

The Efficacy of Liquidity Management and Banking Performance in Nigeria

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Abstract

This paper explores the efficacy of liquidity management and banking performance in Nigeria. It is aimed at examining empirically the effect of efficient liquidity management on banking performance in Nigeria particularly in the aftermath of several banking reforms, rescue mission by the Central bank of Nigeria (CBN) and the attendant Merger and Acquisitions. Profitability and Return on Capital Employed (ROCE) were adopted as our performance indicators or dependent variables. The research design is survey design, accomplished through the administration of structured questionnaires. Data obtained were first presented in tables of percentages and pie charts and were empirically analyzed by Pearson product-moment correlation coefficient (r). Findings from the empirical analysis were quite robust and clearly indicate that there is significant relationship between efficient liquidity management and banking performance and that efficient liquidity management enhance the soundness of bank. These findings which may have re-echoed results from similar researches re-emphasize that efficient liquidity management have important policy implications for developing and emerging economies. Considering the systemic consequences of liquidity problems, it is recommended that a more professional approach should be taken in its management.

Keywords: Liquidity, Management, Banking, Performance, Nigeria.

Introduction

Bank Liquidity simply means the ability of the bank to maintain sufficient funds to pay for its maturing obligations. It is the bank's ability to immediately meet cash, cheques, other withdrawals obligations and legitimate new loan demand while abiding by existing reserve requirements. Liquidity management therefore involves the strategic supply or withdrawal from the market or circulation the amount of liquidity consistent with a desired level of short-term reserve money without distorting the profit making ability and operations of the bank. It relies on the daily assessment of the liquidity conditions in the banking system, so as to determine its liquidity needs and thus the volume of liquidity to allot or withdraw from the market. The liquidity needs of the banking system are usually defined by the sum of reserve requirements imposed on banks by a monetary authority (CBN 2012). To guide Bank's Management on the expected level of liquidity in the system over a period of time, liquidity management which involves the planning and control of cash and other liquid assets, may be supported by daily liquidity forecasting by the Central bank so that appropriate measures are taken to prevent undesirable market developments that may negatively impact on the objective of price stability.

Bhattacharyya and Sahoo (2011), argued that Liquidity management by Central banks typically refers to the framework, set of instruments, and the rules that the monetary authority follows in managing systemic liquidity, consistent with the ultimate goals of monetary policy. In this regard, central banks modulate liquidity conditions by varying both the level of short-term interest rates and influencing the supply of bank reserves in the interbank market. While Central bank liquidity management has short-term effects in financial markets, its long-term implications for the real sector and on price level are more profound. Effective liquidity management is a key factor that helps sustain bank profits and concurrently keeps the banking institution and the financial system generally from illiquidity and perhaps, insolvency. Strategic bank management aims prominently at keeping the bank solvent and liquid in order to earn good profits and remain sound. In order to maintain public confidence on the financial system of the country, Banks are required to maintain adequate amount of cash and near cash assets such as securities to meet withdrawal obligations. It is paramount for the survival of the totality of the financial system of a country and the banks in particular whose core function of financial intermediation depend on the availability of adequate liquidity.

In Nigeria, the challenges of inefficient liquidity management in banks were brought to the fore during the liquidation and distress era of 1980s and 1990s. The negative cumulative effects of banking system liquidity crisis from the 1980s and 1990s lingered up to the re-capitalization era in 2005 in which banks were mandated to increase their capital base from N2 billion to an astronomical high N25 billion. This move by the apex bank was believed would stabilize and rectify liquidity problems that were prevalent in the economy. Barely five years of what was applauded and considered as a fortified repositioning of banks against liquidity shortage, Central Bank of Nigeria (CBN) in 2009 came on a rescue mission to save five illiquid banks. The global financial crisis of 2008 also had its claws on the already ailing banks and to contain the crisis of confidence and ease financial conditions, CBN used both conventional and unconventional measures to inject liquidity into the system. In its rescue mission in 2009, CBN injected N620b to save the affected five banks that were operating on negative shareholder's funds. The use of unconventional measures became necessary as the regular monetary policy transmission mechanism got seriously impaired by the liquidity crisis that warranted the setting up an agency, Asset Management Corporation of Nigeria (AMCON) to buy out the bad debts of affected banks. Against this backdrop, this research study seeks to explore the efficacy of liquidity management and banking performance in Nigeria.

Banking performance over the years has been measured in terms of three major indicators or variables namely Profitability, Return on Asset (ROA) and Return on Capital Employed (ROCE). Profitability is the potential of a venture to be financially successful, the ability of an investment to make profit or the state or condition of yielding a financial profit or gain. Brealey, Myers and Marcus (2004; 458) affirmed that manager often measure the performance of a firm by the ratio of net income to total assets, otherwise referred to as Return on Asset (ROA). Return on Capital Employed (ROCE) in Accountancy is a common method of measuring and judging the size of the return which has been made on the funds invested in a business. Omorukpe (2003; 193), posits that ROCE is the ratio of an accounting entity for a period to capital employed in the accounting entity during that period usually expressed as a percentage. Various measures of profit and of capital employed may be used in calculating this ratio. The ultimate goal of banking business is to maximize profit; and considering the fact that the issue of capital adequacy has re-echoed often times in banking literatures in Nigeria with most recent banking reforms aimed at increasing the capital base of banks for efficient performance, we have adopted Profitability and ROCE as our dependent variable. Pursuant to this goal, this research study is intended to explain Profitability and ROCE in terms of efficient liquidity management and to accomplish this, we formulated two null hypotheses which shall be tested using the statistical tool of Pearson product-moment correlation co-efficient (r) to enable us make our inferences. The hypotheses are as follows:

Ho1: There is no relationship between efficient Liquidity management and Profitability.

Ho2: There is no relationship between efficient liquidity management and Return on Capital Employed (ROCE).

The structural arrangement of the study is as follows: Section 1 which has just concluded had the introduction, section 2 provides a synoptic review of related literatures; section 3 contains the research methodology and model specification, section 4 deals with data presentation and analysis while section 5 caters for the discussion of findings, conclusion and recommendation.

Review of Related Literatures

Globally, the adequacy of liquidity plays very crucial roles in the successful functioning of all business firms. However, the issue of liquidity though important to other businesses, is most paramount to banking institutions and that explains why banks showcase cash and other liquid securities in their balance sheet statement annually. Unlike other conventional firms, bank assets are arranged in terms of the most liquid asset beginning with cash. With respect to finance and financial institutions, liquidity may be defined as the bank's ability to meet maturing obligations without incurring unacceptable losses. A study of liquidity is of major importance to both the internal and external environments of a financial institution and analysts because of its close relationship with day to day operations of a business (Bhunia, 2010). Liquidity shortage, no matter how small, can cause great damage to a financial institution's operations and customer relationship in particular. Every business relies on its clients to succeed and so it is a strategic business plan to build good client relationships. Liquidity crisis, if not properly managed can destroy those relationships instantly. In order to avoid liquidity crisis, management of businesses and financial institutions in particular needs to have a well-defined policy and established procedures for measuring, monitoring, and managing liquidity. Managing liquidity is therefore a core daily process requiring managers to monitor and project cash flows to ensure that adequate liquidity is maintained at all times.

Functionally, banks are financial institutions or intermediaries which mobilise deposits from the public and create deposit money by granting loans, advances and overdrafts to their clients and in the process earn profits on their investors' funds. This definition emphasizes the core functions of banks, namely, financial intermediation and provision of liquidity. Financial intermediation is the process performed by banks of taking in funds from a depositor and then lending them out to a borrower. The banking business thrives on financial intermediation abilities to lend out money at relatively high rates of interest while receiving money on deposit at relatively low rates of interest. The intermediation process involves the mobilisation of deposit from surplus economic units and channelling same to deficit economic units in the form of loan and overdraft and this creates earning assets that enable the bank generate profits. There is consensus in theoretical literature that profitability and liquidity constitute the most prominent issues in corporate finance literatures. While it may be true that the ultimate goal for any firm is to maximize profit, too much attention on profitability may lead the firm into a pitfall by diluting the liquidity position of the organization (Niresh, 2012). Therefore the need to strike a balance between the firm's desire to make profit and the desire to remain liquid cannot be over-emphasized and there arises the issue of liquidity management

The provision of sufficient liquidity to customers at all times is an essential feature of banking. To achieve this goal, banks ensure that sufficient provision of cash and other near cash securities are made available to meet withdrawals obligations and new loan demand by customers in need of liquidity. For this reason, banks in Nigeria are statutorily required to comply with the Cash Reserve Requirement (CRR) policy of the Central Bank of Nigeria (CBN) as a measure of effectively managing the liquidity positions of banks. As a matter of fact, the first strategy to liquidity management in Nigeria is compliance with the statutory reserve requirement and liquidity ratios as stipulated by the regulatory authority. To efficiently manage and enhance liquidity management, CBN employs several other strategic measures. According to the Central Bank of Nigeria Annual Report for 2010 (CBN 2010), the monetary easing policy that commenced in late 2009, which was aimed at improving banking system liquidity, ensuring financial system stability and a steady flow of credit to the real sector of the economy continued. To that end, a number of measures were taken by the Monetary Policy Committee (MPC) and these including: the extension of guarantee on inter-

bank transactions from March 2010 to December 2010, and further to June 2011 and the reduction of the Standing Deposit Facility (SDF) rate from 2.0 to 1.0 per cent. Other measures include: the approval of a N500.00 billion intervention fund (N200 billion for refinancing and restructuring of DMBs' facilities to manufacturing enterprises) and the commencement of the operations of the Asset management Corporation of Nigeria (AMCON). The report states that by December 2010, AMCON had purchased toxic assets of 21 banks worth N1,036.3 billion at the price of N770.6 billion in order to strengthen the balance sheets of the banks and facilitate their ability to extend credit to the domestic economy. From CBN point of view, liquidity management was geared towards improving the liquidity and efficiency of the financial markets without compromising the objective of monetary and price stability.

From theoretical literatures, liquidity management generally has to do with ensuring that the institution maintains sufficient cash and liquid assets to satisfy client demand for loans and other withdrawal obligations, and to pay the institution's expenses. Thus, liquidity management involves a daily analysis and detailed estimation of the size and timing of cash inflows and outflows over the coming days and weeks to minimize the risk that savers will be unable to access their deposits in the moments they demand them. According to Bhattacharyya and Sahoo (2011) Liquidity management takes place within an operational framework which, in itself, is set against the backdrop of the existing economic environment. For instance, the institutional features of the interbank money market need to be efficient in terms of smooth transfer of funds between lenders and borrowers. Eljelly (2004) argues that efficient liquidity management associates planning and controlling current assets and current liabilities in an efficient manner so as to eliminate the risk of non-payment of dues for short term requirements and to also avoid excessive investment in these assets. The planning and control of current assets and current liability may be mandatory in compliance with monetary authority and supervisory policy or may be an organizational strategy to ensure that adequate liquidity is maintained at all times. The primary objective of monetary policy is to ensure price and exchange rate stability. Specifically, monetary policies seek to subdue inflation by effectively controlling the supply and demand of money. The supply of reserves is given by the net effect of the liquidity provided through both autonomous factors and by money market operations of the central bank. The demand for reserves arises from the banks' need to fulfill reserve requirements and it maintains some excess reserves to meet withdrawal obligations.

Prudent bank management requires that the liquidity position of a bank should be ascertained accurately during operations, in other words, every working day. The liquidity of a firm is measured by liquidity ratios; a class of financial metrics that is used to determine a company's ability to pay off its short-term debt obligations. From regulatory authority point of view, liquidity ratio refers to the reserve requirement which is a bank regulation that sets the minimum reserve each bank must hold. Commonly used liquidity ratios are the current ratio and the quick (or acid test) ratio. Vishnani and Bhupesh (2007) affirmed that the most common measure of liquidity is current ratio and return on investment for profitability. The current ratio is used to test a firm's liquidity, that is, its current or working capital position by deriving the proportion of the firm's current assets available to cover its current liability. A higher current ratio indicates a larger investment in current assets which means, a low rate of return on investment for the firm, as excess investment in current assets will not yield enough return. A low current ratio means smaller investment in current assets which means a high rate of return on investment for the firm, as no unused investment is tied up in current assets. However, there is consensus in theoretical literatures that the higher the ratio, the better. The concept behind this ratio is to ascertain whether a company's short-term assets (cash, cash equivalents, marketable securities, receivables and inventory) are readily available to pay off its short-term liabilities (notes payable, current portion of term debt, payables, accrued expenses and taxes) (Loth, 2012).

Research Methodology

Research Design and Data Analysis techniques

Research design referred to as 'Survey design' was adopted in sourcing for data in this study and it is aimed to study our research population by selecting and studying samples chosen from the population in order to

arrive at logical deduction or inferences based on circumstantial evidence. The sampling technique adopted in this study is the Random sampling technique which gives a fair view of the population under study. Our target population for this study is bank employees who are in the senior, middle and lower executive categories of twenty randomly selected banks in Nigeria. Our sample was drawn from these banks located in Asaba, Benin City and Lagos, Nigeria. A sample size of 300 bank employees was derived by random distribution of questionnaires to employees of each of the banks selected as our target population; however, 245 questionnaires were retrieved from respondents.

The research data were obtained using structured questionnaires which were administered randomly on our sample population. The questions were designed to test whether there is significant relationship between efficient liquidity management and Profitability on one hand and whether there is significant relationship between efficient liquidity management and Return on Capital Employed on the other hand. The questionnaire has two sections: Section A tagged 'Demographic Section' contains the personal data of respondents basically to enable us determine the level of experience and education, and Section B contains the questions and answer options. The answer options on the questionnaire which ranges from 'Strongly agree, Agree, Uncertain, Disagree to Strongly Disagree' and were weighted 5, 4, 3, 2 and 1 respectively. The frequency of responses to the answer options was presented first in percentages and also using a pie chart and the data obtained were analyzed using Pearson's product-moment correlation coefficient (r).

Theoretical Framework and Model Specification

Logically, the first step in the measurement of economic relationships is to ascertain whether or not there exists any relationship at all between the variables being quantified and next is to determine the direction and strength of the relationship. Correlation coefficient defines the degree and type of relationship that exists between two or more variables in which they vary together over a period of time. The direction of the relationship may either be positive (if an increase or decrease in the value of one of the variable is associated with an increase or decrease in the value of the other variable) or negative if both variables move in opposite direction (that is, an increase in one variable being associated with a decrease in the other). Positive values of the correlation coefficient indicate a positive linear relationship while negative values indicate a negative linear relationship (Oaikhenan and Udegbonam; 2004). The measure of the strength of the linear relationship between two variables X and Y is estimated by the simple correlation coefficient denoted by r. This r is referred to as Pearson's product-moment correlation coefficient or simply the sample correlation coefficient and is given by the formula

$$r = \frac{\sum (X - \bar{X})(Y - \bar{Y})}{\sqrt{\sum (X - \bar{X})^2 \sum (Y - \bar{Y})^2}} \dots \dots \dots \dots \dots (1)$$

- Where r = Pearson's product-moment correlation coefficient
- X = Weight attached to response
- Y = Frequency of response
- ∑ = Summation sign
- \bar{X} = Mean of weights attached to response
- \bar{Y} = Mean of frequency of response

According to Oaikhenan and Udegbonam (2004), the above Pearson's product-moment correlation coefficient formula or equation is simple to remember, it is nonetheless cumbersome numerically. Less cumbersome is the alternative formula for r.

$$r = \frac{\sum xy}{\sqrt{\sum x^2 \sum y^2}} \dots \dots \dots \dots \dots (2)$$

Where $x = X - \bar{X}$ and
 $y = Y - \bar{Y}$

The computation for our empirical analysis was carried out using equation 2 for ease of numerical calculations.

Decision Rule:

- ◆ The Pearson’s correlation coefficient r may assume any value from -1 to 1 (i. e., $-1 \leq r \leq 1$), depending on the direction and strength of the relationship.
- ◆ If $r = 0$, then there is no linear relationship (Zero correlation)
- ◆ The closer r is to 1, the stronger is the positive correlation while the closer r is to 0, the weaker the correlation.

Data Presentation and Analysis

Presentation of Data

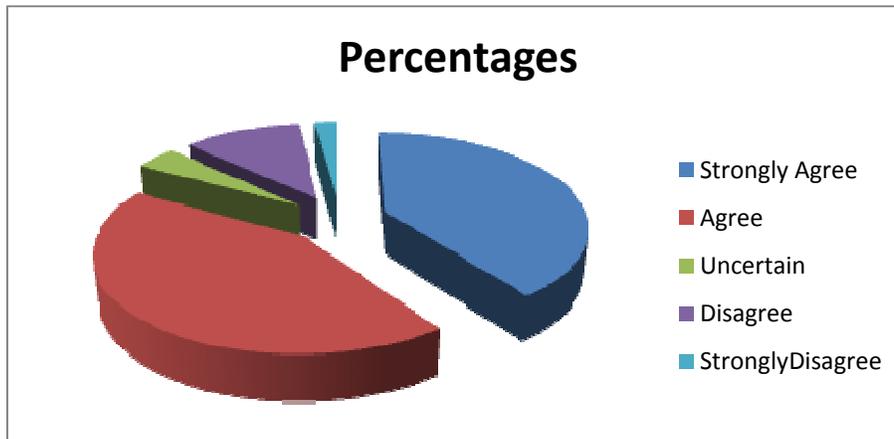
Two hypotheses were formulated in section one of this study. While the responses to question 5 which relates to efficient liquidity management and profitability was used to test Ho1, question 8 relating to efficient liquidity management and Return on capital employed (ROCE was used to test Ho2. Question 5 relates to efficient liquidity management and profitability. The responses to question 5 are shown in the table below.

Table 1 Response to Question 5 on Efficient Liquidity Management and Profitability

Response	Frequency	Percentage (%)
Strongly Agree	99	40
Agree	106	43
Uncertain	10	04
Disagree	26	11
Strongly Disagree	4	02
Total	245	100%

Source: Field Survey, 2013.

Figure 1: Pie Chart Representation of Responses to Question 5



Source: Field Survey, 2013.

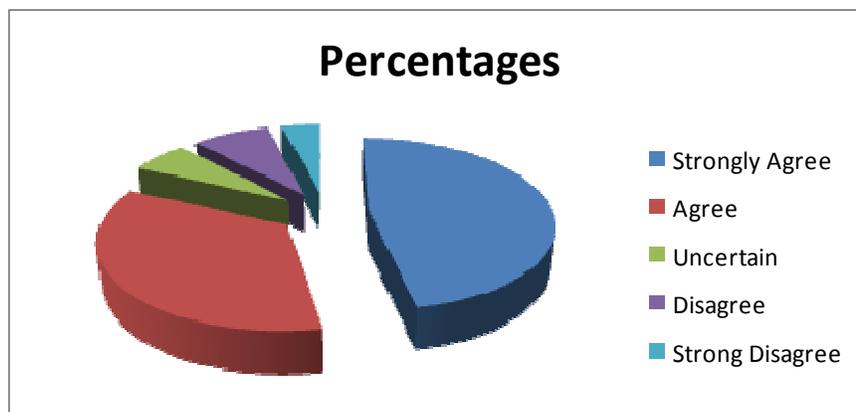
Question 8 relates to efficient liquidity management and return on capital employed. The responses to question 8 are shown in the table below.

Table 1 Response to Question 8 on Efficient Liquidity Management and Return on Capital Employed (ROCE)

Response	Frequency	Percentages
Strongly Agree	115	47
Agree	86	35
Uncertain	15	06
Disagree	19	08
Strongly Disagree	10	04
Total	245	100%

Source: Field Survey, 2013.

Figure 2: Pie Chart Representation of Responses to Question 8



Source: Field Survey, 2013.

Data Analysis and Hypothesis Testing

Hypothesis 1:

The data in table 1 and equation 2 specified in our model were used to compute the correlation coefficient r and test hypothesis 1 which states thus:

Ho1: There is no relationship between efficient Liquidity management and Profitability.

Table 3: Computation of Pearson Product-Moment Correlation Coefficient (r).

	X	Y	$x = \bar{X} - X$	$y = \bar{Y} - Y$	xy	x^2	y^2
Strongly Agree	5	99	2	50	100	4	2500
Agree	4	106	1	57	57	1	3249
Uncertain	3	10	0	-39	0	0	1521
Disagree	2	26	-1	-23	23	1	529
Strongly Disagree	1	4	-2	-45	90	4	2025
Total (Σ)	15	245			270	10	9824

Source: Researcher computation, 2013.

$$\text{Since } \bar{X} = \frac{\sum X}{n} = \frac{15}{5} = 3$$

$$\text{and } \bar{Y} = \frac{\sum Y}{n} = \frac{245}{5} = 49$$

$$\text{From equation 2; } r = \frac{\sum xy}{\sqrt{\sum x^2 \sum y^2}} = \frac{270}{\sqrt{10 \times 9824}} = \frac{270}{313.43} = 0.861$$

Hypothesis 2:

The data in table 2 and equation 2 specified in our model were used to compute the correlation coefficient r and test hypothesis 2 which states thus:

Ho2: There is no relationship between efficient liquidity management and Return on Capital Employed (ROCE).

Table 4: Computation of Pearson Product-Moment Correlation Coefficient (r).

	X	Y	$x = \bar{X} - X$	$y = \bar{Y} - Y$	xy	x^2	y^2
Strongly Agree	5	115	2	66	132	4	4356
Agree	4	86	1	37	37	1	1369
Uncertain	3	15	0	-34	0	0	1156
Disagree	2	19	-1	-30	30	1	900
Strongly Disagree	1	10	-2	-39	78	4	1521
Total (Σ)	15	245			277	10	9302

Source : Researcher computation, 2013.

$$\text{Since } \bar{X} = \frac{\sum X}{n} = \frac{15}{5} = 3$$

$$\text{and } \bar{Y} = \frac{\sum Y}{n} = \frac{245}{5} = 49$$

$$\text{From equation 2; } r = \frac{\sum xy}{\sqrt{\sum x^2 \sum y^2}} = \frac{277}{\sqrt{10 \times 9302}} = \frac{277}{304.99} = 0.908$$

Discussion of Findings, Conclusion and Recommendation

Discussion of Findings.

This research study aimed to investigate the Efficacy of Liquidity Management and Banking Performance in Nigeria. For this reason we formulated two null hypotheses which have been tested in section 4. In hypothesis 1, Ho1, which states that ‘There is no relationship between efficient Liquidity management and Profitability’, the computed Pearson product-moment correlation coefficient, (r) read 0.861. From our decision rule, the closer r is to 1, the stronger is the positive correlation while the closer r is to 0, the weaker the correlation, we deduce that there is a strong positive correlation between efficient liquidity management and banking performance, in this case profitability. With correlation coefficient (r) as high as 0.861, we therefore reject the null hypothesis (Ho) and accept the alternate hypothesis (H1).

To show the robustness of our findings, we formulated another null hypothesis (Ho) using another banking performance indicator, Return on Capital Employed (ROCE). The hypothesis which states ‘There is no relationship between efficient liquidity management and Return on Capital Employed (ROCE)’ had a computed Pearson product-moment correlation coefficient, (r) of 0.908. Interestingly, the computed correlation coefficient (r) for ROCE is higher than that of Profitability affirming that there is a strong positive relationship between efficient liquidity management and banking performance, in this case ROCE. Again, based on our findings, with correlation coefficient (r) as high as 0.908, we reject the null hypothesis (Ho) and accept the alternate hypothesis (H1).

Conclusion

This research study underpins or supports with evidence the fact that there exist a strong positive relationship between efficient liquidity management and banking performance in terms of Profitability and Return on Capital Employed (ROCE). Therefore the need for efficient liquidity management in the banking industry cannot be over emphasized particularly for reasons of maximizing profit levels and concurrently remaining liquid. For the banking industry in Nigeria, there is the need to emphasize ‘the need to remain liquid’. The study buttresses the fact that efficient liquidity management can significantly influence returns on capital employed by a bank and as well impact positively on the bank’s profitability and thus its stability.

The high number of illiquid banks in the Nigerian banking industry as seen in recent times appears to attest to the fact that most bank management in Nigeria do not either place emphasis on strategic liquidity management or are deficient in it. Even though they may be efficient, most businesses in the Nigerian economy are transacted purely on cash basis such that managing liquidity effectively becomes cumbersome. Effective liquidity management creates good public confidence in the financial system of a country and good public confidence prevents a ‘run’ on the banking system and consequently on the

liquidity state of banks. Since economic laws and variables from this study and other related researches have attested to the fact that there is correlation between efficient liquidity management and banking performance, the poor liquidity state of Nigerian banks could be hinged on management. Therefore, there is the need to formulate policies that will enhance effective liquidity management in the banking industry in Nigeria and the public usage of cash.

Recommendation

The findings in this study serve as contributory knowledge to existing facts derived from other researches on liquidity management. The empirical results of this study have important policy implications for the goals and objectives of good bank management particularly with respect to liquidity management, profitability and return on capital employed.

The continuous increase of the capital base of banks though may be the effect of hyper-inflation in most emerging economies is not synonymous to performance and does not even guarantee continuous stability of banks, rather, the strategic management of some elements of banking processes such as liquidity management does. Based on the foregoing, we advance the following recommendations with the hope that they will enhance considerably liquidity management in the Nigerian banking industry.

First and most importantly, we emphasize the need to invest on human capital by banks as it offers the highest returns in terms of increasing performance and it also enhances the level of competence of the employee. Similarly, we recommend the need to replace 'federal character', though an unwritten policy but an implied criterion for employment and job placement particularly at management levels with 'competence' governed religiously by 'equal opportunity policy' as is being practiced in the advance economies of the world. Investing on human capital may be beyond just employees but also frequently creating an interactive forum where bank clients could be sensitize on a variety of activities they indulge in that are capable of hindering effective liquidity management.

Secondly, we recommend that CBN must critically review and follow-up or monitor the effectiveness of liquidity policy tools in banks and where necessary, appropriate sanctions placed on erring banks. This may be so in order to ensure effective implementation of these policy tools in an attempt to achieve desired liquidity level. While it may be true that CBN is effectively enacting and reviewing liquidity management tools such as the Open Market Operation (OMO), Cash Reserve Requirement (CRR), Liquidity ratios (LR), Monetary Policy Rate (MPR) et cetera, as often been stated in their Annual and Economic reports, compliance by the beneficiary banks is not guaranteed as bank returns to the regulatory authority has been reportedly falsified over times.

Thirdly, we recommend that regulatory authority should put in place appropriate policy with compliance measures to check high volume cash transaction and cash hoarding prevalent in the economy. This is important because liquidity management is cumbersome and may be ineffective in an economy that operate solely on large volume of cash transaction or conducts a large proportion of its transactions in cash.

The reason is not far-fetched, liquidity management relies on the daily assessment of the liquidity conditions in the banking system, so as to determine its liquidity needs and thus the volume of liquidity to allot or withdraw from the market. While it might be true that the cheque clearing system is now automated for efficiency, electronic or internet banking is growing at a fast rate, banking culture in yet to be imbibed by the teaming bank customers such that cash hoarding and cash transactions is still the order of the day.

Determining the liquidity needs or level of the banking system in such circumstances is cumbersome. The uncertainty arising from that may either lead to keeping excess liquidity or run short of liquidity and the duo have adverse effect on bank stability.

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