Examining the Nexus Between Liquidity and Profitability of Banks in Nigeria

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Abstract

Due to their functions as party that mediates between economy's surplus and deficit units, banks play a significant role in every economy, as banks are service-oriented that derive the majority of their income from interest on loans provided to customers, other financial services provided, and reinvesting deposits of their customers in other viable business ventures to be profitable and sustainable in the banking business, studying the relationship between liquidity and profitability of banks can be said to be of importance. This study used statistical tool to determine the nature of relationship between liquidity and profitability of deposit money banks. The descriptive statistic employed described the minimum, maximum, average and nature of variations of the data obtained from the banks, where the correlation statistic presents the strength of the relationship between the variables of the study. The findings showed that there is a positive insignificant correlation between ROA and liquid ratio of Deposits Money Banks, and it is advised, the Nigerian Deposit Money Banks ought to be able to adopt flexible means ensure effective liquidity management to minimize or avoid too much or low liquidity level as the case may be and that Deposit Money Banks should be able to create customers sensitizing forum to advertise.

Keywords: *Deposit Money Banks, Liquid ratio, Liquidity, Profitability, Return on Assets.*

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Background to the Study

Studying the relationships between liquidity and profitability is crucial, particularly for deposit money banks, as these businesses focus on providing services to their clients and customers, thereby derive a large portion of their income from interest, service fees, and other viable business investments. This study is focused on the listed Nigerian deposit money banks since banks have a significant impact on a state's economic growth and development because of the intermediary roles they have played between surplus and deficit economic sectors. The two most important roles played by banks, according to Bassey and Moses (2015), are deposit mobilization and loan extension. These roles characterized their status as financial intermediaries in the economy. According to Wilner's (2000), deposit money banks served as financial intermediaries by acting as an effective means of raising capital and directing resources toward profitable and efficient ventures. The management of deposit money institutions should pay close attention to the competing objectives of liquidity and profitability because they are moving in opposite directions, if efficient financial intermediation is to be achieved (Olagunji, Adenanju, & Olabode, 2011). Any effort to increase profitability may inevitably have a negative impact on banks' liquidity levels and vice versa. According to Bassey and Moses (2015), liquidity refers to a bank's capacity to pay off its creditors' claims against its assets as well as its immediate financial commitments to depositors. It is impossible to overstate the significance of liquidity in helping businesses make economically sound decisions that will allow them to meet their short-term and other current financial obligations. According to Saleem and Rehman (2011), payments responsibilities for maturing long-term debt comprised both operational and financial costs.

The bank's liquidity is determined by its capacity to pay short, medium, and long-term commitments that are due within a specific time frame and can also affects the bank's capacity to finance capital needs and investment needs. Liquidity measures the relationship between assets and other financial responsibilities of banks, a bank can be called liquid if its total assets exceed its entire liabilities. Liquidity may suggest a firm's present and long-term financial health and sustainability. A company runs the risk of going bankrupt if an asset cannot cover its debts (Jackson, Perraudin, & Saporta, 2002). Thus, if bank can no longer meet its current financial obligations, then, there is the likely hood that it may be out play in the near future due to liquidity problem. Profitability of banks is important for their sustainability and perpetuity in the banking business. Both variables of liquidity and profitability can make or challenge the going concern of any bank, therefore, there is the need for deposit money banks to set off the right balance between the total assets and liquid assets so as to meet it immediate financial obligations as well as to remain profitable in banking business. The Financial Reporting Council (2013) claims that trust in a bank's liquidity is a key component of the bank's sustainable funding models. A bank's earnings show how much it uses its assets in value-added activities, which is crucial for a bank's survival. The sustainability of DMB depends largely on its capacity to generate a profit and offset its financial obligations that are currently due and on demand. Profitability serves as both a good gauge of a bank's performance and a measure of its long-term viability. Profit is typically understood to be a

measurement of the positive difference between a bank's operating costs and income produced over a specific time period. (2016) Malik, Awais, and Khursheed were of the opinion that, despite being a difficult topic, profitability is one that banks frequently deal with. nonetheless, is a reliable indicator of the long-term viability of banks. Profit planning can be challenging when carried out in a highly competitive corporate environment, according to Agbada and Osuji (2013). Corporate profit planning is one of the most challenging activities extensively carried out by banks managements, because of the involvement of a number of things in the decision-making process which are not generally in their control.

Although there are many different and varied concepts for liquidity and profitability, this paper tends to help fill in any gaps that already exist. According to Zygmunt (2013), activities associated with high levels of inventory and receivables are crucial for maintaining liquidity. Making and reviewing profitability and liquidity is essential for a firm to exist and continue to exist (Ehiedu, 2014). Practically speaking, liquidity and profitability can be utilized as unbiased indices of any profit-oriented organizations (Eljelly, 2004), including deposit money banks. However, profitability and liquidity are crucial for both businesses and other stakeholders (Olagunju, David, & Samuel, 2012). While depositors, customers, and shareholders are primarily interested in the earnings, assets, and investment return on the bank's assets, tax authorities are particularly interested in the profitability of the banks in order to establish the proper tax obligation due. According to Osborne, Fuertes, and Milne (2009), maintaining higher levels of liquidity is expensive for banks because doing so reduces their profitability. ..., banks risk can be reduced due to the high level of liquidity, banks' risk can be minimized, and in the future, a premium will be needed to make up for the expense of lowering the danger of bankruptcy for investors. Since there may be a recurrent relationship between liquidity and profitability, it may be safer for banks to keep large amounts of cash on hand as a buffer against consumer deposits because the cash reserve is inactive and won't be generating any income. The disagreement among academics, professionals, financial analysts, and likely the managements of profit-oriented entities regarding the relationship between liquidity and profitability and the actual relative importance of each has continued to affect the sustainability of businesses, which may be due to the persistent occurrence of challenges in the Nigerian banking industry.

This paper's overall goal is to study the relationship between liquidity and profitability of Nigerian banks, while its specific goals are as follows: to examine the effect of current ratio on profitability of Nigerian banks, to assess how the cash ratio affects the profitability of Nigerian banks and to investigate how the liquid ratio affects the profitability of Nigerian banks. This study is limited to the Nigeria deposit money banks. This study is anticipated to add empirical data on the effect of liquidity on the profitability of Nigerian banks to the body of knowledge. It would also be valuable to current and upcoming researchers and, ideally, policy makers who are interested in the topic.

Literature Review

The concepts of liquidity and profitability is wide and also varies, the banking industry is an industry that is highly sensitive and therefore, needs regulating. Rose and Hudgins (2008), regulating of banks in most countries of the world is done by the central government and Central banks of the respective countries, the regulators played significant role in helping to maintain control over banks because of the functions they played in the economy. The economic function of banks is very important and key to the economic activities of a nation. Managing a healthy liquidity level and at the same time maximizing profits becomes essential to any bank. Deposit money bank like other business firms are profit oriented and their profits are primarily from interest on their earning assets like loans and investments, also their liabilities arises practicable from the deposits banked by their depositors and customers.

Liquidity Concept

Keynes (1936) explained that liquidity needs are motivated by three main ideas: transactionary idea of liquidity needs of banks which arises from an ordinary business activity, precautionary idea which is the idea of a bank to be liquid to absorb adverse business shocks in the course of business and speculative need allow banks to profit from future investment opportunities. Banks liquidity can mean a bank having money when in need of it, particularly to satisfy the withdrawal needs of its customers. Asset is said to be liquid if it can be sold quickly without significant losses (Alger, Agenor & Alger, 1999). Typical bank liquid assets include it cash, reserves representing an excess of reserves required by law (funds hold in the account at the Central bank), and securities with short maturity periods and interbank loan with very short maturity period (Melese & Kantham, 2015). The strength of deposit money banks depend largely on how liquid a bank is, as illiquid can be an imminent sign of trouble and may easily affect the confidence of the customers, thereby resulting to deposits run, that is, demand for payments from their accounts as customers deposits and bank short term securities can be said to be more liquid than equity investment based on a fact that the prices of short term securities and bank deposits interest are fixed compared to the prices and value of equity investments.

Profitability Concept

Profitability is the primary indicator of a bank's efficiency, and it shows how effectively and efficiently its activities are carried out (Tabash & Hassan, 2017). According to Bassey and Moses (2015), banks must constantly deal with the thorny issue of profitability. Banks must be both liquid and profitable at the same time. Liquidity requirements keep banks from investing all of their cash out of concern that they will become insolvent. In a similar vein, solvency requirements allow a bank to finance available investments, pay off long-term obligations, and also attract outside funding. Profitability requirements serve the interests of shareholders who are constantly speculating on the returns on their investments. Customer/depositor demand, as well as legal or regulatory requirements, are what drive liquidity. Deposit money banks must strike a balance between the variables since their requirement for liquidity differs from that of non-bank firms. Being profitable in business or making consistent profits, which may be viewed as the difference

between expenses and revenue returns over a period of time, are two ways that profitability can be defined. Profits are crucial for a bank's long-term economic survival and growth; they are practically required in order to maintain commercial operations and be able to get funding for expansion and growth. The ratio of profit to total revenue and the profit margin represents two distinct measurements of profitability.

The long-term survival of banks is guaranteed by their profitability. Profit was defined by Heibati, Seid, and Dadkhah (2009) as the difference between costs incurred and returns obtained during a given time period. They also asserted that a company is like a living creature with a need to develop. According to Owolabi et al. (2011), an entity's profitability reveals whether or not a firm is sustainable. They contend that liquidity is vital but does not imply that a company is profitable when it has a high level of liquidity because profits can be converted into liquid assets and then reinvested back into the business. The sustainability, expansion, and development of a business over the long term depend on its profitability. Therefore, it is crucial for a bank to engage in revenue-generating activities to ensure its ongoing economic survival and growth. It is also crucial for a bank to produce enough revenue to support its operations and other activities that will further promote economic expansion and growth.

According to a study done by Bordeleau and Graham (2010) on a group of Canadian and American banks from 1997 to 2009, there is a nonlinear relationship between liquidity and profitability of the studied banks. Profitability increased for banks that hold liquid assets, so there is a point at which holding more liquid assets reduces bank profitability. Owolabi et al. (2011) conducted a comparative static dimension research using sampled deposits from money banks, the processing business, and the manufacturing industry. They saw that while there was a trade-off between liquidity and profitability in the banking sector, there was a strong correlation between the two for businesses in the manufacturing and processing sectors. The profitability of commercial banks is significantly influenced by their levels of liquidity and vice versa, according to a study by Olagunju et al. (2011) that used primary data and a fixed and open-ended type of questionnaire to elicit responses from the respondents. This relationship is confirmed by the Pearson correlation method used for the study.

A study carried out by Ehiedu (2014), of two companies from manufacturing industry with a sample of one company from industrial product (Beta Glass Nig. Plc.) and one company from domestic product (Vita Form Nig. Plc.), they observed the existence a positive relationship between liquidity and profitability of firms and that the relationship is simply because idle funds when they are borrowed generate profit and less costs in the business. (Current ratio and profitability), the two companies depicted a negative correlation between acid ratio and return on assets. A study carried out by Bassey and Moses (2015), of fifteen Nigerian deposit money banks from 2010 to 2012 where two models were specified and estimated using ordinary least square (OLS) technique showed that there exists an insignificant relationship between return on asset and profitability of the banks. That the Nigerian banks adopt a tight liquidity approach in

which there is more than average of current assets over current liability. Despite a number of studies carried out about the association between liquidity and profitability of banks, yet an appropriate theoretical model seems far from being fetch and the empirical evidence concerning the liquidity impact on the profitability of banks is also inconsistent.

Methodology
The study is conducted by using secondary data handpicked from the Annual Financial Statements of Banks listed in the Nigerian Stock Exchange (NSE) in 2021 using descriptive research design, it is a systematic and empirical study which the researcher has no control over the variables as they are reflecting the state of happenings, and it used the panel data statistic for the independent variables (Liquidity) and the dependent variable (Profitability). The study uses descriptive statistic to analyze the data sourced for the study. The whole population of the study is chosen because of the relatively small number of banks in Nigeria operating under the platform of NSE in the year 2021. Thus, the dependent variable is measured as firm profitability using the proxy Return on Assets (ROA) and it is measured as Net profit divided by total asset of the banks in line with Khidmat and Rehman (2014), Almazari (2014), Bassey and Moses (2015). The independent variable Liquidity is measured using the proxies; current ratio (current asset divided by current liabilities) in line with Olagunju et al (2011) and Bassey and Moses (2015) and Ajetummobi, Adesina, Faboyede and Adejana (2017), Cash ratio (cash held to total deposits), Bassey and Moses (2015) and Mohanty and Mohrotra (2018), liquid ratio (cash and other near money instruments to total assets), Almazari (2014), Bassey and Moses (2015), Ajetummobi, Adesina, Faboyede and Adejana (2017).

The population of the study is adjusted to twelve banks from fourteen, as Eco bank currently known as Eco transnational incorporation bank (ETI) is now presenting it accounts in Dollars instead of Nigerian Naira and Jaiz bank Plc. do not transact with interest and this makes it impossible to transact short term securities like treasury bills, commercial papers which are part of the component that make liquid assets.

Model Specification
The model of the study is stated as;
$$ROA_{it} = \beta_0 + \beta_1 CUR_{it} + \beta_2 LIQ_{it} + \beta_3 CR_{it} + E_{it}$$

Where:
ROA = Return on Assets
CR = Current ratio
LR = Liquid ratio
Cash = Cash ratio
E = Error term
β_0 = constant of the model
β_1 = parameter of current ratio
β_2 = parameter of liquid assets
β_3 = parameter of cash assets

i = bank

t = year

Result Presentation and Discussion of Findings

This segment of the study presents the descriptive statistics, correlation matrix and regression analysis conducted as well as the inferences made from it.

Table 1: Descriptive Statistics

Variable	Obs	Mean	Std.Dev.	Min	Max
Roa	84	.017	.018	-.095	.062
Cr	84	.905	.28	.126	1.363
Lr	84	.273	.121	.055	.709
Cashratio	84	.265	.131	.056	.637

Source: Author's computations generated using Stata 13 software

From table 1 above the mean of the return on asset (ROA) is 0.017 which signifies the average performance of listed deposit money banks in Nigeria. This explains that on average the ROA of deposit money banks within the period of study is 1.7%. The minimum and maximum values of return on asset are - ₦0.95 and ₦0.62 respectively for every ₦1 with a standard deviation of 0.018 that show low variability amongst the listed DMBs. While in the case of the independent variable, the ratio of current assets to current liabilities had an average ratio of 0.905 with a standard deviation of 0.280, this implied that every deposit money bank has a minimum and maximum of ₦0.126 and ₦1.363 respectively of current assets used to finance the current liabilities. Liquid ratio shows that on average banks keep 27.3% of their total assets' liquid with minimum of 5.5% and maximum of 70% and a standard deviation of 12% that show moderate variability likewise the cash ratio of the banks has an average of 26.5% with a variation that stand at 13.1% and minimum and maximum of 5.6% and 63.7% of ₦1 respectively 0f the deposits collected.

Table 2: Variables Correlation Matrix

Variables	Roa	Cr	Lr	cashratio
Roa	1.000			
Cr	0.292	1.000		
Lr	0.061	-0.192	1.000	
cash ratio	0.306	0.181	0.501	1.000

Source: Author's computations generated using Stata 13 software

The above table 2 shows the correlation between the dependent and the independent variables and on the other hand amongst the independent variables themselves. The table reveals a positive significant correlation between the dependent variable ROA and the explanatory variables CR, LR and Cash ratio with coefficients of 0.292, 0.061 and 0.306 respectively, this implies that current assets, liquid assets and cash move in same direction with the performance (return on assets) of DMBs. The association amongst the independent variables themselves on the table reveals that current ratio and cash ratio are positively correlated among themselves, whereas current ratio and liquid ratio are negatively correlated. Liquid assets and cash are positively correlated amongst themselves. As opined by Gujarati (2004), correlation coefficient between two independent variables above 0.8 is consider excessive. The table above shows that the coefficient between all the independent variables is below 0.8, which suggest the possible absent of harmful multicollinearity; and it is also confirmed by the Variance Inflation Factor (VIF) result which provides evidence of absent of collinearity. The highest VIF value is 1.5 and the mean value is 1.385indicating absent of multicollinearity, because the VIF values are less than 5 and the inverse of the VIF is greater than 0.01. Therefore, the explanatory variables are said to be collinearity free (Gujarati, 2004). The study assumed no multicollinearity for the independent variables.

Table 3: Cross-sectional Time-series Feasible Generalized Least Square Regression

Roa	Coef.	St.Err.	t-value	p-value
Cr	0.010	0.004	2.17	0.030
Lr	-0.005	0.019	-0.28	0.778
Cashratio	0.009	0.004	2.29	0.022
Constant	0.034	0.010	3.48	0.001
Number of obs	84.000	Mean Vif		1.385
Chi-square	15.112	Heteroskedaticit		0.000
Prob > chi2	0.017	y test		0.9067
		Hausman Test		0.0000
		LM Test		0.1210
		Auto Correlation		

Source: Author's computations generated using Stata 13 software

The GLS regression result is presented in the above table for the establishment of the relationship between the dependent and independent variables and the result of the regression is presented in table 3 above where the parameters of the model are stated below;

$$ROA_{it} = 0.034_{it} + 0.010Cr_{it} + (0.005Lir_{it}) + 0.009Car_{it}$$

The model of the study has a constant value of β_0 0.034 which means that in the absent of Cr, Lr and Cash ratio, the β is significant at 1%

The study is designed for panel data, and it runs both fixed and random effects models, as well as the Hausman specification test, which enable the selection of the best model for analysis from the aforementioned models processed. However, because the test result was insignificant, the Langrangier multiplier test was carried out to help determine the best model to interpret between the random effect and pool OLS, and the outcome obtained shows that the random effect model is the most appropriate. Due to the study's experience with heteroskedasticity, the random effect model was deemed inappropriate since its parameters might have been biased by the presence of heteroskedasticity (Boadi & Li, 2015). We then used Generalized Least Square, and the outcome demonstrated that the model is accurate or fit with the chi-square of 15.112 and prob-chi of 0.017 which significant at 1%.

It is clear from the above table that the profitability of Deposit Money Banks was favourably impacted by Current Assets. With the assumption that all other factors remain constant, the results indicated that the coefficient of current assets is positive and statistically significant at 5%, indicating that an increase in current assets of one naira will increase the profitability of deposit money banks by a value of 0.010, providing the basis to reject the null hypothesis that there is no significant relationship between current assets and profitability of listed deposit money banks in Niger. The profitability of Deposit Money Banks is positively correlated with liquid assets, with a beta coefficient of 0.014, though statistically insignificant at 10%. We now fail to reject the null hypothesis that there is no significant relationship between liquid assets and profitability in the Nigerian Deposit Money Banks because it implies that an increase in cash holding of one naira on liquidity will not have a significant impact on the profitability of Deposit Money Banks in Nigeria under the premise that all other factors remain constant. These findings support the idea that there is a strong link between bank profitability and liquidity, contrary to those of Bassey and Moses (2015) and Owolabi et al. (2011).

Conclusion and Recommendations
The overall goal of this paper is to study the relationship between liquidity and profitability of Nigerian banks, while its specific goals are: to examine the effect of current ratio on profitability of Nigerian banks, to assess how the cash ratio affects the profitability of Nigerian banks and to investigate how the liquid ratio affects the profitability of Nigerian banks. This was necessary to resolve the competing interests of the two main sources of a bank's resources, namely the shareholders and depositors, who each chose a different return for their contributions to the survival of the banks. Liquidity and profitability are two sensitive issues in the operations of Deposit Money Banks. The study tries to establish relationship between liquidity and profitability, where three attributes of the liquidity were used as independent variables for the study.

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