2019. Later it recovered from decline and increased up to 2022. Banks favour the decline in operating cost to increase their earning. Of course, the decline in operating cost at industry level might imply that banks are benefiting from economies of scale and technologies to maximize their income.

The liquidity of commercial banking industry decreased over the years 2010 – 2022. Liquidity ratio was 0.645 in 2010 and 0.225 in 2022. This is associated with high volume of deposits during the period. It is crystal clear that when banks have higher liquidity, it is an indication of commercial banks' ability to meet their short-term obligation and the lower shows pressure in such commitment. This implies that banks were getting in to liquidity problem slowly though still the banking industry's liquidity is above the threshold of 15% required by National Bank of Ethiopia. Unless care is exercised, it has negative implication. This can be probably because of

that the depositor's money is held by borrowers than being liquid asset. There is also asset liability mismatch because banks mobilize short term deposit and lend it for long term. The weakness in collecting the loan they released to market on time, could also lead to liquidity problem under unfavourable circumstances.

Table 4: Trend of bank specific variables over the recent 10 years

Years	Loan & Advance (in billions)	Operating Cost ratio	Bank Size	Liquidity Ratio	Provision for NPL	Size of Deposit Ratio	Market Concentration
2010	42.976	0.032	21.91	0.6452	0.0031	0.7085	0.0234
2011	58.682	0.031	22.11	0.656	0.002	0.7333	0.0249
2012	91.196	0.034	22.25	0.439	0.003	0.671	0.0272
2013	112.207	0.037	22.4	0.422	0.036	0.721	0.0243
2014	139.934	0.04	22.58	0.4056	0.033	0.731	0.0238
2015	182.841	0.043	22.87	0.243	0.002	0.753	0.0217
2016	226.379	0.049	23.12	0.239	0.004	0.7569	0.0218
2017	282.774	0.048	23.46	0.3191	0.0034	0.7157	0.0178
2018	351.852	0.038	23.75	0.3222	0.0029	0.7277	0.0156
2019	449.355	0.038	24.01	0.2279	0.0032	0.7693	0.0131
2020	569.507	0.044	24.24	0.2249	0.003	0.7667	0.0117
2021	778.359	0.044	24.52	0.2033	0.0052	0.7777	0.0099
2022	960.878	0.046	24.75	0.2253	0.003	0.7729	0.0084

Source: Authors' computation (2023)

According to the report of NBE (2023) at the end of June 2023, 56.3 percent of the total banking sector deposits was held by only 0.5 percent of the total banking sector depositors. Banks get in to chronic liquidity problem if the top 10 depositors in each bank suddenly withdraw all their money and banks become below the minimum requirement of the 15%. This deteriorates the confidence that customers have on the specific commercial bank and the banking industry gradually. This may require the policy intervention by the regulatory body and the government in general.

Table 4 also depicts that the size of deposit ratio (volume of deposit) measured as ratio of total deposit to total asset. As it is observed, the size of deposit showed slight fluctuations. Even though the directions in the fluctuation were not for long period, it showed frequent and speedy change. Sometimes this frequent change can be to respond to policy changes and the changes in

economic activities. Change in size of deposit directly affects the money available for loans and advances. Though frequent changes occurred, the size of deposit ratio for commercial banks in Ethiopia increased modestly. The more the deposit collected by commercial banks, the more they able to extend loan to their borrowers assuming other things remain constant.

Mean Values of Bank Specific Variables

Table 5: The Mean Valus of Bank Specific Variables for 18 Years

Banks	Obs.	Loan & Advance (in billions)	Operating Cost ratio	Bank Size	Liquidity Ratio	Provisions for NPL	Size of Deposit Ratio
Debub Global Bank	10	1.563	0.0658	21.72	0.4673	0.0030	0.6580
Addis Inter. Bank	11	1.278	0.0582	21.77	0.3799	0.0030	0.6586
Coop. Bank of Oromia	18	11.806	0.0505	22.37	0.4806	0.0045	0.7202
Lion Inter. Bank	16	5.671	0.0349	22.26	0.3703	0.0046	0.7407
Zemen Bank	14	3.982	0.0309	22.43	0.3758	0.0057	0.7490
Berhan Bank	13	4.53	0.0487	22.43	0.4237	0.0055	0.7439
Bunna Bank	13	4.689	0.0474	22.40	0.3005	0.0039	0.7041
Enat Bank	9	2.261	0.0327	22.49	0.2799	0.0028	0.7478
Abay Bank	12	4.675	0.0409	22.56	0.4563	0.0036	0.7479
Oromia Bank	14	6.378	0.0541	22.80	0.4016	0.0025	0.7897
Wegagen Bank	18	8.853	0.0371	23.08	0.3211	0.0037	0.7452
Hibret Bank	18	10.982	0.0315	23.07	0.3255	0.0023	0.7601
Nib Inter. Bank	18	10.197	0.0398	23.08	0.2960	0.0028	0.7462
Bank of Abyssinia	18	17.93	0.0344	23.30	0.2673	0.0596	0.7225
Awash Bank	18	24.28	0.0382	23.72	0.2489	0.0031	0.7404
Dashen Bank	18	18.354	0.0292	23.75	0.2847	0.0022	0.8008
Commercial Bank of Ethiopia	18	105.424	0.0162	26.01	0.5395	0.0070	0.6743

Source: Authors' Computation (2023)

Table 5 is very informative by comparing commercial banks' performance in different ways with each other between 2005 and 2022 in Ethiopia. The results show that Commercial Bank of Ethiopia, Awash Bank, Dashen Bank, Bank of Abyssinia and Cooperative Bank of Oromia were the top five loan and advance providers in Ethiopia. Hibret Bank and Nib International Bank respectively, also the nearest to top five loan providers. Except Commercial Bank of Ethiopia, the remaining top loan providers were private banks, having the same number of observations (18 years). In terms of their establishment, all of the top five banks including Hibret Bank and Nib International Bank were established before the year 2000.

Table 5, also revealed that banks with the largest size have less operating cost ratio. Commercial Bank of Ethiopia is the largest by asset size, but the least operating cost ratio. Dashen Bank has the least operating cost ratio among the private banks. This is because when banks build more asset and extend more loans, they can manage their operating costs through using economies of scale and cut costs with non-value addition.

In terms of their liquidity status, banks have different liquidity level over the study period as it is revealed by Table 5. The top three liquid banks over the study period were Cooperative Bank of Oromia, Debub Global Bank and Abay Bank with the liquidity ratio of 0.4806, 0.4673 and 0.4563 respectively. Awash Bank was less liquid compared to other banks with liquidity ratio of 0.2489. Banks with highest liquidity ratio are safe and can easily meet their short-term obligations and absorb if crisis emerge. It also builds confidence to the depositors and it can be one of the attracting forces for deposit collection. By the other side, banks with less liquid might be utilizing the deposit they collected and may indicate that they are banks with the highest size of deposit ratio. Evidently, though Awash Bank is less liquid, it was among the banks with the highest volume of deposit. But this conclusion may not work always because Debub Global Bank was with the lowest volume of deposit while having good liquidity status relatively as the data show.

Size of deposit ratio indicates the volume of deposit collected by banks. From Table 5, the top three banks with the highest volume of deposit were Dashen Bank, Oromia Bank and Hibret Bank with the deposit ratio of 0.8008, 0.7897 and 0.7601 respectively. Banks with the highest deposit get the opportunity to give more loan and advances. These banks were also the highest loan and advance providers and especially Dashen Bank was the highest loan provider among private banks next to Commercial Bank of Ethiopia (the public and largest loan provider).

As the descriptive statistics above show, the banks vary by size, deposit ratio, liquidity and the volume of loans and advances. There are variations in these variables over the study period too. We take into account the combined effects of these variables on bank loans and advances through regression analyses.

Diagnostic Tests

Before running regression analyses, all the necessary diagnostic tests (normality test, multicollinearity test, serial correlation (autocorrelation) test, heteroskedasticity test, model specification tests and cross-sectional dependence tests (in different alternative ways) are done and all the tests fit with the requirements of the model (See Appendix I).

The Choice between Fixed Effect and Random Effect Model

To choose between Fixed Effect or Random Effect model, there is a formal test which was developed by Hausman in 1978. The null hypothesis of the underlying Hausman test is that there is no substantial difference between FEM and REM estimators. Again, the test statistic developed by Hausman has an asymptotic χ^2 distribution. If the null hypothesis is not accepted, the conclusion is that REM is not appropriate and that we may be better off using FEM, in the case statistical inferences will be conditional on the εi in the sample (Gujarathi, 2004, P 651).

Table 6: Estimation result of both Fixed Effect and Random Effect Models

Variables	**FEM**		**REM**	
	Coef.	**P-value**	**Coef.**	**P-value**
Log of Lending Interest Rate	-0.5060	0.001	-0.2467	0.166
Log of Deposit Interest Rate	0.1349	0.010	0.1184	0.074
Operating Cost Ratio	0.8253	0.019	0.4263	0.262
Bank Size	0.4530	0.000	0.4237	0.000
Liquidity Ratio	-0.0992	0.001	-0.1785	0.000
Log of Provisions for NPL	0.0004	0.849	0.0028	0.326
Size of Deposit Ratio	0.0367	0.208	0.0800	0.029
Market Concentrations	1.0065	0.000	-0.1429	0.176
Log of Reserve Ratio	-0.0033	0.760	-0.0137	0.313
Log of GDP	-0.0676	0.17	-0.0293	0.538
Exchange Rate	0.0055	0.000	0.0048	0.000
Log of Broad Money Supply	0.0490	0.372	0.0604	0.382
Log of Treasury Bill	-.00255	0.006	-0.0135	0.257
Political Risk Index	-0.4445	0.000	-0.3669	0.017
DCMCR	-0.1177	0.000	-0.0979	0.000
_cons	0.5190	0.119	0.5544	0.192

Source: Authors computation (2023)

Testing for Fixed Effect or Random Effect on the basis of Hausman test effect

Test: Ho: difference in coefficients not systematic

chi2(15) = (b-B)'[(V_b-V_B)^(-1)](b-B)

= 264.77

Prob>chi2 = 0.0000
(V_b-V_B is not positive definite)

Therefore, the model is estimated using Fixed Effects regression. The choice of fixed effects model over a random effects model was based on the use of the Hausman test. Accordingly, the result from Hausman test showed in favor of fixed effect model than random effect since the P-values is 0.0000 which less than 0.05.

3.2 Regression result

Table 7**:** Fixed effect model regression result

Log of Loan and Advance	**Coef.**	**Robust Std. Err.**	**t-value**	**Sig.**
Log of Lending Interest Rate	-0.5060	0.2239	-2.26	0.038**
Log of Deposit Interest Rate	0.1349	0.0482	2.80	0.013**
Operating Cost	0.8259	0.4997	1.65	0.118
Bank Size	0.45309	0.0114	39.82	0.000***
Liquidity Ratio	-0.0992	0.0437	-2.27	0.037**
Log of Provisions for NPL	0.0004	0.0024	0.18	0.862
Size of Deposit Ratio	0.0367	0.0330	1.11	0.283
Market Concentrations	1.0065	0.1007	10.00	0.000***
Log of Reserve Ratio	-0.0033	0.0102	-0.32	0.751
Log of GDP	-0.0676	0.0295	-1.29	0.366
Exchange Rate	0.0055	0.0007	7.86	0.000***
Log of Broad Money Supply	0.0490	0.0490	1.00	0.332
Log of Treasury Bill	-0.0255	0.0090	-2.85	0.012**
Political Risk Index	-0.4445	0.0754	-5.90	0.000***
DCMCR	-0.1177	0.0216	-5.44	0.000***
_cons	0.5190	0.5286	0.98	0.341

Number of obs. = 237, Number of groups = 17, F(15,16) = 45571.06, Prob > F = 0.0000
R-sq: within = 0.9952, between = 0.9657, overall =0.9723

Source: Stata result (2023)

Table 7 presents the regression results of log transformed loans and advances on the various variables using FEM. The results show that lending interest rate has a significant negative impact on loans and advances of commercial banks. A 1% increase in lending interest rate results in decline in loans and advances by 0.52%. This depicts that loans and advances are sensitive to lending interest rate. Theoretically, it is common that the higher the lending interest rate, the less the borrowers come to banks to get loan due to increases in cost of borrowing. It discourages borrowing and then investment. Investors may suffer from getting loan. This might be one of the causes why the number of borrowers in Ethiopia become insignificant compared to the size of population and many of them excluded from bank services. The result is in line with the authors'

expectation. This result agree with Bhattarai (2019), Akinlo and Oni (2015), Baoko et al.,(2017) and Awdeh (2017).

Table 7 indicates that deposit interest rate has a positive and significant effect on loan and advances at 1% level of significance. This shows that a percentage increase in deposit interest rate causes an increase in loan and advances by 0.17%. When deposit interest rate increases, assuming other things remain constant, many depositors take their money to commercial banks and banks get the chance of collecting large pool of money in the form of deposit. Then this gives them the capacity to extend more loan to their customers. The theory indicates that when deposit interest rate increases, lending interest rate also increases to cover the cost of deposit. But this fact always may not indicate reality. When deposit rate increases more money flow to banks and banks can issue more loan without increasing interest to benefit from economies of scale taking in to consideration the monetary policy in place. Therefore, the higher the deposit rate, the higher the loans and advances and the finding is similar to Kingsley and Clem (2020).

Bank size has a positive and significant effect on bank loans and advances from the fixed effect regression result at 1% level of significance. When bank increases its asset by 1%, it increases its loans and advance by 0.45%. This implies that when the total asset increases, banks get capacity to give more and more loan and advances. The more the asset of the bank, the more the possibility for loan and advances. This finding is similar with Magoma et al (2022), Bhattarai (2019), Gnawali (2022), Funyina (2020) but against to Matousek and Solomon (2018).

The fixed effect regression result indicates that the liquidity ratio has negative and significant effect on the loans and advances. When liquidity ratio increases, the loans and advances that commercial banks extend to their borrower declines. The higher the liquidity ratio, the lower the possibility for lending, because large amount of money should be reserved for liquidity purpose which reduces the amount of money ready for loan. Liquidity is used as a cushion for commercial banks not to suffer from liquidity crises and to build the confidence of their customers. The result further implies that when liquidity ratio declines, large amount of money is ready for loans and advances. Unless care taken, decrease in liquidity causes bank panic because of loss of trust on the sustaining of the bank fearing that banks may face insolvency problem. This result is in agreement with Arintoko (2021), Adzis et al. (2018), Alkhazaleh (2017), but

opposite to Goet (2021), Matousek and Solomon (2018). Market concentration has strong positive and significant effect on loans and advances of banks at higher level. When market concentration increases, the loans and advances also increase. The higher the market concentration, the higher the loans and advances. This concentration may lead to monopoly by large banks like Commercial Bank of Ethiopia, which is backed by the government. The small banks can be negatively affected unless protected by regulatory framework. This result is similar with the findings of Laidroo (2014), but contradicted with Pham (2015) and Yitayaw (2021).

Exchange rate (Birr/USD) has strong effect on loan and advances of commercial banks. It has positive and significant influence on loan and advances at 1% of level of significance. An increase in an exchange rate (depreciation or devaluation in value of Birr) results in increase in loans and advances of commercial banks. The expectation is that the reduction in value of domestic currency negatively influences the loans and advances of commercial banks. But the result depicted that decline in the value of domestic currency by market or government action, increases the loan to be extended to borrowers. Of course, the objective of the Ethiopian government devaluating the domestic currency is to encourage export. When there is a decline in value of domestic currency, the exporting business motivated, many exporters borrow money from banks to buy the domestic product (the raw materials and few semi-processed) for export purpose. These exporters are giant businesses in Ethiopia and suck many loans from commercial banks. This result is supported by Ayodele (2012), Onaolapo and Shomade (2017) and Olumuyiwa et al (2012), but opposed by Bhattarai (2019) and Sarath and Pham (2015).

The treasury bill has negative and significant effect on the loans and advances of commercial banks in Ethiopia at 5% of level of significance indicating that when treasury bill increases by 1%, the loans and advances of Ethiopian commercial banks decline by 0.0234%. This implies when treasury bill increases, the possibility for loans and advances of commercial banks declines. This is when government announces large money amounts to sell its treasury, those who have money in bank withdraw and invest in government security to get fast and guaranteed return than waiting for return from commercial banks at deposit rate specified in monetary policy. This investment also even has a tax advantage. In Ethiopia, the real interest rate is mostly negative because of high inflation. When investors keep money in banks, the return from deposit and the inflation rate is not balanced. Always, inflation rate is higher and results to negative real

interest rate. Therefore, those who do have money prefer in short-term investment. This puts banks in pressure when large amount of money goes to government. When there is large money flow to government for liquid, guaranteed investment and tax advantage, banks are left with less amount of money for loans and advances. Further, this leads them to loss of interest income. This result is consistent with Awdeh (2017), Akpan et al (2022). Krishnamurthy and Vissing-Jorgensen (2015) and Choi and Robatto (2022).

On the basis of data obtained from World Bank country political risk rating, the political risk index has a negative and strong relationship with the loans and advances of Ethiopian commercial banks at 1% level of significance. When the political turmoil rises, it is obvious that the investment in operation and potential investments decline. Such situation seriously affects the commercial banks' performance in many dimensions. They lose confidence to extend new loan to those who are in need of expanding their investment or planning to engage in new investment. It does not only hinder the new loan, but also the collection of the outstanding loan. This may lead them to non-performing loan at the end. This is what is evident in Ethiopia especially since 2015/6. Lack of political stability affected the business and the performance of banks. Especially, the instability in Oromia region for long period of time and the war in Northern part of Ethiopia, Tigray region and currently in Amhara region created chaos to the normal operation of banks. Even, not only banks, but also the borrowers have no confidence to borrow from banks where there is political instability. In general, this creates negative relation between political risk and bank loans and advances. The result is in agreement the analysis of Porta et al (1997) and indicate that political instability and poor governance have a significant influence on the cost of doing business due to its inherent risk and uncertainty. This raises operational cost, creates uncertainty and, thereby, deters investment due to its distortive nature.

The change in minimum capital requirement, which is measured as dummy (before and after the directive issuance), has strong negative effect on the loan and advances of commercial banks in Ethiopia at 1% of level of significance. This is the effect of a policy change on commercial banks' capacity to hold adequate capital to enter or sustain in the banking business. Over the study period, the directive No. SBB/50/2011 and SBB/78/2021 raised the minimum capital required from 75 million Birr to 500 million Birr, and later to 5 billion Birr. This situation

indicates, the policy change in capital requirement had negative consequence on the loan and advances of commercial banks since 2011. Banks required to increase their capital amount to the required level, otherwise, other measurements like merging banks together if they are unable to meet the requirement until the grace period given. This may create fear to banks not to extend more loans and advances especially long-term loan because this amount of money is not in place during the deadline (cannot be in account of banks) and the possibility of uncollectible amounts. This may lead them to extend only short-term loan for short maturity and other services than long-term loan to satisfy the policy change.

Conclusion

Commercial banks are the spirit and the heart of economy especially for developing countries like Ethiopia where there is no developed capital market. The main objective of the study was to identify the key drivers of loans and advance of commercial banks in Ethiopia. Loans and advances of commercial banks are expressed as a function of bank specific, industry specific and macroeconomic factors. To address the objectives of the study, the authors applied quantitative approach and explanatory design. The are data obtained from seventeen commercial banks (both public and private commercial banks), National Bank of Ethiopia and the World Bank. For the estimation, Fixed Effect Model is applied to see the effect of the selected variables on commercial banks' lending and advance.

The descriptive statistics indicated that there is high concentration of assets, loans and advances, and deposits in the government owned Commercial Bank of Ethiopia. Total asset, total loans and advances, and deposits under the CBE account for 60%, 43.4% and 58.85% respectively over the study period. All private commercial banks took share of the remaining percentage together. On the other side the liquidity status of commercial banks highly declined and demands the monetary policy intervention to safeguard the industry. Loans over the study period increased at industry level though the number of borrowers were insignificant in relation to the Ethiopian population. The study revealed that deposit interest rates, bank size, market concentration, and exchange rate indicated that they have strong and significant effect on bank loans and advances. On the other side, lending interest rate, bank liquidity, treasury bill, political risk index of the country and the change in minimum capital requirement strongly and negatively influence loans and advances. But operating cost, provisions for NPL, reserve ratio, GDP and broad money

supply have statistically insignificant effect on bank loans and advances in Ethiopia. In general, the loan and advances were explained by both the internal and the external factors. The external factors have stronger influences than the bank specific characteristics. The results have some policy implications. The industry is dominated by the public (government owned) bank in terms of loans, deposits and assets. This requires designing policy to encourage those private banks to be competitive in all directions. This can be done through reducing the high interventions with public bank and making ready the banking business environment fair for all. On the other hand, rather than increasing number of banks by different reasons, it is preferable to empower them to build more assets, highly mobilize deposits and enable them to serve the economy. This solves the problems related to liquidity, capital accumulation and competitiveness with either domestic or foreign banks.

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Appendix I: summary of all the result of diagnostic tests

Tests Conducted	P-value
Normality test	Prob>chi2 =0.0703
Multicollinearity	Value =8.26
Serial Correlation	F(1, 16) = 4.105, Prob > F = 0.0598
Model Specifications	_hat = 0.000, _hatsq = 0.117
Heteroskedasticity	chi2(1) = 0.16 , Prob > chi2 = 0.6872
Cross-sectional dependence	Friedman's test = 21.929, Pr = 0.1455