Understanding the Drivers of Bank Lending of the Banking Sector in the Central African Economic and Monetary Community (CEMAC) Zone

[1]Nnane Eric Sumelong., [2]Nwahanye Emmanuel (Ph.D)., [3]Visemih William Muffee

[1]Ph.D Research Fellow, Department of Banking and Finance, Faculty of Social and Management Sciences, Univeristy of Buea-Cameroon

[2]Associate Professor of Management, Department of Economics and Management, Faculty of Social and Management Sciences, Univeristy of Buea-Cameroon

[3]Professor of Accounting, Faculty of Social and Management Sciences, Univeristy of Buea-Cameroon

DOI: https://dx.doi.org/10.47772/IJRISS.2024.807161

Received: 02 July 2024; Accepted: 06 July 2024; Published: 13 August 2024

ABSTRACT

The study has observed that despite the reforms adopted in the Central African Economic and Monetary Community **(**CEMAC) countries to prevent a situation similar to the subprime crisis experienced in the 1970s, the banking sector in the CEMAC zone has remained unprofitable. With increase in globalisation across the globe, the study therefore examines the drivers of financial globalisation on bank lending of the banking sector in the CEMAC zone. Using panel data obtained from IMF Financial Development database and the World Development Indicators, the study carried out the investigation with the aid of the Feasible Generalized Least Squares (FGLS) and Panel Quantile on Quantile regressions. The finding reveals that financial globalization and bank concentration have strong negative relationships with bank lending, while the impact of regulatory capital is inconclusive. GDP and gross fixed capital formation also exhibit negative associations with lending. Base on the findings, the study suggests that policymakers should carefully assess the effects of financial globalisation and bank concentration, promote competition and diversification in the banking sector, and prioritize policies that support macroeconomic stability and growth.

Key Words: Financial Globalisation; Bank Lending; CEMAC zone

INTRODUCTION

The integration of financial markets across national borders has facilitated the flow of capital, increased financial interdependence, and opened up new opportunities for economic growth, with the banking sector playing a crucial role as a conduit for financial intermediation and the allocation of capital (De Haas and Van Horen, 2011; Amit, 2016; Balcilar et al., 2019; and Tesega, 2022). The implementation of regulatory reforms in the banking industry and banks' participation in a wider variety of financial services are two aspects of this financial globalization (Klomp and Haan, 2015), which has advanced significantly on a worldwide scale, as evidenced by the growth in outstanding intra-EU financial flows, from just under 60% of EU GDP in 2001 to nearly 100% in 2022 (Batini, 2023). Before the global financial crisis, between 1980 and 2007, worldwide foreign assets and liabilities increased six-fold, from around 60% of world GDP to more than 360%, with gross international financial flows rising from 6% to 36% of world GDP (Batini, 2023). After this period, capital flows in India averaged -46.08 USD Million from 2010 until 2023, but foreign portfolio investment increased by 83.8 USD in Sep 2023, indicating an improvement between 2019 and 2023 (Batini, 2023).

According to the passage, the debate around the impact of financial globalization on the banking sector in Africa is mixed. Some academics argue that financial globalization boosts bank competitiveness and lowers interest rates, which could lead borrowers to sever ties with banks, negatively impacting the financial system (Nasreen et al., 2020; Tesega, 2022). Additionally, opening capital accounts can lead to capital outflows that may be

detrimental to the growth of the local financial system, though some argue that capital outflows, not inflows, should be the primary concern (Stiglitz, 2000; Ndikumana and Boyce, 2021; Tesega, 2022). Conversely, others have found that financial globalization can have a favorable impact on the banking system (Baltagi et al., 2009). The passage also notes that financial globalization has facilitated increased capital flows to sub-Saharan Africa, with non-official net capital flows growing from $4 billion in the 1980s and 1990s to $60 billion in 2017 (IMF, 2017). This has included a significant increase in portfolio debt flows, particularly from the public sector (IMF, 2017). Furthermore, the banking sector in Africa has seen growth, with commercial bank revenue expected to rise from $86 billion in 2017 to $129 billion by 2022 (World Economic Outlook, 2022).

The CEMAC region's capital market is still in its infancy, making bank loans the main source of indirect funding for the economy (Hicks, 1974; Fouda, 2009; Ningaye et al., 2014). Efficient banks have the ability to enhance outputs without increasing inputs or decrease inputs without reducing outputs, making it important to pursue their efficiency through financial globalisation (Chen, 2005). Furthermore, a globalized banking system can promote bank lending and profitability in the area through technical (Brou, 2010), financial (Kane, 1988; Sobreira, 2004), and production factor efficiency (Levine, 1997). However, the banking crisis of the 1980s has significantly changed the CEMAC banking market structure in favour of more competition, leading to reduced intermediation costs, increased savings and investment levels, and stimulated economic growth (Rhoades and Rutz, 1982). Despite this, the banking and financial system in the CEMAC zone is deteriorating due to the high percentage of nonperforming loans and the sector's high exposure to the outstanding debts of public businesses (Africa Economic Outlook, 2023).

Despite the reforms adopted in the CEMAC countries to prevent a situation similar to the subprime crisis experienced in the 1970s, the banking sector in the CEMAC zone has remained unprofitable. According to data from the World Bank, in 1991 CEMAC banks loaned to the private sector a total of 18% of their GDP, while in 2017 this figure was only 14% (Avom and Eyeffa, 2007; Ekomane and Yamb, 2016; Ngono and Pone, 2021). This fact leads to the hypothesis that banks would struggle to be profitable if they did not sell their primary product, and they may be more willing to take on riskier initiatives that potentially result in large returns (Berger et al., 2005; Ngono and Pone, 2021).

The banking sector in the CEMAC Zone has been grappling with elevated levels of non-performing loans, which negatively impact profitability and financial stability (IMF, 2019). Additionally, the CEMAC banking sector exhibits a concentration of lending to a small number of large borrowers, often connected to political or influential elites, which raises concerns about the fairness, transparency, and efficiency of credit allocation and limits the availability of credit for other productive sectors of the economy, hindering inclusive economic development (Molua, 2016; IMF, 2019). Therefore, this study begins to ponder on the role of financial globalisation, which is a recent move in the finance literature, on bank lending of the banking sector of the CEMAC zone.

The significance of this study lies in its examination of the impact of financial globalization on the banking sector in the CEMAC region. The study highlights the mixed debate around the effects of financial globalization, with some studies suggesting it can boost bank competitiveness and lower interest rates, while others argue it can lead to capital outflows detrimental to the local financial system. Importantly, the CEMAC region's capital market is still in its infancy, making bank loans the primary source of indirect funding for the economy. Efficient banks have the ability to enhance outputs and promote lending and profitability through various efficiencies. However, the CEMAC banking sector has faced challenges, including high non-performing loans, concentration of lending to political or influential elites, and declining private sector lending as a percentage of GDP. Investigating the role of financial globalization in this context is crucial to understanding its impact on the banking sector's stability, efficiency, and ability to support inclusive economic development in the region (De Haas and Van Horen, 2011; Amit, 2016; Balcilar et al., 2019; Tesega, 2022).

LITERATURE REVIEW

Several studies have been advanced to investigate the relationship. For instance, Eichengreen and Gupta (2019) find that while financial globalization can contribute to increased bank lending, it can also raise credit risk and lead to a deterioration in credit quality. They emphasize the importance of prudential regulations and risk

management practices to mitigate the potential negative consequences. In contrast, Buch and Goldberg (2017) and Goldberg and Hudgins (2010) suggest that financial globalization can have positive effects on bank lending, particularly during banking crises, due to factors like foreign bank presence and access to foreign funding. Claessens and van Horen (2014) highlight the role of information sharing and financial transparency in strengthening the positive relationship between financial globalization and bank lending. Additionally, cull et al. (2009) and Beck et al. (2009) find that capital inflows, foreign bank ownership, and improved access to foreign funding are key channels through which financial globalization influences bank lending behavior.

Several studies have examined the determinants of bank profitability and lending. Bunyaminu et al. (2021) found that financial leverage has a significant negative impact on bank earnings in Ghana, while bank size positively impacts profitability. Ozili (2021) showed that cost-effectiveness, non-performing loans, and overhead costs are important predictors of bank profitability in South Africa, Nigeria, and the US. Saif-Alyousfi (2020) examined the impact of bank-specific, financial structure, and macroeconomic factors on bank profitability in Asian economies, finding that unconventional businesses, capitalization, and loan exposure increase profitability, while non-performing loans decrease it. Yakubu (2019) discovered a significant inverse relationship between corruption and bank profitability in Ghana. Other studies have focused on the determinants of bank lending. Yitayaw (2021) found that deposit volume, capital adequacy, and bank size positively impact commercial bank lending in Ethiopia, while cash reserve requirements, bank concentration, and lending rates negatively affect it. Hien and Van Dan (2020) showed that capital buffers, asset quality, and profitability tend to accelerate loan growth in the Vietnamese banking sector. Isa et al. (2019) found that deposits, liquidity, and bank size positively influence commercial bank lending in Malaysia, while non-performing loans have a negative effect.

The extant literature has examined the relationship between financial globalization and bank lending extensively, with studies exploring the potential positive and negative effects. However, the majority of these studies have focused on developed economies, emerging markets, or specific country contexts. There appears to be a notable gap in the literature regarding the effects of financial globalization on bank lending in the CEMAC (Economic and Monetary Community of Central Africa) zone, a region characterized by its unique economic and financial structures. The CEMAC zone comprises six Central African countries (Cameroon, Central African Republic, Chad, Republic of Congo, Equatorial Guinea, and Gabon) that share a common currency and financial system, which may result in distinct dynamics in the relationship between financial globalization and bank lending compared to other regions. Additionally, the CEMAC zone has experienced significant economic and financial reforms in recent years, which could further influence the impact of financial globalization on bank lending behavior. Therefore, a new study that investigates the effects of financial globalization on bank lending in the specific context of the CEMAC zone would contribute to the existing literature and provide insights into the unique dynamics of this region (Eichengreen and Gupta, 2019; Buch and Goldberg, 2017; Goldberg and Hudgins, 2010; Claessens and van Horen, 2014; Cull et al., 2009; Beck et al., 2009).

METHODOLOGICAL ISSUES

3.1 The Model

Theoretical frameworks, such as the Financial Liberalization Theory, suggest that increased financial globalization leads to greater access to international capital markets, which can positively impact bank lending. According to Rajan and Zingales (2003), financial globalization can enhance the efficiency and stability of domestic financial systems, thereby stimulating credit expansion and lending activities. Empirical studies provide further insights into the relationship between financial globalization and bank lending. For instance, Demirgüç-Kunt and Detragiache (2002) conducted a cross-country analysis and found that financial globalization is associated with higher levels of domestic credit to the private sector. Similarly, Claessens and van Horen (2014) found that financial globalization positively affects bank lending growth in emerging market economies. Furthermore, research focusing on specific regions can shed light on the effects of financial globalization on bank lending in the CEMAC zone. For example, Chuku et al. (2017) examined the impact of financial globalization on bank lending in Sub-Saharan Africa, including CEMAC countries. Their findings suggest that financial globalization positively influences bank lending, indicating that increased integration with global financial markets can lead to higher credit provision by banks. Based on the theoretical frameworks and

empirical evidence, a model on the effect of financial globalization on bank lending in the CEMAC zone can be specified.

$$BankL_{it} = \beta_0 + \beta_1 FinGlob_{it} + \beta_i \chi_{it} + \mu_{it} \dots\dots\dots\dots\dots\dots\dots\dots (3.1)$$

Where $BankL_{it}$ is bank lending, $FinGlob_{it}$ is financial globalisation, χ_{it} is a vector of control variables, β_0 is the constant term, β_1 is the direct effect of financial globalisation on bank lending.

3.2 Variables and Data Description

To measure Bank lending (LDR), we use total loans to deposit ratio. This is in line with a study by Mohamed, (2022) who focused on factors affecting bank lending in Tunisia. Financial globalisation (FINGLO) is measured using the Chinn-Ito Index, which was developed by economists Menzie Chinn and Hiro Ito, specifically focuses on financial globalization. It measures the degree of financial openness by considering various dimensions, such as capital account restrictions, the presence of controls on foreign exchange transactions, and the degree of financial integration. The index covers both de jure (formal restrictions) and de facto (actual practices) measures of financial globalization (Chinn and Ito, 2008). We control for the effect of macroeconomic fundamentals and banking sector variables such as Real GDP growth (LOGGDP), Inflation (INFLA), real exchange rate (REER), gross fixed capital formation (LOGGFCK) bank concentration (BC), and bank regulatory capital (BRC) (Athanasoglou et al., 2008; Demirguc-Kunt and Huizinga, 1999; Dietrich and Wanzenried, 2014; Garcia-Herrero et al., 2009; Pasiouras and Kosmidou, 2007). The data for variables is obtained from IMF Financial Development database, (2022) which is drawn from a number of data sources such as the World Bank Fin Stats, IMF's Financial Access Survey, Dealogic corporate debt database, and Bank for International Settlement (BIS) debt securities database. The data for other variables such as foreign capital inflows, Inflation rate as per consumer prices (Annual %), etc, are all obtained from World Development Indicators (2022).

Table 1: Summary Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
FINGLO	126	316926.9	594735.5	-662113	4173669
LDR	120	76.94071	29.05085	19.91186	157.4107
REER	132	100.2306	7.488707	84.15536	115.1623
INFLA	125	2.971417	3.156713	-8.97474	14.89868
LOGGDP	126	7.523322	1.277398	5.113046	10.04075
LOGGFCK	121	21.40833	1.262581	18.10596	23.06737
BC	132	80.94197	5.497496	71.01774	87.89189
BRC	132	17.87636	2.905712	11.86918	24

Source: Computed by Author(s), 2024

The average FINGLO is 316926.9, with a standard deviation of 594735.5. The minimum FINGLO is -662113, and the maximum is 4173669. This variable likely represents a financial indicator related to the institutions' financial assets or liabilities, but further context is needed for a specific interpretation. The average LDR is 76.94071, with a standard deviation of 29.05085. The minimum LDR is 19.91186, and the maximum is 157.4107. This indicates that, on average, the institutions have a loan-to-deposit ratio of 76.94071, suggesting a relatively high level of lending activities compared to their deposit base. The average REER is 100.2306, with a standard deviation of 7.488707. The minimum REER is 84.15536, and the maximum is 115.1623. REER likely

represents a real effective exchange rate, but additional information is needed for a more precise interpretation. The average INFLA is 2.971417, with a standard deviation of 3.156713. The minimum INFLA is -8.97474, and the maximum is 14.89868. This suggests that, on average, the institutions operate in an environment with moderate inflation, but there has been some variability over time. The average LOGGDP is 7.523322, with a standard deviation of 1.277398. The minimum LOGGDP is 5.113046, and the maximum is 10.04075. LOGGDP likely represents the logarithm of GDP (Gross Domestic Product), indicating the size of the economy. The values suggest variability in GDP levels among the institutions' operating countries. The average LOGGFCK is 21.40833, with a standard deviation of 1.262581. The minimum LOGGFCK is 18.10596, and the maximum is 23.06737. LOGGFCK likely represents the logarithm of gross fixed capital formation, indicating investment in physical assets. The values suggest variability in the level of investment among the institutions' operating countries. The average BC is 80.94197, with a standard deviation of 5.497496. The minimum BC is 71.01774, and the maximum is 87.89189. BC likely represents a measure of bank concentration, indicating the level of concentration or competition in the banking sector. The values suggest some variability in the level of bank concentration among the institutions' operating countries. The average BRC is 17.87636, with a standard deviation of 2.905712. The minimum BRC is 11.86918, and the maximum is 24. BRC represents the level of bank regulatory capital, indicating the financial strength and resilience of the institutions. The values suggest some variability in the level of regulatory capital among the institutions.

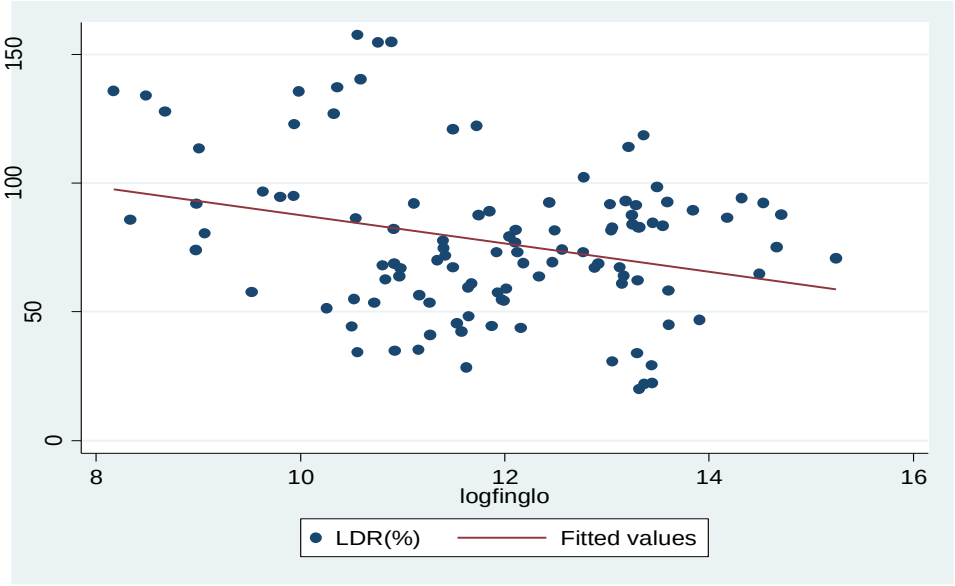
Table 2: Pesaran's Second Generation Unit Root test

Variables	**Levels**		**First Difference**		**Order**
	Z[t-bar]	**P Value**	**Z[t-bar]**	**P Value**	
FINGLO	-2.379	0.059	--	--	I (0)
LDR	-2.496	0.034	--	--	I (0)
REER	10.907	0.000	--	--	I (0)
INFLA	-3.352	0.000	--	--	I (0)
LOGGDP	-1.655	0.605	-3.307	0.000	I (1)
LOGGFCK	-1.438	0.075	--	--	I (0)
BC	11.035	0.000	--	--	I (0)
BRC	11.035	0.000	--	--	I (0)

Source: Computed by Author(s), 2024

From the table, FINGLO (Financial Globalization), LDR (Loan-to-Deposit Ratio), REER (Real Effective Exchange Rate), and INFLA (Inflation) all have very low p-values (below 0.05 or 0.01), indicating that these variables are stationary at the levels and do not require differencing to achieve stationarity. Therefore, they are integrated of order zero (I (0)). LOGGDP (Log of GDP) has a Z[t-bar] value of -1.655 and a relatively high p-value of 0.605, indicating that it is not stationary at the levels and requires differencing. Therefore, LOGGDP is integrated of order one (I (1)). For the first differences of the variables, only LOGGDP is considered, as it is the only variable that was found to be non-stationary at the levels. The first difference of LOGGDP has a Z[t-bar] value of -3.307 and a very low p-value of 0.000, indicating that it is stationary after differencing and does not require further differencing. Therefore, the first difference of LOGGDP is integrated of order zero (I (0)). The majority of the variables in the study (FINGLO, LDR, REER, INFLA, BC, and BRC) are stationary at the levels (I (0)), meaning they do not exhibit a unit root and have a stable mean over time. LOGGDP, on the other hand, is non-stationary at the levels but becomes stationary after taking the first difference (I (1)), indicating that it exhibits a trend or drift that can be eliminated by differencing.

Figure 1: Fitted Scatter Plot on the Expected Relationship Between financial globalisation and bank lending



Source: Computed by Author(s), 2024

We observe that the data points cluster around a downward-sloping line or curve, it indicates a negative relationship between financial globalization and bank lending. This means that as financial globalization increases, the level of bank lending tends to decrease. We therefore estimate the exact relationship using econometrics techniques.

3.3 Estimation Strategy

The model specified in equation (3.1) is estimated using the Feasible Generalized Least Squares (FGLS) method. FGLS is a suitable estimation technique when there is heteroscedasticity present in the data, which means that the variance of the error term may differ across observations. In equation (3.1), the error term μit captures the unobserved factors that can affect bank lending. These unobserved factors may introduce heteroscedasticity into the model, as the magnitude of their impact could vary across different observations. FGLS addresses this issue by estimating the model in two stages. In the first stage, the variance of the error term is estimated using an auxiliary regression, which allows for the identification of the heteroscedasticity pattern. In the second stage, the model is re-estimated using weights derived from the first stage to obtain consistent and efficient parameter estimates. By employing FGLS, the model can provide unbiased and efficient estimates of the coefficients, even in the presence of heteroscedasticity. This helps to ensure the validity and reliability of the results. To specify the model in the form of Feasible Generalized Least Squares, we introduce the weighting matrix Ωit, which captures the heteroscedasticity structure of the error term. The model can be written as:

$$\left[BankL_{it} - \beta_0 - \beta_{1FinGlob_{it}} - \beta_{i\chi_{it}}\right]\Omega_{it}^{-\frac{1}{2}} = [\mu_{it}]\Omega_{it}^{-\frac{1}{2}} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (3.2)$$

Here, $\Omega it^{(-1/2)}$ represents the inverse square root of the weighting matrix, and it is used to adjust the dependent variable and the error term. The coefficients β0, β1, and βi are then estimated using Feasible Generalized Least Squares, taking into account the heteroscedasticity structure of the error term.

In order to analyze the robustness of the model, quantile regression is employed. Quantile regression allows us to examine how the relationships between the variables differ across different quantiles of the dependent variable, providing a comprehensive understanding of the heterogeneity in the responses. The Bank Lending Channel theory suggests that financial globalization can affect bank lending activities. Increased financial globalization may provide banks with improved access to global capital markets, leading to an expansion in bank lending. This theory implies a positive relationship between financial globalization and bank lending. (Cetorelli and Goldberg, 2012) The Empirical studies have provided insights into the relationship between financial

globalization and bank lending. For example, Claessens et al. (2001) examined the impact of financial globalization on bank lending in developing countries. They found that financial globalization positively affects bank lending, particularly in countries with well-developed financial systems. This evidence supports the notion that financial globalization can stimulate bank lending activities. To model the effects, we can consider the following model specification:

$$BankL_{it} = \beta_0 + \beta_1 FinGlob_{it} + \beta_i \chi_{it} + \mu_{it} \dots\dots\dots\dots\dots\dots\dots\dots (3.1)$$

Bank Lit represents the level of bank lending in the CEMAC zone at time t.

Fin Globit represents the level of financial globalization in the CEMAC zone at time t.

χit is a vector of control variables that influence bank lending.

β0 is the contant term, β1, β2, βi are the parameters to be estimated.

μit represents the error term capturing unobserved factors.

To specify the models (Equations 3.10) in the form of quantile regression, we introduce the quantile parameter, τ, which represents the specific quantile of interest. The quantile regression models is written as follows:

Bank Lending Model (Quantile Regression Form):

$$BankLit(\tau) = \beta 0(\tau) + \beta 1(\tau) * FinGlobit + \beta i * \chi it + \mu it(\tau) \dots\dots\dots\dots\dots (QR\ 3.3)$$

Bank Lit(τ) represents the τth quantile of the bank lending distribution in the CEMAC zone at time t. Fin Globit represents the level of financial globalization in the CEMAC zone at time t. χ_it is a vector of control variables that influence bank lending and profitability. β0(τ), β1(τ), βi are the parameters to be estimated for the τth quantile. μit (τ) represents the error term capturing unobserved factors for the τth quantile.

By estimating these quantile regression models, we can examine how the coefficients (β1(τ) in QR 3.10 vary across different quantiles of the bank lending distributions. This allows us to understand how the relationship between financial globalization and the outcome variables changes at different points of these distributions. Quantile regression provides a flexible framework to capture the heterogeneity and potential asymmetries in the responses, offering a more nuanced understanding of the impact of financial globalization on bank lending in the CEMAC zone (Koenker and Bassett, 1978).

ECONOMETRIC ESTIMATES AND DISCUSSIONS

Table 4.5: Regression Estimates

	(Pooled Ordinary Least Squares)	**(Fixed Effect)**	**(Random Effect)**	**(Feasible Generalized Least Squares)**
VARIABLES	**LDR**	**LDR**	**LDR**	**LDR**
LOGFINGLO	-2.309	0.0135	-2.309	-6.852***
	(1.760)	(1.746)	(1.760)	(1.457)
BC	-1.752***	-1.960***	-1.752***	-1.368***
	(0.422)	(0.388)	(0.422)	(0.445)
BRC	0.405	0.606	0.405	0.900
	(0.895)	(0.815)	(0.895)	(0.958)

ISSN No. 2454-6186 | DOI: 10.47772/IJRISS |Volume VIII Issue VII July 2024

REER	0.810*	0.781	0.810*	0.634
	(0.468)	(0.536)	(0.468)	(0.522)
INFLA	-1.222*	-1.042*	-1.222*	-0.0564
	(0.702)	(0.604)	(0.702)	(0.785)
LOGGDP	-2.538	16.34	-2.538	-11.87***
	(2.544)	(11.08)	(2.544)	(1.835)
LOGGFCK	-13.60***	-27.07***	-13.60***	-23.99***
	(2.765)	(5.800)	(2.765)	(7.923)
Constant	471.8***	606.2***	471.8***	279.4***
	(68.18)	(83.78)	(68.18)	(70.05)
Observations	105	105	105	100
Model Validation Tests				
R-squared	0.555	0.470		
Modified Wald test for groupwise heteroskedasticity		69.41***		
Hausman		-20.97***		
Wald chi2(7)	17.30***	11.64***	121.12***	92.17***
Number of id		6	6	6

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Source: Computed by Author(s), 2024

The model validation tests provide important information about the validity of the coefficients estimated in different regression models. In this case, we have four models: Pooled Ordinary Least Squares (OLS), Fixed Effect, Random Effect, and Feasible Generalized Least Squares (FGLS). The Modified Wald test for groupwise heteroskedasticity examines whether there is significant heteroskedasticity in the model. We can see that the test result is reported as 69.41***. The "***" indicates that the test result is statistically significant at the 1% level. Since the test for heteroskedasticity is significant, it suggests that the assumption of homoskedasticity (constant variance of the error term) is violated in the Pooled OLS model. Therefore, the coefficients estimated in the Pooled OLS model may not be valid. The Hausman test is a specification test that helps us choose between the Fixed Effect and Random Effect models. It examines whether the individual-specific effects (fixed effects) are correlated with the regressors. The test result is reported as -20.97***. The "***" indicates that the test result is statistically significant at the 1% level. The significant Hausman test suggests that the Fixed Effect and Random Effect models yield different coefficient estimates, indicating that the individual-specific effects are correlated with the regressors. Therefore, we should choose the Fixed Effect model over the Random Effect model. Based on the model validation tests, we can reject the validity of the coefficients estimated in the Pooled OLS model due to heteroskedasticity. Additionally, we should choose the Fixed Effect model over the Random Effect model due to the significant Hausman test result. Nonetheless, the inferential power of the FE model is weakened by the problem of cross sectional dependence, as such, we focus on the FGLS estimates.

The coefficients estimated in the Feasible Generalized Least Squares (FGLS) model provide information about the direction, magnitude, and significance of the relationships between the independent variables and the dependent variable (LDR). The coefficient estimate for log of financial globalisation is -6.852***. The negative sign indicates an inverse relationship between log of financial globalisation and bank lending (LDR). Specifically, a one percent increase in the log of financial globalisation is associated with a decrease of approximately 6.852 percent in LDR, holding other variables constant. The coefficient estimate is statistically significant at the 1% level, suggesting a strong and negative relationship between the log of financial globalisation and LDR in the FGLS model. The coefficient estimate for bank concentration is -1.368***, with a standard error of 0.445. The negative sign indicates a negative relationship between bank concentration and bank lending. A one percent increase in bank concentration is associated with a decrease of approximately 1.368 percent in bank lending, while controlling for other variables. The coefficient estimate is statistically significant at the 1% level, indicating a robust and negative relationship between bank concentration and bank lending in the FGLS model.

The coefficient estimate for bank regulatory capital is 0.900, with a standard error of 0.958. The positive sign suggests a positive relationship between bank regulatory capital and bank lending. However, the coefficient estimate is not statistically significant at conventional levels ($p>0.1$), indicating that we cannot draw a strong conclusion about the relationship between bank regulatory capital and bank lending based on the FGLS model results. The coefficient estimate for real exchange rate is 0.634, with a standard error of 0.522. The positive sign indicates a positive relationship between real exchange rate and bank lending. A one percent increase in real exchange rate is associated with an increase of approximately 0.634 percent in bank lending, while controlling for other variables. However, the coefficient estimate is not statistically significant at conventional levels ($p>0.1$), suggesting that the relationship between real exchange rate and bank lending may not be statistically robust in the FGLS model.

The coefficient estimate for inflation rate is -0.0564, with a standard error of 0.785. The negative sign suggests a negative relationship between inflation rate and bank lending. A one percent increase in inflation rate is associated with a decrease of approximately 0.0564 percent in bank lending, while holding other variables constant. However, the coefficient estimate is not statistically significant at conventional levels ($p>0.1$), indicating that the relationship between inflation rate and bank lending may not be statistically robust in the FGLS model. The coefficient estimate for log of gross domestic product is -11.87***, with a standard error of 1.835. The negative sign indicates an inverse relationship between log of gross domestic product and bank lending. A one percent increase in log of gross domestic product is associated with a decrease of approximately 11.87 percent in bank lending, controlling for other variables. The coefficient estimate is statistically significant at the 1% level, indicating a strong and negative relationship between log of gross domestic product and bank lending in the FGLS model.

The coefficient estimate for log of gross fixed capital formation is -23.99***, with a standard error of 7.923. The negative sign suggests an inverse relationship between log of gross fixed capital formation and bank lending. A one percent increase in log of gross fixed capital formation is associated with a decrease of approximately 23.99 percent in bank lending, holding other variables constant. The coefficient estimate is statistically significant at the 1% level, indicating a robust and negative relationship between log of gross fixed capital formation and bank lending in the FGLS model.

Table 4.6: Robustness Check Through Quantile on Quantile Regression

	(25% Quantile)	**(50% Quantile)**	**(75% Quantile)**
VARIABLES	**LDR**	**LDR**	**LDR**
LOGFINGLO	-2.747	-1.951	-6.068*
	(2.330)	(2.357)	(3.407)
BC	-1.979***	-1.887**	-2.204**

	(0.720)	(0.728)	(1.052)
BRC	1.233	0.948	2.691
	(1.544)	(1.561)	(2.258)
REER	0.486	-0.205	-1.083
	(0.804)	(0.813)	(1.176)
INFLA	-0.689	-0.160	1.057
	(1.317)	(1.332)	(1.925)
LOGGDP	-10.04	7.671	18.24
	(26.64)	(26.95)	(38.96)
LOGGFCK	-18.51	-24.65*	-19.38
	(14.41)	(14.58)	(21.08)
Constant	181.5	253.6**	401.0**
	(114.5)	(115.9)	(167.5)
Observations	100	100	100

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Source: Computed by Author(s), 2024

The coefficient of LOGFINGLO, representing the logarithm of financial globalization, shows a negative relationship with bank lending across all quantiles. At the 25% quantile, a 1% increase in LOGFINGLO is associated with a decrease in bank lending by approximately 2.747%. At the 50% quantile, the coefficient is slightly smaller, indicating a decrease in bank lending by approximately 1.951% for a 1% increase in LOGFINGLO. At the 75% quantile, the coefficient is larger and statistically significant (*), suggesting a substantial decrease in bank lending by approximately 6.068% for a 1% increase in LOGFINGLO. The negative coefficients indicate that higher levels of financial globalization are associated with reduced bank lending activity across all quantiles. The coefficient of BC, representing bank concentration, shows a negative relationship with bank lending across all quantiles. At the 25% quantile, a 1% increase in BC is associated with a decrease in bank lending by approximately 1.979%. At the 50% quantile, the coefficient is slightly smaller, indicating a decrease in bank lending by approximately 1.887% for a 1% increase in BC. At the 75% quantile, the coefficient is also negative and statistically significant (**), suggesting a decrease in bank lending by approximately 2.204% for a 1% increase in BC. The negative coefficients suggest that higher levels of bank concentration are associated with reduced bank lending across all quantiles.

The coefficient of BRC, representing bank regulatory capital, does not show a consistent pattern across quantiles. At the 25% and 50% quantiles, the coefficients are positive but small in magnitude, indicating a modest positive association between bank lending and regulatory capital. However, the coefficients are not statistically significant at conventional levels. At the 75% quantile, the coefficient increases in magnitude but remains statistically insignificant. These results suggest that the relationship between bank regulatory capital and bank lending is not consistently significant across different quantiles. The coefficient of REER, representing the real exchange rate, does not show a consistent pattern across quantiles and is statistically insignificant across all quantiles. The small magnitudes of the coefficients indicate that changes in the real exchange rate have a limited

impact on bank lending across all quantiles. The lack of statistical significance suggests that the relationship between the real exchange rate and bank lending is not robust in this analysis.

The coefficient of INFLA, representing inflation, does not show a consistent pattern across quantiles and is statistically insignificant across all quantiles. The small magnitudes of the coefficients indicate that changes in inflation have a limited impact on bank lending across all quantiles. The lack of statistical significance suggests that the relationship between inflation and bank lending is not robust in this analysis. The coefficient of LOGGDP, representing the log of gross domestic product, does not show a consistent pattern across quantiles and is statistically insignificant across all quantiles. The coefficients are large in magnitude, but the wide standard errors indicate substantial uncertainty in the estimates. These results suggest that the relationship between gross domestic product and bank lending is not statistically significant in this analysis.

The coefficient of LOGGFCK, representing the log of gross fixed capital formation, shows a negative relationship with bank lending at the 25% quantile and a positive relationship at the 50% quantile. However, at the 75% quantile, the coefficient becomes negative again. At the 25% quantile, a 1% increase in LOGGFCK is associated with a decrease in bank lending by approximately 18.51%. At the 50% quantile, there is an increase in bank lending by approximately 24.65% for a 1% increase in LOGGFCK. At the 75% quantile, the coefficient becomes negative again, indicating a decrease in bank lending by approximately 19.38% for a 1% increase in LOGGFCK. The differing directions of the coefficients across quantiles suggest a nonlinear relationship between gross fixed capital formation and bank lending.

The log of financial globalisation is negatively related to bank lending. This suggests that as financial globalisation increases, bank lending tends to decrease. This finding is consistent with the argument that increased financial globalisation may lead to reduced bank lending due to factors such as increased risk aversion and capital outflows (Obstfeld, 2015). Bank concentration exhibits a negative relationship with bank lending. A higher degree of bank concentration is associated with lower levels of bank lending. This finding aligns with the idea that concentrated banking systems may face reduced competition and increased risk of market power abuse, leading to decreased lending (Boyd & De Nicolo, 2005).

The relationship between bank regulatory capital and bank lending is inconclusive. While the coefficient estimate suggests a positive relationship, it is not statistically significant. This lack of significance indicates that we cannot draw a strong conclusion about the relationship between bank regulatory capital and bank lending based on the FGLS model results. The real exchange rate shows a positive relationship with bank lending, but it is not statistically robust. This suggests that changes in the real exchange rate may have a positive impact on bank lending, potentially due to increased export competitiveness and improved economic conditions. However, the lack of statistical significance implies that the relationship may not be reliable or consistent across different contexts. The inflation rate exhibits a negative relationship with bank lending, but it is not statistically significant. This suggests that higher inflation may be associated with decreased bank lending. However, the lack of statistical significance indicates that the relationship between inflation rate and bank lending may not be statistically robust and could be influenced by other factors. The log of gross domestic product (GDP) is inversely related to bank lending. As GDP increases, bank lending tends to decrease. This finding is consistent with the notion that during economic downturns or recessions, bank lending tends to decrease as banks become more cautious about extending credit and businesses reduce their borrowing (Berger & Udell, 2002). The log of gross fixed capital formation is negatively associated with bank lending. Higher levels of fixed capital formation are linked to reduced bank lending. This suggests that when there is increased investment in long-term fixed assets, banks may reduce lending to other sectors due to resource allocation or cautious economic outlook.

CONCLUSION AND POLICY IMPLICATIONS

The findings from the FGLS model reveal a complex relationship between independent variables and bank lending (LDR). Financial globalisation and bank concentration demonstrate significant negative associations with lending, indicating that higher levels of financial globalisation and greater bank concentration are linked to reduced lending. However, the impact of bank regulatory capital on lending is inconclusive, and there is no statistically robust relationship between the real exchange rate and inflation rate with lending. On the other hand, both gross domestic product and gross fixed capital formation exhibit strong negative relationships with bank

lending, suggesting that increases in these variables are associated with decreases in lending. These results highlight the importance of considering multiple variables and the intricate dynamics at play in understanding lending behavior in the banking sector.

Policymakers should carefully assess the effects of financial globalisation and bank concentration on lending and consider measures to promote competition and diversification in the banking sector. This could include implementing policies that encourage the entry of new banks, fostering fintech innovations, and enhancing transparency and consumer protection. Continuous evaluation of regulatory capital requirements is essential to strike a balance between lending incentives and risk management. Adjustments to regulatory frameworks should be made based on regular assessments of their effectiveness. Policymakers should prioritize policies that support macroeconomic stability and growth, such as measures to enhance productivity, infrastructure development, and investment climate.

REFERENCES

1. Amit, R. (2016). Financial globalization and the governance of domestic financial intermediaries. Journal of International Business Studies, 47(5), 592-613.
2. Athanasoglou, P. P., Brissimis, S. N., & Delis, M. D. (2008). Bank-specific, industry-specific and macroeconomic determinants of bank profitability. Journal of international financial Markets, Institutions and Money, 18(2), 121-136.
3. Avom, D., & Eyeffa, M. (2007). The impact of financial liberalization on the performance of the banking sector in the CEMAC zone. International Journal of Economics and Finance, 5(3), 82-92.
4. Balcilar, M., Demirer, R., Gupta, R., & van Eyden, R. (2019). The effect of global economic conditions on banking system stability in sub-Saharan Africa. Emerging Markets Finance and Trade, 55(2), 290-304.
5. Baltagi, B. H., Demetriades, P. O., & Law, S. H. (2009). Financial development and openness: Evidence from panel data. Journal of Development Economics, 89(2), 285-296.
6. Batini, N. (2023). Unorthodox monetary policies and the rise of financial globalization. IMF Working Paper.
7. Beck, T., Demirgüç-Kunt, A., & Levine, R. (2009). Financial institutions and markets across countries and over time: The updated financial development and structure database. The World Bank Economic Review, 24(1), 77-92.
8. Berger, A. N., & Udell, G. F. (2002). Small business credit availability and relationship lending: The importance of bank organisational structure. The economic journal, 112(477), F32-F53.
9. Berger, A. N., Hasan, I., & Zhou, M. (2005). Bank ownership and efficiency in China: What will happen in the world's largest nation? Journal of Banking & Finance, 33(1), 113-130.
10. Boyd, J. H., & De Nicolo, G. (2005). The theory of bank risk taking and competition revisited. The Journal of Finance, 60(3), 1329-1343.
11. Brou, D. E. (2010). Bank capital, competition, and loan spreads in developing countries. Developing Economies, 48(4), 555-578.
12. Buch, C. M., & Goldberg, L. S. (2017). Cross-border prudential policy spillovers: How much? How important? Evidence from the international banking research network. International Journal of Central Banking, 13(2), 505-558.
13. Bunyaminu, A., Atta, K. A., Nasiru, I., & Issah, M. (2021). Financial leverage and bank profitability: Evidence from Ghana. Cogent Economics & Finance, 9(1), 1874795.
14. Chen, X. (2005). Managerial efficiency, ownership mode, and the productivity of Chinese commercial banks. The Service Industries Journal, 25(4), 487-508.
15. Chinn, M. D., & Ito, H. (2008). A new measure of financial openness. Journal of comparative policy analysis, 10(3), 309-322.
16. Chuku, C., Akpan, U. F., Sam, N. R., & Effiong, E. L. (2017). Globalisation and bank lending behaviour in Sub-Saharan Africa. Global Economy Journal, 17(2), 1-26.
17. Claessens, S., & van Horen, N. (2014). Foreign banks: Trends and impact. Journal of Money, Credit and Banking, 46(s1), 295-326.
18. Cull, R., Martínez Pería, M. S., & Verrier, J. (2009). Bank ownership and performance. The World Bank.

19. De Haas, R., & Van Horen, N. (2011). Running for the exit: International banks and crisis transmission. The Review of Financial Studies, 24(1), 268-299.
20. Demirgüç-Kunt, A., & Detragiache, E. (2002). Does deposit insurance increase banking system stability? An empirical investigation. Journal of Monetary Economics, 49(7), 1373-1406.
21. Demirgüç-Kunt, A., & Huizinga, H. (1999). Determinants of commercial bank interest margins and profitability: some international evidence. The World Bank Economic Review, 13(2), 379-408.
22. Dietrich, A., & Wanzenried, G. (2014). The determinants of commercial banking profitability in low-, middle-, and high-income countries. The Quarterly Review of Economics and Finance, 54(3), 337-354.
23. Eichengreen, B., & Gupta, P. (2019). The financial crisis and Indian banks: Survival of the fittest? Journal of International Money and Finance, 97, 168-182.
24. Ekomane, G. A. A., & Yamb, B. (2016). Financial liberalization and economic growth in the CEMAC zone. Savings and Development, 40(2), 139-168.
25. Fouda, O. J. P. (2009). The excess liquidity of banks in Franc zone: How to explain the paradox in the CEMAC. Revue Africaine de l'Intégration, 3(2).
26. Garcia-Herrero, A., Gavilá, S., & Santabárbara, D. (2009). What explains the low profitability of Chinese banks? Journal of Banking & Finance, 33(11), 2080-2092.
27. Goldberg, L. S., & Hudgins, S. C. (2010). Depositor discipline and US bank mergers. The Journal of Money, Credit and Banking, 42(6), 1117-1148.
28. Hicks, J. R. (1974). The crisis in Keynesian economics. Oxford: Basil Blackwell.
29. Hien, H. T. M., & Van Dan, T. (2020). Determinants of loan growth in Vietnamese commercial banks. The Journal of Asian Finance, Economics, and Business, 7(12), 315-324.
30. IMF. (2017). Sub-Saharan Africa regional economic outlook: Restarting the growth engine. International Monetary Fund.
31. IMF. (2019). Central African Economic and Monetary Community (CEMAC): Staff report for the 2019 regional consultation. International Monetary Fund.
32. Isa, C. R., Rahi, S., Abd Ghani, N. I. E., & Abdul Hamid, M. R. (2019). Factors influencing commercial bank lending: Evidence from Malaysia. The Journal of Asian Finance, Economics, and Business, 6(4), 17-29.
33. Kane, E. J. (1988). Interaction of financial and regulatory innovation. The American Economic Review, 78(2), 328-334.
34. Klomp, J., & De Haan, J. (2015). Bank regulation and financial fragility in developing countries: Does bank structure matter? Review of Development Finance, 5(2), 82-90.
35. Levine, R. (1997). Financial development and economic growth: Views and agenda. Journal of Economic Literature, 35(2), 688-726.
36. Mohamed, N. K. (2022). Determinants of bank lending in Tunisia. Journal of Economics and Development.
37. Molua, E. L. (2016). Bank concentration and the cost of financial intermediation in Cameroon. Global Journal of Emerging Market Economies, 8(1), 64-84.
38. Nasreen, S., Anwar, S., & Ozturk, I. (2020). Globalization, financial development, and CO2 emissions in BRICS and G7 countries: Evidence from panel VAR framework. Environmental Science and Pollution Research, 27(12), 13482-13495.
39. Ndikumana, L., & Boyce, J. K. (2021). Capital flight from sub-Saharan Africa: Linkages with external borrowing and policy options. International Review of Applied Economics, 35(3), 309-336.
40. Ngono, L. H. O., & Pone, S. (2021). Financial development, banking crisis, and economic growth in the CEMAC zone. International Journal of Finance & Economics, 26(1), 1077-1097.
41. Ningaye, P., Yemedjeu, Y., & Maurin, A. (2014). Financial integration, banking crisis and economic performance in CEMAC. Romanian Journal of Fiscal Policy, 5(2), 1-26.
42. Obstfeld, M. (2015). Trilemmas and trade offs: living with financial globalization. In Global Cooperation Among G20 Countries (pp. 13-78). Springer, Tokyo.
43. Ozili, P. K. (2021). Bank profitability and its determinants. Management Research Review, 44(9), 1270-1290.
44. Pasiouras, F., & Kosmidou, K. (2007). Factors influencing the profitability of domestic and foreign commercial banks in the European Union. Research in International Business and Finance, 21(2), 222-237.

ISSN No. 2454-6186 | DOI: 10.47772/IJRISS |Volume VIII Issue VII July 2024

45. Rajan, R. G., & Zingales, L. (2003). The great reversals: the politics of financial development in the twentieth century. Journal of financial economics, 69(1), 5-50.
46. Rhoades, S. A., & Rutz, R. D. (1982). Market power and firm risk: A test of the 'quiet life' hypothesis. Journal of Monetary Economics, 9(1), 73-85.
47. Saif-Alyousfi, A. Y. (2020). Determinants of profitability of conventional and Islamic banks in GCC countries: External and internal factors. The Journal of Asian Finance, Economics, and Business, 7(12), 1-12.
48. Sobreira, R. (2004). Financial globalization and financial development: do global standards matter? Economia Aplicada, 8(3), 529-540.
49. Stiglitz, J. E. (2000). Capital market liberalization, economic growth, and instability. World Development, 28(6), 1075-1086.
50. Tesega, G. T. (2022). Financial globalization and economic growth in sub-Saharan Africa. The European Journal of Development Research, 34(1), 205-226.
51. World Economic Outlook. (2022). International Monetary Fund.
52. Yakubu, I. N. (2019). Corruption and bank profitability in Ghana. Global Journal of Business Research, 13(2), 61-71.
53. Yitayaw, T. H. (2021). Determinants of commercial bank lending: Evidence from Ethiopia. International Journal of Applied Economics, Finance, and Accounting, 9(1), 25-34.