Non-Performing Loans and Performance of Deposits Money Banks in Nigeria

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Abstract: **The study examined the relationship between non-performing loans and performance of deposits money banks in Nigeria. The specific objectives of the study are to: determine the relationship between non-performing loans to total loans and performance of deposits money banks; ascertain the relationship between liquid assets to total assets and performance of deposits money banks. Ten (10) banks were selected from the Nigeria Stock Exchange (NSE). The data used were secondary data and were drawn from 2009 to 2018. The data used were sourced from the bank's annual report and Nigerian Stock Exchange fact book. The data collected were analysed using correlation matrix. The results show that non-performing loans to total loans have no significant relationship with performance of deposits money banks in Nigeria; whereas liquid assets to total assets have significant relationship with performance of deposits money banks in Nigeria. The study, therefore among others recommends that the Regulatory agency such as the Central Bank of Nigeria and the Nigerian Deposit Insurance Corporation should formulate rules that will reduce the occurrence of Loans for which repayment of principal or interest has been overdue for three months or more. Since non-performing loans to total loans have negative relationship with performance of deposits money banks in Nigeria.**

Keywords: **non-performing loans, performance, liquid assets, Banks, Nigeria.**

I. INTRODUCTION

1.1 Background to the Study

The financial soundness indicators (FSIs) were introduced following the financial crises of the 1990s to provide country indicators relating to the existing financial health and reliability of financial organizations, as well as to that of the commercial and household segments (Restoy, 2017). The essential indicators are built on the CAMELS (Capital adequacy, Asset quality, Management soundness, Earnings, Liquidity, Sensitivity to market risk) rating system, which is a generally used managerial structure for the valuation of individual banks' financial reliability (Athanasoglou, Brissimis & Delis, 2008). The framework considers a bank's capital adequacy, asset quality, management, earnings, profitability, liquidity and sensitivity to market risk (Restoy, 2017). Thus, in essence the FSIs follow a micro sensible reason. But, when combined, they deliver a picture of the health of countrywide and worldwide financial organizations, and help in aiming to potential susceptibilities that may require being addressed with whichever micro- or macro prudential policies.

Indeed, FSIs have become a significant contribution in both the scrutiny procedure conducted by global groups, such as the IMF, and the macro prudential framework which is being advanced in most jurisdictions. In specific, FSIs are usually used to establish nationwide risk assessment yardsticks, as contribution to nationwide financial stability indices and as important measurable orientations in national, regional and worldwide financial stability reports.

1.2 Statement of the Problems

The financial turmoil of early part of 20th century in the developed markets and more recent episode in Nigerian Banking Industries where many banks collapsed highlighted the need for continuous monitoring of financial system and an empirical research on this important concept. The Nigerian banking sector witnessed dramatic post consolidation growth in 2005 and this development posed a lot of challenges for the industry and also for regulators. The role of banks remains vital in the funding economic action in overall, and in diverse sections of the market in specific (Athanasoglou, Brissimis & Delis, 2008). The banks' productivity helps forecasting monetary crises because a gainful banking sector is healthier to withstand negative shocks.

The empirical works done so far focuses on diverse groups of determinants. Many studies measure the stimulus of the macroeconomic atmosphere on the banks' performance. While some measure the individual banks' performance to diverse macro-indicators (Demirgüç-Kunt & Huizinga, 1999; Pasiouras & Kosmidou, 2007; Athanasoglou et al., 2008), other studies engage collective bank data to test for the effect of the financial setting (Albertazzi & Gambacorta, 2009). In addition, some of works focuses on the features of the banking sector. For instance, factors as the attentiveness level, improvements, rivalry, possession or the presence of foreign banks, are inspected by Short (1979), Berger and Humphrey (1997), Isik and Hassan (2003), Grigorian and Manole (2006), Iannotta, Nocera & Sironi (2007), Brissimis, Delis and Papanikolaou (2008), García-Herrero, Gavila and Santabarbara (2009).

Finally, a previous category of documents lectures the role of internal issues, such as non-performing loans (Salas &

Saurina, 2002; Louzis et al., 2012), loan loss provisioning (Bikker & Metzemakers, 2005; Bouvatier & Lepetit, 2008), capital (Berger, 1995; Jacques & Nigro, 1997) or interest rate risk (Hmweck & Kilcollin, 1984).

However, most of these studies focused on developed countries and individual banks. The emerging and transition banking sectors have been less investigated, with few exceptions (Yildirim & Philippatos, 2007; Andrieş, Cocris & Ursu, 2012; Mirzaei et al., 2013; Lee & Hsieh, 2013). Likewise, as far as we know, no econometric study has yet considered the connection between financial soundness indicators and performance of deposits money banks in developing country such as Nigeria. In contrast to this contextual, we contribute to the existing empirical analyses in several ways. First, we option to inspect the association between financial soundness indicators and performance of deposits money banks in Nigeria, having in mind the detail that the obtainability of data constitutes a problem for performing time-series analysis. Second, we investigate the incident of ten deposits money banks in Nigeria, for the period 2009 – 2018, using annual report aggregate data. Finally, while considering our explanatory variables from CAMELS (Capital Adequacy, Assets Quality, Management, Earnings, Liquidity and Sensitivity to Market Risk), we excluded those that relate with profitability (performance) thereby considered Assets Quality and Liquidity in the study.

1.3 Objectives of the Study

The core objective of this study is to investigate the relationship between non-performing loans as proxy to financial soundness indicators and performance of deposits money banks in Nigeria. The specific objectives are to:

1. Determine the relationship between non-performing loans to total loans and performance of deposits money banks in Nigeria.
2. Investigate the relationship between liquid assets to total assets and performance of deposits money banks in Nigeria.

1.4 Research Questions

The following research questions were considered in the study.

1. To what extent does non-performing loans to total loans relate with performance of deposits money banks in Nigeria?
2. To what extent do liquid assets to total assets relate with performance of deposits money banks in Nigeria?

1.5 Research Hypotheses

In order to address the issue raised above, the following hypotheses were formulated:

1. Non-performing loans to total loans has no significant relationship with performance of deposits money banks in Nigeria.
2. Liquid assets to total assets have no significant relationship with performance of deposits money banks in Nigeria.

II. REVIEW OF RELATED LITERATURE

2.1 Conceptual Framework

2.1.1 Financial soundness indicators (FSIs)

Financial soundness indicators (FSIs) are indicators accumulated to monitor the fitness and reliability of financial organizations and markets, and of their business and family counterparts (Babihuga, 2007). FSIs comprise both combined evidence on financial organizations and gauges that are illustrative of markets in which monetary institutions function.

The objective of the set of financial stability indicators is to offer users with a coarse knowledge of the reliability of the financial segment as a whole (Akosah, Loloh, Lawson & Kumah, 2018). It would be perfect, of course, if these gauges were similar at the global level. To achieve this objective, the International Monetary Fund (IMF) in co-operation with domestic establishments in 1999 (alongside with the introduction of the FSAP scheme) launched an initiative concentrated on articulating a meaning and single practice for the collation of Financial Soundness Indicators (FSIs) (IMF, 2006). This initiative occasioned in the formation of a Compilation Guide on Financial Soundness Indicators, which was deliberated in detail in 2002 and 2003 and the final version of which was available in March 2006 (IMF 2006).

The essential gauges are based on the CAMELS (Capital adequacy, Asset quality, Management soundness, Earnings, Liquidity, Sensitivity to market risk) rating system, which is a generally used controlling outline for the valuation of individual banks' financial reliability. The key goal of the FSIs is worldwide comparability, which should be certain by the fact that all nations issuing FSIs will use the same methodology. Global comparability is, however, still restricted by some alterations at nationwide level, predominantly in accounting ethics but also in the data collection arrangements desired for computing the FSIs.

This study measures financial soundness indicators using non-performing loans to total loans and liquid assets to total assets.

2.1.1.1 Non-performing loans to total loans

This indicator is to examine asset quality in the loan portfolio. Non-performing Loans to Total Gross Loans is frequently used as a proxy for assets quality. The indicator is computed by using the worth of NPLs as the numerator and the total worth of the loan portfolio (including NPLs, and before the deduction of particular loan loss provisions) as the denominator. A significant quantity of NPLs adversely influences the banking sector effectiveness (Albulescu, 2015). According to the *Regulations Governing the Procedures for Banking Institutions to Evaluate Assets and Deal with Non-performing/Non-accrual Loans*, non-performing loans

comprise the following things: Loans for which reimbursement of principal or interest has been overdue for three months or more. Loans for which the bank has required imbursement from primary/subordinate borrowers or has disposed of security, although the reimbursement of principal or interest has not been overdue for more than three months; total loans comprise bills bought, discounts, accrual and non-accrual loans, but without interbank loans.

2.1.1.2 Liquid assets to total assets

This indicator is to evaluate the liquidity obtainable to meet anticipated and unanticipated demands for cash. Liquid assets to total assets (liquid asset ratio), is computed by using the central measure of liquid assets as the numerator and total assets as the denominator. The level of liquidity specifies the aptitude of the deposit-taking sector to endure tremors to their balance sheets. In this context, on the one hand the liquidity is connected to an improved capacity of yielding loans, and on the other hand, a trade-off may exist between the loans volume and the liquidity volume (Albulescu, 2015). Liquid assets is the fundamental liquid assets including cash, checks for clearing, amounts due from the Central Bank, amounts due from banks, and asset with outstanding maturity of no more than three months, can be rehabilitated into cash rapidly and with negligible influence to the value received.

2.1.2 Corporate Performance

The concept of performance is a contentious issue in finance and accounting mainly because of its multidimensional meanings (Ishaya, et al., 2014). The profitability of a company measures its improvements over its functioning years. Corporate financial performance here in refers to profitability or performance as the case maybe, and it is very important to every business.

From the extant literature, researchers have applied several surrogates as metric measures of financial performance of banks. Such metrics according to Buba (2010) include a combination of financial ratios analysis, benchmarking and measuring of performance against budget. Others include return on assets, returns on equity, net interest margin, and a host of others. Taken this caveat, this study employed Return on Assets (ROA) as a metric of financial performance.

2.1.2.1 Return on assets (ROA)

This indicator is used to investigate domestic banks' efficiency in using their assets. Return on Assets is computed by dividing the net revenue before extraordinary items and taxes by the average worth of total assets (financial and nonfinancial) over the same period and it measures the profitability of the banking sector (Albulescu, 2015). It is also equal to net income before income tax / average total assets. Net income: net income before income tax. Average total assets are the average of total assets at the beginning and the end of the period.

The expression of net income to total assets provides a basic measure of profit performance which can be used for companies of operating results from year to year for the same company or comparisons of results of different companies. Return on assets expresses the net income earned by a company as a percentage of the total assets available for use by that company (Javed, Younas & Imran, 2014). Return on assets suggests that companies with higher amounts of assets should be able to earn higher levels of income, in other words, it measures management's ability to earn a return on the company's resources (assets) (Rivard & Thomas, 1997). The income amount used in this computation is income before the deduction of interest expense, since it is the return to creditors for the resources that they provide the company. The resulting adjusted income amount is thereby the income before any distribution to those who provide funds to the company. It is computed by dividing net income plus interest expense by the company's average investment in asset during the year.

In this study, return on Assets (ROA) is a measure of corporate financial performance that details to the users of financial statements how well a company uses its assets to generate income. This refers to how much profit firms earn based on their asset investments. Rate of return on Assets (ROA) is the net income generated by all assets.

2.2. Theoretical Framework

2.2.1 Economic Theory of Regulation

This study employs the economic theory of regulation as the hypothetical base. The economic theory of regulation assumes that regulation results from the wish of government to eradicate or correct market disappointments and suggest two complementary bases for regulating financial organizations viz; Altruistic public theories and Agency-cost theory. Altruistic public theories treat guidelines as administrative tools for increasing justice and competence across the humanity as a whole. Agency cost theory identifies that inducement conflicts and organization difficulties arise in multi-party associations and that rule presents chances to enforce instructions that improve the well-being of one area of society at the expenditure of another (Diamond & Dybvig, 1983). Each basis sets dissimilar goals and allocates accountability for selecting and regulating rules differently. Altruistic allocate rule to governmental bodies that hunt for market disappointments and correct them. It is taken for granted that we may trust on a well-meant government to use its will and choose activities for the common good (Jansen & Micheal, 1994). Agency-cost theories depict regulation as a way to increase the quality of financial amenities by improving inducements to do contractual duties in demanding circumstances. These private benefits theories count on self-centred parties to spot market disappointments and correct them by opening more markets. In financial services, markets for regulatory service create outside discipline that controls and coordinates industry behaviour. Institutions advantage from rule that improves customer sureness upsurges the

suitability of customer dealings or makes cartel profit and advances performance. Agency-cost theories highlight the need to settle conflicts between the interests of organizations, consumers, watchdogs and taxpayers (Edwards, 1997).

2.3 *Empirical Studies*

2.3.1 *Non-performing loans to total loans and Bank Performance*

According to Nawaz and Munir (2012), banks recently witnessed rising non-performing credit portfolios and these significantly contributed to financial distress in the banking sector. Albulescu (2015) inspected the stimulus of financial soundness indicators on the banks' profitability, at the macro-level, in a set of developing republics. Using the IMF monthly data for the period 2005-2013 and a panel data method, Albulescu found that non-performing loans have an adverse influence on banks' profitability under the fixed effect model. Cihak and Schaeck (2010) exposed that an upsurge in non-performing loans to total loans is revealing of an imminent banking chaos. Cihak and Schaeck (2010) also revealed that a high ratio of non-performing loans to total loans decrease the existence time of the banking system but the influence is not statistically significant. Babihuga (2007) exposed a negative association with non-performing loans and an optimistic association with profitability. Berger and Deyoung (1997)

inspected the association between loan quality, cost efficiency and bank capital. They stated a negative association between cost efficiency and non-performing loans. Kargi (2011) established that banks profitability is inversely influenced by the levels of loans and advances, non-performing loans and deposits, thereby exposing the banks to great risk of illiquidity and distress. Also, Dietrich and Wanzenried (2011) in their study approximating credit risk by the loan loss provisions over total loans ratio, suggest a negative relationship between credit risk and banks' profitability.

2.3.2 *Liquid assets to total assets and Bank Performance*

In the work of Albulescu (2015), using the IMF monthly data for the period 2005-2013 and panel data method to inspects the stimulus of financial soundness indicators on the banks' profitability, at the macro-level, in a set of developing republics. Albulescu (2015) learned that the level of liquidness has a mixed stimulus with the banks' profitability. Almayatah (2018) disclosed that the outcomes of the research displays optimistic influence ratio of Islamic banking on financial soundness indicators signified by the ratio of capital adequacy

2.4: *Webometric Analysis of some selected articles on FSI and Performance*

S/N	Name/Year	Topic/Title	Countries/Methodology/ Variables	Findings
1	Almayatah (2018)	Impact of Islamic banks on the financial soundness Indicators.	Nine countries around the world, regression, capital adequacy, percentage of Islamic banks, total banks credit, total capital of the banking sector.	The outcomes of the research displays optimistic influence ratio of Islamic banking on financial soundness indicators signified by the ratio of capital adequacy and the outcomes display that the upsurge in the percentage of Islamic banking by 1% has the consequence of increasing the amount of capital adequacy by 0.21%.
2	Fapohunda and Eragbhe (2017)	The impact of regulation, financial Development and financial soundness on bank performance in Nigeria for the period 1985-2015.	Nigeria, multivariate OLS analysis, cash reserve ratio and monetary policy rate, ratio of broad money supply to Gross Domestic Product, bank non-performing loans to total gross loans, and earnings of bank after tax.	The answers of the research are that cash reserve ratio, monetary policy rate, financial growths and financial soundness largely influence on bank performance both in the short run and long-run. It is endorses that regulation and supervision of banks should be supported in other to advance the performance of banks in Nigeria. Also, they endorse that the on-going improvements in the banking institution should be strengthened so as to ensure safe, sound and stable banking institution that is a sine qua non for long run financial performance of banks in Nigeria.
3	Albulescu (2015)	The influence of financial soundness indicators on the banks' profitability, at the macro-level, in a set of emerging countries.	Emerging countries, panel data approach, non-performing loans, liquidity, capitalization and the interest rate margins.	The study discovers that non-performing loans have an adverse influence on banks' profitability under the fixed effect model. While the level of liquidness has a mixed effect, the capitalization and the interest rate margins definitely affect the banks' profitability. As anticipated, the non-interest expenditures adversely influence the profitability.
4	Kremmling (2011)	Examine if regulating financial institutions during financial crisis will influence bank performance by taking into account, deposit insurance schemes, capital regulation and activity restrictions.	performance, capital regulation and activity restrictions.	The outcomes presented that capital requirements adversely influenced the level and alteration in loan loss provisions during financial disaster and as such, banks with high or low capital ratios still surrendered to bank runs during financial disaster. Thus, Kremmling (2011) stated that banks complexity can have opposing result on regulation, which directly affects performance and stability.
5	Cihak and Schaeck (2010)	Examined how financial soundness indicators can provide an accurate signal for the profitability of observing systemic banking vulnerabilities.	financial soundness indicators and profitability.	The research discloses that a high capital of risk weighted assets and a high return on equity drops the likelihood of a systemic banking disaster occurring. It was exposed that an upsurge in non-performing loans to total loans is

				revealing of an imminent banking chaos. A low capital adequacy ratio and a high ratio of non-performing loans to total loans decline the existence time of the banking institution but the influence is not statistically significant.
6	Babihuga (2007)	The association between nominated macroeconomic variables and financial indicators for 96 nations covering the period 1998 – 2005.	Regression, macroeconomic indicators and capital adequacy, asset quality and profitability.	The research exposed an adverse association with capital adequacy and non-performing loans and an optimistic association with profitability.
7	Berger and Deyoung (1997)	The association between loan quality, cost efficiency and bank capital.	US, Regression, cost efficiency and non-performing loans, capital adequacy, capital ratio.	They testified an adverse association between cost efficiency and non-performing loans. They initiate that US banks with comparatively high capital adequacy were more lucrative than other banks with lesser capital ratio.
8	Olalekan and Adeyinka (2013)	Effect of capital adequacy on profitability of deposit- taking banks in Nigeria.	Nigeria, Regression, capital adequacy and profitability.	The findings for the primary data analysis revealed a non-significant relationship but the secondary data analysis showed a positive and significant relationship between capital adequacy and profitability of bank. That implied that for deposit- taking banks in Nigeria, capital adequacy plays a key role in the determination of profitability. It was discovered that capitalization and profitability are indicators of bank risk management efficiency and cushion against losses not covered by current earnings.
9	Umoru and Osemwegie (2016)	The degree of significance of the capital adequacy ratio in influencing the financial deeds of Nigerian banks.	Nigeria, Regression, capital adequacy and financial deeds.	Empirical evidence supported the overriding impact of capital adequacy in enhancing the financial needs of Nigerian banks. Nevertheless, the impact of the estimated capital adequacy was below 30%. The policy stance of the empirics holds thus that depositor's money in the banking sector has not been absolutely assured. Hence, the deposit money banks might not be able to fulfil their liabilities and risk.
10	Tochukwu (2016)	Capital adequacy-risk management outcomes of the banks during the 2009-2015 periods.	Pooled regression analysis model, capital adequacy ratio, risk-weighted assets ratio, deposit asset ratio, and nonperforming loans ratio.	Results showed that risk management variables exerted differing degrees of negative effects on capital adequacy. Only risk-weighted asset ratio singularly exerted statistically significant at the 5% level. The explanatory variables jointly exerted statistically significant effect on, and were strong in explaining variations in the explained variable.
11	Ikpefan (2013)	Impact of bank capital adequacy ratios, management and performance in the Nigerian commercial bank (1986 - 2006).	Nigeria, Regression, Shareholders Fund/Total Assets (SHF/TA).	The overall capital adequacy ratios of the study showed that Shareholders Fund/Total Assets (SHF/TA) which measure capital adequacy of banks (risk of default) have negative impact on ROA. The efficiency of management measured by operating expenses index is negatively related to return on capital.
12	Kayode, Obamuyi and Owoputi (2015)	The impact of credit risk on banks" performance in Nigeria.	Nigeria, OLS, credit risk, total loan, return on assets.	Their findings showed that credit risk is negatively and significantly related to bank performance, measured by return on assets (ROA). This suggests that an increased exposure to credit risk reduces bank profitability. They also found that total loan has a positive and significant impact on bank performance. Therefore, to stem the cyclical nature of non-performing loans and increase their profits, the banks were advised to adopt an aggressive deposit mobilization to increase credit availability and develop a reliable credit risk management strategy with adequate punishment for loan payment defaults.
13	Nawaz and Munir (2012)	The impact of credit risk on the profitability of Nigerian banks.	Nigeria, Regression, credit risk management, profitability.	The findings revealed that credit risk management has a significant impact on the profitability of Nigeria banks. Therefore, management need to be cautious in setting up a credit policy that might not negatively affect profitability and also that they need to know how credit policy affects the operation of their banks to ensure judicious utilization of depositors funds.
14	Kargi (2011)	The impact of credit risk on the profitability of Nigerian banks, using data on six selected banks for the periods of 2004 to 2008.	Nigeria, OLS, non-performing loans to total loans and advances and the ratio of total loans and advances to total deposit, return on asset.	From their findings, it is established that banks profitability is inversely influenced by the levels of loans and advances, non-performing loans and deposits, thereby exposing the banks to great risk of illiquidity and distress.
15	Osinubi (2006)	The effects of recapitalization on financial performance in selected banks 2001-2005.	Nigeria, OLS, asset quality, total asset, classified loans, Earnings	The study found that the asset quality of the Nigerian banking industry does not depend on its capital base. However, the study showed that the more the capital base

			Before Interest Taxes (EBIT) and Gross Loans and Advances.	the higher the liquidity and capital adequacy of the banking industry. The return on assets also increases as the firm's capital base increases.
16	Kaanya and Pastory (2013)	The relationship between the credit risk and bank performance as measured by return on asset.	Regression, credit risk and bank performance, return on asset.	The credit risk indicators have produced negative correlation which indicates the higher the credit risk the lower the bank performance. Regression model was statistically fit producing R square and adjusted R square of 70% and 64% respectively. The study recommended that the banks studied should increase the capital reserve to protect the bank for the future losses and to increase bank credit risk management techniques.
17	Michael, Etukafia, Akpabio & Etuk (2018)	Capital adequacy and the value of banks in Nigeria.	Nigeria, OLS, Total Assets (explained variable), Capital, Provision for Bad Debts, and Provision for Loans/Lease Losses (explanatory variables) of deposit money banks (DMBs).	The OLS results showed that capital has a positive and statistically significant relationship with DMBs total assets; loans/lease losses provision and provision for bad debts exhibited negative and statistically non-significant relationships with total assets.
18	Bowa (2015)	The effect of bank capitalization on liquidity of commercial banks in Kenya.	Kenya, regression, size of bank and asset quality, liquidity ratio.	The regression results showed that size of bank and asset quality have an influence on banks liquidity ratio. However, it was identified that bank size had the highest influence on banks liquidity ratio. This therefore shows that the current held assets by banks that is both fixed and current assets determines the overall stability of banks to a great extent.
19	Pasiouras and Kosmidou (2007)	Effect of bank specific characteristics on performance of domestic and foreign commercial banks in 15 EU countries during 1995-2001.	EU, Regression, capital adequacy, credit risk, bank size and liquidity risk, profitability.	Their findings suggest that capital adequacy; credit risk, bank size and liquidity risk have a significant relationship with a bank's profitability, although their impact and relations are not always uniform for domestic and foreign banks.
20	Olalekan and Adeyinka (2013)	Effect of capital adequacy on profitability of deposit taking banks in Nigeria.	Nigeria, Regression, capital adequacy and bank's profitability.	Their findings revealed a non-significant relationship between capital adequacy and a bank's profitability. This implies that for deposit taking banks in Nigeria, capital adequacy did not play a key role in determining profitability.
21	Ezike and Oke (2013)	The impact of the adoption of capital adequacy standards on the performance of Nigerian banks.	Nigeria, OLS, loans and advances (LA), shareholders' funds, total assets and customer deposits, earnings per share (EPS) and profit after tax (PAT).	The results of their analysis showed that capital adequacy standards exerted a major influence on a bank's performance.

Sources: Researcher (2020)

III. METHODOLOGY

3.1   Research Design

The study adopted ex post facto research design. The reason for this is because the data used were secondary data that cannot easily be manipulated. The secondary data used for this study were sourced and obtained from the internet, annual financial reports of the selected banks, Nigerian Stock Exchange, over a period of ten years spanning 2009 to 2018.

3.2   Population of the Study

The population of this study consist of all the deposit money banks registered by the central bank of Nigeria. According to the central bank of Nigeria, there are (26) twenty-six licensed deposit money banks in Nigeria which maintained existence to 2018. The name of the banks and the type of licenses are listed in the table below:

Table 3.1 Population of Deposit Money Banks Operating in Nigeria

S/No	Institutions	Banking License	Type of Institution
1	Access Bank PLC	International Authorization	Commercial Bank
2	Diamond Bank PLC	International Authorization	Commercial Bank
3	Fidelity Bank PLC	International Authorization	Commercial Bank
4	First City Monument Bank PLC	International Authorization	Commercial Bank
5	First Bank Nigeria Limited	International Authorization	Commercial Bank
6	Guaranty Trust Bank PLC	International Authorization	Commercial Bank
7	Skye Bank PLC	International Authorization	Commercial Bank
8	Union Bank of Nigeria PLC	International Authorization	Commercial Bank
9	United Bank of Africa PLC	International Authorization	Commercial Bank

10	Zenith Bank PLC	International Authorization	Commercial Bank
11	Citibank Nigeria Limited	National Authorization	Commercial Bank
12	Eco bank Nigeria PLC	National Authorization	Commercial Bank
13	Heritage Bank Limited	National Authorization	Commercial Bank
14	Keystone Bank Limited	National Authorization	Commercial Bank
15	Stanbic IBTC Bank PLC	National Authorization	Commercial Bank
16	Standard Chartered Bank Limited	National Authorization	Commercial Bank
17	Sterling Bank PLC	National Authorization	Commercial Bank
18	Unity Bank PLC	National Authorization	Commercial Bank
19	Wema Bank PLC	National Authorization	Commercial Bank
20	Suntrust Bank Nigeria Limited	Regional Authorization	Commercial Bank
21	Providusbank PLC	Regional Authorization	Commercial Bank
22	Jaiz Bank Limited	National Authorization	Non-Interest Bank
23	Coronation Merchant Bank	National Authorization	Merchant Bank
24	FBN Merchant Bank	National Authorization	Merchant Bank
25	FSDH Merchant Bank	National Authorization	Merchant Bank
26	Rand Merchant Bank	National Authorization	Merchant Bank

Source: Central Bank of Nigeria List of Deposit Money Banks in Nigeria, May 25 2018

3.3 Determination of Sample Size

The sample size for this study was determined by the number of deposit money banks currently quoted on the floor of Nigeria stock exchange. The ten banks were purposively selected using judgemental sampling method, and they are listed in the table below:

Table 3.2 List of sampled Deposit Money Banks in Nigeria

S/No	Institutions	Banking License	Bank Type
1	Access Bank PLC	International Authorization	Commercial Bank
2	Fidelity Bank PLC	International Authorization	Commercial Bank
3	First City Monument Bank PLC	International Authorization	Commercial Bank
4	First Bank Nigeria Limited	International Authorization	Commercial Bank
5	Guaranty Trust Bank PLC	International Authorization	Commercial Bank
6	Union Bank of Nigeria PLC	International Authorization	Commercial Bank
7	United Bank of Africa PLC	International Authorization	Commercial Bank

8	Zenith Bank PLC	International Authorization	Commercial Bank
9	Ecobank Nigeria PLC	National Authorization	Commercial Bank
10	Stanbic IBTC Bank PLC	National Authorization	Commercial Bank

Source: Extracted from the Population based on Data Availability

3.4 Method of Data Analysis

The secondary data collected were analysed using descriptive statistics and correlation matrix. The descriptive statistics were used to evaluate the features of the data such as Mean, maximum, minimum, and standard deviation and also checks for normality of the data. The correlation analysis was used to evaluate the association between the variables and to check for multi-colinearity. The ordinary regression analysis was used to evaluate the influence of the independent variables on the dependent variable. It reveals the degree of influence and effect the independent variables has on the dependent variable.

3.5 Model Specification

This study employs return on Assets (ROA) as the dependent variable, which measures banks performance. The independent variable - financial soundness indicators were proxied using non-performing loans to total loans (NPL), non-performing loans net of provisions to capital (NPLNP), liquid assets to total assets (LA) and capital to total assets (CAP).

Specifically, the study adopted the model of Albulescu (2015) with some modifications to suit this study. The model of Albulescu (2015) are:

$ROE_{it} = f(NPLGL_{it},\ RCRWA_{it},\ LATA_{it},\ NIEGI_{it},\ IMGI_{it},\ e_{it})\dots\dots\dots\dots\dots$I

Where,

ROE = Return on Equity

NPLGL = Non-performing Loans to Total Gross Loans

RCRWA = Regulatory Capital to Risk-Weighted Assets

LATA = Liquid assets to total assets

NIEGI = Non-interest Expenses to Gross Income

IMGI = Interest Margin to Gross Income

From the above, the model for this study is as follows:

$ROA_{it} = f(NPLTL_{it},\ LATA_{it},\ e_{it})\dots\dots\dots\dots\dots\dots$II

$ROA_{it} = \beta_0 + \beta_1 NPLTL_{it} + LATA_{it} + e_{it}\dots\dots\dots\dots$III

Where:

ROA = Return on Assets

NPLTL = Non-performing Loans to Total Loans

LATA = Liquid assets to total assets

β_0 = Constant term (intercept)

e_{it} = Error term

β_{1-2} = Coefficient of Independent

3.6   Description of Research Variable

Table 3.3: Operationalization of variables

Return on assets (ROA)	net operating profit /total assets	Albulescu (2015)
Non-performing loans to total assets	non-performing or non-accrual loans / total loans	Albulescu (2015)
Liquid assets to total assets	liquid assets / total assets	Albulescu (2015)

Source: Researcher's Compilation (2020)

IV. PRESENTATION AND DATA ANALYSIS

The summary of the analysis result and its corresponding interpretations of the relationship between financial soundness indicators and performance of deposits money banks in Nigeria are presented below.

4.1 Descriptive Statistics

Table 4.1: Descriptive Statistics

VARIABLES	ROA	NPLTL	LATA
Mean	0.090480	0.182442	0.609950
Median	0.085000	0.136550	0.633000
Maximum	0.265000	0.980500	0.945000
Minimum	-0.247000	0.000700	0.036000
Std. Dev.	0.066965	0.159456	0.197585
Skewness	-0.897653	1.930188	-0.473408
Kurtosis	8.709523	8.194154	2.610486
Jarque-Bera	149.2574	174.5072	4.367425
Probability	0.000000	0.000000	0.112623
Sum	9.048000	18.24419	60.99500
Sum Sq. Dev.	0.443943	2.517203	3.864937
Observations	100	100	100

Source: Researcher summary of descriptive statistics (2020)

Table 4.1 above shows the mean (average) for each variable, their maximum values, minimum values, standard deviation. The result provides some insight into the nature of the selected banks' data used for the study. Firstly, it was observed that over the period under review, the sampled banks have positive average return on assets (ROA) of 0.090480, this means that the selected banks has a positive return on assets (performance) in the period of the study. The maximum

and minimum value of return on assets (ROA) is 0.265000 and -0.247000 respectively. The large difference between the maximum value and the mean value and between the minimum value and the mean value shows that the sampled firms used for the study are not dominated by either firms with high performance (ROA) or firm with low performance (ROA). Secondly, it was observed that on the average over the period, the selected firms have non-performing loans to total loans (NPLTL) value of 0.182442, maximum and minimum NPLTL value of 0.980500 and 0.000700 respectively, the large difference between the maximum and minimum non-performing loans to total loans reveals that gyrating nature of the non-performing loans to total loans among the selected banks. Liquid assets to total assets have a mean value of 0.609950, maximum value of 0.945000 and minimum value of 0.036000. The large difference between the maximum and the minimum liquid assets to total assets reveals that gyrating nature of the bank's liquidity among the selected banks.

4.2 Correlation Analysis

Table 4.2: Correlation Analysis

VARIABLES	ROA	NPLTL	LATA
ROA	1.000000	-0.085723	-0.253090
NPLTL	-0.085723	1.000000	0.063976
LATA	-0.253090	0.063976	1.000000

Source: Researcher summary of correlation analysis (2020)

The correlation matrix is to check for multi-colinearity and to explore the association between each explanatory variable and the dependent variable. The findings from the correlation matrix table (table 4.2 above) show that return on assets (ROA) has a negative association with NPLTL (-0.085723) and LATA (-0.253090). Non-performing Loans to Total Loans (NPLTL) has a positive association with LATA (0.063976). In checking for multi-colinearity, the study observed that no two explanatory variables were perfectly correlated.

4.3 Regression Analysis

Table 4.3: Return on Assets (ROA) Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.153970	0.036173	4.256486	0.0000
NPLTL	-0.041096	0.041081	-1.000379	0.3197
LATA	-0.080505	0.032974	-2.441419	0.0165
R-squared	0.621720	Mean dependent var		0.090480
Adjusted R-squared	0.618184	S.D. dependent var		0.066965
S.E. of regression	0.062883	Akaike info criterion		-2.636949
Sum squared resid	0.371705	Schwarz criterion		-

				2.480638
Log likelihood	137.8474	Hannan-Quinn criter.		-2.573687
F-statistic	3.653651	Durbin-Watson stat		1.517714
Prob(F-statistic)	0.004586			

Source: Researcher summary of Regression Analysis (2020)

The R-squared which is the co-efficient of determination or measure of goodness of fit of the model, tests the explanatory power of the independent variables in any regression model. From our result, the R-squared (R^2) is 62% in ROA Model. This showed that our model displayed a good fit because the R^2 is closer to 100%, these explanatory variables can impact up to 62% out of the expected 100%, leaving the remaining 38% which would be accounted for by other variables outside the models as captured by the error term.

The F-statistics measures the overall significance of the explanatory parameters in the model, and it shows the appropriateness of the model used for the analysis while the probability value means that model is statistically significant and valid in explaining the outcome of the dependent variables. From table 4.3 above, the calculated value of the f-statistics is 3.653651 and its probabilities are 0.004586 which is less than 0.05. We therefore accept and state that there is a significance relationship between the variables. This means that the parameter estimates are statistically significant in explaining the relationship in the dependent variable.

The t-statistics helps in measuring the individuals' statistical significance of the parameters in the model from the result report. It is observed from table 4.3 above that only LATA was statistically significant at 5% with its value as -2.441419. This implies that it has contributed significantly to corporate performance at the rate of 5% level of significant. The remaining variable (NPLTL) with its values as -1.000379 was not statistically significant at 5%.

Our model is free from the problem of autocorrelation because the Durbin-Watson value is 1.517714 which is approximated as 2 (that means, the absence of autocorrelation in the model used for the analysis).

The a'priori criteria are determined by the existing accounting theory and states the signs and magnitude of the variables from the result. LATA has negative sign and its values are -2.441419. In ROA Model, this implies that decrease in LATA will significantly decrease the corporate performance by 244%, this conforms to our theoretical expectation. NPLTL and also has negative sign and its values are -1.000379. In ROA Model, this implies that increase in NPLTL will insignificantly decrease the corporate performance by 100%.

4.4 Hypotheses Testing

Ho₁: Non-performing loans to total loans has no significant relationship with performance of deposits money banks in Nigeria.

From the result of our test in table 4.3 above, we found out that the analysis result showed a coefficient value of -0.041096, t-value of -1.000379 and a p-value of 0.3197 for non-performing loans to total loans. The coefficient value which reveals the degree of variation caused by the individual independent variable to the dependent shows a negative value of -0.041096, this reveals that non-performing loans to total loans negatively influences the performance of deposits money banks in Nigeria. The t-value of -1.000379 shows that non-performing loans to total loans has a negative effect on performance of deposits money banks in Nigeria. The probability value of 0.3197 shows that the effect of non-performing loans to total loans on performance of deposits money banks in Nigeria is not statistically significant.

Decision:

Accept null hypothesis if the probability value is greater than the desired level of significant of 5%, otherwise reject.

Therefore, since the probability value is greater than the desired level of significant of 5%, we accept the null and reject the alternative hypothesis; this implies that non-performing loans to total loans has no significant relationship with performance of deposits money banks in Nigeria. Thus, non-performing loans to total loans is negative and has no significant relationship with performance of deposits money banks in Nigeria at 5% level of significant.

Ho₂: Liquid assets to total assets have no significant relationship with performance of deposits money banks in Nigeria.

Drawing inference from table 4.3 above, we found out that the analysis result showed a coefficient value of -0.080505, t-value of -2.441419 and a p-value of 0.0165 for liquid assets to total assets. The coefficient value which reveals the degree of variation caused by the individual independent variable to the dependent shows a negative value of -0.080505, this reveals that liquid assets to total assets negatively influences the performance of deposits money banks in Nigeria. The t-value of -2.441419 shows that liquid assets to total assets have a negative effect on performance of deposits money banks in Nigeria. The probability value of 0.0165 shows that the effect of liquid assets to total assets on performance of deposits money banks in Nigeria is statistically significant.

Decision:

Accept null hypothesis if the probability value is greater than the desired level of significant of 5%, otherwise reject.

Therefore, since the probability value is less than the desired level of significant of 5%, we accept the alternative and reject the null hypothesis; this implies that liquid assets to total assets has significant relationship with performance of deposits money banks in Nigeria. Thus, liquid assets to total assets is negative and has significant relationship with performance of deposits money banks in Nigeria at 5% level of significant.

V. FINDINGS/CONCLUSION

5.1 Discussion of Findings

Non-performing loans to total loans has no significant relationship with performance of deposits money banks in Nigeria

The non-performing loans to total gross loans which are frequently used as a proxy for assets quality were used for measurement of financial soundness indicators and the study found that it has a negative insignificant impact on performance of deposits money banks in Nigeria in both ROA and ROE model. In ROA Model, the variable is statistically insignificant at 5% with the regression coefficient value of -0.041096, t-value of -1.000379 and a p-value of 0.3197 for non-performing loans to total loans. The coefficient value which reveals the degree of variation caused by the individual independent variable to the dependent shows a negative value of -0.041096, this reveals that non-performing loans to total loans negatively influences the performance of deposits money banks in Nigeria. The t-value of -1.000379 shows that non-performing loans to total loans has a negative effect on performance of deposits money banks in Nigeria. The probability value of 0.3197 shows that the effect of non-performing loans to total loans on performance of deposits money banks in Nigeria is not statistically significant. This supports the findings of Albulescu (2015) and Cihak and Schaeck (2010) and Babihuga (2007).

Liquid assets to total assets has significant relationship with performance of deposits money banks in Nigeria

The regression result in ROA Model shows a negative and statistically significant relation between liquid assets to total assets and performance of deposits money banks in Nigeria, with a regression coefficient value of -0.080505, t-value of -2.441419 and a p-value of 0.0165 for liquid assets to total assets. The coefficient value which reveals the degree of variation caused by the individual independent variable to the dependent shows a negative value of -0.080505, this reveals that liquid assets to total assets negatively influences the performance of deposits money banks in Nigeria. The t-value of -2.441419 shows that liquid assets to total assets have a negative effect on performance of deposits money banks in Nigeria. The probability value of 0.0165 shows that the effect of liquid assets to total assets on performance of deposits money banks in Nigeria is statistically significant. This result supports the previous findings of Almayatah (2018) and Albulescu (2015).

5.2 Conclusion and Recommendations

Based on the result, the study concluded that in ROA model, non-performing loans to total loans is negative and has insignificant impact on performance of deposits money banks in Nigeria at 5% level of significant. Thus, the study rejects the alternate hypothesis and accepts the null hypothesis. Whereas liquid assets to total assets (LATA) have negative significant effect on performance (ROA) of deposits money banks in Nigeria at 5% level of significant. This implies that decrease in LATA will also decrease the return on asset by 244%. These therefore conclude that the results prove robust when use the return on assets as indicator to measure the level of performance. Our metric also provides a more powerful gauge of financial stability in Nigeria and very relevant for monetary policymaking decision.

The study, therefore recommends that since non-performing loans to total loans have negative insignificant relationship with performance of deposits money banks in Nigeria; though it is not significant at 5% level of significant but negative, we therefore recommend that the regulatory agency such as the Central Bank of Nigeria and the Nigerian Deposit Insurance Corporation should formulate rules that will reduce the occurrence of Loans for which repayment of principal or interest has been overdue for three months or more. Liquid assets to total assets have negative significant relationship with performance of deposits money banks in Nigeria. This indicator is to analyze the liquidity available to meet expected and unexpected demands for cash. The Regulatory agency such as the Central Bank of Nigeria should formulate fiscal policy that will enable the deposit-taking sector to withstand unexpected financial shocks and also improve their performance.

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