Effect of Regulatory Requirements on Loan Loss Provision of Deposit Money Banks in Nigeria

Author's Details:

(1)Ogundipe, S.A. (Phd Scholar)-Department of Business Administration & Marketing-Babcock University, Ilisan-Remo, Ogun State Email: Ogundipea@Babcock.Edu.Ng **(2)Prof. Asikhia, O.U.**-Department of Business Administration & Marketing-Babcock University, Ilisan-Remo Ogun Email: Asikhiao@Babcock.Edu.Ng **(3)Dr. Kabouh, N.M.**-Department of Business Administration & Marketing-Babcock University-Ilisan-Remo Ogun State Email: Kabouhm@Babcock.Edu.Ng **(4)Dr. Ajike, E.**-Department of Business Administration & Marketing-Babcock University-Ilisan-Remo Ogun State Email: Ajikee@Babcock.Edu.Ng

Abstract

Banking plays a pivotal role in economic development due to its financial intermediation function and it holds the largest financial assets in the global economy. However, in recent years, an increase in NPLs provision diminishes income as banks are exceeding the legal 5% threshold for non-performing loans and are also hindering banks capacity to grant new loans for economic development. This study adopted ex post facto *research design. Validated data was collected from the annual financial reports of 10 deposit money banks. The panel regression analysis tool was employed to analyse the data with descriptive statistics, Pearson correlation model, multiple linear regression tools and linearity test, heteroskedasticity, autocorrelation, co-integration and Hausman test were also carried out including analysing the data and results duly interpreted. The result show that regulatory requirements significantly effects loan loss provision (*Adj.R2 *= 0.345,* F*(9, 96) = 6.701,* p *< 0.05), with ρ-value of F-statistics of 0.00, which is significant as it is less than the chosen significant level of 5%. It was recommended that the management of banks' use of discretion to provide a large sum for loan loss provision should be monitored and prevented to enhance the performance of banks in Nigeria.*

Key words*: Regulatory requirements, loan loss provision, non-performing loans, bank performance.*

Introduction

Loan loss provision is defined as the portion of banks' profit that is set aside through regular deduction to pay off part or whole of sticky past due of its borrowers in compliance with the tenets of prudential guidelines of the National Deposit Insurance Corporation (NDIC) on non-performing credits. Banking regulators are well aware of the implications of the rapid recognition of credit-loss provisions, or the cliff effect, under IFRS 9 for regulatory capital and consequently, the soundness of banks. In March 2017, the Basel Committee on Banking Supervision (BCBS) published a document on the regulatory treatment of accounting provisions, wherein it pointed out this dilemma of IFRS 9 as one of the reasons for allowing countries to adopt transitional arrangements to militate against such negative developments subject to certain conditions (FRS 2018).

According to Golin and Delhaise (2013), loan loss provision is "a noncash charge against operating income made to account for expected or unexpected loan losses." and can be the general provision or specific provision: - General provision covers all loan losses which are not yet determined but banks consider those loans to have a high risk of default. - Specific provision term, on the other hand, is used for loans that are already identified as having troubles to pay back.

The Basel Committee on Banking Supervision (BCBS) estimates that its member countries alone lost output worth more than $76 trillion as a result of the crisis up to the end of 2015. Though sub-prime mortgage crisis was the trigger, the financial crisis itself was rooted in the imperfect functioning of the global financial system as banks were not following sufficiently sound risk management strategies and lacked adequate loss absorption capacity (BIS, 2017). The rule and compliance approach place reliance on transaction testing, such as evaluating the adequacy of the credit administration process, assessing the quality of loans and ensuring the adequacy of provisioning for loan losses are not strictly complied with by banks (CBN, 2014). Also, Soludo, (2004) posited that Nigerian banking system was characterized by poor loan quality of up to 21% of

shareholders' funds compared with 1 to 2% in Europe and America; overtrading, abandoning the true function of banking to focus on quick profit ventures such as trading in forex and tilting their funding support in favour of import-export trade instead of financing manufacturing; reliance on unstable public sector funds for their deposit base. Kareem, Akinola and Oke, (2014) similarly stated that financial services industry experienced a high level of competition coupled with political instability and inconsistencies in policy implementation; thus, leading to a rapid decline on the level of risk assets performance of banks.

Statement of the problem

The growing concern of bank supervisors about insufficient bank provisioning begs the question of whether bank balance sheet characteristics can provide bank managers with a good indication of their true credit risk exposure for which they should calculate adequate loan loss provisions that is commensurate with their credit risk exposure (Ozili, 2018). Similarly, the International Accounting Standard 39 (IAS 39) stated that banks could only recognise credit losses when there was clear evidence of such an event and IAS 39 was criticised for its backwards-looking framework (referring to the; 'too little, too late' weakness of IAS 39) (FRS,2018). Hence an increase in NPLs provision diminishes income and also mismatch of maturities between asset and liability create liquidity risk for the banks which deteriorate banks' overall credit rating including its performance (Badar & Yasmin, 2013). Beside this, only a few studies of citable significance have dealt on the problem of asset quality and the profitability of Nigeria commercial banks using the CAMELS specification for measuring asset quality (Akani & Lucky, 2014). Karim, Chan and Hassan (2010) maintained that at large, the main effect of provision for bad loans on banks is the fact that increasing provision for bad debt limits the financial growth of banks as it deprives banks of the needed liquidity and also limits their capability to fund other potentially viable businesses and make credit facilities available to individuals and corporate bodies. Therefore, the objective of this study is to examine the effect of regulatory requirements on loan loss provisioning on DMBs in Nigeria. The study thereby hypothesized that regulatory requirements do not affect loan loss provision in Nigerian banks.

2.1 Literature Review

The CBN (2014) described loan loss provision (LLP) as a portion of banks' profit that is, deducted or sacrificed to pay off part of sticky past due of its borrowers according to prudential guidelines on non-performing credits, while Khan (2018), asserted that banks have to make provision requirement based on asset classification and taking into account the time lag between an account becoming doubtful of recovery, its recognition as such and the erosion over time in the value of security charged to the bank. ECB (2017) defined loan loss provisioning has robust policies and procedures which banks normally put in place to validate the accuracy and consistency of the loan reserves estimations regularly. However, Lalong (2015), asserted that some borrowers usually default and this will reduce banks income due to the need for provisions for such unpaid loans and consequently jeopardised banks financial condition due to loss of principal and interest. In the same vein CBN (2014) underline reasons to promote provisioning policies, which are consistent with sound risk management practices, by recently reviewed the prudential guidelines for DMBs to reflect forward-looking capital provisioning guidelines that address wide-ranging areas of risk management such as corporate governance, know your customer (KYC) and anti-money laundering, loans loss provisioning, and driven by stress test in evaluating bank risk-return trade-off and risk acceptance criteria profile when financing different sectors of the economy.

The existing literature suggests that LLP can be affected by at least three types of factors such as the economic cycle, discretionary and non-discretionary behaviour of bank managers. The-non discretionary component is related to credit risk and it aims to cover expected future credit losses on loans (Wahlen, 1994; Beaver & Engel, 1996). The possible discretionary components may reflect motives regarding capital management, income smoothing and signalling. According to the capital management hypothesis, less capitalised banks should be less willing to make LLP. More precisely, LLP reduces Tier 1 capital and is deducted from risk-weighted assets when calculating Tier 2 capital. If the increase of Tier 2 capital associated with a higher level of LLPs is larger than the decrease in Tier 1 capital, discretionary behaviour could lead to an increase in regulatory capital

without a corresponding reduction in the insolvency risk (regulatory capital arbitrage). As a result, less capitalised banks are expected to be less willing to make LLP. This is normally tested by using the deviation of the Total Capital Ratio from 8% divided by 8% (CAPi,t), as in Bouvatier and Lepetit (2008) and Bouvatier et al. (2014)

The World Bank Group (2014) survey loan classification over 26 countries and concluded that about three-quarters of the countries apply a debt classification system which has five buckets: standard, watch, substandard, doubtful and loss. Based on business experiences, banks estimate potential loan losses that might happen and determine loan loss provisions to create credit loss reserves in their balance sheets by saving the proportions of their incomes from the previous financial periods. The rule and compliance approach place reliance on transaction testing, such as evaluating the adequacy of the credit administration process, assessing the quality of loans and ensuring the adequacy of provisioning for loan losses.

Further CBN (2014) stated that Section 3.17 under the credit risk management made provision for a tolerable limit of non-performing loan to total loans. Item (a) allows a 10.0 per cent tolerable limit of the ratio of non-performing loans to gross loans (NPL ratio) and further discloses sanctions by the CBN in cases 'where the ratio of non-performing credits to total credits is 20.0 per cent above the tolerable limit of 10.0 per cent and/or 25.0 per cent of non-performing credits are insiders related. Also, Sections 3.24 and 3.25 of the CBN guidelines make provisions for expectations on the credit rating of counterparty/obligor and sectors and credit rating of banks, respectively. The benefits of this approach are not very visible if there are only a few unrelated losses. However, if many losses occur in a short time due to systematic risks such as financial crisis or recession, loan loss reserve can minimize the actual impact of the losses by using the money that is reserved into this account.

Also, under IFRS 9 the approach taken by bank management in incorporating macroeconomic data and assumptions to include in modelling credit risk will be a key determinant of the outcomes to loss provisioning or credit impairments used in the banking sector. The quantum of provisioning allowed will, therefore, have a direct bearing on the regulatory capital level of a bank, especially during the transition phase of IFRS 9. The implication of greater management judgment in credit impairments requires that in future bank supervisors and market analysts will need to closely scrutinise banks' provisions. The pace and the period over which the impairments are implemented are likely to affect the impact thereof (FRS, 2018). Similarly, International Accounting Standard 39 (IAS 39) reported that banks could only recognise credit losses when there was clear evidence

of such an event and was (IAS 39) therefore criticised for its backwards-looking framework (the 'too little, too late' is the weakness of IAS 39).

In response to this problem, the International Accounting Standards Board (IASB) issued the International Financial Reporting Standard 9 (IFRS 9) to replace the incurred loss model (ILM) with an expected credit loss (ECL) model which is forward-looking in its approach and is expected that credit losses would incorporate a broader range of factors such as past events, current conditions and supportable forecasts, including current macroeconomic conditions for it to determine these credit losses; whereas the incurred loss model of IAS 39 has been criticised for amplifying the procyclical effects, while the ECL model of IFRS 9, with its more timely recognition of loan losses, is expected to reduce procyclicality (IFRS 9, 2018).

Further, IFRS 9 (2018) revealed that banks provide loans to a broad range of different clients with different credit risk profiles. However, when some of these borrowers cannot service the repayments on their loans that are not adequately collateralised, banks face potential credit losses hence, banks will carry these credit losses in their financial statements through loan-loss provisioning and impairments to reflect the true value of these loans in their books. In the incurred loss model, banks were not allowed to accrue provision appropriately and timeously for credit losses expected to arise from emerging risks. However the ECL model of provisioning will materially and, in some cases, significantly change the way banks are required to account for the impairments related to these credit losses and the general expectation is that, with the introduction of IFRS 9, credit impairments will increase.

The CBN (2014) stated that every DMB is required to analyze its entire credit portfolio at the end of every month when making returns to CBN and this classification is usually categorized into two parts, performing

(active accounts); and non-performing. The Non-performing loans and advances are further classified into the following segments Sub-standard – where principal and interest is due and remains unpaid for 90 days but less than 180 days. For this category, provision for bad debt is made at 10%; Doubtful accounts – where principal and interest is outstanding for 180 days but less than 360 days. Provision is required to be made at 50%; Lost accounts – where the principal and interest is unpaid for one year or 360 days and more. Full provision must be made at 100% and 1% general provision to be made on the total loan portfolio of banks. Also, Wezel et al., (2012) opined that banks will retain significant discretion in the determination of LLP estimates and bank managers must ensure that the application of Basel III provisioning standards is driven by sound credit risk management considerations.

2.2 Credit Creation

Kargi (2011) defines credit creation as a major source of income to the banks and therefore postulates that credit risk management must be seen as critical for the survival banks. Similarly, Djan, Stephen, Bawuah, Halidu, Kututol, (2015); and Tetteh, (2012) posit that amongst all the services provided by deposit money banks, credit creation is the main income-generating activity for the banks and it involves huge risks to both the lender and the borrower. Mohammed, Ali and Mahshid (2015) posit that banks lend to facilitate the slow process of transferring funds from lenders to borrowers. Explaining further Akani and Onyema (2017) posit that credit represents the supply side of financial intermediation and has the great extent to which it affects the economy. Increase in bank credit has the capacity of raising aggregate demand and also have the capacity of rising inflation. These pro-cyclical effects of commercial banks credit require that the monetary authorities formulate policies to ensure equilibrium credit level in the economy. Credit is a financial market activity where financial institutions are empowered by law with credit functions to extend credit facilities to deficit economic units. According to Olokoyo (2011), the volume of loans DMBs gives out depends on many factors such as their liquidity ratio, interest rate, the volume of customers' deposit, their investments), the customer's prestige and public recognition.

2.3 Reserve requirements

Reserve requirement ratio is the minimal percentage of deposits to be kept up with a central bank by the banks. It is one of the tools of monetary policy used to control money supply in the economy. Any changes made in CRR or SLR affects the availability of money with the bank for credit in the system thereby influencing the money supply in the economy. Whenever CRR is increased, it acts as a tax on bank deposits (Glocker & Towbin, 2012). Also, Chude and Chude, 2014) reiterated that the reserve requirement sets the minimum reserves each bank must hold to demand deposits and banknotes and the purpose of minimum reserve ratios is liquidity rather than safety. It has also been used in the past to control the stock of banknotes and bank deposits.

2.4 Statutory Reserve Requirement

Every bank shall maintain a reserve fund appropriated out of its net profits for each year (after due provision made for taxation) and before any dividend is declared as follows: Where the amount of the reserve funds is; (i) less than the paid-up share capital, transfer to the reserve fund a sum equal to not less than 30% of the net profits; and (ii) equal to or above the paid-up share capital, transfer to the reserve fund a sum equal to not less than 15% of the net profit; Provided that no transfer under this subsection shall be made until all identifiable losses have been made good. Cash reserve ratio: The CBN shall prescribe the minimum cash reserve ratio for banks in Nigeria from time to time in line with its monetary policy's directions (CBN, 2010). The existence of many banking sectors is driven by the reserve requirement of the CBN Peydr´o, (2010) and Robitaille, (2011) and invariably, the Central Bank's reserve requirement is a primary security measure that serves as a warranty for the existence of commercial banks. Research has shown that most of the world's banking sectors are regulated in light of the reserve requirement (Santos, 2000).

2.5 Asset Quality

Asset quality is an evaluation of bank assets to facilitate the measurement of the level and size of credit risk associated with its operation. Asset quality is macro-prudential determinants of commercial banks soundness and profitability. It is usually stated at left-hand side of a bank balance sheet and focused on the quality of loans which provides earnings for a bank (Abata, 2014). The challenges of Nigerian banks in the past have been the mismatch of assets and liabilities. Banking sector crisis over the years has been blamed on the poor quality of assets. Central Bank of Nigeria examination team in 2009 reveals that four years after the consolidation, Nigerian commercial banks have non-performing loans greater than the capital base of the banks, this led to the injection of N620 billion in the banking sector (Akani & Lucky, 2014) and the establishment of AMCON, the above question the relevance of capital adequacy rather than management and assets quality of the banks. Only a few studies of citable significance have dealt on the problem of asset quality and the profitability of Nigeria commercial banks using the CAMELS specification for measuring asset quality. Abata (2014) examined assets quality and bank performance of six largest banks quoted in Nigeria stock exchange using secondary data sourced from the annual reports of the commercial banks for fifteen years (1999 – 2013). The study adopted the use of ratios as a measure of bank performance and asset quality since it is a verifiable means for gauging the firms level activities while the data were analyzed using the Pearson correlation and regression tool of the SPSS 17.0. The findings revealed that assets quality has a statistically relationship and influence on bank performance.

2.6 Interest Rate

Sayedi (2013) expressed an interest rate as the percentage rate over one year. Karl et al., (2009) posits that interest rates are derived from macroeconomic factors which agree with Irungu (2013) that interest rates are major economic factors that influence the economic growth in an economy. Inflation and inflationary expectations can press interest rate upward which affects lending rates resulting to reduce credit demand and lending ability of Commercial Banks (Keynes, 2006). Also, Irungu (2013) states that the interest rate is the price of money. Similarly, Emmanuelle, (2013) observed that interest rates equate the demand and supply of loanable funds. Loanable funds are the sum of money supplied and demanded at any time in the money market. Loanable funds theory has implications on banks savers and borrowers and each side is well compensated at equilibrium, the interest rate should be structured in a way every party feel comfortable. Makinde, (2016) posits that interest rate is the rate that is paid on either savings or lending and it represents the rate of return that is due to the owner of funds for differing present consumption for future consumption.

Theoretical review

Loanable fund theory was propounded in 1930 by Wicksell. It attempted to identify the proximate causes of interest rate variation by analyzing the demand and supply of credit. Banks do consider the effect of adverse selection and moral hazard on their lending activities (Mishkin, 2000) since it is very difficult to forecast the type of borrower at the start of the banking relationship, Stiglitz and Weiss, (1981) and they cannot always set high-interest rates by trying to earn maximum interest income (Chodecai, 2004; Okoye, Amahalu, Obi, & Nweze, 2016). Thus the weakness of the theory is that the interest rates set by banks may not be commensurate with the risk faced by the borrowers thus raising the tendency for loan default. Hence, the question of what is the appropriate rate of interest banks should charge their customer remains unsettled.

Anticipated income theory was propounded by Prochnow in 1944 based on the practice of extending term loans by the US commercial banks. The theory states that bank liquidity can be planned if scheduled loan payments are based on the future income of the borrower at a point in time hence, regardless of the nature and character of a borrower's business, banks always plan the recovery of term-loan from the anticipated income of the borrower. Kolapo, Ayeni, and Oke, (2012) posited that one striking thing with this theory is its "future-oriented approach" to granting of bank loans and advances. It is also generally known as "cash flow approach" to lending in which case a term loan is for a period exceeding one year and extending to less than five years which by implication banks depends on loan portfolio recovery as liquidity source hence, incidents of loan default could be efficiently managed to reduce loan loss reserves to enhance the performance of banks.

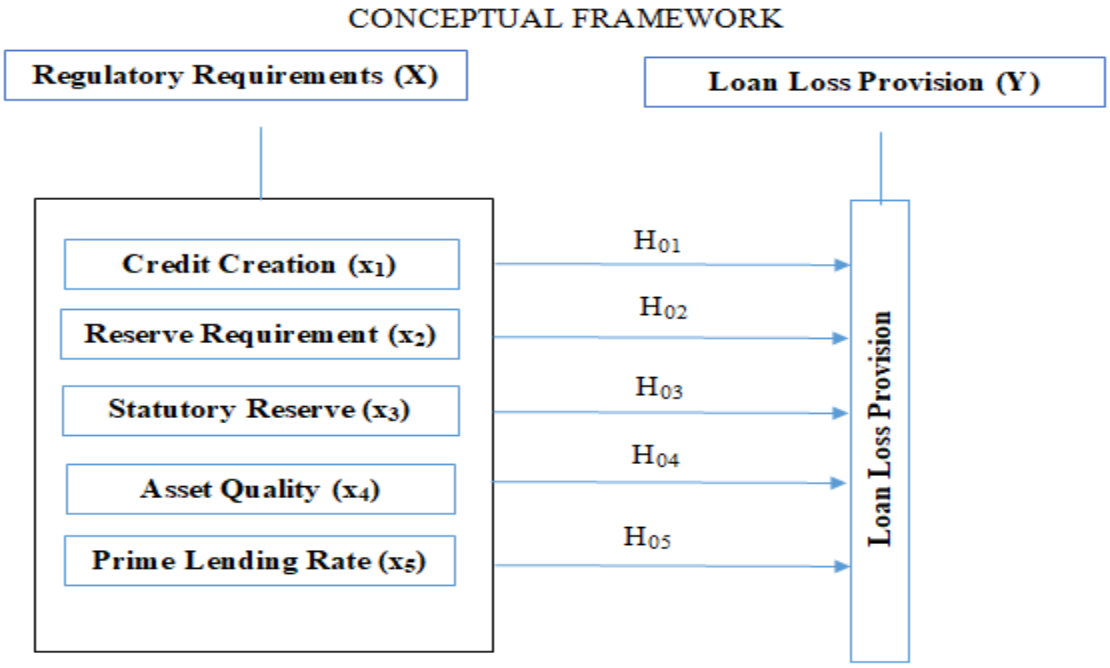
Empirical review

Bouvatier and Lepetit (2012) investigate bank provisioning behaviour and find a positive relationship between bank provisions and loan to asset ratio. Bikker and Metzemakers (2005) examine bank provisioning in a wider cross-country context and find a positive relationship for banks in OECD countries but the relationship is not significant for European banks. Packer and Zhu (2012) found evidence of countercyclical bank provisioning in the Asian region negative relationship for banks in China, India and Japan and these studies suggest that the level of bank provisions is influenced by banks' loan to asset composition.

About activity level, Anandarajan *et al* (2003) argue that large banks have higher levels of business activities compared to smaller banks and will keep more provisions to compensate for their increased level of business activities which implying a positive relationship between bank size and bank provisions. Several studies on the impact of bank size on bank loan provisions document conflicting results, for instance, Leventis, Dimitropoulos, and Anandarajan (2011) report a negative relationship between bank size and loan loss provisions in their cross-country study while Anandarajan *et al* (2007) found a positive but insignificant relation for bank size. Similarly, Quttainah *et al* (2013) identified element of control for bank size while investigating the use of loan loss provisions to manage earnings among Islamic banks and find a positive relationship between bank size and bank provisions. Bouvatier and Lepetit (2012) in a cross country study investigate whether backwards-looking provisioning amplifies growth in bank lending and they found that backwards-looking loan loss provisioning systems exacerbate lending fluctuations in emerging countries than in developed countries. Pool *et al* (2015) examine banks in 12 OECD countries and find that bank lending and loan loss provisions are drivers of business cycle fluctuations and also observe that loan loss provisions decrease as bank lending increases. Ayeni and Kolapo (2012) carried out a study on credit risk and commercial banks' performance in Nigeria: a panel model approach where it found that increase in a non-performing loan, increase in loan loss provision and increase in total loan and advances have a significant impact on the profitability of Nigerian banks. Ozurumba (2016) also study bank performance with an emphasis on Access Bank, United Bank for Africa and Union Bank of Nigeria Plc using loan loss provision as an independent variable and return on assets and return on equity as dependent variables. The specific finding of the work is that return on asset and return on equity have an inverse relationship with loan loss provision.

Methodology

This study adopted *ex post facto* research design. Validated data was collected from the annual financial reports of 10 deposit money banks (United Bank for Africa, Guarantee Trust Bank, Eco Bank, First Bank, Access Bank, Stanbic Bank, Fidelity Bank, Zenith Bank, First City Monument Bank and Union Bank Plc) between 2007and 2018 for the study. Panel regression analysis was employed to analyse the data. Data analysis methods such as descriptive statistics, Pearson correlation model, multiple linear regression tools and various tests were also carried out including linearity test, heteroskedasticity, autocorrelation, co-integration and hausman test to analyse the data and results duly interpreted.



Researchers' model 2020

Model specification

The operationalisation of the dependent and independent variables used for the study is based on the following linear regression equation:
X; = (CC, RR, SR, AQ, LP); Y = (LLP); Where: Y = f(X). The Dependent Variable Y = Loan loss provision while the independent Variable X= Regulatory Requirements (RR). x_1 = Credit Creation (CC); x_2 = Reserve Requirement (RR); x_3 = Statutory Reserve (SR); x_4 = Asset Quality (AQ); X_5 = Prime Lending Rate (PLR). LLP= f (CC,RR,SR,AQ,PLR)

The model formulated for the hypothesis is written as: $LLP= \beta_0 + \beta_1 CC_{it} + \beta_2 RR_{it} + \beta_3 SR_{it} + \beta_4 AQ_{it} + \beta_5 PLR_{it} + e_{it}$

Table 1.1 Variable Description, Measurement and data source

Variables	Description	MEASUREMENT	Source
Credit Creation (CC)	Total aggregate loans including contingencies.	Loan Growth	CBN Annual reports and account of selected DMBs
Reserve Requirements (CRR)	Capital adequacy Ratio (CAR)	Capital Adequacy Ratio	CBN Annual reports and account of DMBs
Statutory Reserve (SR)	Liquidity Ratio, liquid Assets/Total Assets ratio	Liquidity Ratio	CBN Annual reports and account of selected DMBs
Prime Lending Rate (PLR)	Annual Interests on Loans & Advances	Interest on Loan	Audited financial statements of banks, Fitch rating & stock exchange fact book.
Assets Quality (AQ)	Non-performing Loan/Gross Loans	Total loans and advances to total asset	Audited financial statements of banks, Fitch rating & stock exchange fact book.
Loan Loss Provision (LLP).	Provision for impaired loans and lost credit.	Non-Performing Loans/Total Loans & Advances.	Audited financial statements of banks, Fitch rating & stock exchange fact book.

4.3.2 Effect of Regulatory Requirements Dimensions on Loan Loss Provision (LLP) in Deposit Money Banks in Nigeria

Hyphothesis - Regulatory requirements dimensions have no significant effect on loan loss provision in Deposit Money Banks in Nigeria.

LLP = – 2.5879 + 1.998CC + 54600000RR + 37200000SR + 0.973AQ – 0.0538PLR

Table 2 Regulatory Requirements on Loan Loss Provision

Method	**RE GLS**		
Variables	**Coeff**	**z-stat**	**Prob**
CC	1.998	0.58	0.562
RR	546m	0.28	0.777
SR	37.2m	0.55	0.580
AQ	0.973	4.07	0.000
PLR	-0.0538	-0.18	0.856
Constant	-2.5879	-0.23	0.817
Adj. R-squared = 0.0373, Wald $chi^2(5)$ = 17.88; Prob > chi^2= 0.0031			
Hausman Test: $Chi^2_{(3)}$ = 0.13 Prob> chi^2 = 0.9880			
Breusch-Pagan LM Test: $Chi^2_{(1)}$ = 43.65 , Prob> chi^2 = 0.0000			
Breusch-Pagan/ White Test: $Chi^2(18)$ = 17.77, Prob> chi^2 = 0.4708			
Wooldridge Test: $F_{(1, 9)}$ = 0.513 , Prob >F = 0.4921			
LRAI Test: R-Squared = 0.4348, Adjusted R-Squared: 0.3459; F(9, 89) = 6.701, Prob > F = 0.000			

Dependent Variable: Loan Loss Provision (LLP) Significance @ 5%

Interpretation of Result

The Hausman result shows that random effects model is the best estimate considering the probability value of 0.988 which is greater 0.05 significant level; also, the LM test confirmed the result of Hausman that random effect existence with a significant ρ-value of 0.0000. Breusch-Pagan/ White Test revealed that there is no heteroskedascity problem in the model looking at the ρ-value of 0.4708 being insignificant as the null hypothesis specifies that the model is homogeneous; likewise, there was no serial correction problem as shown in the result of the Wooldridge test with the ρ-value of 0.4921, which is insignificant and aligned with the null hypothesis which states that no serial auto correlation; thus Random Effect regression was considered the most appropriate estimate for the model and was conducted with the results presented in Table 4.3.2. Also, corrected R-Squared and Adjusted R-squared was calculated using Linear Regression for Absorbing Indicators (LRAI).
The probabilities and the signs of the z-statistics as presented in Table 4.3.2 showed that credit creation (CC) having z-statistics of 0.58, which is positive and ρ-value of 0.562, which is greater than chosen significant level of 5%, means that CC has insignificant positive effect on Loan Loss Provisions (LLP); also, reserve requirements with z-statistics of 0.28, which is positive and ρ-value of 0777, which is greater than chosen significant level of 5%, implies that RR has insignificant positive effect on Loan Loss Provisions (LLP). Similarly, statutory reserve with z-statistics of 0.55, which is positive and ρ-value of 0.58, which is greater than chosen significant level of 5%, indicates that SR has insignificant positive effect on Loan Loss Provisions (LLP). Contrarily, prime lending rate with z-statistics of -0.18, which is negative and ρ-value of 0.856, which is greater than chosen significant level of 5%, evidenced that PLR has insignificant negative effect on Loan Loss Provisions (LLP). Considering the z-statistics and ρ-value of asset quality (AQ) with positive value of 4.07 and ρ-value of 0.00, means that AQ positively and significantly influences LLP. Interpreting the coefficients of AQ which is 0.973 implies that a naira increase in AQ would result to ₦0.973 decrease in LLP.

Analysis and discussion of findings

Following the ρ-value of F-statistics of 0.00, which is significant because it is less than the chosen significant level of 5%, is evidenced that regulatory requirements significantly effects on Loan Loss Provision (LLP) of listed deposit money banks in Nigeria. The value of adjusted R-squared of 0.3459 explains the power of the explanatory variables in influencing the explained variable. It simply means that a variation in the combined

powers of the explanatory variables (CC, RR, SR, AQ, and PLR) would lead to 34.59% variation in the explained variable, that is, Loan Loss Provision (LLP), while the remaining 65.41% changes that could occur in Loan Loss Provision (LLP) resulted from other factors that are not captured in this model. Therefore, the null hypothesis (H02) which states that regulatory requirement dimensions do not significantly affect Loan Loss Provision (LLP) of selected deposit money banks in Nigeria is hereby rejected while the study accepted the alternate hypothesis that regulatory requirement dimensions significantly affect Loan Loss Provision (LLP) of selected deposit money banks in Nigeria. However, the study decision is supported in empirical literature as; Packer and Zhu (2012) find evidence for countercyclical bank provisioning in the Asian region negative relationship for banks in China, India and Japan and these studies suggest that the level of bank provisions is influenced by banks' loan to asset composition. Also several studies on the impact of bank loan provisions document have shown conflicting results, for instance, Leventis *et al* (2011) report a negative relationship between bank performance and loan loss provisions in their cross-country study while Anandarajan, Hasan, and McCarthy, (2007) found a positive but insignificant relation for bank size. Bikker and Metzemakers (2005) report a significant and positive relation between bank provisions and loan growth for banks in OECD countries while the relation is positive but insignificant for European banks. Pool *et al* (2015) examine banks in 12 OECD countries and find that bank lending and loan loss provisions are drivers of business cycle fluctuations and also observe that loan loss provisions decreases as bank lending increases.

Conclusion and Recommendation

A generally acceptable framework for apportioning and calculation of loan loss provisions peculiar to developing countries should be developed and strictly enforced. This will demand from banks the need to be more circumspect and professional in granting loans to minimize booking of delinquent credits. It is specifically recommended that banks should continue to design; review and implement robust credit risk management system that will prevent them from granting credit to sectors and/ or borrowers that are sensitive to loan defaults to substantially reduce their loan loss provision/reserves and to enhance profitability. Finally, banks' management use of discretion to provide large sum for loan loss provision should be monitored and discouraged by banks' auditors and regulators. Beside this, banks should regularly appropriate sufficient amount higher than the percentage of their statutory reserves annually appropriated out of profit after tax to create extra capital buffers to absorb losses because non-performing loans (NPL) losses can quickly erode banks' solvency.

References

i. *Abata, M. A. (2015). Impact of Asset Management Corporation of Nigeria (AMCON) on the securitisation in the Nigerian banking sector. Global Journal of Contemporary Research in Accounting, Auditing and Business Ethics, 1(2), 282-298.*
ii. *Akani, H.W. & Lucky, A.L. (2014). Money supply and aggregate stock prices in Nigeria: An analysis of cointegration and causality tests. Research Journal of Finance, 2(10), 1 – 24.*
iii. *Akani, H. W.& Onyema, J.I., (2017). Determinants of credit growth in Nigeria. A Multi-dimensional analysis. Journal of Economics and Sustainable development, 8(20) 202215.*
iv. *Anandarajan, A., Hasan, I., & Lozano-Vivas, A. (2003). The role of loan loss provisions in earnings management, capital management, and signaling. The Spanish experience. Advances in International Accounting, 16, 45e65*
v. *Anandarajan, A., Hasan, I. & McCarthy, C. (2007). Use of loan loss provisions for capital, earnings management, and signalling by Australian banks. Accounting & Finance, 47 No. 3, 357-379*
vi. *Ayeni, R.K., Kolapo, T.F. & Oke, M.O. (2012).Credit risk and commercial banks' performances in Nigeria.A panel model approach. Australian journal of business and management research, 2, 31-38*
vii. *Badar, M. & Yasmin, A.(2013). Impact of macroeconomic forces on non-performing loans.An empirical study of commercial banks in Pakistan. Journal of Transactions on Business and Economics.1 (10).*

viii. *Beaver, W.H., Engel, E., (1996). Discretionary behavior with respect to allowances for loan losses and the behavior of security prices. J. Account. Econ. 22, 177–206*

ix. *Bikker, J. A. & Metzemakers, P. A. (2005).Bank provisioning behaviour and procyclicality,Journal of International Financial Markets, Institutions and Money,15 2, 141-157.*

x. *BIS (2017). Banking Regulation and Supervision after the Crisis –Where Are We Now, and what lies ahead? CIRSF Annual International Conference Lisbon, Portugal.*

xi. *Bouvatier, V., Lepetit, L., Strobel, F., (2014). Bank income smoothing, ownership concentration and regulatory environment. J. Bank. Finance 41, 253–270*

xii. *Bouvatier, V., & Lepetit, L. (2012).Effects of loan loss provisions on growth in bank lending. Some international comparisons. International Economics, 132.91-116.*

xiii. *Bouvatier, V., Lepetit, L., (2008). Banks procyclical behavior; does provisioning matter? Journal of International Financial Markets, Inst. Money 18, 513–526.*

xiv. *Central Bank of Nigeria (2014). Consolidated banking supervision annual report (2009 – 2014). www.central bank of Nigeria. Abuja.*

xv. *CBN, (201O). Annual report for the year ended 31 December, 2010. CBN Publications, Abuja.*

xvi. *Chodechai, S. (2004). Determinants of Bank Lending in Thailand. An Empirical Examination for the years 1992 – 1996, Unpublished Thesis.*

xvii. *Chude, N. P., & Chude D. I. (2014).The relationship between regulatory inconsistencies and Nigerian Banking Industry. Global Journal of Management and Business Research Finance 14 . 4 Version 1.0.*

xviii. *Djan, G. O., Stephen, F., Bawuah, J., Halidu, O. B. & Kuutol, P. K. (2015).Credit risk management and its impact on financial performance of listed banks in Ghana. International Journal of Financial Markets, 2(2), 24-32.*

xix. *European Central Bank (2017). Guidance to banks on non-performing loans. Quarterly published European Banking Authority (EBA) risk dashboard*

xx. *Glocker, C., & Towbin, P. (2012). Reserve Requirements for Price and Financial Stability: When Are They Effective? International Journal of Central Banking, **8** (1): 65-113.*

xxi. *Golin, J. & Delhaize, P. (2013). The Bank Credit Analysis Handbook: A guide for Analysts, Bankers and Investors. 2nd edition. John Wiley & Sons Singapore Pt. Ltd. Singapore. International Financial Report System (2018). IFRS 9.*

xxii. *Irungu, P.N., (2013). The Effect of Interest Rate Spread on Financial Performance of Commercial Banks in Kenya. An MSc Research Project Submitted to the University of Nairobi.*

xxiii. *Kargi, H. S. (2011). Credit risk and the performance of Nigerian banks (Master's thesis). Ahmadu Bello University, Kaduna, Nigeria.*

xxiv. *Karl, E., Ray C. and Shannon, M. (2009). Principles of Economics. Pearson International Edition. Pretence Hall.*

xxv. *Kareem, A.O., Akinola, G.O. & Oke, E.A. (2014). Effect of mergers and acquisitions on employee development. The Nigerian banking industry experience. Fountain Journal of Management and Social Sciences. 3(2). 47-56.*

xxvi. *Karim, M. Z. K, Chan, S. & Hassan, S. (2010). Bank efficiency and non-performing loans.evidence from Malaysia and Singapore. Prague Economic Papers, 2, 118-132.*

xxvii. *Khan N.A. (2018). An Empirical Assessment of Non-Performing Assets in Indian Scheduled*

xxviii. *Kolapo, T.F. Ayeni, R.K & Oke, M.O. (2012).Credit risk and commercial banks' performances in Nigeria. A panel model approach. Australian journal of business and management research, 2, 31-38*

xxix. *Lalong R.M.(2015). Credit risk management (CRM) practices in commercial banks of Bangladesh. A Study on Basic Bank Ltd. International Journal of Economics, Finance and Management Sciences.20150302.12. 2326-9553. 2326-9561 (Online)*

xxx. *Leventis, S., Dimitropoulos, P. E. & Anandarajan, A. (2011). Loan loss provisions, earnings and capital management under IFRS.The case of EU commercial banks, Journal of Financial Services Research, 40No. (1-2), 103-122.*

xxxi. *Makinde, H.O. (2016). Effect of Interest Rates on Commercial Bank Deposits in Nigeria (2000-2013).Proceeding of the First American Academic Research Conference on Global Business, Economics, Finance and Social Sciences (AAR16 New York Conference).*

xxxii. *Mishkin, F.(2000). The Economics of Money, Banking and Financial Markets. Addison-Wesley, Boston, sixth edition.*

xxxiii. *Mohammad H., Ali H., & Mahshid, S. (2015). Inspecting the effectiveness of liquidity risk on Banks profitability. Kuwait Chapter of Arabian Journal of Business and Management Review, 3 (9), 171-208*

xxxiv. *NDIC,(2010).Prudential guidelines for deposit money banks in Nigeria. www.ndic.org.ng*

xxxv. *Olokoyo, F. O. (2011). Determinants of commercial banks lending behaviour in Nigeria. International Journal of Financial Research, 2(2). 1<12*

xxxvi. *Okoye, P.V., Amahalu, N.N., Obi. & Nweze, C.L. (2016). Cash flow statement and liquidity. Empirical evidence from quoted Banks in Nigeria. Proceedings of Faculty of Management Sciences, International Conference, Nnamdi Azikiwe University, Nigeria, 705-718.*

xxxvii. *Ozili, P. K. (2018). Bank Loan Loss Provisions, Investor Protection and the Macro-economy. Munich Personal RePEc Archive (MPRA), University of Essex*

xxxviii. *Ozurumba, B. A. (2016). Impact of non-performing loans on the performance of selected deposit money banks in Nigeria. Research Journal of Finance and Accounting,5(2),32-41.*

xxxix. *Packer, F, and Zhu, H. (2012). Loan-Loss Provisioning Practices of Asian banks, Bank for International Settlements, Working Paper 375, April.*

xl. *Peydr´o, J. (2010). Discussion of the effects of bank capital on lending: What do we know, and what does it mean? International Journal of Central Banking, **6** (4): 55-69.*

xli. *Pool, S; De Haan,Li & Jacobs J.P., (2015). Loans loss provision, loans and credit and real economy. Journal of Macro-economics 45, 124-136.*

xlii. *Prochanow, H. V. (1944). Portfolio Management of Commercial Bank. (Objectives and Theory). Retrieved from www.yourarticlelibrary.com 15/05/2015.*

xliii. *Quittaniah, M.A.; Song L & WU, Q., (2013). Do Islamic banks employ less earnings management? Journal of International Financial & Accounting.24 (3) 203-233*

xliv. *Robitaille, P. (2011). Liquidity and Reserve Requirements in Brazil, International Finance Discussion Papers, Bank of Brazil 3-70.*

xlv. *Santos, A.C. (2000). Bank Capital Regulation in Contemporary Banking Theory. A review of the literature. BIS Working Papers. 90.3-44.*

xlvi. *Sayedi, S.(2013). Bank specific, industrial specific and macroeconomic Determinants of banks' profitability in Nigeria. Journal of Finance.*

xlvii. *Soludo, C.C. (2004) Consolidating the Nigerian Banking Industry to meet the Development Challenges of the 21st Century. Address by the CBN Governor to the Bankers Committee. CBN, Abuja.*

xlviii. *Stiglitz, J. E. & Weiss, A. (1981). Credit rationing in markets with imperfect information. American Economic Review,71, 393-410.*

xlix. *Tetteh, L.F. (2012). Evaluation of credit risk management practices in Ghana commercial bank limited (Doctoral dissertation, Kwame Nkrumah University of Science and Technology) Retrieved from PDF.*

l. *Wezel, T; Chen Lau, J.A. & Colombia; F.,(2012). Dynamic Loan Loss Provisioning Effectiveness & Guide to implementation. IMF Working Papers. WP/12 /110.*

li. *World Bank (2014). World Development Indicators. World Bank, Washington DC.*

lii. *Wahlen, J., (1994). The nature of information in commercial bank loan loss disclosures Account. Rev. 69 (3), 455–478*