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FINANCIAL SOUNDNESS INDICATORS AND PERFORMANCE OF LISTED DEPOSITS MONEY BANKS IN NIGERIA

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ABSTRACT:

The study examines the relationship between financial soundness indicators and performance of deposits money banks in Nigeria. The specific objectives of the study are to ascertain the relationship between: non-performing loans and performance of deposits money banks; liquid assets ratio and performance of deposits money banks; and capital adequacy ratio and performance of deposits money banks in Nigeria. Eight (8) deposits money banks were selected from the Nigerian Stock Exchange (NSE). The secondary data used were sourced from the selected bank's annual report and Nigerian Stock Exchange fact book over the period of 10years (from 2009 to 2018). The data collected were analysed using Pearson correlation matrix. Additional test were conducted using the regression of ordinary least square method. The results show that the coefficient of Liquid asset ratio and Capital adequacy ratio are positive indicating that they positively influence bank's performance (ROA & ROE) during the period studied. However, Non-performing loan is detrimental to the bank's performance since it has negative coefficient. Based on the findings, the study concludes that financial soundness indicators of banks affect and increase their performance. Although, most banks could not grow or perform as expected due to high rate of non-performing loan, but an upsurge in the percentage of capital adequacy ratio has the influence of increasing the proportion of banks performance; and with the higher liquidity, banks can also meet up with the expected and unexpected demands for cash.

Key words: *Capital adequacy ratio, Financial soundness indicators, Liquid asset ratio, Non-performing loans, Performance.*
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1. INTRODUCTION

Soundness of the banks is given by high benefit of their exercises, and furthermore adequate liquidity which demonstrates that banks has a fair structure of assets and liabilities (Klaas & Vagizova, 2014). Financial stability of the banks in medium term can be decreased due to inadequate nature of capital, resources (assets) and liabilities, related with animosity of their credit strategy that expands credit risk, and thus, likelihood of misfortunes. Low quality of credit portfolio demonstrating that unfit administration approaches of a credit portfolio are utilized for deficient capitalization of some of banks. Yet, the size of capital defines ability of bank to maintain stability during the crisis periods, reliance on interbank credit market and critical portion of interest liabilities in structure of bank liabilities (Klaas & Vagizova, 2014).
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.

The performance of deposits money banks can be influenced by internal and external factors. These factors can be classified into bank specific (internal) and macroeconomic variables. The internal factors are individual bank qualities which influence the bank's performance. These factors are essentially influenced by the internal decisions of management and board (Almazari, 2014). The external factors are sector wide or country wide factors which are beyond the control of the company and affect the profitability of banks (Azam & Siddiqoui, 2012). Bank stability is mostly measured in a negative way by considering individual or systemic distress broadly defined as periods where the banking system is not capable of fulfilling its intermediation function for the economy effectively anymore. Koch and MacDonald (2014) define banking distress as systemic if non-performing assets reach at least 10% of total assets at the peak of the crisis; the fiscal cost of the rescue operations. Many central banks through their financial stability reports (FSRs) attempt to assess the risks to financial stability by focusing on a small number of key indicators (Gadanecz & Jayaram, 2008).

Finance and Accounting works done so far has focused extensively on diverse classes of issues, such as stimulus of the macroeconomic atmosphere on the banks' performance, and the individual banks' performance to diverse macro- indicators (Demirgüç-Kunt & Huizinga, 1999; Pasiouras & Kosmidou, 2007; Athanasoglou *et al.*, 2008), effect of the financial setting (Albertazzi & Gambacorta, 2009), macroeconomic gauges and banking industry gauges or internal (Pasiouras & Kosmidou, 2007; Athanasoglou *et al.*, 2008), leaving the financial soundness gauges unexplored and relatively new research area. Moreover, this financial soundness gauges have been less investigated than either macroeconomic gauges or banking industry gauges in emerging and transition banking sectors than in developed countries like United States, United Kingdom and scholars did not do many researches in this field and the understanding is still limited. Clearly, the relationship between financial soundness indicators and performance of deposits money banks remains unexplored whereas findings from a few existing studies were focused on motivations and were inadequate. It is against this backdrop that this study ascertained the relationship between financial soundness indicators and Bank's performance in emerging country such as Nigeria, trying to find out the reaction of non-performing loans ratio, liquidity ratio and capital adequacy in collaborating or substituting financial soundness indicators.

Objectives of the Study

The main objective of this study is to investigate the nexus between financial soundness indicators and performance of listed deposits money Banks in Nigeria. The specific objectives are to:

1. Evaluate the relationship between non-performing loans and performance of listed deposits money banks in Nigeria.
2. Ascertain the relationship between liquid asset ratio and performance of listed deposits money banks in Nigeria.
3. Determine the relationship between capital ratio and performance of listed deposits money banks in Nigeria.

Research Hypotheses

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

1. Non-performing loans does not have positive significant relationship with performance of listed deposits money banks in Nigeria.
2. Liquid asset ratio does not have positive significant relationship with performance of listed deposits money banks in Nigeria.
3. Capital ratio does not have positive significant relationship with performance of listed deposits money banks in Nigeria.

2. LITERATURE REVIEW

2.1 Conceptual Review

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). It comprises 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. 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 capital adequacy gauges measure the banking sector's capacity to grip unexpected losses and are thus closest to the "resilience to shocks" idea, while the asset quality gauges are directly connected with potential dangers to banks' solvency. The profitability gauges measure the capacity to grip losses without any influence on capital, while the liquidity gauges measure banks' resilience to cash flow tremors. Foreign currency exposure is a gauge measuring a bank's risk exposure with respect to movements in asset prices on monetary markets. The management quality gauges were eventually not comprised in the FSIs owing to problems linked with computing gauges that are qualitative in nature (Sundararajan et al. 2002). 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.

2.1.2 Non-performing loans (NPL)

This indicator is to examine asset quality in the loan portfolio. It is the ratio of nonperforming loans to total loans which reveals the quality of a bank's loan portfolio. It is the percentage of the total loans and advances that is on the verge of going bad. A higher ratio sends a signal that the management was not efficient when evaluating loan applications.

Again it shows that there is a higher probability that most of the loans might not be recovered. Non-Performing loan facilities should be classified into three categories namely, substandard, doubtful or lost on the basis of criteria specified by the Banking laws in a country. 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.

2.1.3 Liquid assets ratio

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 such as 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.

2.1.4 Capital adequacy ratio

The capital adequacy indicator is one of the most important criteria used in the evaluation of commercial banks and is considered the most important indicator of total financial robustness (Alhenawi, 1998). This indicator is to study the degree of financial leverage on assets financed by other than banks' own reserves. Capital is equity interest of proprietors in a bank (i.e. the variance between total assets and liabilities). Total assets are the sum of monetary and non-financial assets. Regulatory Capital to Risk-Weighted Assets, measures the capital adequacy of deposit takers. Capital adequacy examines the degree of robustness of financial organizations to endure tremors to their balance sheets. Subsequently, a well-capitalized organization can upsurge its profitability through the augmentation of its clients' sureness. However, an advanced capitalization means at the same time fewer capitals for the credit action, and thus a profit reduction. Therefore, the impact can be either optimistic or undesirable (Albulescu, 2015).

2.1.5 Performance of Banks

Banking performance may also show managers attitude toward risk. Banks that make huge profits are not scared when venturing into risky activities. In a similar fashion, banks that are not effective in their management encounter higher bad debt. Performance measure is important to the investors. The level of performance is very significant for shareholders of a bank because it shows how effective management has utilized their investments (Devinaga, 2010). In determining the financial strength of a commercial bank, the level of performance is predominant. ROA and ROE are used as main performance measures in most of the organizations including banks and other financial institutions. The ROA demonstrates the level of net income produced by the bank and also determines how the assets utilized by banks generate profit over the years. It 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). On the other

hand, the return on equity (ROE) is the ratio of net income to total equity indicating returns to shareholders on the book value of their investment. It measures the rate of return for ownership interest (shareholders). It tells how efficient a bank is at generating profits from each unit of shareholder equity, also known as *net assets or assets minus liabilities.* In this study, it is calculated as profit after tax divided by shareholder's equity. The ranking of banks is usually based upon the higher ROA ratio and total assets. As a general view, particularly in banking sector, ROA is known as good profitability multiplier for the reason that equity multiplier does not influence it (Saeed et al., 2016). Performance can be measured in a number of ways. They include return on assets (ROA), return on equity (ROE), return on investment (ROI), operation profit margin (OPM), earns per share (EPS), etc. Over the year, most researchers prefer using return on asset (ROA) and Return on Equity (ROE) as indicators of profitability or performance. Researchers often use both ROA and ROE as measures for performance. In their defence, these researchers selected ROA and ROE over others because it is free of financial leverage and the risks associated with it (Flamini et al., 2009). Additionally, it is possible to compare companies in the same industry or diverse industry when ROA and ROE is employed as a proxy for performance. This makes ROA and ROE strong measures for performance (Devinaga, 2010). Hence, these are considered in this study.

2.2 Theoretical framework

This study is anchored on the buffer theory of capital adequacy.

2.2.1 Buffer Theory of Capital Adequacy

The buffer theory by Calem and Rob (1996) predicts that a bank approaching the regulatory minimum capital ratio may have an incentive to boost capital and reduce risk in order to avoid the regulatory costs triggered by a breach of the capital requirements.

Buffer theory of capital adequacy is anchored on the volatility of capital adequacy ratio as well as reliability and dependability on capital for long term planning. Also, a bank faces the danger of capital base erosion if it is unable to mobilise sufficient deposits. In that case, the bank may be endangered by capital adequacy ratio volatility. Therefore, the theory postulates that banks may prefer to hold a "buffer" of excess capital to reduce the probability of falling under the legal capital requirements, especially if their capital adequacy ratio is very volatile. This is to hedge against prolonged undercapitalisation and avoid sanctions and possible closure by the regulatory authorities which consider breach of the capital requirements as a major infringement of banking legislation.

2.3 Empirical Review

Akosah, Loloh, Lawson and Kumah (2018) computed the aggregate financial stability index (AFSI) for Ghana to measure the performance of the financial organization since the acceptance of inflation directing in 2017. The index is resultant from four sub-indices, namely financial development index (FDI), financial soundness index (FSI), financial vulnerability index (FVI), and the world economic climate index (WECI). The movement in AFSI identifies three separate expansions in Ghana's financial organization. These are (1) the period of financial strain subsequent the worldwide financial crisis (June 2007 – September 2010); (2) period of continued development in financial stability (December 2010 – June 2015); and (3) a return to financial pressure (September 2015 – December 2016). We detect that the dangers to financial stability still persevere as sub-indices especially FVI, FDI and FSI (in 2016) continue underneath their respective levels in since 2012.

Abba, Okwa, Soje, and Aikpitanyi (2018) analysed capital adequacy ratio (CAR) and Nigerian deposit money banks' (DMBs) performance using balanced panel data collected from financial statements of 12 selected quoted banks for the ten-year period 2005-2014. The index for profitability which is ROA was found to be the most important determinant of CAR. Also, Nigerian banks' risk portfolio is quite high and ROA is quite low. The study concludes that CAR is largely determined by banks risk-portfolio, deposit level, profitability and asset quality and

CAR of Nigerian banks is well above CBN and Basel Accord regulatory minimum. The banks should maintained optimum capital adequacy ratio.

Adekunle (2018) studied internal factors affecting profitability of deposit money banks (DMBs) in Nigeria for the period of 2008-2016 using panel data of 14 listed banks drawn from the Nigerian Stock Exchange. Secondary data obtained from the listed deposit money banks' financial statements were analysed. The independent variables were proxied by capital adequacy, credit risk, and inflation while profitability was proxied by return on assets (ROA). The study adopts correlational research design to investigate the determinants of profitability of the deposit money banks. Panel data techniques (fixed and random effects model) were employed to examine the effect of internal factors on profitability of the sampled listed deposit money banks. The study found that internal factors had significantly influenced on deposit money banks' profitability over the study period. The capital adequacy had a positive and significant relationship with bank ROA while credit risk had a negative and significant relationship with banks' profitability during the study period.

Ahmad, Ahmad, and Adeel (2018) appraise the trade-off between liquidity and profitability in the banking sector. The research was applied to all listed banks of Pakistan Stock Exchange during the time period of 2010-2015. Document investigation was the key research method adopted to gather secondary data for the research. Six research models were stated and estimated via Ordinary Least Squares (OLS) method. The observed outcomes exposed significant connection among bank liquidity ratios and return on assets, return on equity, net profit margin, and Tobin-q. However, return on investment and earning per share relationship with liquidity is insignificant.

Gweyi, Tobias, and Oloko (2018) evaluate the influence of liquidity risk on financial performance of deposit taking savings and credit co-operatives (DT-Saccos) in Kenya. The study adopted a descriptive research design. The target population for this study was 164 deposit taking Sacco societies licensed to undertake deposit-taking Sacco business in Kenya. The study adopted census and considered all the Deposit Taking Savings for study. Secondary data was collected from 135 deposit taking Sacco's audited financial statement which represented 82.32% success rate. Data was analysed using both descriptive and inferential statistics. The result indicates liquidity risk has a negative and significant influence on financial performance.

Tuffour, Owusu, and Boateng, (2018) appraise factors internal to the firm as well as those external to the control of the firms' management. The study examined internal and external determinants of bank profitability in Ghanaian banking industry. A panel data of 6 banks listed on the Ghana Stock Exchange was analysed over the period 2010-2015, using pooled regression models. The statistical results revealed that major determinants of bank profitability in Ghana include the bank capital adequacy, liquidity, total assets and real interest rate. Bank liquidity has significant negative effect on both return on assets and return on equity, while bank operating efficiency has negative and significant influence on only return on equity. On the other hand, while bank capital adequacy was positive and significant for determining both return on assets and return on equity, that of bank total assets has positive and significant influence on only return on assets.

Onyekwelu, Chukwuani, and Onyeka (2018) appraised effect of liquidity on financial performance of deposit money banks in Nigeria**.** Ex-post facto research design was adopted and sample of five (5) banks was used for the study. Secondary data were collected from the firms for ten years period, 2007-2016. The data were analyzed using multiple regression analysis. Results show that Liquidity has positive and significant effect on banks' profitability, that is, return on capital employed (ROCE).

Saheed (2018) studied the effect of capital adequacy and operational efficiency on profitability of deposit money banks (DMBs) in Nigeria for the period of 2008-2016 using panel data of 15

listed banks drawn from the Nigerian stock exchange. The study adopts correlational research design to examine the effect of the bank specific factors on bank profitability. Panel data techniques were employed to examine the effect of capital adequacy and credit risk on profitability of the sampled DMBs. Although Hausman specification test suggested that random effect model is more appropriate, the study utilized feasible generalized least square (FGLS) to underpin the outcome of the Hausman specification. The capital adequacy has a positive and significant relationship with bank profitability while operational efficiency has a negative and significant relationship with bank profitability during the study period.

Almayatah (2018) determined the influence of Islamic banks on the financial soundness Indicators, bearing in mind that these gauges are mirror that reproduce the aptitude of the banking system in fascinating crises and professionally capitalizing in the operation of the money. The pool data model used to guess the influence of Islamic banking, where the procedure used improved by using (the pooled time series-cross section analysis) to increase measurement efficiency. The outcomes of the research show optimistic influence ratio of Islamic banking on financial soundness indicators signified by the ratio of capital adequacy and the outcomes show that the upsurge in the percentage of Islamic banking by 1% has the influence of increasing the proportion of capital adequacy by 0.21%.

Abdulazeez, Asish, and Rohani (2017) assessed the profitability of Saudi banks using the parameters of the capital adequacy, asset quality, management quality, earning ability and liquidity framework over the period 2000-2014 using pooled ordinary least square and fixed effect model. Their results shown that domestic banks are more profitable than foreign banks; and foreign banks carry more credit risk in their portfolio. In contrast to domestic banks, operating expenses to total income for foreign banks is significant but negatively related to profitability, indicating that cost management inefficiency adversely affect the profitability of this group. Their results also indicated that banks with larger size are less profitable.

Fapohunda and Eragbhe (2017) empirically investigated the influence of regulation, financial Progress and financial soundness on bank performance in Nigeria for the period 1985-2015. The research uses two regulatory gauges (cash reserve ratio and monetary policy rate) as measures of regulation; the ratio of broad money supply to Gross Domestic Product (M2/GDP) for financial progress; bank non-performing loans to total gross loans for financial soundness while bank performance was proxy by earnings of bank after tax. It accepted a multivariate OLS analysis for the guesstimate process, co-integration scrutiny for long-run equilibrium connection and the associated error correction model to ascertain the short-run effect of the variables. The answers of the research are that cash reserve ratio, monetary policy rate, financial progresses and financial soundness mostly influence on bank performance both in the short run and long- run.

Tochukwu (2016) opines that capital adequacy ratio is one of the relevant measures of safety and soundness of a banking institution because it serves as a buffer or cushion for absorbing losses. The researcher employed pooled regression analysis model to examine capital adequacy-risk management outcomes of the banks during the 2009-2015 periods. Analysis was based on twelve (12) banks whose selection was guided by convenience criteria. Variables of interest were capital adequacy ratio, risk-weighted assets ratio, deposit asset ratio, and nonperforming loans ratio. Data were extracted from published financial statements of the banks. Pooled least squares (PLS) techniques were used to obtain estimates of parameters of the model, as well as relevant inferential statistics. 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.

Umoru and Osemwegie (2016) examined the degree of significance of the capital adequacy ratio in influencing the financial deeds of Nigerian banks by applying the feasible GLS estimator technique on the pooled panel model for the period of 2007 to 2015. 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.

Albulescu (2015) examined the stimulus of financial soundness indicators on the banks' profitability, at the macro- level, in a set of developing republics. Dissimilar from preceding studies which evaluate the influence of the banking sector features and of the macroeconomic setting on the profitability, He emphases on the internal situations of banks. Using the IMF monthly data for the period 2005-2013 and a panel data method, and learn that non-performing loans have an adverse influence on banks' profitability under the fixed effect model. While the level of liquidness has a mixed stimulus, the capitalization and the interest rate margins definitely touch the banks' profitability. As predictable, the non-interest expenses damagingly influence the profitability. The outcomes show robust either if we use the return on assets or the return on equity pointer to measure the level of profitability.

Bowa (2015) examined the effect of bank capitalization on liquidity of commercial banks in Kenya. 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. The results suggested that larger banks essentially enjoy economies of scale which in turn positively influences their profitability. The study further asserts that holding assets in highly liquid form tends actually increases income levels. On the contrary, banks with poor asset quality often suffer from high credit risks leading to less profitability. Banks size therefore determines the banks` ability to remain profitable and sustainable for the foreseeable future.

Olalekan and Adeyinka (2013) examined the effect of capital adequacy on profitability of deposit- taking banks in Nigeria. They sought to assess the effect of capital adequacy of both foreign and domestic banks in Nigeria and their profitability. The paper presented primary data collected by questionnaires involving a sample of 518 distributed to staff of banks with a response rate of 76%. Also published financial statement of banks were used from 2006 - 2010. 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.

Ikpefan (2012) investigated the impact of shareholders‟ fund on bank performance in the Nigerian deposit money banks for the period spanning 1986 and 2006. The study captured their performance indicators and employed cross-sectional and time series of bank data obtained from Central Bank of Nigeria (CBN).The formulated models were estimated using ordinary least square regression method. The study identified a positive relationship between shareholders fund and bank loan. The researcher also found that there is significant relationship between shareholders‟ fund and banks‟ liquidity, bank deposits, and bank loans. The study confirmed that the efficiency of management measured by operating expenses is negatively related to return on capital.

Kremmling (2011) required to find out if regulating financial organizations during financial disaster will affect bank performance by taking into account, deposit insurance schemes, capital regulation and activity limitations. The outcomes presented that capital requirements damagingly influenced the level and change in loan loss provisions during financial disaster and as such, banks with high or low capital ratios still yielded to bank runs during financial disaster.

Cihak and Schaeck (2010) investigated how financial soundness indicators can offer an accurate indication for the profitability of detecting systemic banking susceptibilities. They used an

example of 100 countries, the research discloses that a high capital of risk weighted assets and a high return on equity drops the probability of a systemic banking disaster happening. 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 decrease the existence time of the banking system but the influence is not statistically significant.

Babihuga (2007) investigated the association between nominated macroeconomic variables and financial indicators for 96 nations covering the period 1998 – 2005. The study covers key macroeconomic indicators and capital adequacy, asset quality and profitability. The study exposed a negative association with capital adequacy and non-performing loans and a optimistic association with profitability.

Iyade (2006) investigated the influence of regulation and supervision on the doings of Nigerian banks with importance on the role of the Central Bank of Nigeria and the Nigerian Deposit Insurance Corporation. He assessed the roles and contributions of CBN and NDIC to the Nigerian banking sector. Extensive field survey and library research was carried out and data obtained were exposed to thorough examination. The examination displayed that the supervisory and regulatory framework of the Central Bank of Nigeria and the Nigerian Deposit Insurance Corporation are not adequate to promise effective banking practices in Nigeria.

3. MATERIAL AND METHOD

The study adopted *ex post facto* research design. The ex-post facto configuration was applied on the premise that it doesn't offer the investigation an opportunity to control the factors for the most part since they have recently occurred and can't be affected. The investigation applied secondary data gotten from the internet, annual financial reports of the selected banks, Nigerian Stock Exchange, over a period of ten years spanning 2009 to 2018. Using judgmental sampling method, the study considered eight listed deposits money banks due to availability of required data.

In analysing the data gathered, regressions of ordinary least square method was employed to determine the empirical effect of explanatory variables on dependent variable. Pearson Correlation Matrix was also adopted to examine the nexus between the financial soundness indicators and Bank's performance in Nigeria.

The model adopted for this study is underpinned to the model of Albulescu (2015) that studied "Banks' Profitability and Financial Soundness Indicators: A Macro-Level Investigation in Emerging Countries". Albulescu measured profitability with Return on Equity (ROE) as a function of Non-performing loans to total gross loans, Regulatory capital to risk-weighted assets, Liquid assets to total assets, Non-interest expenses to gross income and Interest margin to gross income used as financial soundness indicators. However, the study improved on the model by incorporating Return on Asset (ROA) as a measured for performance/profitability and modifying the proxies of financial soundness indicators to Non-performing loans ratio (NPLR), Liquid assets ratio (LAR) and capital adequacy ratio (CAR). In this study, ROA and ROE are proxies of performance which is the dependent variables while NPLR, LAR and CAR are the indicators of financial soundness which is the proxies of the independent variable.

Therefore, the model functional form becomes;

$ROA_{it} = f(NPLR_{it}, LAR_{it}, CAR_{it}, e_{it})$ (1)

$ROE_{it} = f(NPLR_{it}, LAR_{it}, CAR_{it}, e_{it})$ (2)

The Model becomes;

$ROA_{it} = \beta_0 + \beta_1 NPLR_{it} + \beta_2 LAR_{it} + \beta_3 CAR_{it} + e_{it}$ (3)

$ROE_{it} = \beta_0 + \beta_1 NPLR_{it} + \beta_2 LAR_{it} + \beta_3 CAR_{it} + e_{it}$ (4)

Where:

ROA = Return on assets ROE = Return on equity

NPLR = Non-performing loans ratio LAR = Liquid assets ratio

CAR = capital ratio
β0 = Constant term (intercept) eit = Error term
β1-3 = Coefficient of Independent

3.1 Description of Research Variable

The study used some variables that are largely adopted from extant literature, which are in conformity with the research problem and research objectives. Return on assets and Return on equity were considered as proxy for performance variable while, non-performing loans ratio, liquid assets ratio and capital ratio served as explanatory variables of the study. It employs the variables according to the approach used by the previous studies and it will consider availability of data for measurement purposes.

Table 1: Operationalization of variables

Return on assets (ROA)	net operating profit /total assets	Albulescu (2015)
Return on equity (ROE)	net income after tax/shareholders' equity	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)
Capital to total assets	capital / total assets	Financial Stability Report (2014)

Source: Researcher's Compilation (2021)

3.2 Apriori Expectation

B2, β3, > 0 judging by the literature underpinning, we expect a direct and positive flow among the employed variables such as Return on Assets (ROA) and Return on Equity (ROE), and its independent counterpart that is Liquid assets ratio (LAR) and Capital adequacy ratio (CAR). We also expect β1 < 0 that means, a negative effect of Non-performing loan ratio (NPLR) on the both dependent variables

4. RESULT AND DISCUSSIONS

The summary of the analysis result and its corresponding interpretations of the nexus between financial soundness indicators and performance of listed commercial Banks in Nigeria are presented below.

4.1 Data Analysis

Table 2: Descriptive Statistics

VARIABLES	ROA	ROE	NPLR	LAR	CAR
Mean	0.100400	0.334750	0.173360	0.579788	0.620650
Median	0.096500	0.300000	0.139400	0.597500	0.660500
Maximum	0.265000	0.880000	0.980500	0.857000	0.894000
Minimum	-0.247000	0.150000	0.000700	0.036000	0.156000
Std. Dev.	0.069350	0.161104	0.152919	0.193740	0.145406
Skewness	-1.331018	1.994971	2.330003	-0.398548	-0.529192
Kurtosis	10.01548	6.825663	11.29678	2.435437	2.906195
Jarque-Bera	187.6782	101.8511	301.8409	3.180315	3.763256
Probability	0.000000	0.000000	0.000000	0.203894	0.152342
Sum	8.032000	26.78000	13.86879	46.38300	49.65200
Sum Sq. Dev.	0.379947	2.050395	1.847357	2.965293	1.670292
Observations	80	80	80	80	80

Source: Author's computation with E-view 8

Table 2 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 0.100400, that of return on equity (ROE) is 0.334750, this means that the selected banks has a positive performance in the period of the study. The maximum and minimum value of return on assets (ROA) is 0.265000 and -0.247000 respectively, and that of return on equity (ROE) is 0.880000 and 0.150000 respectively. The large difference between the maximum value and the minimum value shows that the sampled firms used for the study are not dominated by either firms with high performance (ROA or ROE) or firm with low performance (ROA or ROE). Secondly, it was observed that on the average over the period, the selected firms have non-performing loans ratio (NPLR) value of 0.173360, maximum and minimum NPLR value of 0.980500 and 0.000700 respectively, the large difference between the maximum and minimum non-performing loans ratio reveals that gyrating nature of the non-performing loans to total loans among the selected banks. Liquid assets ratio (LAR) has a mean value of 0.579788, maximum value of 0.857000 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. Capital ratio (CAR) has average value of 0.620650, maximum and minimum values of 0.894000 and 0.156000 respectively, the large differences between the maximum and minimum value shows the banks' capital adequacy.

Table 3: Correlation Matrix

VARIABLE	ROA	ROE	NPLR	LAR	CAR
ROA	1.000000	0.356862	0.230830	-0.109330	0.057150
ROE	0.356862	1.000000	-0.056739	0.006294	0.125182
NPLR	0.230830	-0.056739	1.000000	-0.085042	-0.000916
LAR	-0.109330	0.006294	-0.085042	1.000000	-0.003505
CAR	0.057150	0.125182	-0.000916	-0.003505	1.000000

Source: Author's computation with E-view 8

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 positive association with return on equity (ROE). This justifies the use of both measures as proxy for banks performance. The table shows that return on assets (ROA) has a negative association with LAR (-0.109330), and positively associated with NPLR (0.230830) and CAR (0.057150); whereas Return on equity (ROE) has a negative association with NPLR (-0.056739), and then positively associated with LAR (0.006294) and CAR (0.125182). Non- performing loans ratio (NPLR) has a negative association with LAR (-0.085042) and CAR (-0.000916). Liquid assets ratio (LAR) also has a negative association with CAR (-0.003505). In checking for multi-colinearity, the study observed that no two explanatory variables were perfectly correlated.

Table 4: Regression Results of Model One

Dependent Variable: ROA				
Method: Panel Least Squares				
Date: 04/10/21 Time: 23:42				
Sample: 2009 2018				
Periods included: 10				
Cross-sections included: 8				
Total panel (balanced) observations: 80				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.043577	0.041063	1.061228	0.2920
NPLR	-0.032524	0.037129	-0.875976	0.3838

LAR	0.110703	0.047116	2.349559	0.0214
CAR	0.005125	0.049684	0.103147	0.9181
R-squared	0.698911	Mean dependent var		0.100400
Adjusted R-squared	0.656186	S.D. dependent var		0.069350
S.E. of regression	0.063705	Akaike info criterion		-2.608656
Sum squared resid	0.304372	Schwarz criterion		-2.459779
Log likelihood	109.3462	Hannan-Quinn criter.		-2.548967
F-statistic	4.655636	Durbin-Watson stat		1.912999
Prob(F-statistic)	0.002067			

Source: Author's computation with E-view 8

4.1.1 Interpretation of Findings

a. From the result of the analysis presented in Table 4, Non-performing loans ratio (NPLR) has negative effect on bank's performance (ROA) as indicated by a coefficient of -0.032524, though it is statistically insignificant at 5% level. This implies that increase in Non-Performing Loan is detrimental to banks performance (ROA)..
b. Liquid assets ratio (LAR) has positive effect on bank's performance (ROA). This is shown by a regression coefficient of 0.110703 and it is statistical significant at 5% level. This shows that the management of Liquid assets by Nigerian banks helps to increase the performance of Banks.
c. Capital ratio (CAR) has positive effect on bank's performance (ROA). This is indicated by a regression coefficient of 0.005125. The effect is statistically insignificant at 5% level. This means that the increase in capital adequacy ratio brings about increased in the performance of Banks.

Table 5: Regression Results of Model Two

Dependent Variable: ROE				
Method: Panel Least Squares				
Date: 04/10/21 Time: 23:44				
Sample: 2009 2018				
Periods included: 10				
Cross-sections included: 8				
Total panel (balanced) observations: 80				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.181751	0.096164	1.890015	0.0626
NPLR	-0.150733	0.114840	-1.312555	0.1933
LR	0.030694	0.088718	0.345974	0.7303
CR	0.114124	0.117479	0.971441	0.3345
R-squared	0.659720	Mean dependent var		0.334750
Adjusted R-squared	0.614905	S.D. dependent var		0.161104
S.E. of regression	0.151565	Akaike info criterion		-0.875137
Sum squared resid	1.722906	Schwarz criterion		-0.726260
Log likelihood	40.00548	Hannan-Quinn criter.		-0.815448
F-statistic	3.563988	Durbin-Watson stat		1.568083
Prob(F-statistic)	0.010241			

Source: Author's computation with E-view 8

4.1.2 Interpretation of Findings

a. From the result of the analysis presented in Table 5, Non-performing loans ratio (NPLR) has negative effect on bank's performance (ROE) as indicated by a coefficient of -0.150733, and it is statistically insignificant at 5% level. This implies that increase in Non-Performing Loan is highly detrimental to banks performance (ROE).
b. Liquid assets ratio (LAR) has positive effect on bank's performance (ROA). This is shown by a regression coefficient of 0.030694 and it is statistical insignificant at 5% level. This shows that the management of Liquid assets by Nigerian banks helps to increase the performance of Banks.
c. Capital ratio (CAR) has positive effect on bank's performance (ROA). This is indicated by a regression coefficient of 0.114124. The effect is statistically insignificant at 5% level. This means that the increase in capital adequacy ratio brings about increased in the performance of Banks.

Conclusively, Tables 4 and 5 show that the relationship existing between the dependent and independent variables are stated thus:
ROA = 0.043577 - 0.032524NPLR + 0.110703LAR + 0.005125CAR ROE = 0.181751 - 0.150733NPLR + 0.030694LAR + 0.114124CAR

From the two results, this means that liquid asset ratio (LAR) and capital ratio (CAR) variables conform to a priori expectation. In first and second model, their coefficients of 0.110703; 0.030694 for LAR; and 0.005125; 0.114124 for CAR indicates that Bank's performance (ROA & ROE) will rise by 0.110703; 0.030694 units for LAR and 0.005125; 0.114124 units for CAR if proper financial soundness indicators of Banks increases by 1 unit respectively, ceteris paribus. On the contrary, Non-performing loan ratio variable of both equation coefficients of -0.032524; -0.150733 indicates that Bank's performance will dwindle by -0.032524; -0.150733 units if Banks Non-performing Loan increases by 1 unit. This finding is in line with the findings of Albulescu (2015); Cihak and Schaeck (2010) and Babihuga (2007).

4.2 Hypotheses Testing

4.2.1 Model One

For proper test, the hypotheses were restated in null form as follows:

Table 6: Summary of model one regression results

Variables	Coefficients	P-value	Decision Rule	Conclusion
Non-performing loan ratio	-0.032524	0.3838	P-value > 0.05	Insignificant
Liquid asset ratio	0.110703	0.0214	P-value < 0.05	Significant
Capital ratio	0.005125	0.9181	P-value > 0.05	Insignificant

Source: Extract from Regression Estimation Result of Table 4

H_{01}: Non-performing loans ratio does not have positive significant relationship with performance of listed commercial Banks in Nigeria.
Drawing inference from Table 6 above, non-performing loan ratio have negative coefficient of -0.032524 with p-value of 0.3838 which is statistically insignificant at 5% level. Thus, we accept the null hypothesis and reject the alternative. Therefore, non-performing loan ratio has negative insignificant effect on Bank's performance as well as, showing insignificant negative relationship with Bank's performance in Nigeria. this is in agreement with the a priori expectation of non-performing loan ratio. The finding concurs with that of Albulescu (2015); Cihak and Schaeck (2010) and Babihuga (2007).

H_{02}: Liquid asset ratio does not have positive significant relationship with performance of listed commercial Banks in Nigeria.
Drawing inference from Table 6 above, liquid asset ratio have positive coefficient of 0.110703 and the p-value is 0.0214, it is statistically significance at 5% level. Thus we reject the null hypothesis and accept the alternative and conclude that, liquid asset ratio has positive significant

effect on Bank's performance as well as, showing significant positive relationship with Bank's performance in Nigeria. The result showed consistency with the earlier findings of *Almayatah (2018) and* Albulescu (2015).

H_{03}: Capital ratio does not have positive significant relationship with performance of listed commercial Banks in Nigeria.
Drawing inference from Table 6 above, capital ratio has a positive coefficient of 0.005125 with p-value of 0.9181 which is statistically insignificant at 5% level. Thus, we accept the null hypothesis and reject the alternative. Therefore, capital ratio has a positive insignificant effect on Bank's performance as well as, showing insignificant positive relationship with Bank's performance in Nigeria. The finding concurs with that of Etukafia, Akpabio & Etuk (2018); and was in variance with the findings of Babihuga (2007).

4.2.2 Model Two

For proper test, the hypotheses were restated in null form as follows:
Table 7: Summary of model two regression results

Variables	Coefficients	P-value	Decision Rule	Conclusion
Non-performing loan ratio	-0.150733	0.1933	P-value > 0.05	Insignificant
Liquid asset ratio	0.030694	0.7303	P-value > 0.05	Insignificant
Capital ratio	0.114124	0.3345	P-value > 0.05	Insignificant

Source: Extract from Regression Estimation Result of Table 5

H_{01}: Non-performing loans ratio does not have positive significant relationship with performance of listed commercial Banks in Nigeria.
Drawing inference from Table 7 above, non-performing loan ratio have negative coefficient of -0.150733 with p-value of 0.1933 which is statistically insignificant at 5% level. Thus, we accept the null hypothesis and reject the alternative. Therefore, non-performing loan ratio has negative insignificant effect on Bank's performance as well as, showing insignificant negative relationship with Bank's performance in Nigeria. The finding concurs with that of Albulescu (2015); Cihak and Schaeck (2010) and Babihuga (2007).

H_{02}: Liquid asset ratio does not have positive significant relationship with performance of listed commercial Banks in Nigeria.
Drawing inference from Table 7 above, liquid asset ratio have positive coefficient of 0.030694 and the p-value is 0.7303, it is statistically insignificance at 5% level. Thus we reject the alternative hypothesis and accept the null and conclude that, liquid asset ratio has positive insignificant effect on Bank's performance as well as, showing insignificant positive relationship with Bank's performance in Nigeria. The result showed consistency with the earlier findings of *Almayatah (2018) and* Albulescu (2015).

H_{03}: Capital ratio does not have positive significant relationship with performance of listed commercial Banks in Nigeria.
Drawing inference from Table 7 above, capital ratio has a positive coefficient of 0.114124 with p-value of 0.3345 which is statistically insignificant at 5% level. Thus, we accept the null hypothesis and reject the alternative. Therefore, capital ratio has a positive insignificant effect on Bank's performance as well as, showing insignificant positive relationship with Bank's performance in Nigeria. The finding concurs with that of Etukafia, Akpabio & Etuk (2018); and was in variance with the findings of Babihuga (2007).

4.3 Implications of Findings:

1. Non-performing loan has negative effect showing that it dwindles performance of banks (ROA & ROE) and has not enhanced Bank's performance. This may be as a result of poor credit management.
2. Liquid asset ratio has positive influence indicating that it positively influences performance of banks (ROA and ROE). With the higher liquidity, banks can meet up with the expected and unexpected demands for cash.
3. Capital ratio has a positive effect on performance of banks (ROA and ROE) indicating that an upsurge in the percentage of capital adequacy ratio has the influence of increasing the proportion of banks performance.

CONCLUSION AND RECOMMENDATIONS

The estimated result on the nexus between the financial soundness indicators and performance of listed commercial Banks in Nigeria with focus on the ROA and ROE as proxies for bank's performance; we found that the regression coefficient of Liquid asset ratio and Capital ratio are positive indicating that they positively influence bank's
performance (ROA & ROE) during the period studied. However, Non-performing loan is detrimental to the bank's performance. Based on the findings, the study concluded that financial soundness indicators of banks affect and increase their performance. Although, most banks could not grow or perform as expected due to high rate of non-performing loan, but an upsurge in the percentage of capital adequacy ratio has the influence of increasing the proportion of banks performance; and with the higher liquidity, banks can also meet up with the expected and unexpected demands for cash.

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