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ASSESSING THE EFFECT OF CAPITAL ADEQUACY RISK AND LIQUIDITY RISK MANAGEMENT ON FIRM VALUE OF DEPOSIT MONEY BANKS IN NIGERIA

Anetoh Vivian Chioma[1], Prof. Nwadialor Eugene Okoye[2],

Anetoh John Chidume (Ph.D)[3] and Okeke Goodfaith Nnenna (Ph.D)[4]

[1]Department of Accountancy, Anambra State Polytechnic Mgbakwu, Anambra State, Nigeria
Email: anetohvivian@yahoo.com; Tel: +2347038510196

[2]Department of Accountancy, Faculty of Management Sciences,
Chukwuemeka Odumegwu Ojukwu University, Igbariam Campus, Anambra State, Nigeria.

[3]Department of Marketing, Faculty of Management Sciences,
Chukwuemeka Odumegwu Ojukwu University, Igbariam Campus, Anambra State, Nigeria.

[4]Department of Business Administration, Faculty of Management Sciences, Chukwuemeka Odumegwu Ojukwu University, Igbariam Campus, Anambra State, Nigeria.

ABSTRACT: *The study examined the effect of capital adequacy risk and liquidity risk on firm value of listed deposit banks in Nigeria. The study used an ex-post facto research design. The population of the study consists of all the deposit money banks listed in Nigeria Stock Exchange. The study used secondary sources of data from Central Bank of Nigeria as well as from annual reports and financial statement of accounts of deposit money banks under investigation from 2010-2019. Preliminary tests were conducted based on data collected. Partial Least Squares Structural Equation Modeling was used to test the postulated hypotheses at 5% level of significance. The findings revealed that capital adequacy risk had a significant and positive effect on firm value of deposit money banks in Nigeria. Liquidity risk had a positive but no significant effect on firm value of deposit money banks in Nigeria. The study recommends that banks should continue to review their capital adequacy ratios in order to sustain and meet up with current economic realities as stipulated by regulatory authorities. They should incorporate proper liquidity management strategies like regular conduct of financial stress test, development of formal contingency funding plan in order to surmount liquidity shortfalls during crisis.*

KEYWORDS: Capital Adequacy Risk, Liquidity Risk, Firm Value, Deposit Money Banks

INTRODUCTION

Banks facilitate economic growth in numerous ways but the main function of banks is to provide funds for investment purposes. Banks in the process of credit creation affect the economy through the provision of credit to fund private investment and consumption. Ebong (2006) opined that banks facilitate economic activity principally by mediating between the savings of surplus units and the savings of deficit units. They act as intermediaries by mobilizing funds from the various savings surplus units, pool them together and then consequently serve as a source from which the various savings deficit units can acquire funds

for investment purposes (Bhattarai, 2016). The Central bank of Nigeria in 2004 increased banks capital to 25billion in order to provide a margin of safety for stakeholders and depositors (Soyemi, 2014). The CBN mandate to capitalize banks using a capital base of 25billion resulted in forceful mergers and acquisitions of some money deposit banks reducing their number from 39(thirty-nine) to 21(twenty-one). This mandate was to make Nigerian banks complete favorably in the global financial market and also generate a high capital base that will provide banks with the resources to meet the cost of compliance in the areas of credit and market risk management (Soludo, 2005). Nevertheless, there is need for a more comprehensive and rigorous risk management processes in the Nigerian banking sector (Sanusi, 2010) who also opined that Nigeria did not feel the full impact of the 2008 global crisis until after the second quarter of 2008, when speculations and uncertainties led to significant divestments from the Nigerian Stock Exchange (NSE) by foreign portfolio managers causing a 40% drop in the market capitalization of the NSE between September 2008 and March 2009 (Sanusi, 2010). He argued that several measures such as recapitalization were adopted by the Nigerian authorities to deal with the crises; including the introduction of more rigorous and comprehensive risk management practices in order to protect banks from the 'bad' experiences of bank failures and past financial crises, especially the 2008 global financial crises (Sanusi, 2010).

Statement of the Problem

Extant literature has shown that researches have been conducted on the study variables (capital adequacy risk and liquidity risk) but with varying findings. Based on empirical evidence, there are still inconsistencies in the findings of different scholars on the study variables. For instance Marozva (2015) found that liquidity risk has an insignificant but positive effect on firm value of deposit money banks which contradicts the findings by (Sirak, 2016 and Nigist, 2015) that found that liquidity risk has a significant and positive effect on firm value of banks. Kim (2015) found that liquidity risk has a significant but negative effect on firm value of banks while Olarewaju (2015) found that liquidity risk has an insignificant and negative effect on firm value of deposit money banks. The findings of (Udom, 2018; Okoye., 2017; Anahalu, 2017 and Umoru, 2016) revealed that capital adequacy risk has a significant and positive effect on the value of banks which is contrary to the findings of (Mendoza, 2017; Ahmad, 2017 and Aruwa, 2014) that found insignificant but positive effect of capital adequacy risk on the value of banks. Also, Pradhan (2017) as well as (Ikpefan, 2013) found that capital adequacy risk has a significant but negative effect on firm value of deposit money banks.

Objectives of the Study

The main objective of the study is to investigate the effect of capital adequacy risk and liquidity risk on firm value of deposit money banks in Nigeria. The specific objectives of the study are to;

1. Investigate the effect of capital adequacy ratio on firm value of listed deposit money banks in Nigeria.

2. Ascertain the effect of loan to deposit ratio on firm value of listed deposit money banks in Nigeria.

Research Questions

Based on the objectives of this study, the following research questions were formulated;

1. How does capital adequacy ratio affect firm value of listed deposit money banks in Nigeria?
2. To what extent does loan to deposit ratio affect firm value of listed deposit money banks in Nigeria?

Statement of Hypotheses

The following hypotheses were formulated in their null structures to guide the study;

HO_1: Capital adequacy ratio does not significantly affect firm value of listed deposit money banks in Nigeria.

HO_2: Loan to deposit ratio has no significant effect on firm value of listed deposit money banks in Nigeria.

Scope of the Study

This study covered a period of 10 years from 2010-2019. It concentrated on listed deposit money banks in Nigeria. The study is limited to studying the effect of two risk management parameters namely; capital adequacy risk and liquidity risk. Capital adequacy risk as used in the study is measured using capital adequacy ratio while liquidity risk is measured by ratio of loan to deposit. The dependent variable for the study is firm value proxied by Tobin Q and share price to its book value of listed Deposit Money Banks under review in Nigeria.

REVIEW OF RELATED LITERATURE

Capital Adequacy Risk

An organization is expected to meet minimum requirements set out by regulatory agencies. One of such requirements is the minimum capital. In Nigeria, the Central Bank of Nigeria (CBN) sets the minimum capital requirement for all banks and finance houses. Even when all other requirements must have been met, the entity cannot operate as a bank without meeting the minimum capital requirement (Pradhan, 2017). The regulator is interested in the minimum capital because a bank is expected to have adequate funds in order to meet the needs of their present and potential customers (Okafor, 2010). Almost every aspect of banking is either directly or indirectly influenced by the availability of capital. One of the key factors to be considered when the safety and soundness of a particular bank is assessed is capital. An adequate capital base serves as a safety net for a variety of risks to which an institution is exposed in the course of its business (Ikpefan, 2013). Capital absorbs possible losses and thus provides a basis for maintaining depositor confidence in a bank. Besides, the availability of capital determines the maximum level of assets (Greuning & Bratanovic, 2009).

Greuning (2009) advanced that the key purposes of capital are to provide stability and to absorb losses, thereby providing a measure of protection to depositors and other creditors in the event of liquidation. In any case, there are two major sources of capital to a business. They are: equity (contributions by owners of the business) and Debts (borrowings from people outside the business). The choice of which one (debt or equity) should have greater weight in the case of banks is guided by regulation. Capital risk is the potential of loss of part or all of an investment. It applies to the whole gamut of assets that are not subject to a guarantee of full return of original capital (Afriyie, 2011). Investors face capital risk when they invest in stocks, non-government bonds, real estate, commodities, and other alternative assets. Also, when a company invests in a project, it exposes itself to risk that the project will not produce future returns to cover its capital invested (Fredrick, 2012). In addition, Capital adequacy in banking business provides protection against sudden financial losses (Kithinji, 2010).

Banking capital is calculated by the difference between the market value of assets and liabilities, which equal equity. Capital plays an important role against potential risk, especially in the case of provisions inadequate which prompted the central banks to increase banks' capital to provide a margin of safety for stakeholders and principally depositors (Saunders & Cornett, 2002). In addition, the volume of capital is inversely proportional to risks (Thomas, 2015). Since 1976, Basel committee through three versions focused on identifying suitable ratio of capital adequacy to ensure banking stability. It has developed the components of the capital adequacy ratio in response to international banking developments, so that the ratio should not be less than 8% (Hassan et al, 2016).

The Concept of Capital Adequacy

The concept of capital adequacy is a result of the idea of rearranging banks' existing capital structures in order to restructure the banking industry against widespread distress. Adequate capital creates an opportunity for better standards in any business establishment by improving business exertion and performance. According to Olalekan and Adeyinka (2013), the minimum ratio of capital to total risk-weighted assets should remain at 8 per cent as prescribed in circular BSD/11/2017 issued on 4 August 2017. Further, at least 50 per cent of a bank's capital should comprise of paid-up capital and reserves, while every bank should maintain a ratio of not less than 8% in Basel 3 including the capital conservation buffer is 10.5% (CBN, 2019). Archer (2010) maintained that capital adequacy refers to availability of reasonable capital that will safeguard the sanctity of any customer deposits held by an organization. Another definition by Olalekan and Adeyinka, (2013) suggests that capital adequacy refers to money required by an institution to hold or have in order to facilitate sound and smooth business operations over a period of time. Almazari and Alamri (2017) captured that the term capital adequacy connotes the ability and competence of a firm to determine how well it addresses the risks it is faced with. They also assert that capital adequacy is a very significant factor especially ascertaining the prices of various products and optimization of returns from a firm's activities. The significant pointers of capital adequacy in a firm may include asset quality, capital structure, the liquidity of a firm and the asset base (Olalekan & Adeyinka, 2013).

Liquidity Risk

Liquidity is the ability of a bank to fund increases in assets and meet obligations as they fall due, without incurring unacceptable losses (Basel, 2008). European central bank also defines liquidity as the ability to settle obligations with immediacy. A bank is illiquid if it is unable to settle obligations in time. In this case, the bank defaults making shareholders and depositors to incur losses. International Monetary Fund defines liquidity as assets that can be easily converted into cash. Bank liquidity includes the impact of alternative funding source and their predictability. A liquid bank either has the right amount of immediately spendable funds on hand when they are required or can quickly raise liquid funds by borrowing or by selling of asset. A liquid asset is an asset that can be readily converted to cash. Koch and Macdonald (2015) define liquidity risk as the one that can be easily and quickly covered into cash with minimum loss. They considered liquid asset to be cash, federal funds sold and reserve repurchase agreement, short term treasury and agency obligation, high quality short term corporate and municipal securities, and some government guaranteed loan that can be readily sold.

Liquidity is a bank's capacity to fund increase in assets and meet both expected and unexpected cash and collateral obligations at reasonable cost and without incurring unacceptable losses (Al Tamimi, 2015). Effective liquidity risk management ensures a bank's ability to meet its obligations as they fall due and reduces the probability of an adverse situation developing (Muteti, 2014). This assumes significance on account of the fact that liquidity crisis, even at a single institution, can have systemic implications. Also, it can be defined as the inability of a bank to meet short term financial demands. Liquidity risk can affect not only the value of a bank but also its reputation. The insufficient liquidity causes erosion in depositor's confidence which leads to an opportunity cost. It is defined as the capacity of financial institutions to finance increases in their assets and comply with their liabilities as they mature (Oluwafemi, 2010).

Banks usually face excess and lack of funds risks which is usually related to bank liquidity (Muteti, 2014). Conversely, when a bank experiences lack of funds, the bank will have difficulty in meeting its short-term obligations. Thus, there will be a conflict of interest between seeking high profits and maintaining high liquidity, because when a bank expects high profits it will risk the level of bank liquidity that is low. Liquidity risk in commercial banks can be defined as the risk of being unable either to meet their obligations to depositors or to fund increases in assets as they fall due without incurring unacceptable costs or losses (Ismail, 2010). Liquidity risk is the possibility of negative effects on the interests of owners, customers and other stakeholders of a financial institution resulting from the inability to meet current cash obligations in a timely and cost-efficient manner (Adeusi, Akeke, Adebisi & Oladunjoye, 2014). Efficient liquidity management requires maintaining sufficient cash reserves on hand while also investing as many funds as possible to maximize earnings (Ogol, 2011).

Loan to Deposit Ratio (LTD)

Choudhry (2011) posited that loan to Deposit (LTD) is the standard and commonly used metrics. It measures the relationship between lending and customer deposit and it also measure the self-sustainability of the bank. If loan to deposit ratio is high, the bank either has a large loan portfolio or is using non deposit or purchased funds to finance asset. When the

ratio is relatively high, banks would be less inclined to lend and invest (Machiraju, 2003). A level above 100% is an early warning sign of excessive asset growth while a level below 70% implies excessive liquidity and implies a potential inadequate return on funds (Choudhry, 2011). The Netherland Bank working paper describe Loan to Deposit ratio as the ratio which measures the coverage of loans with stable funding which are usually deposits from households and non -financial companies. A high loans to deposits ratio means that the bank is issuing out more of its deposits in the form of interest-bearing loans, which, in turn, means it will generate more income. The problem is that the bank‘s loans aren‘t always repaid. Then the bank has to repay deposits on request, so having a ratio that is too high puts the bank at high risk. On the other hand, a very low ratio implies that the bank at low risk, but it isn’t using its asset to generate more income and this end up with low profit. Most studies conducted on the subject matter used Loan to Deposit ratio as variable to measure liquidity risk and performance and found out that loan to deposit ratio have negative relationship with performance of commercial banks.

THEORETICAL FRAMEWORK

Capital Adequacy Risk is anchored on Buffer Theory (Calem and Robin, 1996)

Buffer theory was developed by Calem and Robin in 1996. The theory posits that whenever a bank's capital is marginally above the regulatory minimum ratio, there is a need for the bank to increase the ratio in order to minimize risk and avoid the regulatory cost as a result of a breach of the capital requirements. According to this theory, banks that hold excess capital enjoy enough buffers against bankruptcy and insolvency. Banks would have the abilities to venture into various investment and loan grants that will, in turn, increase value. Capital adequacy empowers banks to diversify their portfolio in order to mitigate risks and ensure stability (Kigen, 2014). Low level of capital increases the chances of bank failure while sufficient and adequate capital lead to improved financing activities hence impacting positively on the value of the bank. Whenever banks hold adequate capital it forms a basis for trust from shareholders (Calem & Rob, 2009). Again, banks with higher capital adequacy are willing to venture into risky but high return investments leading to increased value (Annor & Obeng, 2017). The assumption of this theory is that capital is one element that determines the level of financial risks that banks can contain in their day-to-day operations.

Liquidity Risk is anchored on the Shiftability Theory (Moulton, 1918)

The shiftability theory was coined by H.G. Moulton in 1918. The theory holds that the liquidity position of a bank can be enhanced if the bank maintains a substantial number of earning assets that can be shifted to other banks with a better cash position without material loss. It assumes that assets may not be tied on only self-liquidating bills, but can also be held in other shiftable open-market assets. The risk that a bank may not have ready cash to meet its transactions will affect the operations of the bank. Thus, liquidity problems may adversely affect the value of a bank as well as its solvency. This happens when banks' liquidity risk reduces the ability of the bank to meet its financial obligations as they fall due. The reduced deposit streams will lead to insufficient funds for other investments which will decrease bank value. The assumption of this theory is that high liquidity risk will cause a run on the bank. A bank run

implies that depositors will come in streams and quick succession for withdrawal of their deposits in fear that the bank is no longer safe.

EMPIRICAL REVIEW ON CAPITAL ADEQUACY RISK

Erna, Sri, Suhadak and Solimum (2018) in their study investigated the effects of Tier-1 capital, risk management and profitability on performance of Indonesian commercial Banks. The research population consisted of all commercial banks listed in the Indonesia Stock Exchange for the periods of 2010 to 2014 with a total of 42 companies. The statistical analysis used for testing the hypothesized effect was the use of Structural Equation Modeling (SEM), a covariance based using WarpPLS. Findings research result shows that Tier-1 Capital has a positive effect to Capital on Risk Management. Risk management has a positive effect to performance, but risk management has no effect on profitability. Profitability has a positive effect to performance. Tier-1 Capital has a negative effect to profitability, in other hand; profitability also has a negative effect to Tier-1 Capital. Performance has a positive effect on Tier-1 Capital while the Tier-1 Capital has no effect on performance.

Udom and Eze (2018) examined the effect of capital adequacy requirements on firm value of commercial banks in Nigeria from 1996-2016 The study employed bank total qualifying capital (TQC), adjusted shareholders fund (ASF), capital risk-weighted assets (CRWA) as capital adequacy variables, and inflation rate (INF) and GDP growth rate (GDPGR) as macroeconomic control variables while Tobin Q was used to measure firm value. The result from multiple OLS regression analysis showed that capital adequacy variables (ASF, CRWA, TQC) together have a significant effect on the dependent variable, Tobin Q.

Michael, Etukafia, Etenam and Etuk (2018) examined the effect of capital adequacy and the value of banks in Nigeria, using secondary data for the period spanning 2006 and 2016. Total assets (explained variable), capital, provision for bad debts, and provision for loans/lease losses (explanatory variables) of deposit money banks (DMBs) were used as variables in the study. Data were analyzed using ordinary least square (OLS) regression technique. Unit root tests (Augmented Dickey-Fuller and Phillips-Perron) were conducted to test the stationary levels of the variables. OLS results showed that capital has a positive and statistically significant relationship with DMBs total assets; loans/lease losses provision and provision for bad debts exhibited negative and statistically non-significant relationships with total assets. These positions were in line with a priori expectations of the study.

Amahalu, Emmanuel, Nweze and Obi (2017) analyzed the effect of capital adequacy on financial performance with a focus on selected quoted deposit money banks in Nigeria from 2010-2015. The study made use of secondary data obtained from fact books, annual reports and account of the deposit money banks under study. The data were subjected to multiple regression analysis, test. The findings revealed that there is a positive and significant relationship between capital adequacy and financial performance. It was also empirically verified that capital adequacy has a statistically significant effect on financial performance on deposit money banks at 5% level of significance.

Pradhan and Parajuli (2017) examined the effect of capital adequacy and cost income ratio on the performance of Nepalese commercial banks using data from 20(twenty) Nepalese commercial banks collected for six (6) years from 2009-2014. The return on assets and net interest margin are the dependent variables. The independent variables are the capital adequacy ratio, cost income ratio, debt to equity ratio, equity capital to assets, bank size and liquid ratio. The regression results showed that capital adequacy ratio, cost income ratio, and equity capital to total assets have a negative impact on return on assets.

Mendoza and Rivera (2017) examined the effects of credit risk and capital adequacy of 567(five hundred and sixty-seven) rural banks in the Philippines on bank profitability. The study employed non-performing loan ratio and capital adequacy ratio as independent variables and regressed them on two profitability measures (return on assets and return on equity). The results showed that capital adequacy has no significant impact on the profitability of rural banks in the Philippines.

Okoye, Ikechukwu, Nweze, Obi and Okika (2017) investigated the effect of capital adequacy on firm value with a focus on selected quoted deposit money banks in Nigeria from 2010-2015. The independent variables are liquid assets ratio, loans ratio and asset turnover ratio while the dependent variable is Tobin Q representing firm value. Results from the Pearson Coefficient of Correlation and Multiple-Regression Analysis showed that there is a positive and significant relationship between capital adequacy and firm value.

EMPIRICAL REVIEW ON LIQUIDITY RISK

Al-Homaidi et al. (2019), in their study on the liquidity of Indian banks investigated the liquidity determinants of Indian banks from 2008 to 2017, using data on commercial banks listed on the Bombay Stock Exchange and several statistical models, such as pooled OLS, fixed and random effects regression analysis. Bank liquidity was considered as the dependent variable measured by liquid assets to total assets while the independent variables are bank size, capital adequacy ratio, deposit ratio, operation efficiency ratio, asset quality ratio, asset management ratio, return on equity ratio, net interest margin and return on assets. The models also incorporated various macroeconomic factors, such as interest rates and exchange rates. The study found that bank size, capital adequacy ratio, deposit ratio and operation efficiency ratio had a positive effect on liquidity, asset quality ratio, asset management ratio, return on equity ratio and net interest margin harmed liquidity.

Eyon (2019) examined the effect of liquidity risk on financial performance of Ethiopian commercial banks. Balanced Fixed effect panel regression was used for the analysis in which data was collected from financial statement and accounts of 9(nine) commercial banks for the sampled covered period from 2007 to 2016. Liquidity coverage ratio, net stable funding ratio, loan to deposit ratio, liquidity ratio, and cash reserve ratio, portion of nonperforming loan from the total bank loan, CPI and GDP growth were measures of liquidity. Eight factors affecting financial performance of Ethiopian commercial banks were selected and analyzed. The findings showed that liquidity coverage ratio, net stable funding ratio, loan to deposit ratio and liquidity ratio had negative and statistically significant impact on Ethiopian commercial banks financial performance. Cash reserve ratio, portion of nonperforming loan from the total bank loan, CPI and GDP growth rate had negative and insignificant impact on

financial performance of Ethiopian commercial banks for the tested period. Liquidity risk negatively affects financial performance of Ethiopian commercial banks.

In Cameroun, Njimanted *et al*. (2017) examined the impact of excess liquidity on the financial performance of commercial banks. Using return on assets (ROA) as a proxy for the measurement of financial performance while cash reserve ratio, portion of nonperforming loan to total loan, gross domestic product, interest rate gap, total liquid inflows, CPI and GDP growth as proxy for excess liquidity. Data was obtained from annual report of the selected banks under review from 1990 to 2016. The findings reveal that excess liquidity and total liquid outflows affect ROA negatively. The gross domestic product, interest rate gap, total liquid inflows and previous year ROA had positive effects on ROA. The findings show that there is an existing significant negative effect between excess liquidity and commercial bank performance.

Mucheru, Shukla and Kibachia (2017) examined the effects of liquidity management on the performance of commercial banks in Rwanda. Cash management, loan repayment, investment in a non-core business, liquidity decisions, and management competency were employed as proxies for liquidity management while the firm performance was measured using return on equity (ROE). Data were obtained from 14 (fourteen) banks for a period of three years from 2014 to 2016 and analyzed using both descriptive and inferential statistics. Results from multiple regression analysis revealed that cash management, non-core investment, and loan repayment have a positive relationship with financial performance while liquidity decisions, and management competency has a significant negative relationship with the financial performance of commercial banks.

Nabeel and Hussain (2017) examined the effect of liquidity management on profitability in the banking sector of Pakistan covering a ten-year period from 2006 to 2015. Liquidity management is the independent variable and profitability is the dependent variable. The quick, current, cash, interest coverage and capital adequacy ratios were taken as dimensions of liquidity, and return on assets, return on equity, and earnings per share as dimensions of profitability. The data were analysed using correlation, descriptive statistics and regression techniques. Results showed that interest coverage, capital adequacy and quick ratio have a positive whereas- cash and current ratios have a negative relationship with banks' profitability.

METHODOLOGY

Therefore, this study utilized an *ex-post facto* research design by collecting already existing data thereby averted any form of manipulations. Secondary source of data was used while the area of the study is concentrated on all Deposit Money Banks listed in the Nigerian Stock Exchange (NSE). The target population for the study consists of deposit money banks in Nigeria as well as deposit money banks in Ghana. The study adopted a purposive sampling technique and selected only all the deposit money banks listed in Nigeria Stock Exchange (13) namely: First City Monument Bank, Fidelity Bank, Guaranty Trust Bank, Stanbic IBTC, Sterling Bank, Union Bank, Access Bank, First Bank, Zenith Bank, Unity Bank, Wema Bank, Ecobank and United Bank (Source: Nigerian Stock Exchange Facts Book, 2020). The researcher utilized secondary data in which data were collected from the annual reports and financial statement of accounts of all the deposit money banks listed in Nigerian Stock

Exchange for the period from 2010 to 2019. The study adopted Partial Least Square Structural Equation Modeling; an advanced as well as a second generation statistical technique specially developed for the test of complex model or complex relationships that involved many dependent variables and many independent constructs. It is also used when the dependent variable has many proxies which regression analysis cannot estimate simultaneously in one model. PLS-SEM is used in this study to test for the hypothesized significance as well as effect of credit and operational risk parameters on firm value (Tobin Q and PBV) of all deposit money banks listed in Nigeria. Although, its usage is still unique in Nigeria but many accounting and financial studies have used it in their work (Gadzo et al., 2019; Saeidi et al., 2018 and Maruhun et al., 2018).

Decision Rule: Accept null hypothesis if the P-value is greater than the stipulated level of significance of 5% (0.05). Also, reject null hypothesis and accept the alternative hypothesis if the P-value is less than or equal to the stipulated significant level 5% (0.05)

Operational Model for the study

Model A: Firm Value (Tobin Q) = $\beta 0 + \beta 1CAR + \beta 2LR + \mu$

Model B: Firm Value (Firm share price to firm book value) = $\beta 0 + \beta 1CAR + \beta 2LR + \mu$

Where; Firm value is measured by Tobin Q and price book value.

Capital adequacy risk is measured by capital adequacy ratio.

Liquidity risk is measured by loan to deposit ratio.

RESULTS AND FINDINGS

Assessment of the Structural Model

The formulated hypotheses were tested using Partial Least Squares Structural Equation Modeling bootstrapping procedure. This was facilitated using SmartPLS version 3.8 (Hair et al., 2017). The study used the standardized root mean square residual (SRMS), the root mean square residual covariance (RMS $_{theta}$) as well as normed fit index (NFI) as the measures for the assessment of PLS-SEM goodness of fit. The three models fit measures results show that the SRMR value is 0.024, RMS $_{theta}$ value is 0.021and the NFI value is 0.914 which portrayed a well-fitting model. This means that the model is well fitted for the data used and that the threshold for acceptance of the fitness of the model used in the study was therefore met. The coefficient of determination measures the total variance explained in the endogenous constructs as a result of variations in the exogenous variables in the model used. The model explains the positive significant variance of 0.68 (68%) for firm value measured by Tobin Q and 0.604 (60.4%) for firm value measured by firm share price to its book value (PBV). The R^2 value generated showed the moderate power of the exogenous constructs to explain the endogenous constructs which is clearly met the threshold given that the R^2 values of 0.75, 0.50 and 0.25 stand for substantial, moderate and weak respectively as proposed by (Hair, Hult, Ringle & Sarstedt, 2017). Table 1 shows the PLS-SEM bootstrapping results for the test of hypotheses formulated to guide the study.

Table 1: Bootstrapping Result of the Structural Model

Hypotheses	P. Coefficients	S. Mean	Std. Dev.	T-values	P- values	Decision
CAR(CAR) -> FV(TBQ)	0.617	0.626	0.069	8.959	0.000	Supported
CAR(CAR) -> FV(PBV)	0.604	0.610	0.066	9.149	0.000	Supported
LR(LDR) -> FV(TBQ)	0.047	0.084	0.108	0.432	0.666	Not supported
LR(LDR) -> FV(PBV)	0.044	0.075	0.101	0.435	0.664	Not supported

Note: Path is significant at 5% level of significance; if the t-value is ≥ 1.96, or p-value ≤ 0.05.

Source: PLS-SEM Bootstrapping Output, 2020.

The Structural Model Showing the Path Coefficients Results

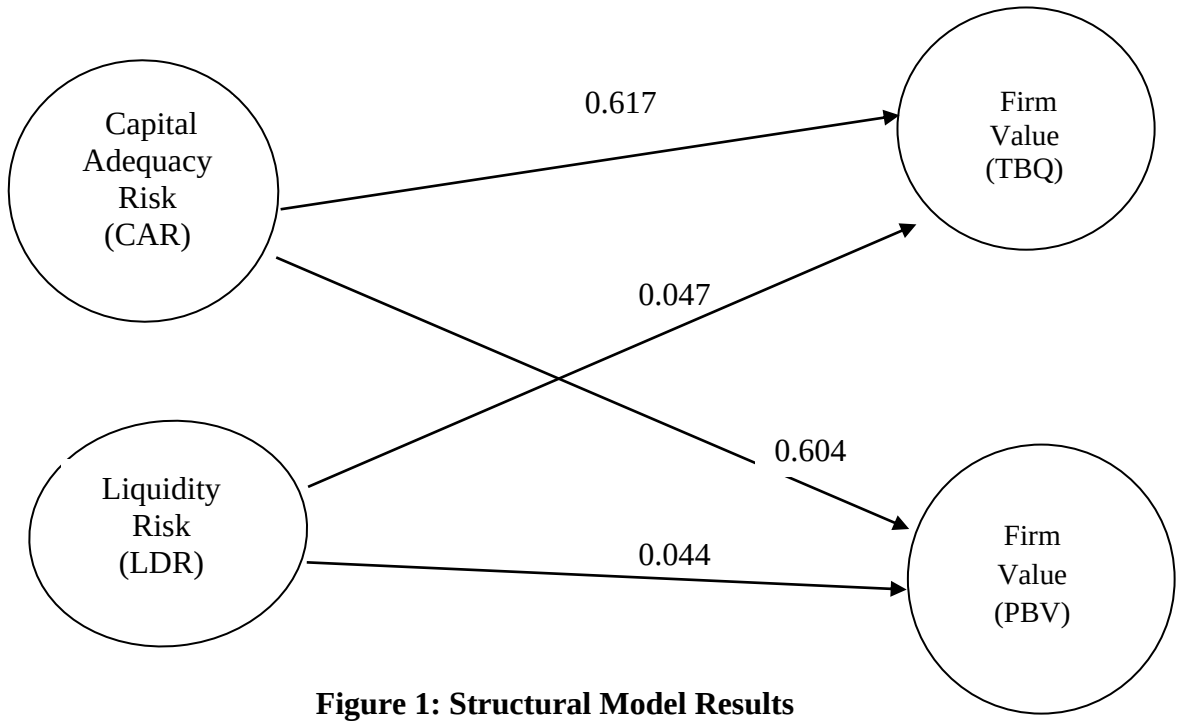

Figure 1: Structural Model Results

Source: PLS-SEM Bootstrapping Output, 2020.

Owing to the fact that the path coefficient should ≥ 0.20 to show its significance effect; the t-value should be ≥ 1.96 while the p-value should be ≤ 0.05 to be significant as cited by (Wong, 2013). A cursory look at the path coefficients, t-values and the p-values of the structural model in table 1 and figure 1 show that capital adequacy risk (measured by capital

adequacy ratio) had a positive and significant effect on firm value as measured by Tobin Q (β = 0.617, t = 8.959 and p < 0.05). Also, it had a positive and significant effect on firm value measured by share price to its book value (β = 0.604, t = 9.149 and p < 0.05). On the other hand, liquidity risk (measured by loan to deposit ratio) had a positive but insignificant effect on firm value as measured by Tobin Q (β = 0.047, t = 0.432 and p > 0.05). In addition, it had a positive but insignificant effect on firm value measured by share price to its book value (β = 0.044, t = 0.435 and p > 0.05). Accordingly, alternative hypothesis one (H1) earlier formulated to guide the study was significant and was supported while alternative hypothesis two (H2) was not supported.

DISCUSSION

A cursory assessment of results presented on table 1 and figure 1 indicate that capital adequacy risk captured by capital adequacy ratio had a significant and positive effect on firm value of deposit money banks in Nigeria. The finding of this study is in line with the findings of the following researchers (Udom, 2018; Okoye., 2017; Anahalu, 2017 and Umoru, 2016) that found that capital adequacy risk has a significant and positive effect on firm value. The finding of this study contradicts the findings of the following studies (Mendoza, 2017; Ahmad, 2017 and Aruwa, 2014) that found that capital adequacy risk has an insignificant but positive effect on firm value. In addition, our finding negates the findings of (Pradhan, 2017 and Ikpefan, 2013) that found that capital adequacy risk has a significant but negative effect on firm value of deposit money banks. Furthermore, an examination of results as shown on table 1 and figure 1 portray that liquidity risk has an insignificant but positive effect on firm value of deposit money banks in Nigeria. The finding of this study is in agreement with the finding of (Marozva, 2015) that found that liquidity risk has an insignificant but positive effect on firm value. Our finding negates the findings of (Sirak, 2016 and Nigist, 2015) that found that liquidity risk has a significant and positive effect on firm value. In addition, Kim (2015) found that liquidity risk has a significant negative effect on firm value while Olarewaju (2015) found that liquidity risk has an insignificant negative effect on firm value contrary to the finding of this study that found positive but insignificant effect on firm value regarding deposit money banks in Nigeria

IMPLICATION TO RESEARCH AND PRACTICE

The Nigerian banking Industry for the past decades has witnessed series of banking distress and failures as a result of high incidence of volatility caused by risks. Banks that had been doing well suddenly announced large losses due to exposures to risks, increased interest rate, fluctuations in the stock market, as well as derivate challenges. In the light of this ugly phenomenon which prompted the need for this study as urgent attention is needed in order to mitigate and manage risks in the banking sector in Nigeria. Accordingly, this study has demonstrated and provided a a platform as well as a working document that will help to reduce the challenges posed by risks in Nigeria. It is expected that bank executives and managers, future researchers and practitioners stand to benefit from the findings of this study. They should endeavor to maintain adequate capital requirements in order to manage their risks well especially capital and liquidity risks.

CONCLUSION AND RECOMMENDATIONS

Capital adequacy risk significantly and positively affects the value of deposit money banks' performance in Nigeria. Capital adequacy risk has been properly managed in Nigeria as a result of banks' recapitalization, consolidation and mergers. This was as a result of increase in banks' capital base which has a positive consequential effect on firm value. Liquidity risk has not been properly managed in Nigeria as indicated by the findings of the study. Undoubtedly, many banks in Nigeria are still confronted with the problem of cash management and also were unable to meet up with liquidity requirement ratio of 30%. The study concludes that liquidity risk has not significantly increased the value of deposit money banks in Nigeria. Liquidity risk management across the deposit money banks in Nigeria has not yielded the substantial positive result. Based on the findings of the study, the following recommendations were made:

1. Banks continue to review their capital adequacy ratios in order to sustain and meet up with current economic realities as stipulated by regulatory authorities (Central Bank of Nigeria).

2. Banks should incorporate proper liquidity management strategies such as regular conduct of financial stress test, development of formal contingency funding plan in order to overcome liquidity shortfalls during emergency situations.

Suggestions for Future Research

This study is not a conclusive one as it calls for further scientific inquiring. Therefore, we suggest the following;

1. There is need to expand the scope of this study in future research to cover other geographical countries in order to broaden the frontier of knowledge since this study did not cover the whole of West Africa.

2. There is need for the application of other second generation multivariate analytical techniques in further research such as Maximum Likelihood Structural Equation Modeling as well as Covariance-Based Structural Equation Modeling in order to compare their results with the findings from this study.

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