Liquidity Management and the Performance of Banks in Nigeria (2000-2010)

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Abstract

This study examines liquidity management and the performance of banks in Nigeria within the period 2000-2010. It investigates the relationship between the variables of bank performance and those of liquidity management using bank deposit, cash reserve requirement, bank investment, and cash ratio as indicators. Data were mainly collected from CBN's statistical bulletin. Data were analyzed using simple percentages and simple regression model. Findings indicate that a strong relationship exists between bank deposit and bank reserve requirement, and bank investment and cash ratio. Thus, these finding which has re-echoed results from similar studies re-emphasize the fact that successful operations and survival of banks anchored on efficient and effective liquidity management. Therefore, it is recommended that banks should not concentrate purely on deposits but rather other measures be adopted to reduce illiquidity in this sector.

Key words   Cash flows, liquidity, bank performance, cash ratio

1. Introduction

Liquidity is a financial institution's capacity to meet it cash and collateral obligations without incurring unacceptable losses. Adequate liquidity is dependent upon the institution's ability to efficiently meet both expected and unexpected cash flows and collateral needs without adversely affecting either daily operations or the financial condition of the institution. Therefore, liquidity management involves the supply/withdrawal from the market the amount of liquidity consistent with the desired level of short-term interest rates or reserve money. It is the ability of an institution to meet demands for funds thereby ensuring that the institution maintain sufficient cash and liquid assets to satisfy client demand for loans and savings withdrawals and then meet its expected expenses.

Primarily, the liquidity management role is to prospectively assess the needs for funds to meet obligation and ensure the availability of cash or collateral to fulfill those need at the appropriate time by coordinating the various sources of funds available to the institution under normal and stressed conditions. 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. Management of liquidity 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 moment they demand them. Thus, liquidity is lifeblood of a banking system. Moses (1997), Ebhodaghe (2002), Biety (2003), Adekanye (1984), and Anyanwu (1993), assert that the objective of liquidity management is to gear banks towards a financial position that enables them meet their financial obligations as they arise.

Lack of adequate liquidity in a bank is often characterized by the inability to meet daily financial obligations. At time it may have the risk of losing deposits which erodes its supply of cash and thus forces the institution into disposal of its more liquid assets. As opined by (Pandy, 2005), managing monies of a

firm in order to maximized cash availability and interest income on any idle cash is a function of liquidity management. However, the problems of weak corporate governance, poor capital base, illiquidity and insolvency, poor asset quality and low earnings are some of the constraints faced by the banking system. Hence, the following probing questions become very pertinent:

How effective is liquidity planning and what are the major sources of banks liquidity?

What are the credit policies adopted by individual banks and how does it affect the liquidity position of the Bank?

What strategies are adopted by banks in the management of liquidity?

Is there any significant relationship between liquidity management and the performance of banks in Nigeria?

Does liquidity management affect the performance of banks in Nigeria?

This study therefore assesses liquidity management and the performance of banks between 2000 and 2010. We will examine the sources of bank liquidity and also identify the strategies adopted by banks in the management of liquidity. We will also establish the relationship that exists between the sources of bank liquidity and performance. And finally we will ascertain the challenges faced by banks in Nigeria in managing liquidity from 2000 to 2010.

However, to achieve these objectives we hypothesized that:

1. H_o: There is no significant relationship between deposit and reserved requirement of banks in Nigeria from, 2000 to 2010;

2. H_o: There is no significant relationship between bank investment and cash ratio in Nigeria from 2000 to 2010.

2. Literature review

2.1. The concept of liquidity management

Finance in a banking system is liken to the blood in the human system, adequate circulation of this blood in the body means the human system will function well resulting into good health. And the inadequacy will also mean that human system will be weak. Similarly, business can only operate under the state of adequate liquidity. A company is said to be liquid, if it can convert its asset to cash with minimum amount of delay and inconvenience. The optimum capital structure is determined by keeping in mind the long-term and short-term requirements of finance. This is in line with (Biety, 1998), who define liquidity as "the speed and ease with which an asset is sold and still realizes fair price". Therefore liquidity is seen as the inflows and outflows of cash through the firm as product acquisition, sales payment and collection processes taking place over time, with which asset can be converted into cash without a significant loss of principal liquid asset. It is a relationship between the fine dimension (how long it will take to sell) and the price dimension (The discount from fair market price) of an investment asset. Hence, a firm should ensure it does not suffer from lack of liquidity and does not also have excess liquidity. Failure to meet obligation due to lack of sufficient liquidity results in poor credit worthiness and loss of creditors' confidence. However, a high degree of liquidity results in idle cash. Thus, liquidity management as a concept encompasses efficient and effective planning and organization of Bank's assets which will enhance its liquidity and profitability at a minimum cost possible.

2.2. Banks Liquidity: Sources and management

Banks derive their liquidity from the following sources: vault cash, balances held with CBN, balances held with offices & branches outside Nigeria, money at call in Nigeria, inter-bank placement, placement with discount houses, treasuring bills, treasuring certificates, investment in stabilizations securities, bills discounted payable in Nigeria, Negotiable certificates of deposits, bankers acceptances and commercial papers.

The viability of banks can be directly linked to their liquidity management. Hence the ability to ensure that there is availability of funds to meet its financial commitments or maturing obligations at a reasonable price at all times.

According to (Ekezie, 1997), deposit mobilization is one of the most important functions of banks. This enables deposits to be mobilized which otherwise would have remained idle and unproductive in the

surplus economic unit. Also important is the need for adequate income through interest on loan as this will ensure continued provision of productive resources. Therefore it is uneconomic and financially unreasonable for banks to allow excess idle cash in the vault or excess liquidity. Rather, they should manage their liquidity to maximized revenues while holding risks of insolvency at a desired level.

Liquidity management therefore refers to the planning and control of liquid assets either as an obligation to the customers financial needs or as a measure to adhere to the monetary policies of the Central Bank. For a commercial bank to plan or manage its liquidity position, it must comply firstly with the legal requirement concerning its cash position.

However, it is very essential for banks to manage and maintain adequate funds for operations in other to avoid excesses or deficiencies of the required primary reserves. Where there is a decline in the market price of securities or where additional funds needed to correct the bank reserve position are for a short time, it will be definitely expensive to secure securities than to borrow from another bank. Moreover, it may be more desirable to borrow for bank's liquidity needs than to call back outstanding loan or cancel out rightly or place embargo on new loans, a situation that will reduce the customer confidence in the bank.

Effective liquidity management therefore involves obtaining full utilization of all reserves. The primary reserves are made of vault cash, cash balances or excess reserves with the CBN, as well as deposits with other banks, both locally and abroad. They are maintained to satisfy legal and operational requirements. While the secondary reserves are those liquid assets that can be converted into cash without impairment of the principal sum invested. Secondary reserves are characterized by short maturity, high credit quality and high marketability. The secondary reserves are held primarily to meet both anticipated and unanticipated short-term and seasonal cash needs from depositors. They contribute to that attainment of both profitability and liquidity objective of the bank.

2.3. Theories of liquidity

The Liquid Asset Theory: Certain theories of liquidity management were propounded to further aid the banking sector in its management of liquidity. This theory states that bank should maintain large pool short-term asset. They pre-suppose the existence of efficient primary and secondary (money) markets (Anyanwu, 1993). The theory also emphasizes the need to have short term (liquid) assets which will facilitate the bank's ability to meet its short term obligation as they mature.

2.4. Commercial Loan Theory or Real Bill Doctrine

The theory stipulates that lending should be on short-term since most deposits are also in short-term. It is the oldest theory of liquidity management. It seeks to match short-term profit motive with short-term obligations of making depositors funds available when needed. The doctrine is buttressed by (Onoh, 2002), he opines that for management and application of funds (liquidity) to be effective, the tenor of funds (sourced from deposits and other sources) must be marched with the tenor of asset (i.e. loans and advances to customers etc.)

2.5. Anticipated Loan Theory

This theory was postulated in the 1940s and it focuses on the earning power and the credit worthiness of the borrower as the major source of bank liquidity. The doctrine urges banks to examine the reputation of the borrower and the ability and willingness to pay. They agree on granting long term and non-business loans by banks since it will be repaid out of the future earnings of the borrower.

2.6. Liquidity Management and Performance

Bank liquidity simply means the ability of the bank to maintain sufficient funds to pay for its maturing obligations. It is the banks' ability to immediately meet cash, cheques, and other withdrawal obligations and legitimate new loan demand while abiding by existing reserve requirements. Liquidity management therefore is the strategic supply or withdrawal from the market circulation the amount of liquidity Consistent with desired level of short–term reserve money without distorting the profit making ability and operations of the bank (Aghada and Osuji, 2013). Generally, the adequacy of liquidity plays very crucial roles in the successful functioning of all business firms. The ability to meet short-term obligations may

affect the firm's operations. Every investor has interest in the liquidity position of the company. However, the issue of liquidity though important to other businesses, is most paramount to banking institutions and this explains why bank show-case cash and other liquid securities in their balance sheet statement. Thus bank ensures that sufficient provision of cash and other near cash securities are made available to meet withdrawals obligation and new loan demand by customers in need of liquidity (Aghada and Osuji, 2013). Hence, banks in Nigeria are statutorily required to comply with cash reserve requirement (CRR) policy of the Central Bank of Nigeria as a measure of effectively managing the liquidity position of banks.

3. Methodology of research

This paper adopts the desk study design. Apart from texts and journal publications, data were mainly collected from CBN's statistical bulletin. The data were presented in percentages using tables and also analyzed using simple regression model. The focus here was to establish the relationship between the variables of bank performance and those of liquidity management.

4. Data analyses, interpretation and discussion of findings

The data used in this section were obtained from the statistical bulletin of the Central Bank of Nigeria, 2010. They are presented in the table below;

Table 1. Trend of banks deposit, investment, cash reserve requirement and cash ratio in Nigeria from 2000-2010

Yrs	Bank Investment (Y 2) million	Bank Deposit (y1) million	Cash reserved requirement (xi) million	Cash ratio (x2)%
2000	7948.7	343174.10	77781.9	9.8
2001	15919.9	451963.10	125257.8	10.8
2002	32375.0	556011.70	139701.8	10.6
2003	62928.6	6557339.70	152257.5	10.0
2004	72772.3	797517.20	165303.1	8.6
2005	88382.1	1316957.40	101097.3	9.7
2006	141577.5	1739636.90	206513.6	4.2
2007	292298.7	2693554.30	148099.3	2.8
2008	480718.6	4118172.80	150706.8	1.3
2009	890332.6	5763511.20	87026.3	1.3
2010	1785745.6	5954260.50	95646.0	1.0

Source: CBN statistical Bulletin Vol. 211, Dec 2010 (www.ndic.org)

4.1. Data analysis

Between 2000-2003, banks deposit was in steady rise from N343174.10 to N65573339.70 which was an increase of 94.8%, while the reserve requirement took a rising trend from N77781.9 to N152257.5 which was an increase of 48.9%. This indicated growth in the volume of customer deposit in banks. Between the periods of 2004-2007, bank deposit continued to rise from N797517.20 to N2693554.80 which was also an increase of 70.4%, while the reserve requirement took a fluctuating trend between the period 2004-2007 as a result of the monetary authority policy during the same period. Bank deposit was still rising between 2000-2010, it rose from N4118172.80 to N5954260.50 which was an increase of 30%, while reserve requirement stood at N150706.3 in 2008 after the initial volatility, it slumped to N87026.3 in 2009 and later rose again in 2010 to N95646.0.

Furthermore, bank investment took a rising trend between the periods of 2000-2003 it stood at N7948.7 to N62928; this was an increase of 87.4%. It continued upward between 2004-2007 and stood at N72772.3 to N292298.7, an increase of 75.1%. Another increase was seen in 2008-2010 showing N480718.6 to N1785745.6 at 73.1% cash reserve ratio exhibited a volatile trend between 2000-2003, it stood at 9.8%, 10.8%, 10.6% and 10.0% respectively. The fluctuation in cash reserve ratio was as a result of various policies given by the regulatory authorities to control the rate at which banks lends out funds. The trend continued

from 2004-2007 it was 8.6%, 9.7%, 4.2% & 2.8% showing an increase and decrease indices and it continued again in 2008-2010 where it fell to 1.3% in 2008 and was the same in 2009, then dropped to 1.0% in 2010.

The implication of this is the fact that as the cash ratio decreases; banks are able to give out more loans to investors and thereby boosting the economy.

4.2. Interpretation of results

A simple regression model using SPSS software to test the first hypothesis was used.

First Hypothesis:

Banks deposit is regressed against reserve requirement drawn from CBN statistical bulletin.

Table 2. Correlations

		BD	**RR**
Pearson correlation	BD	1.000	-125
	RR	-.125	1.000
Sig (1-tailed)	BD	-	.357
	RR	.357	-
N	BD	11	11
	RR	11	11

Where:
BD - Bank deposit
RR – Reserve ratio

Table 3. Model Summary b

Model	R	R square	Adjusted R square	Std. error of the estimate
1	.125[a]	.016	-.094	2.5293E6

a. Predictors: (constant), RR
b. Dependent variable BD

Table 4. Coefficients [a]

Model	Unstandardized Coefficients		Standardized Coefficient		
	B	Std error	Beta	T	Sig
1 (constant)	3781075.36	2823979.09	-	1.339	213
RR	5	1	-.125	-.378	. 714
	-7.796	20.636			.

a. Dependent variable: BD

The result of the regression analysis is expressed below:
BD = 3781075.365 - .125 RR
R   = 0.125 or 13%
Calculated t – value = 0.378
Table t-value = 2.262

Decision Rule:
Accept H_o of $T_{cal} < T_{tab}$
Reject H_o of $T_{cal} > T_{tab}$

From the analysis conducted, if cash reserve requirement is zero, the amount of cash deposit in Nigerian banks would be N3781075.365. But if bank deposit varies by one unit, the variation in banks deposit could be explained by cash reserve requirement at 7.796 units. The result of the correlation analysis is positive at 13% meaning that there is a relationship between BD and RR. The result shows weak relationship, indicating that cash reserve requirement influences cash deposit but the effect of cash deposit

is not significant. However, the result shows that they are directly related. This means that, as cash reserve requirement increase, cash deposit also increases. Thus, calculated T = 0.378 while the table value = 2.262 using a two tail test at a degree of freedom (11-2=9). Since tcal is less than T_{tab} (T_{cal} 0.478 < T_{tab} 2.262) we accept the null hypothesis.

Second Hypothesis:

Banks investment is regressed against cash ratio:

Table 5. Correlations

		BD	**RR**
Pearson correlation	BD	1.000	-.742
	CR	-742	1.000
Sig (1-tailed)	BI	-	.357
	CR	.004	-
N	BI	11	11
	CR	11	11

Where:
BD - Band investment
CR – Cash ratio

Table 6. Model Summary b

Model	R	R square	Adjusted R square	Std. error of the estimate
1	.742ª	550	500	3.85544E5

a. Predictors: (constant), CR
b. Dependent variable: B1

Table 7. Coefficients [a]

Model	Unstandardized Coefficients		Standardized Coefficient		
	B	Std error	Beta	T	Sig
Constant	966038.39	218561.797		4.420	0.002
RR	4	29043.169	-.742	-3.318	.009
	-				
	96368.370				

a. Dependent variable: B1

The second regression analysis is expressed below:
BI = 966038.394 - .742 CR
R = 0.742 or 74%
Calculated t-value = 3.318
Table t- value = 2.262

Decision Rule:
Accept Ho if T_{cal} < T_{tab}
Reject Ho if T_{cal} > T_{tab}

From the analysis, if cash reserve ratio is zero, the amount of investment in Nigerian banks would be N966038.394. But if banks investment varies by one unit, the variation in banks' investment could be explained by cash reserve ratio at N96368.37 units. Thus, the result of the correlation analysis is positive at 74%. This means that there is a strong relationship between BD and CR, their relationship as shown in this result is positive, which means they are directly related. Therefore there is a correlation between investment and cash ratio as the increase in one leads to an increase in the other. Thus, the calculated T = 3.318 while the table value = 2.262 using two tailed test at 9 degree of freedom (11-2 =9). Since T_{cal} is greater than T_{tab} (.T_{cal} 3.l328 > T_{tab} 2.262) we accept a positive relationship between banks investment and cash ratio.

4.3. Discussion of findings

Our first model sought to explain the relationship between banks deposit and reserve requirement showed that the result was positive but does not have significant relationship between the variables. However from the result we saw a weak relationship between the dependent and independent variables, meaning that cash reserve requirement influence cash deposit to further prove the weak relationship of the two variables, it is noticed that our T_{cal} is less than Ttab (ie Tcal 0.478 < Ttab 2.262). Going by the rule, we accept the Null hypothesis (Ho) and reject the alternative (Hi). The weakness could be caused by the under listed:

1. Funds deposited by customers in the bank and withdrawn at short notice might not be used by the bank for investment that can in turn boost the asset base of the bank before it was withdrawn.

2. Banks have some other ways of sourcing for funds but not included in the model which helps build a strong asset base apart from cash ratio.

3. In spite of the reduction in reserve requirement, banks still exhibit apathy in lending out funds to investors due to the risk in investment and the weak financial intermediation capacity.

In our second model, an attempt was made to establish the relationship between banks investment and cash ratio. It was observed that a significant relationship existed between the liquidity management variable (cash ratio) and performance of banks as proxies by banks investment. From the result obtained in our findings, T_{cal} is greater than T_{tab} (i.e. T_{cal} 3.318>T_{tab} 2.262). This enables us to reject the Null hypothesis (Ho) and accept the alternative (Hi). The model showed that cash ratio has a significant relationship with bank investment. From our result, it is noticed that if cash ratio is zero, the amount of investment in Nigerian banks would be N966038.394. But if banks investment varies by one unit, the variation in banks investment could be explained by cash reserve ratio at N96368.37 units thus, the result of the correlation analysis is positive at 74% meaning there is a strong relationship between BI and CR.

5. Conclusions and recommendations

5.1. Conclusions

This study empirically support the fact that there is a strong relationship between banks reserve requirement and bank deposits in one hand, and bank investment and cash ratio in the other hand. Therefore, for successful operations and survival of banks, efficient and effective liquidity management must not be compromised. They must maintain optimal liquidity level in order to satisfy their financial obligations to customers and also maximize profit for shareholders. Effective liquidity management creates public confidence and public confident prevents a 'run' on the banking system.

5.2. Recommendations

The finding on this research study serves as a contributory knowledge to the existing facts derived from other researches on liquidity management. Thus the following recommendations were made; since banks survival anchors on liquidity management, concentration should not be focused on the deposit concept but rather other measures be adopted to reduce illiquidity in the banking sector. Adequate monitoring by the monetary authorities is made on the effectiveness of the liquidity policy tools in banks and where necessary sanctions should be placed on erring banks. This will enhance the implementation of these policy tools in an attempt to achieve desired liquidity level. Instead of allowing excessive liquidity as a provision for unexpected withdrawals demand by the customers, alternative measures such as borrowing and discounting bills be applied while surplus cash be invested in short-term investment of the money market.

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