THE IMPACT OF CREDIT AND LIQUIDITY RISK MANAGEMENT ON THE PROFITABILITY OF DEPOSIT MONEY BANKS IN NIGERIA

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Abstract
This paper is aimed at evaluating the impact of credit risk and liquidity risk management on the profitability of deposit money banks in Nigeria with particular reference to First bank of Nigeria Plc. Descriptive research design was used for the study where questionnaires were administered to a sample size of eighty (80) respondents. The data obtained were presented in tables and analysed using simple percentages. The formulated hypotheses were tested using the Pearson product moment correlation. The results of the study revealed that there is a significant relationship between credit management and bank profitability and there is a significant relationship between bank liquidity and profitability among deposit money banks in Nigeria. Based on the findings, it was recommended that deposit money banks should set up effective system of internal controls to monitor the risk control mechanisms in use in order to ensure complete compliance with bank philosophy. Again, banks should always maintain a balance between deposit-loan ratio in order to avoid asset liabilities mismatch.

Keywords: Credit risk, Liquidity risk, Risk management, Profitability, Deposit Money Banks
INTRODUCTION

Banks as financial intermediaries are very significant in the economy of every nation. The relevance of banks to the economy lies primarily in their ability to mobilize credit and grant credit to various economic actors. Lending operations are core banking activities and the most profitable asset of credit institutions. In many markets, banks have to operate in the economic environment that is characterized by the existence of obstacles to good credit management. Where credit is not properly channeled, controlled and administered, it leads to a devastating effect on the banks, reducing its performance, profitability and further into bank distress and failure (Berger and Christa, 2009)

According to Cai and Anjan (2008), credit administration is the most important function of the banking industry. It is the most risky and difficult, and at the same time most profitable function performed by banks. The key strategic value a bank adds has always depended upon its ability to manage credit risk. This cannot be properly done without an effective risk assessment, control and follow up strategy. Risk increase when credit principles are violated. Sound banking practices require that bank management put in place standards for appraising and approving individual credit application to ensure that loans granted are repaid. However, due to poor credit administration caused by loopholes and violation in risk assessment and control techniques, bad and doubted debts still claim a bulk charge on bank performance causing many banks to witness institutionalized distress and some, total unexpected collapse. Since lending carries a reasonable portion of resource exposure of deposit banks in Nigeria, the ability of a bank to generate much profit is largely a function of effective and efficient management of its lending portfolio.

The impact of liquidity position in management of banks have remained fascinating and intriguing, though very elusive in the process of investment analysis vis-à-vis bank portfolio management. There appears to be an interminable argument in the literature over the years on the meaning, role and determinants of liquidity and credit management. Acharya and Naqvi (2012) refer to liquidity as the speed and certainty with which an asset can be converted back into cash whenever the asset holder desires. A liquid bank stores enough liquid assets and cash together with the ability to raise funds quickly from other sources to enable it meet its payment obligations and financial commitment in a timely manner. Ngwu (2006) views liquidity management as the act of storing enough funds and raising funds quickly from the market to satisfy depositors, loan customers and other parties with a view to maintaining public confidence.
In spite of the measures put in place and aimed at protecting depositors and other public interest, the incidence of bank distress and failure has been on the increase in deposit money banks in Nigeria. This is as a result of increased probability of bank default, reduced performance and bulk charge against profits emanating from ineffective credit and liquidity risk management. Hence, for a bank to be viable and profitable; there must be strategic credit and liquidity risk management policies formulated and implemented in full. The tools for effective implementation of these policies will be anchored on the philosophy and mission of the bank, the overall credit risk strategy, and the credit policies adopted in the realization of strategic goals and objectives of the banks as well as the expansion prospects of such bank.

The effective management of credit and liquidity risks is inextricably linked to the development of banking technology, which will enable the bank to increase its speed of decision making and at the same time reduce the cost of controlling banking risk. The development of these banking technologies that reduce operating costs and cost of risk control will inevitably yield greater earnings and returns for the bank in terms of contribution and profitability.

**Statement of the problem**

With the increase of credit transactions and loan customers in the nation’s economy, credit expansion has been witnessed in the Nigerian financial sector. The trend of events in this sector shows that bank deposit-loan ratio increases daily as the economy grows daily. But credit risk has been on the increase with an increase in loan demands. Traditionally, credit was made available in association with one’s financial status, business sustainability, reputation and liquidity, but the unstable situation of the Nigerian financial market makes it difficult for banks to rely on the aforementioned determinants. Business conditions are often unpredictable and can lead to changes in the borrowers financial position and affects their ability the repay the loans at the date of maturity.

With the above scenario, the bank faces a credit risk of losing part or the entire loan including the interest receivable on such loans. This negatively affects the bank and reduces its’ financial strength to meet its’ financial obligations as they fall due. As these conditions remain unchecked, the liquidity of the bank is also threatened.

Liquidity is considered as the success of a bank, whose inefficient management constitutes a huge problem to both banks and the economy at large. The far reacting consequences of poor credit and liquidity management apart from decline in profit include loss of confidence in the bank’s ability to fulfill its short term and long term obligations, lack of trust on the part of depositors and other customers alike and the concomitant reduction in the level of operations.
In spite of the importance of credit and liquidity risk management to bank survival, no paper has so far analyzed the relationship between credit and liquidity risk on a broad range and its different dimensions in the Nigerian banking industry. As a consequence, many important questions regarding this topic remain unanswered. What is the general relationship between credit and liquidity risk in banks? Do they jointly influence bank probability of default? What impact do these consolidated risks have on bank profitability? And if so, what measures should be adopted to manage both risks together?

In view of the above, this study is centered on the profitable, efficient and viable remaking of deposit money banks in Nigeria within the matrix of the implementation of strategic and effective credit and liquidity management policies.

Research hypotheses

Hypothesis I

Ho: There is no significant relationship between bank credit management and bank profitability.

Hi: There is a significant relationship between bank credit management and bank profitability.

Hypothesis II

Ho: There is no significant relationship between bank liquidity management and profitability.

Hi: There is a significant relationship between bank liquidity management and profitability.

THEORETICAL FRAMEWORK

Over the years, different theories have been formulated in ensuring the availability and sufficiency of liquidity at any point in time. The following theories shall be considered in the validation of this study;

i. Liquidity Asset Theory: This focuses on the asset side of the balance sheet and argues that banks must hold large amount of liquid assets against possible demand or payment cushion of readily marketable short term liquid assets against unforeseen circumstances (Ngwu, 2006).

ii. Shiftability Theory: This is based on the proportion that banks liquidity is maintained if it holds assets that could be shifted or sold to other lenders or investors for cash. Also, these assets could be shifted to the Central Bank for cash without
material loss in case of necessity than relying on maturities to solve their liquidity problems (Ngwu, 2006).

iii. **Anticipated Income Theory**: This theory is of the view that banks liquidity can be estimated and met if scheduled payments are based on the income of the borrower. It emphasizes that banks should relates loans repayment to income rather than relying heavily on collaterals. That is, bank liquidity can be influenced by the maturity pattern of loans through customers’ installments rather than those secured by real estate (Ngwu, 2006).

iv. **Commercial Loan Theory**: Also called the real bills theory states that banks should advance short term self-liquidating productive loans to business firms. In other words, banks should finance the movement of goods through the successive process of production so that once these goods are sold, the loans will liquidate themselves. Such loans are termed inventory or working capital loan (Ngwu, 2006).

v. **Liabilities Management Theory**: This theory advocates that a bank can meet its liquidity requirement by bidding the market for additional funds. In other words, they can borrow money from the money market to meet their liquidity needs instead of granting self liquidating loans (Jhingan, 2010).

**LITERATURE REVIEW**

Credit risk is a serious threat to the performance of banks which when unchecked would lead to the total collapse of banks. Liquidity risk also act as a snare to banks with an unsound risk assessment and control policy. In the face of current events in the banking sector, these two risks cannot be ignored as they have considerable bearing on the performance and survival of banks (Coyle, 2000). In order to reduce the combined effect of these risks on the overall default risk of banks, there is need for efficient credit and liquidity management policies to be formulated and fully implemented in banks.

Credit management policy is a comprehensive process that deals with identifying the target markets, credit extension; credit monitoring and identifying the proceeds. Credit management policy entails the mechanisms, standards and parameters that guide the bank officers in granting loans and managing the loan portfolio under the banking discipline. It is a set of guidelines designed to maximize cost associated with credit while maximizing benefits from it (McNaughton, 1996). Marsh (2008) further added that credit management policy assist financial institutions’ credit department in the extension of credit privileges governed by rules and guidelines established by top management.
According to Jhingan (2010), a bank needs a high degree of liquidity in its assets portfolio. The liquidity of assets refers to the ease and certainty with which it can be turned into cash. The bank must hold a sufficient large proportion of its assets in the form of cash and liquid assets for the purpose of profitability. If the bank keeps liquidity the uppermost, its profit will be low. In the other hand, if it ignores liquidity and aims at earning more, it will be disastrous for it. This in managing investment portfolio a bank must strike a balance between the objectives of liquidity and profitability. This balance must be achieved with a relatively high degree of safety.

According to Graham (1990), profitability is always associated with performance and productivity, therefore true pure profit is the increase in wealth that an investor gets out making an investment taking into consideration all costs associated with it including the opportunity cost of capital. In the banking industry, every credit granted attracts an interest to the bank. Hence bank lending operations are risky but very profitability. In order to minimize these risks inherent in banking activities, there is need for efficient, effective and strategic credit and liquidity management, which will in turn accelerate the tempo of profits.

Until the recently, lending has been the essence of deposit money banks and in fact, now, a colossal part of banks assets are in credit grants. As a result, the formulation and execution of a sound lending policy constitute part of the most vital responsibility of bank management. Kargi (2011) opined that well conceived lending policies and careful credit practices are essential for a bank if it is to perform its credit creating functions effectively and efficiently and at the same time minimize or eliminate the risk inherent in any extension of credit. It is important to note that the type and number of loans a bank will make as well as to whom it will grant credit and at what conditions and circumstances, requires a sound policy decision; adequate care must be taken in the process of arriving at such decisions. Thus, a meaningful periodic appraisal of lending and credit administration of a bank in the light of ever changing environmental conditions is necessary.

Another important aspect of lending policies and guidelines is in respect of payment. Credit is commonly believed to be the lifeblood of the economy. If this assertion is correct, then any credit which ceases to flow becomes stagnant. It should therefore be a basic policy of deposit money bank lending that any money loaned should flow back to the bank in form of repayment. A sound bank loan should be collectable from the anticipated income or profit of the borrower rather than from liquidation of any collateral that may be pledge (Kargi 2011).

Apart from individual loans, it is also important that the overall quality of the loan portfolio and in which way they are carried out be monitored. How elaborate, effective and efficient this monitoring is performed depends on the size of the bank, the number of branches a bank has as well as the variation in marketing. There are basically two methods of monitoring bank loans
as contained in Gujarati and Sangeetha (2007). The first is the external method where banks use external auditors, examiners and bank inspectors as independent check. The internal method contains three methods. The first methods is called continuing quality control where constant quality control is carried out within each branch at the head office by a credit committee set up to survey and report on the quality of lending. The second method is to establish a loan audit department with a reporting authority directly to the senior manager of the banks via the controller or accountant. The third method is inspection. A team inspects all branches and head office division on a periodic basis. Each inspection is usually carried out as a surprise to examine the documentation of loan, controlling the follow-up of payments or collateral.

**Impact of credit risk on profitability**

It is a major concern for bank customers to be aware of the safety of their deposits in any given bank. For this reason, it is very essential for banks to critically assess the customers who demand the extension of credit or loan facility before granting such. This is because a weak and poorly administered credit policy would lead to bad debt in the loan portfolio of banks. This will in-turn affect the entire asset strength of the banks which consequently posses a liquidity threat to the bank. To this, Pandey (2011) advances that the planning, monitoring, collection and management of lent funds is core of the credit department which must be effectively carried out to ensure the survival of the banking industry.

If credit risks increase with the growing volume of credit transactions in banks, bad and doubtful debts will claim a bulk of the supposed profit estimated to be earned by banks. As these risks remain unchecked, the profitability of banks reduces with each transaction. This also reduces the operational performance of bank.

**Impact of liquidity risk on profitability**

Cash is the important current assets for the operation of any business. It is the input needed to keep the business running continuously. A bank as a business concern needs to have cash and liquid assets which it can easily convert into cash at short notice. Pandey (2011) indentifies the types of assets available to a bank to include cash, deposits with the central bank, treasury bills. Thus, for banks to remain in the business of financial intermediation, they must formulate policies to ensure the availability of cash and liquid assets in the asset portfolio at any point in time.

Liquidity risk reduces the ability of the bank to meet its financial obligations as they fall due. When this risk remains unchecked, banks will lose customers thereby reducing the volume
of deposits. When deposits reduce, the bank will have insufficient funds for other investments; this significantly reduces the level of profitability.

Again, a high liquidity risk causes a run on the bank. This run is evidenced in the panic withdrawal of deposits by customers from the bank. This adversely affects the potentials of the bank by keeping away would be customers and potential investors from the bank. Consequent upon this, the bank’s operations reduce drastically and results in a significant reduction in profit.

RESEARCH METHODOLOGY
The study adopted descriptive research design where questionnaires were administered to a sample size of eighty respondents. All responses pertaining to both dependent and independent variables on five point Likert scale. The data collected were analyzed using Pearson correlation test.

Sample Collection
The objective of this study is to examine the impact of credit risk and liquidity risk management on deposit money banks profitability. The target sample frame is First Bank of Nigeria Plc. A total of 80 questionnaires were hand delivered.

The sample technique adopted in this research is the random sampling techniques. A number of the sample was randomly selected based on the assumption that the sample so selected has the same parameters contained in the population to yield research data that can be generalized into a larger population. The probability sampling techniques was also used to make sure that all the staff, customers and clients of the selected bank had an equal chance of being selected.

Data treatment techniques
The data collected were presented in tabular forms after summarizing and classifying them. The tabulated data was then analyzed using the simple percentage method to compare the responses. A higher percentage mean acceptance while a lower percentage means rejection.

In testing the hypotheses using Pearson correlation, the responses of the respondents are ranked in order of strength;

- Strongly Agree (SA) -5
- Agree (A) -4
- Undecided (U) -3
- Disagree (D) -2
- Strongly Disagree (SD) -1
The ranked responses are called the “X” variables while the number of respondents to a given response is the “Y” variables. Using the Pearson product moment correlation, the degree of relationship of the variables is expressed as:

\[ r = \frac{N\sum XY - (\sum X)(\sum Y)}{\sqrt{[N\sum (X)^2 - (\sum X)^2][N\sum (Y)^2 - (\sum Y)^2]}} \]

Where:
- \( r \) = Correlation result (coefficient)
- \( N \) = Number of Items
- \( \sum \) = Summation

**Decision Rule:**
- **a.** If \( r = 0.0 - 0.3 \) there is negligible relationship, hence, accept Ho (the null hypothesis)
- **b.** If \( r = 0.3 - 0.5 \), there is a low relationship, hence accept Ho.
- **c.** If \( r = 0.5 - 0.8 \), there is a substantial relationship, hence, reject Ho and accept Hi
- **d.** If \( r = 0.9 - 1.0 \), there is a very high relationship, hence, reject Ho and accept Hi.

**ANALYSIS AND FINDINGS**

As can be seen from table 1, 63% strongly agreed, 19% agreed, 13% were undecided, 5% disagreed and 0% strongly disagreed that there is a relationship between credit management and bank profitability.

<table>
<thead>
<tr>
<th>Reponses</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SA</td>
<td>30</td>
<td>20</td>
<td>50</td>
<td>63</td>
</tr>
<tr>
<td>A</td>
<td>10</td>
<td>5</td>
<td>15</td>
<td>19</td>
</tr>
<tr>
<td>U</td>
<td>5</td>
<td>5</td>
<td>10</td>
<td>13</td>
</tr>
<tr>
<td>D</td>
<td>5</td>
<td>0</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>SD</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>50</strong></td>
<td><strong>30</strong></td>
<td><strong>80</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

In table 2, 50% strongly agreed, 25% agreed, 13% were undecided, 6% disagreed and 6% strongly disagreed that there is a relationship between liquidity position and profitability.
Table 2: Bank liquidity has a significant impact on bank profitability

<table>
<thead>
<tr>
<th>Responses</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SA</td>
<td>25</td>
<td>15</td>
<td>40</td>
<td>50</td>
</tr>
<tr>
<td>A</td>
<td>10</td>
<td>10</td>
<td>20</td>
<td>25</td>
</tr>
<tr>
<td>U</td>
<td>10</td>
<td>0</td>
<td>10</td>
<td>13</td>
</tr>
<tr>
<td>D</td>
<td>5</td>
<td>0</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>SD</td>
<td>0</td>
<td>5</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td>50</td>
<td>30</td>
<td>80</td>
<td>100</td>
</tr>
</tbody>
</table>

In table 3, 44% strongly agreed, 25% agreed, 12% were undecided, 0% disagreed and 19% strongly disagreed that there is a positive relationship between liquidity risk and credit risk in banks.

Table 3: There is a positive relationship between credit risk and liquidity risk in banks

<table>
<thead>
<tr>
<th>Responses</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SA</td>
<td>20</td>
<td>15</td>
<td>35</td>
<td>44</td>
</tr>
<tr>
<td>A</td>
<td>10</td>
<td>10</td>
<td>20</td>
<td>25</td>
</tr>
<tr>
<td>U</td>
<td>10</td>
<td>0</td>
<td>10</td>
<td>12</td>
</tr>
<tr>
<td>D</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>SD</td>
<td>10</td>
<td>5</td>
<td>15</td>
<td>19</td>
</tr>
<tr>
<td>Total</td>
<td>50</td>
<td>30</td>
<td>80</td>
<td>100</td>
</tr>
</tbody>
</table>

In table 4, 34% strongly agreed, 25% agreed, 9% were undecided, 26% disagreed and 6% strongly disagreed that banks are aware of the increasing effect of credit and liquidity risks on banks’ performance.

Table 4: Banks are aware of the increasing effect of credit and liquidity risks on bank performance

<table>
<thead>
<tr>
<th>Responses</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SA</td>
<td>19</td>
<td>8</td>
<td>27</td>
<td>34</td>
</tr>
<tr>
<td>A</td>
<td>16</td>
<td>4</td>
<td>20</td>
<td>25</td>
</tr>
<tr>
<td>U</td>
<td>4</td>
<td>3</td>
<td>7</td>
<td>9</td>
</tr>
<tr>
<td>D</td>
<td>11</td>
<td>10</td>
<td>21</td>
<td>26</td>
</tr>
<tr>
<td>SD</td>
<td>0</td>
<td>5</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td>50</td>
<td>30</td>
<td>80</td>
<td>100</td>
</tr>
</tbody>
</table>
Test of Hypotheses

Hypothesis I

Ho: There is no significant relationship between credit management and bank profitability
Hi: There is a significant relationship between credit management and bank profitability

Table 5: Response from question one of the questionnaire

<table>
<thead>
<tr>
<th>Responses</th>
<th>Total From males and females (frequency)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SA</td>
<td>50</td>
</tr>
<tr>
<td>A</td>
<td>15</td>
</tr>
<tr>
<td>U</td>
<td>10</td>
</tr>
<tr>
<td>D</td>
<td>5</td>
</tr>
<tr>
<td>SD</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
</tr>
</tbody>
</table>

Table 6: Pearson Product Moment Correlation of the relationship between credit management and bank profitability

<table>
<thead>
<tr>
<th>Responses (X)</th>
<th>Frequency (y)</th>
<th>$X^2$</th>
<th>$Y^2$</th>
<th>XY</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>50</td>
<td>25</td>
<td>2500</td>
<td>250</td>
</tr>
<tr>
<td>4</td>
<td>15</td>
<td>16</td>
<td>225</td>
<td>60</td>
</tr>
<tr>
<td>3</td>
<td>10</td>
<td>9</td>
<td>100</td>
<td>30</td>
</tr>
<tr>
<td>2</td>
<td>5</td>
<td>4</td>
<td>25</td>
<td>10</td>
</tr>
<tr>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>$\sum X = 15$</td>
<td>$\sum Y = 80$</td>
<td>$\sum X^2 = 55$</td>
<td>$\sum Y^2 = 2850$</td>
<td>$\sum XY = 350$</td>
</tr>
</tbody>
</table>

Source: Computation from table 5

\[
r = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{[N \sum (X)^2 - (\sum X)^2]} \ [N \sum (Y)^2 - (\sum Y)^2]}
\]

\[
r = \frac{5350 - (15)(80)}{\sqrt{(5)(55) - (15)^2} \ [5(2850) - (80)^2]}
\]

\[
r = \frac{1750 - 1200}{\sqrt{50} \times 7850}
\]

\[
r = \frac{550}{626.5} = 0.88
\]
**Decision:** The correlation coefficient \( r = 0.88 \) means that there is a very high relationship between the variables tested. We therefore reject Ho and accept Hi which states that there is a significant relationship between credit management and bank profitability.

**Hypothesis II**

**Ho:** There is no significant relationship between bank liquidity and profitability.

**Hi:** There is a significant relationship between bank liquidity and profitability.

**Table 7: Response from question 2 of questionnaire**

<table>
<thead>
<tr>
<th>Responses</th>
<th>Total From males and females (frequency)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SA</td>
<td>40</td>
</tr>
<tr>
<td>A</td>
<td>20</td>
</tr>
<tr>
<td>U</td>
<td>10</td>
</tr>
<tr>
<td>D</td>
<td>5</td>
</tr>
<tr>
<td>SD</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
</tr>
</tbody>
</table>

**Table 8: Pearson product moment correlation of the relationship between bank liquidity and profitability**

<table>
<thead>
<tr>
<th>Responses (X)</th>
<th>Frequency (y)</th>
<th>( X^2 )</th>
<th>( Y^2 )</th>
<th>XY</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>40</td>
<td>25</td>
<td>1600</td>
<td>200</td>
</tr>
<tr>
<td>4</td>
<td>20</td>
<td>16</td>
<td>400</td>
<td>80</td>
</tr>
<tr>
<td>3</td>
<td>10</td>
<td>9</td>
<td>100</td>
<td>30</td>
</tr>
<tr>
<td>2</td>
<td>5</td>
<td>4</td>
<td>25</td>
<td>10</td>
</tr>
<tr>
<td>1</td>
<td>5</td>
<td>1</td>
<td>25</td>
<td>5</td>
</tr>
<tr>
<td>( \sum X=15 )</td>
<td>( \sum Y=80 )</td>
<td>( \sum X^2=55 )</td>
<td>( \sum Y^2=2150 )</td>
<td>( \sum XY=325 )</td>
</tr>
</tbody>
</table>

Source: Computation from table 7

\[
r = \frac{N\sum XY - (\sum x)(\sum y)}{\sqrt{[N\sum (X^2) - (\sum X)^2] [N\sum (Y^2) - (\sum Y)^2]}}
\]

\[
r = \frac{5(325) - (15)(80)}{\sqrt{[5(55) - (15)^2] [5(2150) - (80)^2]}}
\]
\[ r = \frac{1625 - 1200}{\sqrt{50 \times 4350}} \]
\[ r = \frac{425}{466} = 0.91 \]

**Decision:** The correlation coefficient \( r = 0.91 \) means that there is a very high relationship between the variables tested. We therefore reject Ho and accept Hi which states that there is a significant relationship between bank liquidity and profitability.

**CONCLUSION**
For effective and efficient performance of banks, there is need for strategic credit risk and liquidity risk policy formulation and implementation in full. Credit and Liquidity risk management are one of the key factors for bank survival. This study investigated their relationship in Nigeria Money deposit bank using first bank of Nigeria plc as a case study. It was revealed that each category of risk has a significant impact on bank profitability. It was also documented that the interaction of both risk categories significantly determines banks probability of default.

The stability of a bank is a function of the admixture of credit and liquidity risk management; hence, these two should be administered. Based on the study findings, the following recommendations were made for implementation.

Deposit money banks should set up effective system of internal controls to monitor the risk control mechanisms in use. This would help ensure complete compliance with bank philosophy and also help make adjustments where necessary.

Deposit banks should always maintain a balance between deposit-loan ratio. This is because an excess in any would result in asset liabilities mismatch. Also, if excess loans are granted out of the available deposits, liquidity stands threatened thereby resulting in a run on the bank.

**SCOPE OF FUTURE RESEARCH**
The researcher suggests the following areas for further studies.

a. The impact of credit risk on liquidity contraction and expansion in Nigerian Banks.

b. The consolidated impact of credit and liquidity risks on economic growth in Nigeria.

c. Risk assessment and control mechanisms in deposit banks in Nigeria.
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