

IMPACT OF NON-PERFORMING LOANS ON BANK PROFITABILITY: EMPIRICAL EVIDENCE FROM COMMERCIAL BANKS IN GHANA

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Abstract

This study examined the influence of non-performing loans on Ghana commercial banks' profitability in the 2009–2018 period. The factors that explain the NPL contain very essential information for banks. The results indicate that the effect of non-performing loans on profitability is not statistically significant: operating expense efficiency and return on equity, have a positive and statistically significant relationship with profitability. The sample consisted of the banking sector (commercial banks) in the 2009–2018 period. The factors include return on assets as a function of the ratio of non-performing loans, credit risk, exchange rate, inflation, unemployment, and bank size as a control variable. The estimation was done by regression using multivariate linear regression through SPSS software. The study considered limited banking indicators as determinants of non-performing loans and was limited to the specific 2009–2018 time frame. The regression results indicate that bank profitability is strongly impacted by the increase in non-performing loans. The multivariate linear regression shows that profitability has a positive insignificant influence on non-performing loans. On the other hand, operating expense efficiency and return on equity have a positive and statistically significant relationship with profitability. Hence, when the banking sector's expenses are higher as compared to its revenue, the banks' overall profit would be low, impacting non-performing loans of the banks. The operating expenses should therefore be maintained as low as possible.

Keywords: non-performing loans, credit risk, commercial banks.

JEL classification: np. G33, K22.

1. Introduction

The elementary signal in terms of banks in terms financial of “well-being” is non-performing loans, which also serve as critical credit risk tool for in the bank-

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ing institution. Hence, an increase in non-performing loans connotes that the given organization or societal units faces challenges in credit debt servicing, which in effect raises the probability of loans being defaulted. Stemming from this, (Morttinen, 2005) opine bank assets of banks worth reducing, with their value diminishing from losses associated with writing off debt. Banks do not work in isolation or independently but interlock and function with several backlinks. Consequently, when one bank performs poorly, it reflects on the overall banking sector performance, with a single bank impacting financial firms mainly other banks and causing financial insecurity and distress. The banks impaired loan standard gives rise to the menace of systematic risk, fear and withdrawals, constraints to financial mediation, and ultimately barriers to investment and development.

Moreover, (Kunt and Detragiache, 1998) and (Gonzalez-Hermosilo, 1999) advocate that the arrival of a banking conjuncture stems from a build-up of non-performing loans. Recently, the financial crisis that emerged in United State (2007), served as an instigator which brought to light the weakness of transnational banking. Notable this debility was the acceptance of high credit risk that produced the a rise non-performing loans. According to the European Central Bank, a loan is non-performing or impaired when there occurs a delay of ninety or more days in the payment of interest. The downsides of non-performing loans include reduced bank profits, and if this is not sufficiently alarming though frequently it is, lately NPLs also bring such things as, reductions in bank capital creating a pressing need to re-capitalize and constraining the provision of credit to the economy.

(Reinhart and Rogoff, 2011) deem non-performing loans a metric for the onset of a banking crisis. The 2007–2008 period saw a rapid, significant increase in the levels of NPLs evident in a separate class of province and province in the identical class. For instance, the ratio of non-performing loans to total loans of developed provinces as recorded by the OECD; was 3% and 8% for 2002 and 2014 respectively. However, in Central and Southeastern Europe, it was 4% in 2002 and, reaching almost 15% in 2014 whereas in countries like Macedonia, Poland, and Lithuania, the NPLs in 2002 amounted 6.7%, 2.8%, and 6.1%, reaching 11.3%, 5% and 10% respectively in 2014. Again, in Sub-Sahara Africa was 2.1% in 2008 and reaching almost 21% in 2017 in countries like Uganda, South Africa, Kenya, Nigeria, and Ghana, the NPL in 2008 were 2.1%, 3.9%, 9%, 7.1%, and 7.7% and reached 5.5%. 2.8%, 10%, 14% and 21% respectively, in 2017 (World Bank, 2018).

The banking industry is an engine for growth in present-day economies. Banks are firms that facilitate the mediation of finances through the distribution of excess funds to various interested parties. Their role in nation-building and; underlying purpose, involves the use of deposits and other liabilities from savers with surplus resources on the other hand redirecting them to fund-seeking business entrepreneurs on the other hand. Being financial institutions, banks also accept deposits grant loans. As such they play a variety of roles with, accepting deposits and con-

verting the deposits them into sizable loans being their key duty (Kent Matthews and John Thompson, 2005). When banks give loans, the customers who takes them out may fail to repay them. (Ikram & Su, 2015), (Rasool, Dars & Shah, 2013) purport the banking industry to be the engine for developing an economy. In as much as the establishment of banks as well as loans have collaborative benefits, banks are risk of some loans being non-performing disincentivising their granting to Small and Medium enterprises. For developing countries, the banking sector's role is instrumental since Small and Medium enterprises are more dependent more on loans which help ensure survival and business continuity. Moreover, non-performing loans is a critical concern that put at stake the continuity of the banks themselves.

Because of this process, non-performing loans appears to be a significant obstacle to financial soundness, affecting credit and operational risk as well as resources allocation efficiency. Hence, it is imperative to find the factors behind NPLs and feasible risk reduction suggestions.

According to (Levine, 2005), financial sector efficiency is key to long term economic expansion. The uncontrolled decline of loan portfolios causes harm to banks, making them susceptible to shocks, which leads to banking crisis and the need for state bailouts. (Acharya, Drechsler & Schnabi, 2014, Reinhart & Roghoff, 2011). Ghana's banking industry is no exception to the high rate of debts experienced across the global banking industry. The influence of non-performing loans over the last ten years has accounted significantly for banks' nonfeasance in Ghana. Moreover, the adverse effects of NPLs affects the banks' ability to provide additional credit facilities to consumers thereby affecting the level of private investment.

(Klein, 2013) opines that the key issue of most provinces is the concern of impaired loans narrowing down on their determinants and their impact on the economy. Resolving this issue has become a precondition for restoring financial markets' functionality. Over the past decade, there has been a lot of research on determinants of non-performing loans due to the 2007–2008 financial crisis. (Nkusu, 2011) employed two specified approaches to determine bad assets dynamics between 1998 and 2009 for twenty-six high-income economies with panel regression. For macroeconomic parameters and NPL, the author applied panel vector autoregression framework and the response revealed NPL as positively associated with all variables as well as strong predictive power. Notwithstanding the determinants of impaired loan quality, research indicated a terminating rise in collective non-performing loans that consumed itself. Again, (Louzis et al., 2012) investigated the determinants of NPL for the Greek banking sector separately for each loan category such as consumer, business, and mortgages. Using a balanced panel consisting of the nine largest Greek banks for the 2003–2009 period, he showed that NPLs in the Greek banking system are explained mainly by macroeconomics.

To the best of the researcher's knowledge, research on NPL factors in Ghana's banks is limited. The researcher restricts the analysis to panel data using NPL and

UN in logarithmic differences spanning from 2009 to 2018, which differs from (Amuakwa-Mensah and Boakye-Adjei, 2015; and Alhassan et al. 2014). Research by Amuakwa-Mensah and Boakye-Adjei has left a gap in terms the impact of the financial crisis and shocks on NPLs. Further, (Alhassan et al, 2014) ignored the issues of heterogeneity in the determinant of NPLs of Ghanaian and foreign banks, as well as and large and small banks. However, these gaps have already been addressed by (Amuakwa-Mensah and Marbuah, 2017). The Ghanaian banking landscape provides a fertile ground for investigation among Sub-Saharan banking systems. All Sub-Saharan African states have seen great changes in politics, economics as well as the social setting. In Ghana, the Bank of Ghana has implemented a series of tough supervisory measures in line with its power as a regulator and conforming to internationally accepted norms. For instance, the Central Bank issued a communique requesting monies received by directors on retirements and those resigned to be collected. Additionally, the Ghanaian setting has witnessed an evolution in the banking industry, as evidenced by the adoption of the Financial Sector Adjustment Programme (FINSAP) and the Financial Sector Strategic Plan (FINSSP) in 1986 and 2003 respectively. Consequences stemming from the adoption of these programs include interest rate liberalization, direct credit abolishment, changing the makeup of banks in distress, fortifying the regulatory and supervisory structures, privatizing government banks as well as, open-mindedness in the foreign exchange market, the establishment of a capital market, and a reform of the legal framework (Bawumia, 2010). Building on the research of (Amuakwa-Mensah et al., 2017) and (Kjosevski and Petovski, 2017), the researcher employed a dynamic panel. Striving to provide a harmonious and impartial result, the researcher applied Arellano and Bond's (1991) difference generalized method of moments (GMM difference).

2. Outline of Loan Performance in Ghana

Over the last decade, there has been a major growth increase in impairment loans within the financial sector.

Following (Laurin et al.,2002), the authors recommend the use of a more robust internal control categorisation system against the former standard system, in the bid to ensure thorough monitoring. Loans in Ghana are classified into five (5) credit facilities based on their perceived risk and other characteristics that come into play, to be able to ascertain the amount of provision to be allotted in line with the Banking Act of 1963, Act 179. Per the central bank's classification, they include current, OLEM, substandard, doubtful, and loss (Bank of Ghana, 2008).

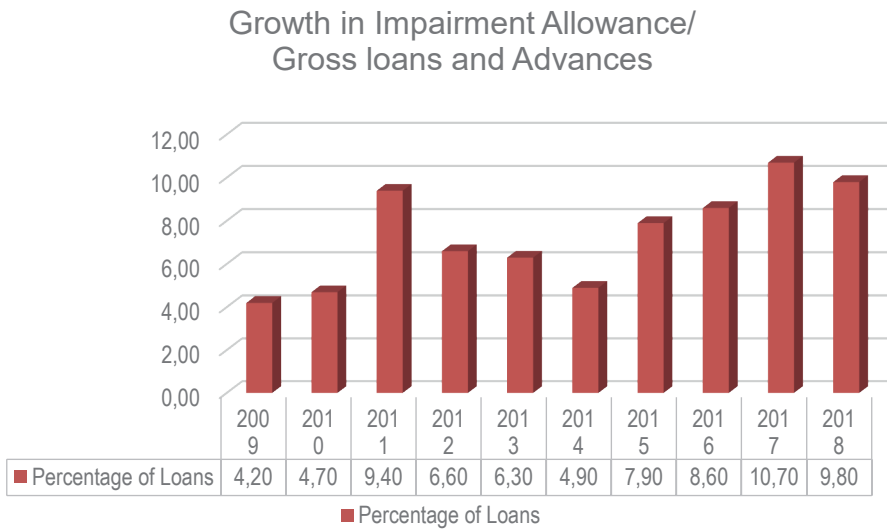


Figure 1. Increase in impairment allowance in the 2009–2018

Source: Ghana Banking Survey 2012, 2014 & 2019.

3. Objectives of the Study

This study aims to analyze the linkage between macroeconomic and bank-specific determinants of non-performing loans and their impacts on macroeconomic performance in Ghana. Its objectives are as follows:

1. Examine non-performing loans' impact on return on assets of commercial banks in Ghana.
2. Determine credit risk influence on return on assets of commercial banks in Ghana.
3. Investigate the impact of bank size on return on assets of commercial banks in Ghana.
4. Examine the macroeconomic factors that affect non-performing loans and bank profitability.

4. Literature Review

Recently, non-performing loans have been broadly discussed in the literature. The Commercial banks granting of credit facilities is the primary role that exposes them to credit risk. Credit risk presents the principal risk faced by commercial banks and the financial performance is dependent directly on the quality of the loan's portfolio (Klein, 2013). In the Ghanaian setting, there are few literature sources on this topic. (Latif ,2014) investigated the quality of assets in banks during a five-years periods starting with 2005, based on a sample of 12 banks, he found that all the varia-

bles (GDP growth, inflation, exchange rate, bank size, NIM) used in operationalising the determinants influence NPLs positively.

(Amuakwa-Mensah et al., 2017) sampled 20 banks focusing on how the 2007–2009 financial crisis has shaped banks in Ghana and confirmed the assertion that there is a significant relationship between bank-specific factors, macroeconomic factors and NPLs. Again, the researchers observed that the impact of the fiscal crisis on NPLs is subject to the volume of credit risk in their sub-sample analysis.

(Adusei, 2018) narrowed down the factors that contribute to NPLs in the banks for in a five-years period starting from 1998 and found that money supply, financial development, and other macroeconomic variables are statistically significant in determining NPLs in all cases except for real incomes. Based on the reviewed literature pertaining to the Ghanaian setting, the researcher introduced unemployment, and domestic credits granted to private entities as a proxy for one of the macroeconomic determinants and increases the period to reflect the current state of the banking system.

According to (Klein, 2013), a reduction in the ability of borrowers in servicing their indebtedness can be explained by how NPLs are influenced by the real economy. Additionally, increase expenses relating to the management of skyrocketing NPLs as well as provision for inadequate capital plays a significant role in the low supply of loans and may influence the entire economy (Mohd et al., 2010). Similarly, this effect can stem from the absence of credit lines. To illustrate, debt swells a disincentivise investing in fresh strategies as the benefits emanating from such a venture will be shared with the lender (Myers, 1977). (Demyanets, 2012), focused on the sensitivity of emerging economies to fiscal shocks in a 14 years period starting from 1996, he established that the economy shrinks when the number of NPLs increase, whilst the exchange rate reduces. (Nkusu, 2011) concentrated on 26 advanced countries covering 11 years from 1996 and established that the deterioration of loans was attributed to unfavorable shocks to assets, systematic performance as well as loans to the private sector.

(Mazreku et al., 2018) assessed the level of non-performing loans in 10 transitional Countries across ten years from 2006 by applying Pooled OLS, Fixed and Random Effects, he found that the increase in GDP and inflation are all adversely related and a probable cause of the increase in NPLs, whereas unemployment's association with NPLs is positive.

(Narman et al., 2019) studied the drivers of non-performing loans in 53 emerging and 30 advanced economies spanning thirteen years from 2001 with a panel data set and established that real GDP growth is instrumental in determining NPL ratio with the exchange rate and foreign direct investment having a statistical significance in the post-crisis period concerning emerging countries.

(Klein, 2013) investigated NPLs in sixteen Central Eastern and South Eastern European countries across fourteen years from 1998 using panel data set of respective banks and found both bank-specific and macroeconomic factors to be statistical-

ly significant in determining NPLs with the former factor exhibiting a low explanatory power.

(Nkusu, 2011) also researched 26 advanced economies concerning non-performing loans and vulnerabilities in macro-finance. The researcher used panel regression and established that negative growth in the system contributes to increasing NPLs while the impulse function is a key catalyst to link the friction in the credit market with sensitivity in the system's financials.

(Kjosevki et al., 2017) examined the effects of both bank-specific and macroeconomic factors on NPLs in 27 Baltic region countries and found every variable used in operationalizing the determinants to be statistically significant with the various models used.

(Kumarasinghe, 2017) asserts that out of the six variables used as proxies for the determinants, GDP growth and export growth were significant in influencing the level of non-performing loans in banks in Sri Lanka. The researcher also observed that the relationship between GDP and NPL was inconsistent with the large portion of findings in the literature on the topic and as such, GDP was positive.

5. Research Methodology

The research design adopted is the descriptive research design. Descriptive research enhances knowledge on the issues being studied. This research used a sample of 9 listed banks drawn from the population of 37 firms. While there is a total of 11 banks listed on the stock exchange, Ecobank Transnational and Standard Chart Preference inc. were not included since they failed to meet the criteria of the researcher. The collection of data took place primarily through secondary data. The population of interest for this study is the Ghanaian banking firms. The sample-set comprises ten listed financial firms and uses their annual reports covering the period of 2009–2018 period. The study adopted the purposive sampling technique. The analysis was conducted using descriptive statistics, variable dynamics, corrections, and linear multivariate regression, in which the variables of interest are NPL and other control variables: bank size and liquidity.

The econometric model specified and developed to achieve the purpose of this research has been derived from (Kalpo et al., 2012; Nsobilla, 2016, and Do, 2020). The ROA is a function of dependent variables expression and is expressed as follows:

$$ROA = f\left(\frac{NPL}{RL}, \frac{L}{D}, \ln_Assets\right) \quad (1)$$

where: ROA = Return on assets
 NPL = non-performing loans
 L = Total loan
 D = Deposits
 S = Logarithm of assets

The econometric model has the following expression:

$$KMA = \beta_0 + \beta_1 NPL + \beta_2 CR + \beta_3 S + \mu \quad (2)$$

where: NPL denotes non-performing loans,

B_0 = Intercept or parametric constant

$\beta_1 \beta_2$ = dependent variables constant,

μ = error term

The prior expectation in the model was that the independent variables measured by return on assets (ROA) were expected to have a negative relationship on bank profitability, this does not apply to the bank size (S), which was expected to have a positive relationship with the performance of the bank. This can be expressed mathematically as β_1 and $\beta_2 < 0$ and $\beta_3 >$, indicating that a unit in the independent variable will lead to a unit decrease in ROA. Based on prior research, variables parameters were expected to correspond to those presented in Table 1

Table 1. Measurement of variables.

Variable	Abbreviation	Proxy	Expected Signs
Non-performing Loans	NPL	Impairment loss over total loans and advances	
Equity Ratio	ER	Equity over total assets	?
Return on Equity	ROE	Net profit for the year over total equity	?
Gross Loans Growth	GLG	Percentage change in gross loans	+/-
Return on Assets	ROA	Net profit for the year over total asset	?
Bank size	S	Logarithm of total assets	+/-
Credit Risk	CR	Loans over total assets	-
Operational Efficiency	OE	Proportion of operating expenses over operating income	+
Unemployment	UNE	Proportion of total labour force	?
Inflation	Inf	annual consumer price	+/-
Exchange Rate	ER	Annual exchange rate	+/-
Real Gross Domestic Product Growth	GDPG	Percentage change of annual GDP growth rate	-

Source: Adapted from (Amuakwa-Mensah al ,2017) and (Kjosevski and Petovski, 2017)

6. Empirical Results and Interpretation

The descriptive statistics of the variables used to accomplish the objectives of the study are non-performing loans (NPL), return on assets (ROA), return on equity (ROE), Gross loan growth (GLG), Equity ratio (ER), Bank size (S), Credit risk (CR), Operational efficiency (OE), Unemployment (UNE), Inflation (Inf), Exchange rate (E), and Real gross domestic product growth (GDPG). All are presented in Table 2.

Table 2. Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
NPL	90	.004658	.398197	.09426353	.078744005	1.607	.254	2.421	.503
ROA	90	-.043844	.069640	.02879037	.020195892	-.790	.254	1.637	.503
ROE	90	-.273512	1.363171	.22069217	.225712751	2.602	.254	13.186	.503
GLG	90	-3.673832	1.000000	.11119527	.466797750	-6.085	.254	49.369	.503
CR	90	.092126	.660126	.40127836	.133436314	-.170	.254	-.842	.503
OE	90	.308031	1.379642	.66222945	.209301412	1.192	.254	2.694	.503
E	90	.02987	.82781	.1556530	.08905026	5.313	.254	37.559	.503
S	90	4.976281	7.026740	6.32802431	.403204624	-.835	.254	.798	.503
INF	90	.074000	.193000	.12020000	.034979352	.722	.254	-.416	.503
ER	90	.15	.68	.4163	.20250	-.045	.254	-1.709	.503
GDPG	90	-.90	.59	-.1345	.48844	.008	.254	-1.204	.503
Valid N (listwise)	90								

Source: Author's computation from data analysis

The average value of NPL for commercial banks in Ghana was 9.45% with a minimum of 0.47% and maximum of 39.82%. The mean ROA was 2.88% with a minimum of -4.38% and a maximum of 6.96%. Return on equity (ROE) and, Gross Loan growth (GLG) had an average value of 22.07% and ,11.12% the minimum and maximum for the former was -27.35% ,22.07% respectively, whereas for the latter it was -367.38%, and 11.12% respectively. The average credit risk was 40.13% with a minimum of 9.21% and a maximum of 66.01%. Based on the data from Table 2, the average ratio of equity was 15.51%, with a minimum of 2.99% and

a maximum of 82.78%. The operating efficiency took an average value of 66.22% with a minimum of 30.80% and a maximum of 137.96%. The average inflation and exchange rates were 12.02% and 41.63%, with a minimum of 7.4%, and a maximum of 19.23%, for the former and 15% and 68% respectively, for the latter. The real domestic product growth (GDPG), took an average of -90% with a minimum of 15% and a maximum of -13.45%.

7. Correlation Results

Following the descriptive analyses of the variable indicators presented in Table 2 above. The study employed a correlation matrix for its variables in the study. Based on the correlation matrix, it was observed that bank profitability (ROA) and return on equity had a strong positive correlation.

Table 3. Correlation matrix

	NPL	ROA	ROE	GLG	CR	OE	E	S	INF	ER	GDPG
NPL	1	-.310**	-.287**	-.097	-.225*	.295**	-.031	.195*	-.045	.352**	.116
		.001	.003	.182	.016	.002	.385	.033	.337	.000	.138
ROA	-.310**	1	.686**	.187*	-.057	-.880**	-.025	.074	-.002	-.182*	-.154
		.001	.000	.039	.297	.000	.408	.244	.491	.043	.074
ROE	-.287**	.686**	1	.105	-.021	-.610**	-.280**	.240*	.029	-.139	-.182*
		.003	.000	.163	.421	.000	.004	.011	.394	.096	.043
GLG	-.097	.187*	.105	1	-.070	-.173	.302**	-.177*	-.233*	.043	-.061
		.182	.039	.163		.255	.051	.002	.047	.342	.284
CR	-.225*	-.057	-.021	-.070	1	.193*	-.198*	-.296**	.013	-.167	-.168
		.016	.297	.421	.255		.034	.031	.002	.452	.057
OE	.295**	-.880**	-.610**	-.173	.193*	1	.015	-.113	.071	.182*	.071
		.002	.000	.051	.034		.443	.144	.253	.043	.254
E	-.031	-.025	-.280**	.302**	-.198*	.015	1	-.568**	.102	-.148	-.010
		.385	.408	.004	.002	.031	.443		.000	.170	.462
S	.195*	.074	.240*	-.177*	-.296**	-.113	-.568**	1	-.131	.685**	.011
		.033	.244	.011	.047	.002	.144	.000	.110	.000	.460
INF	-.045	-.002	.029	-.233*	.013	.071	.102	-.131	1	-.071	-.316**
		.337	.491	.394	.014	.452	.253	.170	.110		.001

continued tab.3

ER	.352**	-.182*	-.139	.043	-.167	.182*	-.148	.685**	-.071	1	.010
	.000	.043	.096	.342	.058	.043	.082	.000	.253		.461
GDPG	.116	-.154	-.182*	-.061	-.168	.071	-.010	.011	-.316**	.010	1
	.138	.074	.043	.284	.057	.254	.462	.460	.001	.461	

** Correlation is significant at the 0.01 level (1-tailed).

* Correlation is significant at the 0.05 level (1-tailed).

Source: Author’s computation from data analysis

8. Multivariate Linear Regression Results

After analysing the correlation relationship between the variables and the descriptive statistics, a pre-test was conducted to choose the model appropriate model for the time-series data. The regression results are analyzed in Table 4 shows the analysis of the regression results. The normality distribution was conducted through kurtosis and skewness, and all the variables have a normal distribution. In the time-series data, some econometrics challenges might appear, such as autocorrelation. But if the outcome after engaging linear regression establishes that the R² and adjusted R² are greater than the Durbin Watson ratio, then the results of the regression analyzed are not considered spurious and hence acceptable. To make the results unbiased, robustness was added to the regression. The study results are derived from multivariate linear regression. The VIF test indicates that variables take values below 5 and hence the study concludes that there is no multicollinearity.

Table 4. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.910a	.827	.806	.008903967	.827	37.888	10	79	.000	1.409

a. Predictors: (Constant), GDPG, E, OE, ER, INF, CR, GLG, NPL, ROE, S

b. Dependent Variable: ROA

Source: Author’s computation from data analysis

The R² and adjusted R² ratios are higher, which indicates that the independent variable presents a dependent variable with 83%. The F ratio is also higher as well and therefore, is at a significant level of 0.

Table 5. Multivariate Linear Regression

Model	Unstandardised Coefficients		Standardised Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	.065	.039		1.663	.100		
NPL	.003	.014	.010	.191	.849	.738	1.354
ROE	.022	.006	.246	3.627	.001	.477	2.099
GLG	.001	.002	.022	.396	.693	.691	1.448
CR	.016	.009	.105	1.683	.096	.557	1.795
OE	-.073	.006	-.758	-11.803	.000	.529	1.889
E	.014	.017	.061	.802	.425	.378	2.645
S	-.001	.006	-.016	-.139	.890	.166	6.039
INF	.019	.031	.034	.629	.531	.758	1.320
ER	.003	.009	.025	.286	.776	.277	3.612
GDPG	-.001	.002	-.027	-.512	.610	.811	1.233

Dependent Variable: ROA

Source: Author's computation from data analysis

Based on the results, variables such as return on equity (ROE) and operating efficiency (OE) have a positive significant influence on return on assets (ROA), while the relationship between bank size (S), non-performing loans (NPL), and return on assets is positive and statistically insignificant. These results reflect the coefficient of the study variable of interest return on assets (ROA), indicating that its correlation to non-performing loans (NPL) is positive and statistically insignificant. This result is not consistent with the empirical results and literature that support the negative effect of NPL on the return on assets (ROA) and the profitability of banks (Kargi, 2011; Kingu, al, 2018; Nsobilla, 2015). The coefficient of credit risk (CR) is positive but not statistically significant.

The coefficients of Gross Loan Growth (GLG), Unemployment (UNE), Inflation (Inf), an Exchange rate (ER), and Real Gross Domestic Product Growth (GDPG), exerts positive and statistically insignificant impact on bank profitability (ROA) for commercial banks in Ghana.

9. Conclusion

This study aims to examine the nature of NPL and its influence on commercial bank profitability. To attain these objectives a quality analysis was performed using time series data from the 2009 -2018 period. The first objective regarding the impact of non-performing loans on commercial bank profitability was met, it was confirmed that there exists a positive insignificant relationship between non-performing loans and return on assets (ROA) for the banks in Ghana.

The research might influence credit risk procedures and policies applied by banks and may lead to increased supervision efforts made by the central bank of Ghana. Banks should endeavor to follow a balanced approach between credit risk exposure and loan portfolio, this is because an increase in credit risk, directly affects bank profitability.

Based on the data from the International Monetary Fund (IMF), the NPLs level in Ghana is higher compared to the rest of in Sub-Saharan Africa. Hence, the Ghanaian banking industry should maintain control over NPLs and in doing so keep the banking system safe and maintain depositors' trust. The impact of credit risk indicates a positive relationship but is not statistically significant in terms of bank profitability. This signifies that banks that have credit risk under control are in a good position to enhance their profitability objectives.

In the end, the relationship between bank size and bank profitability is positive, but statistically not a significant one. Bank size has an essential role for banks to enable them to attain better financial outcomes and hence serves as amortization should they ever face loan default.

This study has been carried out irrespective of the limitations such as small size, time horizon, research design, and sampling procedure. For instance, this study is a cross-sectional survey, and therefore, any developmental trends which might occur before or after this period present a limitation. Moreover, its sample size of 9 entities makes relatively small study. The research was further limited by inadequate funding due to various expenses incurred directly and indirectly in relation to it.

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APPENDIX 1

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.910 ^a	.827	.806	.008903967	.827	37.888	10	79	.000

a. Predictors: (Constant), GDPG, E, OE, ER, INF, CR, GLG, NPL, ROE, S

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.065	.039		1.663	.100		
	NPL	.003	.014	.010	.191	.849	.738	1.354
	ROE	.022	.006	.246	3.627	.001	.477	2.099
	GLG	.001	.002	.022	.396	.693	.691	1.448
	CR	.016	.009	.105	1.683	.096	.557	1.795
	OE	-.073	.006	-.758	-11.803	.000	.529	1.889
	E	.014	.017	.061	.802	.425	.378	2.645
	S	-.001	.006	-.016	-.139	.890	.166	6.039
	INF	.019	.031	.034	.629	.531	.758	1.320
	ER	.003	.009	.025	.286	.776	.277	3.612
	GDPG	-.001	.002	-.027	-.512	.610	.811	1.233

a. Dependent Variable: ROA

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
		Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
NPL	90	.004658	.398197	.09426353	.078744005	1.607	.254	2.421	.503
ROA	90	-.043844	.069640	.02879037	.020195892	-.790	.254	1.637	.503
ROE	90	-.273512	1.363171	.22069217	.225712751	2.602	.254	13.186	.503
GLG	90	-3.673832	1.000000	.11119527	.466797750	-6.085	.254	49.369	.503
CR	90	.092126	.660126	.40127836	.133436314	-.170	.254	-.842	.503
OE	90	.308031	1.379642	.66222945	.209301412	1.192	.254	2.694	.503
E	90	.02987	.82781	.1556530	.08905026	5.313	.254	37.559	.503
S	90	4.976281	7.026740	6.32802431	.403204624	-.835	.254	.798	.503
INF	90	.074000	.193000	.12020000	.034979352	.722	.254	-.416	.503

continued tab.

ER	90	.15	.68	.4163	.20250	-.045	.254	-1.709	.503
GDPG	90	-.90	.59	-.1345	.48844	.008	.254	-1.204	.503
Valid N (listwise)	90								

WPŁYW KREDYTÓW ZAGROŻONYCH NA RENTOWNOŚĆ BANKÓW: DOWODY EMPIRYCZNE Z BANKÓW KOMERCYJNYCH W GHANIE

Streszczenie

W badaniu określono wpływ kredytów zagrożonych (ang. NPL - *non performing loans*) na rentowność banków komercyjnych w Ghanie w latach 2009–2018. Czynniki wyjaśniające NPL zawierają istotne informacje dla banków. Wyniki analizy wskazują, że wpływ kredytów zagrożonych na rentowność nie jest statystycznie istotny: efektywność kosztów operacyjnych i zwrot z kapitału własnego mają dodatni i statystycznie istotny związek z rentownością. Próba obejmowała sektor bankowy (banki komercyjne) w okresie 2009–2018. Czynniki te obejmują zwrot z aktywów jako funkcję stosunku kredytów zagrożonych, ryzyko kredytowe, kurs walutowy, inflację, bezrobocie i wielkość banku jako zmienną kontrolną. Oszacowania dokonano za pomocą regresji przy użyciu wielowymiarowej regresji liniowej za pomocą oprogramowania SPSS.

W badaniu wzięto pod uwagę ograniczone wskaźniki bankowe jako wyznaczniki kredytów zagrożonych i ograniczono się do określonego przedziału czasowego 2009–2018. Wyniki przeprowadzonej regresji wskazują, że na rentowność banków duży wpływ ma wzrost liczby kredytów zagrożonych. Wielowymiarowa regresja liniowa pokazuje, że rentowność ma pozytywny, nieistotny wpływ na kredyty zagrożone. Z drugiej strony efektywność kosztów operacyjnych i zwrot z kapitału mają dodatni i statystycznie istotny związek z rentownością. W związku z tym, gdy wydatki sektora bankowego są wyższe w porównaniu z jego przychodami, ogólny zysk banków byłby niski, co miałoby wpływ na zagrożone kredyty banków. Dlatego też koszty operacyjne powinny być utrzymywane na jak najniższym poziomie.

Słowa kluczowe: kredyty zagrożone, ryzyko kredytowe, banki komercyjne.