

COVID-19 Pandemic and Non-Performing Bank Asset

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Abstract

This study examined effect of COVID-19 pandemic and non-Performing loans in the Nigeria banking industry. The objectives of the study were to determine the effects of COVID-19 pandemic on non-performing loans in the Nigeria banking industry as well as ascertaining the effect of non-performing loans on the Nigerian economy. Using secondary data sourced from Nigerian Centre for Disease Control (NCDC), CBN statistical bulletin and World Health Organisation (WHO) websites, the study employed the ordinary least square regression method to carry out the analysis. The findings reveal that COVID-19 pandemic had a negative and significant impact on non-performing loans in the Nigeria banking industry while non-performing loans recorded a negative and significant impact on the Nigeria economy within COVID-19 pandemic period of 2020-2021. It is recommended, among others, that to achieve the objective of quality portfolio management in banks and to contribute to economic growth of Nigeria, improved sound management of credit portfolio is key

Keywords: *Credit, Non-Performing Loan, Credit Crunch, Default, Asset Management.*

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Background to the Study

In virtually all countries of the world, banking industry remains the most regulated by a great deal (Hull, 2012)). One of the areas of stiff regulations is the minimum benchmark requirement of the capital banks should maintain to enable them absorb losses in the event of emergencies. It is this kind of capital requirement which the Basel Committee conducted to aim to enhance the key supervisory issue and thus improve the quality of banking supervision. To achieve this minimum capital requirement at all times as required by regulation, concerted efforts must be put in place to ensure it is not impaired by the non-performing loan which is the riskiest asset of banks across the world.

The might of the banking industry has been found to be an important prerequisite for guaranteeing the viability, stability and growth of any economy, hence the regular assessment of financial condition of banks becoming a fundamental goal for regulators (Halling and Hayden, 2006). In this regard, the safety of banking system depends to a large extent on the profitability and capital adequacy of banks. A non-performing commercial bank loan is a loan in which the borrower has defaulted or has not made scheduled loan payments for one-day past or more. The Non-Performing Loan (NPL) ratio of a bank represent the percentage measure of loans already lost or at risk of becoming non-performing of the total amount of loans at the bank (Ari and Anil, 2020). An excessively high NPL ratio causes bank to limit their credit supply to borrowers, often causing a credit supply contraction in the immediate aftermath. Banks also risk profit loss and even bankruptcy if no immediate measures are not taken to reduce high levels of NPL ratios (Panta and Bishop, 2019).

At the macroeconomic level, countries with economies characterized by banks with high NPL ratios often experience sluggish economic growth, a dramatic decrease in market confidence, increased distortion of credit allocation, sustained or increased demand of loans from borrowers, and a large contraction in available credit supply. To that end, both bank administrations as well as national governments take measures to ensure NPL ratios are kept at healthy levels. However, not all instances of high NPL ratios in modern economic history are addressed properly, and many of the NPL ratio crises are accompanied by recessional periods in the economy. At the start of 2015, there were 33 countries with an NPL ratio of above 10%. Out of those 33 countries, 20 had NPL ratio of over 15% and 11 had an NPL ratio of over 20% (International Monetary Fund, 2018). In Nigeria, as revealed by the Central Bank of Nigeria (2022), total non-performing loans in the banking sector hit N1.21tn as of the end of February 2022. The CBN stated that the total credit in the sector rose to N25.25tn as of the end of February 2022 from N21.13tn position as of same period in 2021. The industry NPL ratio continued to trend below the prudential threshold of five per cent

Since the coronavirus outbreak in 2019, the Nigerian government has adopted a social distancing policy to break the chain of spreading COVID-19. Indirectly, this social distancing policy hampered several business sectors from operating physically. Some even had to lay off their employees to reduce operational costs. This systemic impact also affects debtor's ability in repaying loans originated from bank credit. With the attendant failure and/or inability of several debtors to honour their repayment obligations, the banking sector began to be cautious

in channeling credit to needy economic units in order to avoid the risk of further bad credits. The difficulty in repaying by borrowers has made several banks, especially those with high credit with the small-scale businesses, experience increase in bad credit cases. The occurrence of bad credit cases in several banks is a sign that the bank's operational activities are weak. The COVID-19 pandemic is an external factor beyond the ability of debtors to control, which causes difficulties for debtors to repay credits originating from bank credits even as the coronavirus pandemic is viewed to natural disaster.

Studying the extent of the effect of non-performing loans is of particular importance in developing and emerging market economies such as Nigeria. The significance of non-performing loans is mainly due to the vulnerability of these usually non-diversified economies to external shocks and macroeconomic instability. At a micro level, bank bankruptcy is usually preceded by a build-up of non-performing loans at a systemic level, and banking crises are also preceded by a substantial accumulation of non-performing loans (Jiménez, Ongena, Peydró, Saurina, 2017).

Problem of Study

A major challenge facing the banking sector is the prevalence of nonperforming loan asset (NPL). The high incidence of such loans have been identified as a factor that limits the effectiveness and efficiency of the banking sector in promoting economic growth in many countries (Boudriga, Taktak, Jellouli, 2010). It is observed that the already non-performing loan assets could be exacerbated by the pandemic. Given the scenario above, this study was initiated to among others, investigate the possible effects of COVID-19 pandemic on loan asset performance in the Nigeria banking industry. The specific objectives of this study are to:

- i. Ascertain the effects of COVID-19 pandemic on non-performing loan assets in the Nigeria banking industry.
- ii. Determine the effect of non-performing loan assets on the Nigerian economy

Hypotheses

In order to acquire the knowledge of possible effects of COVID-19 pandemic on non-performing loan assets of banks in Nigeria, and inversely the impact of non-performing loan assets on the Nigeria economy, we made the following null hypotheses:

1. COVID-19 pandemic does not significantly affect non-performing loan assets in Nigeria banking industry
2. Non-performing loan assets do not have significant effect on the Nigeria economy

The rest of this paper is structured as follow: part two contains review of relevant literature, part three has the methodology adopted in carrying out the study, part four contains presentation of data and their analysis thereof while the last part five presents the summary, conclusion and recommendations for improved management of credit risk asset in the Nigeria banking industry.

Review of Relevant Literature

Conceptual Review

Non-Performing Loan Asset

According to International Monetary Fund (IMF) (2016), a loan is deemed to be non-performing if payments (principal and/or interest) due have not been paid for at least 90 days. A major challenge confronting the banking sector in Nigeria is the prevalence of Non-Performing Loans (NPLs). Nigeria has experienced financial sector problems in the past and Non-Performing Loans (NPLs) were identified as the main cause of these (Adeyemi, 2011; Bebeji, 2013; Somoye, 2010).

As Kolapo, Ayeni and Oke (2012), assert that these toxic loans (estimated at \$33.3billion) were taken off the balance sheet of banks with public funds in 2010. However, in spite of the depressed official figures, in the preceding three years ending in 2014, the magnitude has grown by 22%. This trend has continued to give the monetary authorities in Nigeria a serious cause for concern as different measures have been employed in recent times to rein in the severely increasing trend of non-performing loans. It is commendable that governments in Nigeria have acknowledged this problem, but noteworthy is the fact that policy initiatives have failed to contain NPLs, which have continued to increase in absolute terms between 2011 and 2014 by about 122% in Nigeria as against a 5% maximum benchmark of an annual growth of NPLs (Anderson et al., 2011). Their model predicts Nigeria having the highest Gross Domestic Product (GDP) growth rate over the same period of 5.4% in domestic currency. Given the trend of NPLs in Nigeria, her potential and future role in global economy could be put in jeopardy, hence requiring attention.

Non-performing loans can lead to efficiency problem for banking sector. It is found by a number of economists that failing banks tend to be located far from the most efficient frontier Berger and Humphrey (1992), Barr and Siems (1994) De Young and Whalen (1994), Whelock and Wilson (1994), because banks don't optimize their portfolio decisions by lending less than demanded.

Credit Crunch

A "credit crunch" is a disequilibrium phenomenon which is present when banks are unwilling to lend, especially when a firm with profitable projects cannot obtain credit in spite of low interest rates (lower than the expected marginal products). Credit crunch results in excess demand for credit and hence credit rationing, where loans are allocated via non-price mechanism. The phenomena that banks are reluctant to take new risks and commit new loans is described as the "credit crunch" problem. According to the United States Council of Economic Advisors (1991), credit crunch is a situation in which the supply of credit is restricted below the range usually identified of investment projects.

Capital Adequacy

CBN (1995) claims that banks are expected to maintain adequate capital to meet their financial obligations operate profitably and contribute to promoting a sound financial system. It is for these reasons that the CBN prescribes minimum capital requirements. This minimum

ratio of capital adequacy has been increased from 6 percent in 1992 to 8 percent in 1996. It is further stipulated that at least 50 percent of the component of a bank's capital shall comprise paid-up capital and reserves, while every bank shall maintain a ratio of not less than one to ten (1.10) between its adjusted capital funds and its total credit. When a bank's capital falls below the prescribed ratio, it is an indication that the bank may be heading for distress.

Inability to meet stipulated higher minimum capital requirements was one of the criteria used for classifying banks into either "healthy" or "unhealthy" and later category was barred from the foreign exchange market. In describing capital inadequacy, Ogundina (1999) argues that capital in any business whether bank or company serves as means by which losses may be absorbed. It provides a cushion to withstand abnormal losses not covered by current earnings pattern. Unfortunately a good number of banks are grossly undercapitalized. This situation could partly be attributed to the fact that many of the banks were established with very little capital. This problem of inadequate capital has been further worsened by the huge amount of non-performing loans which have eroded the capital base of some of these banks.

Theoretical Framework

The theories that are relevant and could constitute the basis of this study include: agency theory, stakeholder theory, policeman theory, moral hazard theory and transaction cost theory.

Agency Theory

This theory is rooted in the works of Berle and Means (1932) on the separation of firm ownership for management and often credited to the landmark work of Jensen and Meckling (1976) and Fama and Jensen (1983). They suggest that Agency problems will always arise in circumstances where the principal (shareholders) employs the agent (professional managers) to undertake some duties on their behalf for a reward. Thus, management acting in the capacity of an agent to the principal owes the principal a fiduciary duty of care to run the business in the best interest of the shareholders for a given reward (Berle and Means, 1992; Jensen and Meckling, 1976).

The theory suggests that shareholders who are less informed are likely to demand information that would help them to monitor the behaviour of the professional managers who are better informed. Shlefer and Vishny (1997) highlighted the issue of information asymmetry and agency problem from the agent perspective. They argued that the professional manager whose compensation is associated with the effective management of capital provided by the shareholders reflected by the company's performance might likely influence the misstatement of the financial statements to their advantage. From the Agency theory perspective, the key function of auditing is to mitigate against information asymmetry among related parties. Agency problems could also arise due to adverse selections and moral hazards (Jensen and Meckling 1976).

Moral hazard is the risk that a party has not entered into a contract in good faith or has provided misleading information about its assets, liabilities, or credit capacity. A moral hazard

occurs when one party in a transaction has the opportunity to assume additional risks that negatively affect the other party. The decision is based not on what is considered right, but what provides the highest level of benefit, hence the reference to morality. This can apply to activities within the financial industry, such as with the contract between a borrower or lender while adverse selection refers to the possibility of shareholders hiring agents who do not have the right kind of skills that may enable them to deliver expected returns (Adelopo, 2010). While moral hazards tend to happen after the contract, adverse selection may occur both before and after the contract between the shareholders and professional managers.

This theory is fundamental to the demand of auditing services considering the contributions of Jensen and Meckling (1976). They argue that a component of the agency costs supported by shareholders for the monitoring of the professional manager's action. Since it is mandated by laws that public limited companies are required to engage the services of an independent auditor that needs to review and approve the financial statements prepared by the directors of the company then the independent auditors effort is a relevant component of monitoring costs, as long as auditors have to make sure that professional managers act according to the shareholder's interest, while also independent auditors will spend more time inspecting the manager's activity. Therefore, inversely, the audit may delay by a period if the agency problems are enormous, hence the agency theory is fundamental in considering factors of audit report lag.

Stakeholder Theory

The Stakeholder theory was developed by Freeman in (1984). In recent years, the debate over whether the corporation should be designed and held accountable for shareholder wealth maximization or for meeting the goals of multiple stakeholder's as intensified. The shareholder perspective has come under scrutiny as supporters of stakeholder's theory often views such a perspective as restrictive, not least, as it focuses only on shareholders and ignores or mistreats other stakeholders. The actual operation of market efficiently in real world has been questioned and argued for wider business responsibilities (Clarkson, 1995). The recent corporate collapses have further fuelled such debate where each group has put forward its own arguments on organisational objectives and governance structure.

Stakeholders are group of persons who have interest in organisation actions. According to Freeman (1984), stakeholders are individual or group who possess vested interest in an organisations and can be affected or affect by the organisation operations. The theory suggests that firm activities should be projected on longer and broader perspectives (Freeman, 1984). The theory posits that the importance of corporate activity is not only for the benefit of the shareholders but also for the benefits of all relevant stakeholders and it is all these relevant stakeholders which include: employees, shareholders, customers supplies, the government, trade unions and the society in general should be the main nexus of the modern firm (Cadbury, 1992). This consideration should thus impact upon the formulation of corporate strategy of the organisation as a whole (Marcoux, 2003).

The Moral Hazard Theory

The Moral Hazard Theory was developed by Zeckhauser (1970). Moral hazard refers to a condition leading to risk that results when a bank's customer provides information that is misleading about its financial statements or his or her credit capacity, or has a hidden incentive to take risks that are unusual in an attempt to earn a profit before the contract settles. The bank customer who is the borrower may not enter into the contract with the bank in good faith, hence gives misleading information about his or financial status or credit capacity. The theory postulates that, the problem of moral hazard may result from information asymmetric between banks customer and the bank which makes it almost impossible to distinguish bad from good prospective borrowers (Richard, 2011). Researchers have noted that moral hazard problem has led to overtime pilling up of NPLs (Bofondi and Gobbi, 2003).

Transactions Costs Theory

The theory was first developed by Schwartz (1974) is the anchor theory for this study. The theory infers that suppliers may have an advantage over traditional lenders in checking the real financial situation or the credit worthiness of their clients. Suppliers also have a better ability to monitor and force repayment of the credit. All these superiorities may give suppliers a cost advantage when compared with financial institutions. Three sources of cost advantage were classified by Petersen and Rajan (1997) as follows: information acquisition, controlling the buyer and salvaging value from existing assets. The first source of cost advantage can be explained by the fact that sellers can get information about buyers faster and at lower cost because it is obtained in the normal course of business. That is, the frequency and the amount of the buyer's orders give suppliers an idea of the client's situation; the buyer's rejection of discounts for early payment may serve to alert the supplier of a weakening in the credit-worthiness of the buyer, and sellers usually visit customers more often than financial institutions do.

Meanwhile, an in-depth review of the supporting theories above shows clearly that the most appropriate and relevant theory on which this study is anchored is the moral hazard theory. This theory underpins this study largely because efficient financial systems and financial intermediation requires accurate information about borrowers and the venture the credits are used for. More so, the moral hazard theory states that the higher the nonperforming loans the lower the financial performance and the higher the assets quality, the higher the financial performance of banks and vice versa.

Empirical Evidence

Oyinlola, Osayomi and Adeniyi (2020), explored the nature of the COVID-19 both in terms of the shape of its growth curve and then estimated the basic reproduction number on the one hand, while also providing forecast of the path of the pandemic, particularly the number of infections for Nigeria. Applying the poisson, negative binomial and Wallinga and Teunis (2004) modelling techniques in treating data obtained, the study came up with findings that the incidence of infections may just begin to taper off by the end of the second quarter before stabilizing at about the third quarter of 2020.

Inegbedion (2021), examined the impact of COVID-19 on economic growth in Nigeria using opinions and attitudes with the objective to ascertain respondents' perception of the effect of the COVID-19 pandemic on economic growth in Nigeria. The study applied the cross-sectional survey research design with a mix-method in collecting the research data. The secondary data obtained for the study were analysed using percentage changes while the primary data were analysed using a one-sample t-test and least-squares technique. The findings show that the COVID-19-induced lockdown had significantly constrained economic activities and the circular flow of income. It was also found that the perceived reduction in the circular flow of income in the wake of the COVID-19 lockdown had negatively impacted on economic growth in Nigeria.

Hayatuddin, Muhammad and Umar (2020), investigated the lockdown effect on economic activities in Nigeria as the lockdown response measure to COVID-19 pandemic claim to pose a serious and potentially long term socio-economic units. Considering four regions in Nigeria (Northwest, North-Central, South-South and Southeast), the study adopted a quantitative research approach which entails systematic evaluation of individuals' behavior towards an unprecedented economic shock and their response to the manner in which the situation might unfolds by lifting the lockdown measure in Nigeria. The results show that most socio-economic challenges including job loss, increased social vices, rise in poverty level, fall in economic activities, as well as fall in the level of GDP faced by individuals was not a direct consequent of the lockdown. It was also found that both public and individuals need to establish democratic preferences, and trust on health professionals or experts.

Using expo facto research design to collate secondary data from the Nigeria Centre for Disease Control (NCDC), Central Bank of Nigeria (CBN) and Naira metrics covering the period April 1 to June 30, 2020, Onwughai (2020) determined the impact of the COVID-19 on the Nigeria economy with empirical evidences from the foreign exchange rates. The findings reveal that a negative relationship exist between the impact of the COVID-19 and the value of the naira against the dollar. In the light of the result, the study concluded that there was no relationship between COVID-19 and the Nigeria foreign exchange rates. The study recommends that the government and its agencies should focus more on other economic factors like oil price and importation to manage the exchange rate instead of COVID-19

Hardiyanti and Lukmanul (2021) investigated whether the impact of COVID-19 was on the increase in bad credits at conventional commercial banks in Indonesia. Using secondary data sourced from the Ministry of Health and from the Financial Services Authority (OJK), each of which consists of 50 data samples, the study employed simple regression analysis to determine the magnitude of the influence of COVID-19 on non-performing loans. The results show clearly that COVID-19 has a significant effect on non-performing loans, with the implication that other researchers could make COVID-19 an external indicator of an emergency beyond human ability that can affect the level of non-performing loans anywhere in the world.

Research Gap and Contribution

As highlighted above, the strength of banks plays a significant role in the viability, stability and growth of any economy which depends largely on the profitability and capital adequacy unimpaired by (loan asset) losses. A thorough review of empirical evidences bothering on COVID-19 pandemic cum non-performing loan assets in Nigeria banking industry brought to the fore the scarcity of comprehensive studies as well as lacking conclusion of the subject matter. While most of the studies have focused on only one segment of the subject area, that is, effects of non-performing loan assets on the national economy, others which captured the entire scape by investigating COVID-19 cum loan asset performance in the Nigeria banking industry have their study terminated in the first and second quarter of 2020 when the impact of the pandemic was still at the unfolding stage.

For example, Oyinlola, Osayomi and Adeniyi (2020) come up with findings that the incidence of infections may just begin to taper off by the end of the second quarter before stabilizing at about the third quarter of 2020, Igbinedion (2020) finds that though the COVID-19-induced lockdown had significantly constrained economic activities and the circular flow of income. it was also found that the perceived reduction in the circular flow of income in the wake of the COVID-19 lockdown had negatively impacted on economic growth in Nigeria.

Hayatuddin, Muhammad and Umar (2020), who investigated the lockdown effect on economic activities in Nigeria as the lockdown response measure to COVID-19 pandemic claimed to pose a serious and potentially long term socio-economic units find that most socio-economic challenges including job loss, increased social vices, rise in poverty level, fall in economic activities, as well as fall in the level of GDP faced by individuals was not a direct consequent of the lockdown. Similarly, Onwughai (2020) who determined the impact of the COVID-19 on the Nigeria economy with empirical evidences from the foreign exchange rates finds that a negative relationship exists between the impact of the COVID-19 and the value of the naira against the dollar, and in the light of the finding concluded that there was no relationship between COVID-19 and the Nigeria foreign exchange rates

Hardiyanti and Lukmanul (2021) who investigated whether the impact of COVID-19 was on the increase in bad credits at conventional commercial banks in Indonesia find that COVID-19 has a significant effect on non-performing loans, with recommendation for further studies to other researchers to make COVID -19 an external indicator of an emergency beyond human ability that can affect the level of non-performing loans elsewhere.

From analysis of the empirical evidences above, it is thus clear that there is scanty review which either terminated in 2020 (when the pandemic was at its early stage) or conducted outside outside the shore of Nigeria, as well as lack of consensus on COVID-19 pandemic and non-performing loans in Nigeria. Therefore, we have found the existence of research gap and devote our effort to conduct a research on it to contribute in bridging the identified gap in literature.

Methodology

Research Design/Data Source/Analysis

The research design for this study is *quantitative and ex post research design*. The choice of quantitative research design is motivated by the fact that the study seeks to find out empirically, the effect of COVID 19 on non-performing loans in the Nigeria banking industry. The study is also descriptive in nature as it is designed to obtain data that describe the characteristics of the topic of interest in the research (Hair et al., 2011). Meanwhile the scope of this study, in consideration of the occurrence period of COVID-19 pandemic, spans through the first quarter of 2020 to fourth quarter of 2021.

This study applied secondary data, which were sourced from the Central Bank of Nigeria Statistical Bulletin, financial statements extracted from the annual reports of banks, National Deposit Insurance Corporation (NDIC) and National Centre for Disease Control (NCDC). The multivariate with ordinary least square (OLS) regression technique was employed in analyzing data obtained for this study. With aid of e – view software. The researcher ensured that all assumptions of multiple regressions were obeyed even as the data analysis techniques employed were the descriptive statistics and regression analysis using quarterly data.

Model specification

The model below was used to modify and estimate as follows:

Model I

$$\text{NPL} = (\text{COVID 19}) \dots \dots \dots (1)$$

$$\text{NPL} = \beta_0 + \beta_1 \text{COVID 19} + U_t \dots \dots \dots (2)$$

Model II

$$\text{GDP} = f(\text{NPL}) \dots \dots \dots (3)$$

$$\text{GDP} = \beta_0 + \beta_1 \text{NPL} + U_t \dots \dots \dots (4)$$

Where:

GDP = Gross Domestic Product

NPL = Non – performing loans

U_t = Error or disturbance term

β_0 = Represents the constant or the intercept on y axis

$\beta_1 \dots \beta_3$ = Regression Co-efficient

Data Presentation, Analysis and Discussion of Findings

Presentation of Data

Table 1: Showing data on Non – performing loans (NPL), Gross Domestic Product and COVID 19.

YEAR 2020	GDP ₦	COVID	NPL ₦B
Quarter 1	35,969.90	135	10,903.89
Quarter 2	35,969.90	25694	10,902.03
Quarter 3	39,714.72	58848	12,839.57
Quarter 4	44,230.80	87607	13,783.89
YEAR 2021			
Quarter 1	40,014.50	162891	15,634.56
Quarter 2p	41,123.50	151110	15,561.90
Quarter 3	41,567.50	141908	15,703.63
Quarter 4	42,0117.60	142309	16,01891

Source: Central Bank of Nigeria Statistical Bulletin, National Deposit Insurance Corporation (NDIC) and National Centre for Disease Control (NCDC) 2022.

Table 2: Data Analysis

Dependent Variable: NPL

Method: Least Squares

Date: 11/14/21 Time: 04:45

Sample (adjusted): 2020 Q1 2021 Q4

Included observations: 8 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1071.090	242.4506	4.417765	0.0036
COVID 19	-0.000612	0.000116	-5.279301	0.0341
R-squared	0.992999	Mean dependent var	405.0780	
Adjusted R-squared	0.985998	S.D. dependent var	76.47937	
S.E. of regression	0.904974	Akaike info criterion	7.527060	
Sum squared resid	163.7958	Schwarz criterion	7.292723	
Log likelihood	-15.81765	Hannan-Quinn criter.	6.898122	
F-statistic	141.8387	Durbin-Watson stat	2.247455	
Prob(F-statistic)	0.007001			

Table 3: Model I

The OLS result is stated in the table below:

Variable	Coefficient	Std. error	t-statistics	Prob. Value
C	1071.090	242.4506	4.417765	0.0036
COVID 19	-0.000612	0.000116	-5.279301	0.0341
R-squared			0.985998	
Adjusted R-squared			0.94974	
DW Stat			2.247455	
F-statistic			141.8387	
Prob(F-statistic)			0.007001	

Constant

The constant of the equation is positive and statistically significant. The constant is 1071.090. This implies that if the independent variables are held constant the dependent variables will become 1071.090.

COVID 19

The coefficient of COVID 19 is negative and statistically significant. The value of the coefficient is -0.000612. This implies that there is an inverse relationship between COVID 19 and non-performing loans.

Coefficient of Determination (R^2)

The R^2 value is 0.985998 and R^2 (adjusted for loss in degree of freedom) is 0.94974. The value of R^2 shows that the model explains variations in gross domestic product to the tune of 99%. Durbin Watson statistics value of 2.247455 shows the absence of negative autocorrelation.

Table 4: F-Statistics

The F-statistics which is used to determine the overall significance of the entire regression model yielded an F-Statistic value of 141.8387. This implies that the entire regression model is statistically significantly.

Dependent Variable: GDP

Method: Least Squares

Date: 11/14/21 Time: 04:48

Sample (adjusted): 2020Q1 2021 Q4

Included observations: 8 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2312.090	11.4506	3.192167	0.0016
NPL	-3.847617	0.666120	-5.776164	0.0041
R-squared	0.781239	Mean dependent var		405.0780
Adjusted R-squared	0.771018	S.D. dependent var		76.47937
S.E. of regression	8.049747	Akaike info criterion		7.527060
Sum squared reside	163.7958	Schwarz criterion		7.292723
Log likelihood	-15.81765	Hannan-Quinn criter.		6.898122
F-statistic	149.1117	Durbin-Watson stat		2.117955
Prob(F-statistic)	0.000101			

Table 5: Model II

The OLS result is stated in the table below:

Variable	Coefficient	Std. error	t-statistics	Prob. Value
C	2312.090	11.4506	3.192167	0.0016
NPL	-3.847617	0.666120	-5.776164	0.0041
R-squared		0.781239		
Adjusted R-squared		0.771018		
DW Stat		2.117955		
F-statistic		149.1117		
Prob(F-statistic)		0.000101		

Constant

The constant of the equation is positive and statistically significant. The constant is 2312.090. This implies that if the independent variables are held constant the dependent variables will become 2312.090.

NPL (Non-Performing Loans)

The coefficient of NPL (Non-Performing Loan) is negative and statistically significant. The value of the coefficient is -3.847617. This implies that there is a inverse relationship between NPL (Non-Performing Loan) and Gross Domestic Product. A unit increase in NPL (Non-Performing Loans) will result in -3.847617 decrease in GDP

Coefficient of Determination (R^2)

The R^2 value is 0.781239 and R^2 (adjusted for loss in degree of freedom) is 0.771018. The value of R^2 shows that the model explains variations in gross domestic product to the tune of 78%. Durbin Watson statistics value of 2.117955 shows the absence of negative autocorrelation.

F-Statistics

The F-statistics which is used to determine the overall significance of the entire regression model yielded an F-Statistic value of 149.1117. This implies that the entire regression model is statistically significantly.

Test of Hypotheses

Model I

COVID 19 pandemic has not had positive and significant impact on non-performing loans in the Nigeria banking industry. The hypotheses above were tested by considering the f-tabulated and f-calculated values.

Decision Rule: Reject the null hypothesis if the f-calculated is greater than the f –critical (table value) at 5% level of significance.

Decision: A comparative analysis of both the F-calculated value of F– Statistics in model one shows that the F-Statistic = 141.8387 and f- tabulated of 0.7890 shows that the f- calculated is

higher than the f -tabulated. The null hypothesis is therefore rejected and concludes otherwise that COVID 19 pandemic had negative and significant negative effect on non-performing loan assets in the Nigeria banking industry within the period of study

Model II

Null Hypothesis (Ho) Two:

Non-performing loans did not significant effect on the Nigerian economy during COVID 19 pandemic.

Decision Rule: Reject the null hypothesis if the f -calculated is greater than the f -critical (table value) at 5% level of significance.

Decision: A comparative analysis of both the F -calculated value of F -Statistics in model one shows that the F -Statistic = 149.1117 and f - tabulated of 0.5300 shows that the f - calculated is higher than the f -tabulated. The null hypothesis is therefore rejected and concludes otherwise that Non-performing loans had significant negative effect on the Nigerian economy during COVID 19 pandemic.

Summary of Findings

Based on the objectives of the study and the stated hypotheses the following are the summary of findings:

- i. COVID-19 pandemic had a negative and significant impact on non-performing loans in the Nigeria banking industry.
- ii. Non-performing loans has a negative and significant impact on the Nigeria economy during COVID-19 pandemic.

Conclusion

This study attempted to find evidence as to whether the COVID-19 pandemic actually contributes to the rise in non-performing loan assets in deposit money banks in Nigeria. The results of the data analysis proved that it is true that the COVID-19 pandemic has effects on the increase in bad credit cases in several deposit money banks in Nigeria within the study period. Therefore, the COVID-19 cases could be used as one of the external factors that contributed to increase in bank credit, increased inflation, and exacerbation in exchange rates in Nigeria. The persistence increase in non-performing loans results in poor Performance of Deposit Money bank in Nigeria. Also, Non-Performing Loan reduces deposit money banks return on asset. Thus, the study concludes that the occurrence of COVID-19 is one of the bank's external factors which leads to a deterioration in bad and doubtful loan situation as well as impacted on the increase in the number of non-performing loans of deposit money banks in Nigeria.

These situations were caused by a combination of factors including the pressure on interest margins occasioned by reduced credit demand and interest concessions granted to businesses and individuals as pandemic reliefs, which thus increased impairment provisions and low yields on surplus liquidity. Moreso, it could be concluded that Impairments constitute

additional financial costs to the lender resulting from the reduction in the creditworthiness of the borrower. Whereas bad loans are to be written off completely by the lender, impairments are deductions that should reflect in financials of the lender pending when the loans become active.

Recommendations

Based on the foregoing research findings and their respective implications, the following are recommended:

1. Given the reduction in the Non-Performing Loans (NPLs) ratio to 4.95 per cent in June 2022, compared with 5.7 per cent in June 2021, as noted by CBN (2022), we urge the Central Bank of Nigeria to sustain its tight prudential regime to ensure that the NPLs ratio is brought well below its prudential benchmark moving on. This will no doubt create sufficient lead-time to apply remediable solution before serious damage is done.
2. Adequate monitoring and timely evaluation of borrower's repayment process is key and should be given top priority on management of banks risk assets.
3. Every loan granted by each of the bank has to be adequately collateralized and the incidence of insider related credits deemphasized to avoid loan losses or huge non-performing loans.
4. The regulatory authorities on the other hand should engage themselves in capacity building to enable them perform their supervisory and regulatory functions as effectively as possible.

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Appendix

YEAR 2020	GDP	COVID	NPL
Quarter 1	35,969.90	135	10,903.89
Quarter 2	35,969.90	25694	10,902.03
Quarter 3	39,714.72	58848	12,839.57
Quarter 4	44,230.80	87607	13,783.89
YEAR 2021			
Quarter 1	40,014.50	162891	15,634.56
Quarter 2	41,123.50	151110	15,561.90
Quarter 3	41,567.50	141908	15,703.63
Quarter 4	42,0117.60	142309	16,01891

Source: Central Bank of Nigeria Statistical Bulletin, National Deposit Insurance Corporation (NDIC) and National Centre for Disease Control (NCDC)