



Do Macro-Governance Indicators Reduce Non-Performing Loans of Banking Institutions? Evidence from the CEMAC Zone

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ABSTRACT

This study aimed at examining the macro-governance indicators in the reduction of non-performing loans of the banking sector in the CEMAC zone. To achieve this aim we collected data of Cameroon, Gabon, Central African Republic, Chad and Equatorial Guinea from 2010-2018 and analysed our data using the PCSE. The results showed us that macro-governance indicators such as voice and accountability, government effectiveness, regulatory quality, control of corruption and rule of law have a negative and significant influence on non-performing loans of the banking sector in the CEMAC zone. These results therefore enabled us to conclude that, control of corruption, government effectiveness, regulatory quality, rule of law, and voice and accountability reduces non-performing loans of the Banking sector in the CEMAC zone respectively. Based on that, we recommended states and regulatory authorities of the CEMAC zone to improve on the stated the macro-governance indicators.

Keywords: CEMAC; Macro-governance Indicators; Non-performing loans; Banking Sector

1. Introduction

Non-performing loans of banks have been observed to be a critical topic of interest for more than a decade now. Its reduction has led to serious debates and interactions among monetary authorities, financial authorities, Bretton wood institutions and academicians. This is because Non-performing loans is known to negatively affect the performance of banking systems and its stability. Therefore, it is considered as a major threat of banks in all the economies in the world (Idriss & Nayan, 2016; Goyal, Mishra & Verma, 2023). Aligning to the fact that banks play an important role in every economies, non-performing loans therefore becomes an important issue to tackle.

To tackle this issue, there is an existing wide range of literature that focused on the determinants or on the drivers that significantly lead to an increase or decrease of non-performing loans in banking institutions (Athari, Saliba, Khalife & Salameh-Ayanian, 2023). These drivers have been divided into three main groups namely the macroeconomic drivers, the specific bank level drivers and the institutional drivers. The Macroeconomic drivers are most importantly the GDP, Unemployment rate, Inflation, exchange rate, domestic credit and foreign direct investments (Ha & Nguyen, 2023; Giammanco, Gitto & Ofria, 2022; Tnaskovic & Jandra, 2015). For the bank specific drivers we have bad management, skimping hypothesis, moral hazard, liquidity, profitability, size of the bank, and income diversification (Athari et al., 2023; Klein, 2013). Then, for the institutional drivers we are concerned with the governance of banking institutions (Buyukoglu, Sit and Eksi, 2021). As far as this study is concerned we put our interest on the governance of banking institutions.

The governance of banking institutions gained more influence from the debate by Berles and Means (1932) following the 1929 crisis whose main cause was the governance of institutions (Hajer & Anis, 2016). At that time, it was known as corporate governance since the focus was on private listed corporations (Hopt, 2021). As time evolved, the concept of corporate governance extended to other sectors such as non-listed companies, State owned Enterprises, Non-profit Organisations and most importantly, Financial Institutions (Canabillas, 2019; OECD, 2015; Hopt and Hippel, 2010; Miglionico, 2019). Given that our concern is on financial institutions, governance of financial institutions is usually directed to banking institutions and this therefore leads to the name governance of banking institutions (Hopt, 2021). The reasons that the governance has been extended to banking institutions is due to the fact banks are special. Their specialness is because of the associated danger of bank runs; the macroeconomic functions of banks as a central importance in the economy, the fundamental need of trust that turns around the banking activities gave rise to its governance (Binder, Glos & Riepe., 2020; Barr, Jackson & Tahyar., 2018; Laeven, 2013)

Given its etymology, governance of banking institution is generally seen in terms of internal and external mechanisms. This argument was confirmed by Elle (2021) who stated that banks have internal governance rules, and are also regulated and supervised by monetary and financial authorities that are considered

as external governance. Talking of internal governance we refer to government and control by the organs of the corporation (That is the Board) while external governance is considered as the pressure exercised on directors by external forces (Takeover market and regulation) (Binder, 2018; Hopt, 2021). In addition to the different governance mentioned, it is important to understand the specialness enable us to extend our view of governance of institutions at the country level. Moreover, there is the tendency to ensure that the environment of banking institutions should be in an area of good governance in the economy as a whole (Murshed and Saadat, 2018). Following these arguments, we decided to focus on the governance of the whole economy, which we called Macro-governance.

Macro-governance could be seen as the ability of governments to formulate and implement rules, policies and regulation (Ngono, 2020). It takes into consideration the compliance of banking institutions in general by focusing on the macro-perspective of governance in terms of judicial system, strong regulations, corrupt bureaucracy and institutional control. It aims at influencing the bank behaviour and can also affect the regulation and supervision of the banking industry. The concept is better explained by indicators usually known as the World Governance Indicators that were introduced by Kauffmann and Kraay (2007). These WGI's per say are; Control of Corruption, Government Effectiveness (GE), Political Stability and Absence of Violence (PA), Rule of Law (RL), Regulatory Quality, and Voice and Accountability (VA). In this paper, the use of Macro governance is based on the assumption that weak supervision and judicial systems, underdeveloped institutions can affect market competitiveness and worsens the situation of borrower and lenders as this is the case in developing economies (Tanaskovic & Jandra, 2015). Actually, there are little studies on macro-governance indicators on Non-performing loans, and moreover, there is no study in CEMAC that shows how macro-governance is directly related to non-performing loans.

However, as Murshed and Saadat (2018) argued that the governance of the economy is a key factor contributing to lower Non-performing Loans in developing countries. Also, studies had shown that governance tend to influence the risk of default of loans across countries. For instance, Kauffmann and Kraay (2007) indicated that governance could lead to decreasing credit risk of banks. Moreover, Lee, Yahya, Habibullah and Ashhari (2020) argued that governance indicators like political stability and absence of violence, regulatory quality, rule of law and corruption had a negatively impact in banks of the European Union. From these studies, we can infer that governance is related to non-performing loans as it is the main indicator of risk default. Looking at that we therefore noticed that it is important to look at Macro-governance and non-performing loans in the CEMAC zone.

Bringing the debate towards the CEMAC zone, it is known that the zone is characterized by high non-performing loans (IMF report, 2021). This has actually been identified from 2013 to 2021 where the non-performing loans galloped from 732,885 million Fcfa in 2013 to 1,938 billion Fcfa in 2021 in the region (BEAC report, 2021). Knowing the threats it could have in the banking sector it is arguable to find different ways to reduce it. In addition to that, it is more problematic especially as it is totally a bank based economy with the banking sector alone making up to 90% of the financial sector in the CEMAC zone, and also, considered as the prominent transmission channel of monetary policy, and actually the main source of financing for the private sector (World Bank, 2022; World Bank, 2021; Essiane, 2022; Bikai & Essiane, 2017; Bikai and Kenkouo, 2019). Referring to our literature, and based on the argument that the governance of an economy is an important factor in the reduction of non-performing loans, we therefore decided to focus our research on the influence of Macro-governance in the reduction of non-performing loans in the CEMAC zone and therefore, we asked ourselves the following research question:

- To what extent does Macro-governance indicators reduces the non-performing loans of banking institutions in the CEMAC zone?

To answer our research question, we had as main objective to examine the influence of Macro-governance indicators on the reduction of non-performing loans of banking institutions in CEMAC zone.

Given the objective above, we stated our hypotheses in the alternative form as follows;

- 1st H₁: Voice and Accountability significantly reduces the Non-performing Loans of Banking Institutions in the CEMAC zone
- 2nd H₁: Control of Corruption significantly reduces the Non-performing Loans of Banking Institutions in the CEMAC zone
- 3rd H₁: Government Effectiveness significantly reduces the Non-performing Loans of Banking Institutions in the CEMAC zone
- 4th H₁: Regulatory Quality significantly reduces the Non-performing Loans of Banking Institutions in the CEMAC zone
- 5th H₁: Rule of Law significantly reduces the Non-performing Loans of Banking Institutions in the CEMAC zone
- 6th H₁: Political stability and Absence of Violence significantly reduces the Non-performing Loans of Banking Institutions in the CEMAC zone

This research is important as it brings the debate around governance at the macro level to tackle the issue of non-performing loans, which is worldwide. In the CEMAC region, this study will be important to governments of each member states, to the central Bank BEAC, to regulatory authorities, shareholders, and future investors in the banking sector as it will enable them to have a global thought on the solutions or other determinants to non-performing loans in the process of their decision making. Also, this study is important to researchers or academicians by improving the debate on governance and non-performing loans as well as giving room for other studies in each of the elements tackled in this paper.

For better understanding, the rest of this paper is made up of literature review, the Methodology, Findings and Discussion of Findings, Implications, Conclusion and Suggestions for further research.

2. Literature Review

2.1 Theoretical Framework

The main theoretical foundations of this study are the institutional theory and the Public Interest Theory.

2.1.1 Institutional Theory

To begin with the institutional theory, it was propounded by Maggio and Powell (1983) and it is based on the notions that govern institutions. The theory states that organisations implement business practices because doing so enhances their legitimacy. According to the author, it is asserted that institutional environment can strongly influence the development of formal structure in an organisation and often more than market pressures. Given that the state has received attention over time, Scott (1995) identified three pillars namely regulative, normative and cognitive pillars. He explained that as a regulative pillar, the state has the capacity to define rules of the game by enacting laws and regulations. This shows that the state can dictate the scope of firms' activities by codifying industry boundaries. In relation to this study, the notions that govern institutions and the codifying boundaries dictated by the state are related to the macro-governance indicators. This entails that these governance indicators are related to rules put in place by the state in the banking sector for banking institutions to implement business practices that will enhance their legitimacy. The compliance to the different macro governance indicators will enhance a good institutional environment that could strongly influence banking institutions and help in avoiding market failures like non-performing loans as our case in this study. For instance if the state ensures voice and accountability, control of corruption, political stability, regulatory quality, rule of law and government effectiveness, practices in the banking sector are better guided and failures like NPLs might be minimised and this therefore becomes a main foundation of the theory.

2.1.2 Public Interest Theory

Concerning the Public Interest Theory, it is focused on the idea that regulation is supplied in response to the demand of the public for the correction of inefficient or inequitable market practices. The theory was propounded by Pigou (1932) and it is based on the assumption that regulation is initially put in place to benefit the whole society rather than particular vested interest. Following the thoughts of the theory we noticed that the regulatory body should enhance the satisfaction of all the stakeholders in the banking sector. This implies that satisfaction of customers, investors or shareholders, managers and the banking institution should be regarded as utmost importance and the regulation should cut across the satisfaction of all with all without discrimination. Given that NPLs, which is caused by market failures such as information asymmetry and principal-agent relationship affect some stakeholders, it is important to provide principles that will correct market failures and therefore, macro-governance indicators have been identified as important principles that will minimise market failures.

2.2 Empirical link between Macro-governance Indicators and Non-performing loans

There are few studies that focused on the relationship of macro-governance and non-performing loans. These few studies however, through the use of governance indicators, enabled us to have a good foundation on the existing relationship between macro-governance and non-performing loans. For instance, Bragoudakis, Anastasiou and Malandrakis (2019) found it necessary to investigate on the influence of governance indicators on aggregate level of non-performing loans in Greece. Their aim was motivated due to the fact that there were no study on the relationship between non-performing loans and governance indicators at the national or regional level. To achieve their objectives they collected data from 1996-2016 on the six Worldwide Governance Indicators and aggregate non-performing loans plus control variables for Greece. In their study, they used the Principal Component Analysis (PCA) to have a Governance index and the results actually showed that there is a significant negative influence of governance on non-performing loans. This explains that there is a relationship between macro-governance and non-performing loans.

Also, the study of Goyal, Prosad and Singhal (2023) published a paper on "non-performing assets and institutional quality: Evidence from Developing Countries". They used governance indicators to find out if it has an existing relationship with Non-performing assets. In their paper they found out that institutional environment is crucial in credit quality of banks and concluded that Non-performing Assets significantly decreased in developing nations when there is greater improved institutional environment (That is governance quality). In some studies we noticed that the link was established between governance indicators and credit risk whereby non-performing loan was considered as an indicator of credit risk. Such study justifies that there is an existing link between macro-governance and non-performing loans. For instance, Lee et al., (2020), using what he mentioned "Country Governance" used the governance indicators such as political stability and absence of violence, regulatory quality, rule of law and corruption and concluded that they have a negatively impact on the Credit Risks of European Banks.

Knowing that non-performing loans is a threat to the banking stability, studies relating governance and bank stability could provide an empirical link between macro governance and non-performing loans. For instance, Cam and Ozer (2022) that stronger governance, which are freedom of expression, political stability, lower expropriation of risk and corruption, property rights enhance financial soundness and development. As non-performing loans have an inverse relationship with banking stability (Katuka, Mudzingi & Vengesai, 2023; Foglia, 2022; Merhbene, 2021) we could therefore deduce that strong governance is inversely

related to non-performing loans. Moreover, Malik, Bin, Rehman and Khan (2022) argued that the governance environment is an important indicator of financial stability implying that it is an important indicator on non-performing loans.

Arguments put forward are the fact that corruption plays an important role in the activities of banks (Cjeci & Marinc, 2022). It disrupts the lending decision of banks and undermines bank's profitability and stability (Ha & Nguyen, 2023; Toader, Onofrei, Popescu & Andries, 2018; Dermiguc-Kunt & Detragiache, 1998). Therefore its control is important to reduce the effects it can have of banking institutions and thus necessitate governance. Other elements like voice and accountability promotes issues like freedom of expression and transparency, this reduces the problem of information asymmetry in banking institutions and therefore, should be a focus on non-performing loans' issue. The other indicators are also important following the studies reviewed above and thus, it is important to consider them in our study.

In the CEMAC zone, no author actually considered macro-governance indicators as important elements in the fight against non-performing loans. The main study on non-performing loans focused on the determinants of non-performing loans by Keungne and Mba (2021) and the direction they used was on macro-determinants and specific determinants but macro-governance indicators. This study therefore contributes to the literature of the CEMAC zone by introducing macro-governance as an important determinant of NPL. Given the above existing link between the concepts of our study, we therefore confirmed the stated hypothesis and then test it for conclusion.

3. Methodology

3.1 Research Design and Sources of Data

To achieve the objective of this study, we used the ex-post facto research design. This is because data were collected previous years. The study uses data from Five (5) countries (Cameroon, Central African Republic, Equatorial Guinea, Chad and Gabon) of the CEMAC zone, out of six (6) countries (Equatorial Guinea inclusive) from 2010 to 2018. Congo was excluded from our sample because of lack of data on non-performing loans. Each data used in this study were collected from the World Bank Data Base, IMF, BEAC reports and COBAC reports. The data used were balanced in nature.

3.2 Variables and their Measurements

Following our research objective, the variables used for this are divided into dependent, independent and control variables. The dependent variable is Non-performing Loans (NPL) measured as the percentage of the volume of non-performing over the volume of gross loan. The data were already available in World Bank Data Base, precisely the World Development Indicators (WDI), starting from 2010 to 2020. Further years were not considered due to unavailability of data.

For our independent variable, we have Macro Governance measured by the World Governance Indicators from the World Bank Date Base. These World Governance Indicators are; Accountability and Transparency (AT), Control of Corruption (CC), Government Effectiveness (GE), Political stability and Absence of Violence (PA), Regulatory Quality (RQ), and Rule of Law (RL).The values of these indicators ranges from -2.5 to +2.5. The lower the value indicates poor level of governance and the higher the value indicates high level of governance (Kaufmann et al., 2010).

Concerning the control variables, we used Country's specific characteristics such as Gross Domestic Product (GDP), Inflation (I), and Domestic Loans (DL). Also we used the Bank's specific Characteristics such as the Size of the banking sector (SB) and Loan Loss Provision (LP). Looking at their measurements, we noticed that GDP is measured by the GDP growth; Inflation is measured by the Inflation Rate (IR); Domestic loan is measured by credit to the state (CS) and Credit to the Private Sector (CP); Size of the Banking sector is measured by the log of total assets; Lastly, LLP is measured Loan Loss Provision ratio. The data for GDP growth and IR were gotten directly from the BEAC annual reports. Data from CS, CP and LP ratio were gotten directly from the World Development Indicators of the World Bank Data Base. Finally, data of SB was gotten the COBAC reports and then, the total assets was computed using excel formula "ln(Total Assets)" to get its measurements, which is the log of the total assets.

The aforementioned is presented on table 1 below taking into consideration the variables' names, their measurements, their sources and their a-priori expectations. This provides reliability on the collection of data and moreover enables us to compare our results gotten in this study with the expectations gotten from other studies. This table is therefore shown as follows

Table 1: Operationalisation of variables studied

Variables		Definitions	Sources
Dependent Variables	Measurements		
Non-performing Loans	Non-Performing Loan Ratio	This is the ratio of loans that defaulted per the total number of loans	WDI
Independent Variables			
Macro-Governance indicators	Accountability and Transparency (AT)	This is the perception of the extent to which there is freedom of association, freedom of expression and free media.	WDI
	Control of Corruption (CC)	This is the perception of the extent to which power is exercised for private gain including both petty and grand forms of corruption.	WGI
	Government Effectiveness (GE)	This is the perceptions of the quality of the services and the degree of its independence from political pressures, the quality of policy formulation and implementation.	WGI
	Political Stability and Absence of Violence (PA)	This measures perceptions of the likelihood of political instability and/or politically-motivated violence, including terrorism.	WGI
	Regulatory Quality (RQ)	This is the perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development.	WGI
	Rule of Law (RL)	This is the extent to which agents in the society abide to the rules of the society as well as quality of contract enforcement, property rights and the court	WGI
Control Variables			
Country's Specific Characteristics			
GDP	GDP growth	This measured the economic growth of a country	BEAC Reports
Inflation	Inflation Rate (IR)	This refers the persistent increase in the price level	BEAC Reports
Domestic Credit	Credit to the state by banks as % of GDP (CS)	This refers to the credit given to the state	WDI
	Credit to the Private Sector by banks as % of GDP (CS)	This refers to the credit given to the state	WDI
Banks' Specific Characteristics			
Size of the banking sector	Log total Assets	This refers to the total size of the banking sector	COBAC reports
Loan Loss Provision	Percentage Loan Loss Provision ratio (LLP/Gross Loans)	This refers to an amount put aside to take care of Non-performing loans	IMF Indicators

Source: Author, 2024

3.3 Data Analysis and Econometric Model

The variables used in the study were analysed using descriptive and inferential statistics. The descriptive statistics were presented using mean, standard deviation, minimum and maximum values of the variables studied. For the inferential statistics, we used the panel regression analysis. The regression analysis enabled us to examine the relationship that exists between the dependent variable and the independent variables. In the context of our study, we did some

diagnostics tests to identify an unbiased estimation technique to have the best linear unbiased estimates. The analysis of our variables is based on the functional model below

$$NPL = f\{AT, CC, GE, PA, RQ, RL\}$$

From the above functional model we used the following econometric model for our study as follows;

$$NPL_{it} = \beta_0 + \beta_n X_{it} + \beta_{n+1} Z_{it} + \varepsilon_{it} \dots \dots \dots (1)$$

Where β_0 is the constant; β_n and β_{n+1} represent the coefficients of the independent variables and the control variables. The control variables are represented by Z_{it} and the independent variables are represented by X_{it} . ε is the error term and then “i” and “t” are representing the countries and the years respectively. Equation (1) enables us to explicitly specify our model. Given the presence of multi-collinearity we there specify the model of our study as follows;

$$NPL_{it} = \beta_0 + \beta_1 MG_{it} + \beta_2 GDP_{it} + \beta_3 IR_{it} + \beta_4 SB_{it} + \beta_2 LLP_{it} + \beta_2 CS_{it} + \beta_2 CP_{it} + \varepsilon_{it} \dots \dots \dots (2)$$

Where;

NPL= Non-performing Loans; MG= Macro Governance Index; GDP= Gross Domestic Product; IR= Inflation Rate; SB= Size of the Banking sector; = LLP= Loan Loss Provision; CS= Credit to state; CP= Credit to Private.

Given that the treating multi-collinearity does not only necessitate creating an index, but also separating the variables that are highly correlated, we then analysed our data using the different governance indicators independently as presented by equations (3), (4), (5), (6), (7) and (8)

$$NPL_{it} = \beta_0 + \beta_1 VA_{it} + \beta_2 GDP_{it} + \beta_3 IR_{it} + \beta_4 SB_{it} + \beta_2 LLP_{it} + \beta_2 CS_{it} + \beta_2 CP_{it} + \varepsilon_{it} \dots \dots \dots (3)$$

Where;

NPL= Non-performing Loans; VA= Voice and Accountability; GDP= Gross Domestic Product; IR= Inflation Rate; SB= Size of the Banking sector; = LLP= Loan Loss Provision; CS= Credit by banks to the state; CP= Credit by banks to Private Sector.

$$NPL_{it} = \beta_0 + \beta_1 CC_{it} + \beta_2 GDP_{it} + \beta_3 IR_{it} + \beta_4 SB_{it} + \beta_2 LLP_{it} + \beta_2 CS_{it} + \beta_2 CP_{it} + \varepsilon_{it} \dots \dots \dots (4)$$

Where;

NPL= Non-performing Loans; CC= Control of Corruption; GDP= Gross Domestic Product; IR= Inflation Rate; SB= Size of the Banking sector; = LLP= Loan Loss Provision; CS= Credit by banks to the state; CP= Credit by banks to the Private.

$$NPL_{it} = \beta_0 + \beta_1 GE_{it} + \beta_2 GDP_{it} + \beta_3 IR_{it} + \beta_4 SB_{it} + \beta_2 LLP_{it} + \beta_2 CS_{it} + \beta_2 CP_{it} + \varepsilon_{it} \dots \dots \dots (5)$$

Where;

NPL= Non-performing Loans; GE= Government Effectiveness; GDP= Gross Domestic Product; IR= Inflation Rate; SB= Size of the Banking sector; = LLP= Loan Loss Provision; CS= Credit by banks to state; CP= Credit by banks to Private.

$$NPL_{it} = \beta_0 + \beta_1 PS_{it} + \beta_2 GDP_{it} + \beta_3 IR_{it} + \beta_4 SB_{it} + \beta_2 LLP_{it} + \beta_2 CS_{it} + \beta_2 CP_{it} + \varepsilon_{it} \dots \dots \dots (6)$$

Where;

NPL= Non-performing Loans; PS= Political Stability; GDP= Gross Domestic Product; IR= Inflation Rate; SB= Size of the Banking sector; = LLP= Loan Loss Provision; CS= Credit by banks to state; CP= Credit by banks to Private.

$$NPL_{it} = \beta_0 + \beta_1 RL_{it} + \beta_2 GDP_{it} + \beta_3 IR_{it} + \beta_4 SB_{it} + \beta_2 LLP_{it} + \beta_2 CS_{it} + \beta_2 CP_{it} + \varepsilon_{it} \dots \dots \dots (7)$$

Where;

NPL= Non-performing Loans; RL= Rule of Law; GDP= Gross Domestic Product; IR= Inflation Rate; SB= Size of the Banking sector; = LLP= Loan Loss Provision; CS= Credit by banks to state; CP= Credit by banks to Private.

$$NPL_{it} = \beta_0 + \beta_1 RQ_{it} + \beta_2 GDP_{it} + \beta_3 IR_{it} + \beta_4 SB_{it} + \beta_2 LLP_{it} + \beta_2 CS_{it} + \beta_2 CP_{it} + \varepsilon_{it} \dots \dots \dots (8)$$

Where;

NPL= Non-performing Loans; RQ= Regulatory Quality; GDP= Gross Domestic Product; IR= Inflation Rate; SB= Size of the Banking sector; = LLP= Loan Loss Provision; CS= Credit to state; CP= Credit to Private.

These models were analysed using the Panel Corrected Standard Error and precisely the Prais-Winsten Regression. This was due to the fact that our fixed effect regression was faced with the problem of heteroskedasticity and autocorrelation. Due to that, our fixed effects results become biased and not reliable for our study. The different tests used that guided us to the Best estimate are explained below

3.3.1 Pre and Post Estimation Diagnostic test

i) Pre-estimation Test

- Multi-Collinearity test:

The first pre-test estimation was the multicollinearity test, which is done through the correlation matrix. The aim of this test was to identify if there exist multicollinearity between our independent variables. The decision criteria is when the value $n > 0.7$ (where n is the value of correlation between two variables), there exist multicollinearity problem and then it needs to be treated and vice-versa. In our study we identified that there is a multicollinearity problem between our governance indicators given that there are highly correlated. However, we treated it using the Principal Component Analysis (PCA). The use of PCA to treat multicollinearity problems was put forth by woodridge (2010). It produces the weights for each variable automatically. From the PCA we succeeded to derive a variable from the six (6) indicators known as MACRO-GOVERNANCE INDEX. The index explains the variance in the set of different governance indicators as much as possible.

Moreover, to treat the problem of multicollinearity, we ran our regression using each governance indicator separately so as to avoid unbiased results.

- Cross-sectional Dependence test

For the cross-sectional dependence test, we tried to find out if the cross-sections are interdependent to each other. To do that we used the Breusch-Pagan LM test of independence test. The decision criteria for this test are when P value < 0.5 , there is independence among cross-sections and vice versa. Following our results we confirmed that there is cross-sectional dependence given that our p value < 0.0384 . The test was inspired from the study of Hoyos and Safaridis (2006) who argued for panel data having $T > N$, one can use the Breusch Pagan Lagrange Multiplier Test through the stata Command "xttest 2". Given the results, we need to proceed with estimation technique that considers the problem of Cross-sectional independence.

- Autocorrelation Test

Here, we decided to determine if the lagged value of a variable is related to its original value over time. In this study, we used the Woodridge test for autocorrelation with the decision criterion being "there is no first autocorrelation of $p > 0.5$ ". In our study, our results show that our p value < 0.5 implying that there is autocorrelation. Given that we then have to proceed with the estimation that considers auto-correlation.

- Test of Heteroscedasticity

Heteroscedasticity is a situation when the variance of our estimations is not normally distributed over time. Given that heteroscedasticity is an economic problem that gives biased results, it is important to test for it and identify its presence in our estimations. To do that we used the wald test Following the rule of thumb which states that the p -value should be greater than the level significance to conclude that there is no heteroscedasticity otherwise there is a problem of heteroscedasticity

Based on the tests above and results gotten we realised that there are economic problems in our data set. Therefore, we used the Panel Corrected Standard Error. The results are therefore shown on the next section below

4. RESULTS AND FINDINGS

Our results are presented using both descriptive and inferential statistics. These are shown as follows

4.1 Presentation of Descriptive Statistics

Table 2: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Non-performing loans	45	14.111	8.776	2.55	36.678
Macro Governance Index	45	0	1	-1.738	2.061
GDP	45	1.652	7.636	-36.392	13.55
Size of the banking sector	45	14.041	1.085	11.962	15.562

Inflation Rate	45	2.113	2.053	-2.078	7.789
Loan Loss Provision	45	80.967	24.271	35.437	142.911
Credit to state and government	45	2.956	2.06	.123	8.824
Credit to Private	45	10.673	3.195	4.034	14.984
Voice and Accountability	45	-1.292	.368	-1.999	-.863
Control Corruption	45	-1.173	.261	-1.628	-.634
Government Effectiveness	45	-1.197	.347	-1.887	-.606
Rule of Law	45	-1.155	.392	-1.842	-.403
Quality of Regulation	45	-1.089	.337	-1.636	-.436
Political stability	45	-.83	.846	-2.699	.385

Source: Computed by Author (2024), Stata 14.2

In table 2 above, our main interest is on the mean, standard deviation, minimum and maximum values. The mean value describes the overall level of each of the variable studied in the CEMAC zone. Looking at the Non-performing loans, the mean value was 14.111 and the standard deviation was 8.776. This implies that the present level of non-performing loans of banks in the CEMAC zone is averagely 14.111% of the total gross loans and the level at which it might deviate is 8.776%, which is quite low compared to its mean value. For the Macro-governance index, it resulted that the mean value has been 0 implying the macro-governance situation by combining the World Governance Indicators has been neutral (That is not bad, not good). However, its standard deviation is 1, implying that there has been high volatility of the macro-governance situation in the CEMAC zone. Looking at the different governance indicators individually, we noticed their mean values are averagely -1 and given their standard deviation is higher than their mean values, it implies there is a high volatility of each governance indicator in the CEMAC zone.

For other variables considered in this study, we also observed that some of them have been highly volatile whereas others were not. For instance, GDP descriptive results show the GDP of countries in the CEMAC zone from 2010 to 2020 was averagely at 1.652%. However, its standard deviation (7.636), which is greater than its mean value, shows that the GDP of CEMAC was highly volatile and could change at any time. For the size of the banking sector, the results show that the size of the banking sector was averagely 14.041%, with a standard deviation of 1.085, which is very low compared to its mean and thus, implies that the size of the banking sector was not highly volatile and could not be changing over time. Looking at the Loan Loss Provision, we observed that it was averagely 80.967% of the total loans with a standard deviation of 24.271 implying that banking institutions in the CEMAC zone didn't have a highly volatile a loan loss provision and thus, it could be difficult for the loan loss provision to change as time goes. This is because its standard deviation is far lower than its mean value. As concerned with domestic credit, we noticed that the credit to the private sector was averagely 10.673% of the GDP and credit to the state and government was averagely 2.956% of the GDP. The aforementioned therefore show us the descriptive nature of our variables used. Given that, we now move to our inferential statistics that is presented below.

4.2 Presentation of Inferential Statistics

4.2.1 Pre-estimation Technique

Table 3: Matrix of correlation

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
(1) Nonperformingl~o	1												
(2) GDP	-0.507	1											
(3) Sizeofthebanki~r	-0.379	0.148	1										
(4) InflationRate	-0.302	0.018	0.07	1									
(5) LoanLossProvis~n	-0.755	0.504	0.13	0.265	1								
(6) Credittostatea~t	-0.062	0.110	0.21	-0.247	0.111	1							

(7) CredittoPrivate	0.242	-0.249	0.32	-0.240	-0.165	0.444	1						
(8) RuleofLaw	-0.698	0.302	0.7	0.175	0.482	0.398	0.16	1.000					
(9) VoiceandAccoun~y	-0.438	0.428	0.11	-0.178	0.433	0.675	0.30	0.44	1.000				
(10) ControlCorrup~n	-0.589	0.238	0.12	0.104	0.599	0.544	0.24	0.68	0.737	1			
(11) QualityofRegu~n	-0.626	0.330	0.43	-0.112	0.390	0.594	0.20	0.72	0.829	0.72	1		
(12) GovernmentEff~s	-0.576	0.185	0.85	0.099	0.323	0.281	0.39	0.84	0.376	0.47	0.66	1	
(13) Political stability	-0.444	0.056	0.70	0.273	0.232	-0.040	0.02	0.76	-0.129	0.23	0.24	0.69	1.

Source: Computed by Author (2024), Stata 14.2

Table 3 above enables us to identify if there is an existing multi-collinearity with the independent variables used in this study. The results above therefore show that there exist a multi-collinearity between governance namely voice and accountability, Government Effectiveness, Control of Corruption, Regulatory Quality, Rule of Law, and Political Stability and Absence of Violence. Given this multi-collinearity, we used the Principal Component Analysis to bring forth a unique independent variable known as Macro-governance. This high multi-collinearity is also treated by separating the variables for each regression analysis as specified in our equations 4 – 8. The inferential results are then presented on table 4 below.

Aside of that, we noticed from the correlation coefficients that a negative relationship between all the governance indicators and non-performing loans. Only Voice and Accountability, and Political stability compared to other governance indicators have a weak relationship with Non-performing loan given that their correlation coefficients are less than 0.5. In relation to the control variables, only Loan Loss provision and GDP do not have a weak relationship with Non-performing loans where as he other control variables have a weak and/or very relationship with non-performing loans according to the correlation coefficients. Therefore, aside from the identification of multi-collinearity among independent variables, the correlation matrix enabled us to have a clue on the relationship existing between the independent variables and the dependent variable. These relationships are explicitly presented and understood using regression analysis as shown below.

Table 4: Regression Analysis

	Pooled OLS	Fixed Effect	Random Effect
Macro_Governance	-4.645*** (1.025)	-4.644** (1.737)	-4.645*** (1.025)
GDP	-0.13 (0.101)	-0.051 (0.098)	-0.13 (0.101)
Size of the banking sector	-3.292*** (0.643)	-0.446 (3.715)	-3.292*** (0.643)
Inflation Rate	-0.032 (0.342)	-0.148 (0.319)	-.032 (0.342)
Loan Loss Provision	-0.107** (0.04)	-0.154*** (0.04)	-0.107*** (0.04)
Credit to state and government	0.894** (0.421)	1.845*** (0.582)	0.894** (0.421)
Credit to Private	0.9*** (0.255)	0.135 (0.361)	0.9*** (0.255)
Constant	56.995*** (8.657)	26.384 (50.029)	56.995*** (8.657)

Observations	45	45	45
r-square	0.8143	0.6450	0.8143
Prob>chi2/F	0.0000	0.0000	0.0000
F statistics	23.19	18.54	/
Chi-square	/	/	162.30
Diagnosics Tests			
Breusch-Pagan LM test of Independence: $\chi^2(10) = 19.149$, Pr = 0.0384			
Modified Wald Test for Groupwise heteroscedasticity in Fixed Effect Reg $\chi^2(5) = 18.21$, Prob>chi ² = 0.0027			
Wooldridge test autocorrelation: F (1, 4), Prob>F= 0.0015			
Standard errors are in parentheses			
*** p<.01, ** p<.05, * p<.1			

Source: Computed by Author (2024), Stata 14.2

From results on table 4 above, the regression estimation techniques show us that Macro-governance index has a negative significant effect on Non-Performing loans at 5%. This significance is also seen on the coefficients of Credit to state and government and loan loss provision. However, this significance is positive for credit on state and government and negative for loan loss provision, there by showing the direction of the effect on non-performing loans. Moreover, there are two other variables known a credit to the private sector as well as size of the banking sector that are significant but not in all estimation techniques used in table 4above. Other variables such as GDP and Inflation rate do not have any significant effect on Non-Performing Loans.

Despite the results presented on table 4, it is important to ensure that they could be reliable for this study. This was done by testing for cross-sectional Independence, heteroscedasticity, and autocorrelation. From the results we identified economic problems of cross-sectional dependence, heteroscedasticity and autocorrelation through the Breusch-Pagan LM test of independence, the Modified Wald Test Group-wise heteroscedasticity and the Wooldridge test of autocorrelation respectively. This is because the tests statistics are significant at 5% and thus, invalidates the fixed effects model for inference. Therefore, this study use an estimation technique based on correlated panels Corrected Standard Errors (PCSEs) that have the ability to eliminate such problems in econometric analysis and that considers the possibility of contemporaneous correlation in cross-section, allowing for better inference than linear models. This is therefore presented on table 5 below

Table 5: Prais-Winsten regression, correlated panels corrected standard errors (PCSEs)

	Aggregate Results	Disaggregate Results
Macro governance	-3.994*** (0.954)	
Voice and Accountability		-10.583*** (3.7)
Control of Corruption		-15.274*** (3.649)
Government Effectiveness		-15.193*** (4.653)
Political Instability		-1.341 (1.43)
Quality of Regulation		-14.326*** (2.726)

Rule of Law							-11.833*** (2.883)
GDP	-.096 (.076)	-.026 (.08)	-.096 (.076)	-.106 (.084)	-.104 (.085)	-.083 (.06)	-.062 (.074)
Size of the banking Sector	-2.762** (1.13)	-2.897** (1.238)	-2.762** (1.13)	.953 (1.49)	-1.735 (1.266)	-1.138 (.972)	.095 (1.326)
Inflation Rate	.035 (.251)	-.145 (.225)	.035 (.251)	-.089 (.287)	-.058 (.255)	-.283 (.213)	.028 (.254)
Loan Loss Provision	-.137*** (.04)	-.157*** (.036)	-.137*** (.04)	-.159*** (.042)	-.178*** (.04)	-.164*** (.031)	-.148*** (.037)
Credit to state	.893** (.446)	1.126** (.468)	.893** (.446)	.155 (.443)	.39 (.521)	1.186*** (.386)	.789* (.469)
Credit to Private	.579** (.286)	.551* (.294)	.579** (.286)	.772*** (.281)	.288 (.346)	.301 (.267)	.219 (.309)
_constant	55.526*** (14.234)	45.277** (18.826)	37.607** (16.079)	-12.727 (27.139)	48.141*** (17.229)	22.056 (13.533)	6.753 (19.13)
Observations	45	45	45	45	45	45	45
R-squared	.647	.614	.647	.698	.52	.733	.604

Standard errors are in parentheses

*** $p < .01$, ** $p < .05$, * $p < .1$

Source: Computed by Author (2024), Stata 14.2

Looking at the table above we observed that we have the aggregate results and the disaggregated results made up of specific governance indicators. From the results we noticed that macro-governance index, voice and accountability, control corruption, government effectiveness, Quality of regulation and rule of law have a negative significant effect on the Non-Performing Loans of the CEMAC's Banking Sector. Only Political stability has been observed not having a significant effect on Non-Performing Loans.

Given the models used we noticed that some control variables have a significant effect on Non-Performing Loans. Among them, we have Loan Loss Provisions, Credit to the state, Credit to the Private Sector, and Size of the banking sector whereas GDP and Inflation Rate do not have any significant effect in any model. However, we observed that the significance does not cut across all models for control variables except loan loss provision that is significant in all model specification. For instance, we have the size of the banking sector is only significant when voice and accountability and control of corruption are considered each at 5% significance level. For Credit to the state and government, it is significant at 5% only when voice and accountability, control of corruption and quality of regulation are each independent variables. Still, Credit to the state and credit to private have a significant effect when quality of regulation and government effectiveness are considered respectively. These results presented are discussed in the next section below

5. DISCUSSION OF FINDINGS

5.1 Discussion of Aggregated Results

Concerning to the aggregated results, our focus is on the findings related to the macro-governance index as a result of the PCA component analysis. The findings reveal us that an improvement of Macro-governance index by 1 unit leads to the reduction of non-performing loans by 3.994 percentage points in the CEMAC zone. This result is in line with the study of Anastasiou et al., (2019) who argued that the governance index has a significant negative influence of governance on the non-performing loans. This result is statistically significant at 1% and controlled by other variables such as the banking sector, Loan Loss Provision, the Credit to the State and the Credit to the Private Sector. The findings of the control variables show us that there is an inverse influence of size of

the banking sector and Loan Loss Provision with non-performing loans. This implies that an increase by 1% of each of them leads to the reduction of non-performing loans by 2.762 and 0.137 percentage points respectively. On the other hand, we observed that an increase in Domestic credits (That is Credit to the state and Credit to the Private sector) by 1% each leads to an increase on non-performing loans of the banking sector in the CEMAC zone.

5.2 Discussion of Disaggregated Results

Starting with the findings show us that voice and accountability, it shows that there is an indirect and significant effect on the non-performing loans of banking institutions in the CEMAC zone. This implies that an improvement in voice and accountability enable to reduce the non-performing loans of the banking sector in the CEMAC zone. On a quantitative point of view, an improvement of voice and accountability by 1 unit will enable non-performing loans of the CEMAC zone to reduce by 10.583 percentage point. Given the average percentage of non-performing loans in the CEMAC zone, the reduction by 10.583 percentage point is considerable. This result is statistically significant at 1% and moreover, it goes in line with the study of Cam and Ozer (2022). This significance is noticed due to the freedom of creating banking professional's associations in each country of the CEMAC zone that can express freely on behalf of the professional bankers in each country. These results are significantly controlled by other variables such as the size of the banking sector, loan loss provision, the Credit to the state and Credit to the private sector. These variables are all significant at 1% at least and some have an indirect effect (SB, LLP) while others have a direct effect (CS, CP)

The results related to Control of Corruption show that it has an indirect and significant effect on non-performing loans. This effect is statistically presented by a coefficient of -15.274, implying that an improvement in the control of corruption by 1 unit reduces non-performing loans of the CEMAC zone by 15.274 percentage point. This result is statistically significant at 1%, and as that of voice and accountability, the results are consistent with our a priori and other studies such as the study of Anastasiou et al., (2019), and Goyal et al., (2023). In the same line, the findings of Government Effectiveness, quality of regulation and rule of law also have an indirect significant effect on the non-performing loans of the Banking sector in the CEMAC zone. This result is consistent with our a priori and moreover, they are all statistically significant at 1%. It significance is due to the fact governments of all the countries in the CEMAC zone has been interested in the fight against corruption in their countries at all levels. In addition to that, other variables were used in the model and identified to be significant. These variables were the size of the banking sector, loan loss provision, Credit to the state, and Credit to the private sector and all of them were statistically significant at 5% at least. The Size of the banking sector and the loan loss provision have an indirect effect, implying that an increase by 1 unit or 1% lead to a reduction of non-performing loans by 2.762 and 0.137 percentage points respectively. Concerning the credit to the state and credit to the private sector, we observed from the findings that an increase in each of them by 1% will lead to an increase in non-performing loans by 0.893 and 0.579 percentage points.

Specifically, the results reveal that an improvement on government effectiveness, quality of regulation and rule of law lead to a reduction on non-performing loans by 15.274, 15.193 and 14.326 percentage points. This significance is due to the fact that the banking sector is perceived to have good policies formulated and implemented in the CEMAC zone. Moreover, it has been identified that in each country in the CEMAC, government authorities has the ability to formulate and implement sound policies and regulation that has been promoting and contributing to the development of the banking sector, which has enable a good perception in the quality of contract enforcement and property rights in the sector.

However, among the governance indicators only political stability does not have a significant effect on non-performing loans as shown by its coefficient. This is because despite the recurrence of violence and terrorism in most of the countries in the CEMAC zone, it does not affect the areas concentrated of banking institutions. This is not in line with the study of Lee et al., (2020) who argued that political stability has a significant negative impact on the credit risks of European banks.

6. CONCLUSION

This study aimed at examining the influence of Macro-governance indicators on the reduction of Non-performing loans. To achieve this study we used an ex-post facto research design and specified panel regression models that will enable us to achieve the objective stated. Specifically we implemented a fixed effect regression and the Panel Corrected Standard Error (PCSE) regression but given our post-test estimations, we based ourselves on the PCSE results. From the results, we observed that macro-governance clearly reduces the non-performing loans of the banking sector in the CEMAC zone. This is seen as the results related to the governance indicators have a negative significant influence on the Non-performing loans of banking sector in the CEMAC zone. Precisely, Voice and Accountability, Control of Corruption, Government Effectiveness, Regulatory Quality, and Rule of Law significantly reduce the non-performing loans of the banking sector in the CEMAC zone respectively. This therefore enables us to conclude that Macro-governance Indicators actually reduces the Non-performing loans of the Banking sector.

7. POLICY IMPLICATIONS

From the results gotten, we observed that among the governance indicators, control of corruption is identified to have the highest influence on the reduction of non-performing loans followed by Government Effectiveness, Quality of Regulation, Rule of Law and finally Voice and Accountability respectively

according to the coefficients. This therefore implies that more focus should be put on the control of corruption by each state given that this might reduce NPLs by 15.24 percentage points. For instance, the states or regulatory authorities can put mechanisms that will enable that managers or loan officers not to disburse loans based on bribery without a proper screening of the borrowers' risk of adverse selection. This might reduce the level of non-performing loans highest compared to other Macro-governance Indicators in the Banking sector.

More to that, an emphasis should be put on Government Effectiveness and regulatory Quality as their improvements might reduce Non-performing Loans of the banking sector by 15.19 percentage points and 14.326 percentage points respectively. This could be done by ensuring that the activities of the banking sector should independent from political pressures, and that the policy formulated and implemented by the states should mostly focus on the development of the private sector. The CEMAC zone is noted as an area with a high political pressure and given the contribution of lending to the state as a percentage of GDP by the banking sector we observed that banks are related to the state. However, it is important that banking sectors should be free from political pressure despite their relationship with the state and that the state commitments in the formulation and implementation of Policies in the banking should also enable the development of the banking sector. Therefore, policies could be formulated so that they could be less stringent and then, enable more investments in the banking sector that might increase the size of the banking sector and thus could also help I the reduction of non-performing loans as shown by the results.

Subsequently, the focus should now be on the rule of law whose improvements might lead to the drop of non-performing loans by 11.833 percentage points. This therefore tells us that rule is also important even though it is not as important as the others discussed above. However, as rule of law deals with contract enforcement, property rights, and the courts it is important to improve the rule of law that will enhance the quality of contract enforcement, property rights and the court that might enable to an extent the reduction of non-performing loans. This could be done by ensuring an environment that might enable more attorneys and magistrates specialised on the banking activities, which may reduce the likelihood of crime and violence without punishments or sanctions. This could lead to the reduction on asymmetry information and therefore, NPLs.

Lastly, the recommendation goes in line with voice and accountability. Despite the fact it has the least influence on the reduction of non-performing loans among all other Governance Indicators, there is still the need of the states and regulatory authorities of the CEMAC region to focus on its improvement. Acknowledging the presence of the Association of Banking Professionals in the banking sector, emphasises should be made on the transparency of banking institutions. It is important to have a platform or a media specialised in the vulgarisation of banking institutions by reporting its activities, performance, organisational structure, events and projections. This will enhance the freedom of expression and thus, help in the reduction of non-performing loans in the Banking Sector.

Generally, the CEMAC zone is characterised by poor governance. In addition, our results also approves that each governance indicator is poor given their negative values all through. Therefore, an improvement in each of them is also essential in the banking sector as that helps in the reduction of non-performing loans and upgrades trust of the banking sector in the CEMAC zone.

REFERENCES

- Athari, S. A., Saliba, C., Khalife, D., & Salameh-Ayanian, M. (2023). The role of Country Governance in Achieving the Banking Sector's Sustainability in Vulnerable Environments: New Insight from Emerging Economies. *Sustainability*, 15(13), 15.
- Barr, M. S., Jackson, E. H., & Tahyar, M. E. (2018). *Financial Regulation: Law and Policy*. Foundation Press.
- Berle, A., & Means, G. (1932). *The Modern Corporation and Private Property*. New York: Commerce Clearing House.
- Binder, J.-H. (2018). Der Aufsichtsrat von Kreditinstituten drei Jahre nach dem „Regulierungstsunami“. *Zeitschrift für Unternehmens- und Gesellschaftsrecht*, 88-125.
- Binder, J.-H., Gios, A., & Riepe, J. (2020). *Handbuch Bankenaufsichtsrecht*. Cologne.
- Bragoudakis, Z., Anastasiou, D., & Malandrakis, I. (2022). Non-Performing Loans, Governance Indicators and Systemic Liquidity Risk: Evidence from Greece. *Bank Greece Working Paper No. 260*, 29.
- Buyukoglu, B., Sit, A., & Eksi, I. H. (2021). Governance Matters on Non-Performing Loans: Evidence from Emerging Markets. *PSL Quarterly Review*, 74(296), 77-91.
- Cabanillas, L. G. (2019). Corporate Governance of Unlisted Companies. *Journal of Banking and Securities Law*, 38(154), 85-118.
- Cam, I., & Ozer, G. (2022). The Influence of Country Governance on the Capital Structure and Investment Financing Decisions of Firms: An International Investigation. *Borsa Istanbul Review*, 257-271.
- Demirguc-Kunt, A., & Detragiache, E. (1998). The Determinants of Banking Crises in Developing and Developed Countries. *Quarterly Journal of IMF*, 45(1), 81-109.

- DiMaggio, P. J., & Powell, W. W. (1983). The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organisational Fields. *American Sociological Review*, 48(2), 147-160.
- Elle, S. M. (2021). Corporate Governance Hierarchies and the Performance of Commercial Banks in Cameroon. *Managerial and Decision Economics*(6), 2374-2391.
- Foglia, M. (2022). Non-Performing Loans and Macroeconomic Factors: The Italian Case. *Risks*, 10(1), 21.
- Giammanco, M. D., Gitto, L., & Ofria, F. (2023). Government Failures and Non-Performing Loans in Asian Countries. *Journal of Economic Studies*, 50(6), 1158-1170.
- Goyal, S., Prosad, J. M., & Singhai, N. (2023). Non-performing Assets and Institutional Quality Indicators: Evidence from Developing Countries. *Journal of Business Perspective*.
- Goyal, S., Singhal, N., Mishra, N., & Verma, S. K. (2023). The Impact of Macroeconomic and institutional environment on NPL of developing and developed countries. *Future Business Journal*, 9(45), 1-15.
- Ha, D., & Nguyen, Y. (2023). Institutional Quality's Influence on Financial Inclusion Impact on Bank Stability. *Cogent Economics & Finance*, 1, 212-219.
- Hajer, C., & Anis, J. (2016). Analysis of the Impact of Governance on Bank Performance: Case of Commercial Tunisian Banks. *Journal of the Knowledge Economy*, 9, 871-895.
- Hopt, J. K. (2011). Comparative Corporate Governance: The State of the Art and International Regulation. *American Journal of Comparative Law*, 83.
- Hopt, K. J. (2020). Corporate Governance of Banks and Financial Institutions: Economic Theory, Supervisory Practice and Policy. *European Business Organisation Law Review*, 21(6), 13-37.
- Hopt, K. J. (2021). Corporate Governance of Banks and Financial Institutions: Economic Theory, Supervisory Practice, Evidence and Policy. *European Business Organisation Law Review (EBOR)*, 22(1), 13-37.
- Hopt, K. J., & Hippel, T. V. (2010). *Comparative Corporate Governance of Non-Profit Organisations*. New York: Cambridge University Press.
- Idris, I. T., & Nayan, S. (2016). The Moderating Role of Loan Monitoring on the Relationship between Macroeconomic Variables and Non-performing Loans in Association of South-East Asian Nation Countries. *International Journal of Economics and Financial Issues*, 6(2), 402-408.
- Katuka, B., Mudzingiri, C., & Edson, V. (2023). The Effects of non-performing loans on bank stability and economic performance in Zimbabwe. *Asian Economic and Financial Review*, 6(13), 393-405.
- Kaufmann, D., & Kraay, A. (2007). The Worldwide Governance Indicators Project: Answering the Critics. *World Bank Policy Research Working Paper Series No. 4149*, 34.
- Kaufmann, D., Kraay, A., & Mastruzzi, M. (2010). *The Worldwide Governance Indicators: Methodology and Analytical Issues*. Washington: The World Bank.
- Keugne, K. L.-s., & Mba, E. F. (2021). Les déterminants des prêts non performants des banques dans la CEMAC. Yaoundé: BEAC.
- Lee, Y. Y., Yahya, M. H., Habibullah, M. S., & Ashhari, Z. M. (2020). Non-Performing Loans in European Union: Country Governance Dimensions. *Journal of Financial Economic Policy*, 12(2), 209-226.
- Malik, A. H., Isa, A. H., Jais, M. B., Rehman, A. U., & Khan, M. A. (2022). Financial Stability of Asian Nations: Governance Quality and Financial Inclusion. *Borsa Istanbul Review*, 377-387.
- Merhbene, D. E. (2021). The Relationship between Non-performing Loans, Banking System Stability and Economic Stability: The Case of Tunisia. Geneva: Graduate Institute of International and Development Studies, International Economics Department.
- Miglionico, A. (2019). *The Governance of Credit Rating Agencies: Regulatory Regimes and Liability Issues*. Cheltenham: Edward Elgar Publishing Limited.
- Murshed, M., & Saadat, S. Y. (2018). An Empirical Investigation of Non-Performing loans and Governance: A South Asian Perspective. *World Review Business Research*, 8(1), 188-206.
- Ngono, J. F. (2020). Bank Regulation and Bank Risk-Taking. *European Scientific Journal*, 16(1), 122-137.
- Pigou, A. C. (1932). *The Economics of Welfare*. London: Macmillan.
- Scott, W. R. (1995). *Institutions and Organisations: Ideas, Interests and Identities*. London: Thousand Oaks.
- Tanaskovic, S., & Jandric, M. (2105). Macroeconomic and Institutional Determinants of Non-performing loans. *Journal of Central Banking Theory*, 1, 47-62.

Toader, T., Onofrei, M., Popescu, A.-I., & Andries, A. M. (2018). Corruption and Banking Stability: Evidence from Emerging Economies. *Emerging Markets Finance and Trade*, 54(3), 591-617.

Wooldridge, J. (2010). *Econometric Analysis of Cross Section and Panel Data*. London: MIT Press.