

# An Empirical Investigation of the Liquidity-Profitability Relationship in Nigerian Commercial Banks

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## Abstract

The study critically assessed the relationship between liquidity and profitability of Nigerian commercial banks. Purposive sampling method was used to select First Bank Nigeria Plc as the case study being the oldest and the biggest among the 24 commercial banks currently operating in Nigeria. Secondary data collated from First Bank's annual reports of ten years (2002-2011) were used for the study. The regression analysis of ordinary least square was employed to analyse the data. Student's t-test was also used to test the relevant hypothesis. Findings show that there is a very high correlation between liquidity of banks and their profitability. The result further shows that liquidity is a determining variable when it comes to banks profitability. To this end, it was therefore recommended that the monetary authority should create a conducive environment that can boost banks' liquidity which will eventually transform to loanable funds and profit. Also, the Nigerian commercial banks are advised to put in place efficient liquid management to forestall insolvency and bankruptcy.

**Keywords:** Profitability, Liquidity, Insolvency

## 1. Introduction

The causes of failure in Nigerian commercial banks have been linked to various reasons. The most prominent of these reasons is due to poor liquidity management. It is very clear that as a result of the formation of a number of commercial banks, square pegs have been placed in round holes. This is to say that the establishment of many commercial banks has led to the employment of some inefficient and experienced managers. This is coupled with the corrupt tendencies in the mind of many of these bankers, which has led to the distress of many banks recently.

Other reasons, why banks fail are as a result of some problems affecting solvency and profitability. However, it is generally believed that liquidity is more important than profitability. This is because most organizations/banks actually make profits but do not possess enough liquid assets to offset current obligations to both customers and creditors.

Though, according to Akhator and Isedu (2000), the major objective of a commercial bank is to make profit. Banks hold portfolios of assets and given the characteristics and distribution of their liabilities, they attempt to structure their liabilities and assets in such a manner as to yield the highest returns. Profits made on loans are as a result of higher interest rate than those paid on deposits. However, if a bank is unable to attract sufficient deposits, but continues to expand its lending activities, illiquidity is imminent (Adekanye 2010).

The large holding of current assets, especially cash, strengthens the firm's liquidity position, reduces risk and further reduces the overall profitability. Thus, a risk-return trade-off is involved in holding current assets (Pandey, 2004).

Therefore, it is very important to manage current assets efficiently in order to safeguard a firm against the danger of illiquidity and insolvency because investment in current assets surely affects a firm's profitability, liquidity and risk.

Since to a large extent, there is usually disagreement between liquidity and profitability, while trying to manage current assets, this research paper is out to empirically investigate the authenticity or otherwise of this notion with a focus on Nigerian commercial banks and to see how the disagreement, (if any) can be resolved.

## 2. Literature Review

### 2.1 Liquidity and Its Uses

The concept of liquidity is a very vital issue in the management of banks and other organizations. This is because banks have to ensure that their customers, the regulatory authorities and the public never lose confidence in them as long as they meet their customer's financial obligations as they fall due.

Anao et al (1999), defined liquidity as the amount of cash or near cash assets that a company has or can obtain to transact business and also finance its operations. That is to say, liquid assets are assets which can readily be converted to cash in case of need. These include cash, debtors, short term marketable securities like; commercial papers and investments which mature within one year.

According to Pandey (2004), liquidity is viewed as the convenience and speed of transforming assets into cash or transferring assets from one form to another without any loss of value.

Many banks go bankrupt and collapse not because they are not profitable, but because they do not have enough cash or liquid assets to transact with or honour their maturing obligations. Most of their cash will be tied up in debtors yet to be collected, in immobile stocks and in idle fixed assets. Therefore an appropriate level of liquidity must be maintained, which continuously can be used in carrying on business.

To corroborate the above, Akhator et al (2002) asserted that adequate liquidity in banks is needed to meet commitments when due and to undertake new ones and to honour the maturing obligations such as:

- Meet deposit fluctuation overflow (outflow)
- Compensate for non-receipt and non-flow of funds (Credit risks and shortfall in expected inflow of loan requirements).
- Generate and sustain public confidence on the solvency of the bank.
- Avoid forced sales of assets at losses
- Minimize the use of discount, window borrowing and its attendant closer supervision by the financial regulators.

## 2.2 Factors Affecting Liquidity

According to Akhator (2002), a number of factors affect the level of aggregate liquidity as measured by traditional ratio. They are:

- i. Charges in loan characteristics: Loan requirement is a very important factor in a banks liquidity position. It constitutes a significant source of funds for making new loans and for meeting deposit withdrawals. If the rate of loan repayment or deposit turnover is reduced, the liquidity is also reduced.
- ii. Deposit Velocity: Bank liquidity is adversely affected by increase in the turnover of demand deposits. If market interest rate rises significantly and banks cannot pay the higher interest on demand deposits because of legal restrictions or outright prohibition, depositors will certainly switch to holding other savings and time deposits. However if rates of interest on those deposits are also under tight control and ceiling, depositors may decide to move their funds to less controlled credit instruments like near monies outside the banking system.
- iii. Pledging Securities: Securities pledged to protect government deposits are not available for other liquidity needs. The pledging requirement reduces the banks liquidity as banks cannot sell those assets to meet loan demands or deposit withdrawals. In Nigeria, stabilization securities are used by the central bank to directly reduce bank liquidity. Banks must acquire these securities and are not free to sell them even in the face of acute liquidity shortage.
- iv. Liability sources of liquidity: This is another factor affecting aggregate liquidity in recent years. Banks have increasingly established liability sources of liquidity both to make loans and to meet deposit withdrawals. Larger banks like First Bank Plc., Zenith Bank Plc. e.t.c in Nigeria have been able to obtain sizeable amount of fund by issuing negotiable certificate of deposit and to a lesser extent by borrowing Euro-currency and inter-bank funds. Sources of liquidity for these banks include, loan from sales note, discount window and repurchase agreements. However, these liability sources often come under varying degrees of regulatory restrictions. Another problem is that supplies of certificate of deposit and the various non-deposit sources of funds are highly limited and non-stable in Nigeria and therefore may not be reliable sources of liquidity especially during the period of acute liquidity needs (Iganiga, 2000).
- v. Loan expansion: Rapid loan expansion reduces more sharply during the period of economic activity because the central bank often responds by reducing reserve supplies of the commercial banks

## 2.3 The Concept of Profitability

Profitability is defined as the measure that indicates whether a company is performing satisfactorily or not. It is used among other things to identify if a company may be a worthwhile investment opportunity and to determine a company's performance relative to its competitors.

Pandey (2004) opined that a company should earn profit to survive and grow over a long period of time. According to him, profit is essential but it would be wrong to assume that every action initiated by management of a company should be aimed at profit maximization irrespective of social consequences. It is unfortunate however, that sufficient profit must be earned to sustain the operations of the business to be able to obtain more funds from investors for expansion and growth and to contribute towards the social welfare of the society.

Profit is the difference between revenue and expenses over a period of time (usually one year). Profit is the ultimate output of a company and a company will have no future if it fails to make sufficient profits. Therefore the manager should continuously evaluate the efficiency of the company in terms of profit. Creditors and owners are both interested in the profitability of a company. Creditors want to get interest and principal payment regularly. Owners want to get a required rate of return on their investment which is only possible when the company earns enough profits.

## 2.4 Risks and Profitability

A decision on the appropriate margin of safety will be governed by the consideration of risks. Each solution (increasing liquidity, lengthening the debt collection schedule, or a combination of both) will cost the firm a considerable profit making ability. The profitability assumptions therefore suggest a low proportion of current liabilities to total liabilities. This strategy, of course will result in a low level of working capital.

In the banking industry, risk is viewed as the probability of technical insolvency. In a legal sense, insolvency occurs whenever the assets of a bank are less than its liabilities net worth, and on the other hand, technical insolvency occurs whenever a bank is unable to meet its cash obligations (James, 1990).

Therefore, the way in which the assets of a bank are financed involves a trade-off between risk and profitability.

## 2.5 Liquidity versus Profitability

The important aims of the working capital management are profitability and solvency. Solvency used in the technical sense refers to the firm's continuous ability to meet maturing obligations. To have higher profitability, the firm may sacrifice solvency and maintain a relatively low level of current assets. When the firm does so, profitability will improve.

Akhaton et al (2002), is of the view that profit is an objective of commercial banks which is a function of loan. Profits results as loans are granted at higher interest rate, and then a fraction paid on deposit. In general, the more liquid an asset is, the lower rate of interest paid on it.

Hence, there is a trade-off also between profitability and liquidity. If the bank grants too much loan, it may end up in illiquidity. Similarly, a bank that maintains large reserve asset may find its profit lower than needed to continue in the industry.

## 3. Methodology

The methodology adopted for this research work was empirical in nature. Secondary data used were obtained from the annual reports and accounts of the First Bank Nigeria Plc. for the period of 10 years (2002-2011).

First Bank Nig. Plc. was purposively chosen from the 24 commercial banks in Nigeria for the purpose of the study. The Bank is the oldest Bank and the strongest in the country.

### 3.1 Model Specification

The paper used quantitative method of data analysis. A simple linear regression analysis was used to determine the effect of liquidity on banks' profitability. The t-test and the product moment correlation were also used to measure the relationship between the two variables.

The regression model is given as follows:

$$Y = f(x)$$

Y being profitability and x being liquidity

The equation can be expressed explicitly thus:

$$Y = a + bx + e$$

Where Y = Profitability (the dependent variable)

x = Liquidity (the independent variable)

a = The estimate of some unknown parameters

b = The regression coefficient (the ratio of the change in profitability as a result of the change in liquidity)

Liquidity in this paper connotes First Bank's cash and balances with other Banks plus treasury bills.

#### 4.1 Data Presentation and Analysis

The data gathered were basically from the financial summary of First Bank Nig. Plc. and are shown below.

Table 1. Ten Year Financial Summary of First Bank Nig. Plc.

Year	Cash and Balances with other banks + Treasury bills ₦' m	Profit after Tax ₦' m
2002	186,978	3,979
2003	230,497	10,323
2004	195,800	11,096
2005	194,498	12,184
2006	251,784	16,053
2007	358,577	18,355
2008	483,815	30,473
2009	668,772	35,074
2010	482,386	32,123
2011	607,835	47,462

Source: First Bank of Nigeria PLC. Annual Reports.

The analysis of result are shown as follows:

Table 2. Result From First Bank Plc Financial Data

Dependent variable: Y

Method: Least squares

Sample: 2002-2011

Included observation: 10

Variable	Coefficient	Std. Error	t-statistic	Prob
C	-4383.478	3663.230	-1.196616	0.2657
X	0.071281	0.009046	7.879464	0.0000
R-squared	0.885854	Meandependent	Var.	21712.20
Adjusted R-squared	0.871586	S.D.dependent	Var.	13815.02
S.E. of regression	4950.595	Akaike info	Criterion	20.02926
Sum squared resid.	1.96E+08	Schwarz	Criterion	20.08978
Log likelihood	-98.14630	F. statistic		62.08596
Durbin-Watson stat.	1.439638	Prob(F.Statistic)		0.000049

Source: computed by the researcher with the aid of SPSS

#### 4.2 Findings

From the analysis,  $R^2$  shows that 88.59% of the observation was explained by the model while the remaining 11.41% was unexplained.

Also R which is the square root of  $R^2$ , representing the product moment correlation coefficient is equal to 0.941198 or 94.12%. This shows that there is a very strong positive correlation between liquidity and profitability of First Bank Nig. Plc.

The regression analysis can be expressed in equation form as follows:

$$Y = -4383.478 + 0.071281X$$

$$S.E = (3663.230) \quad (0.009046)$$

This result shows that every unit change in the independent variable (liquidity) will cause the dependent variable (profitability) to change by 0.071281 or 7.13%. This shows that there are other variables and actions that contribute to profitability among Nigerian commercial Banks apart from liquidity.

#### 4.3 Test of Hypothesis

The hypothesis tested is indicated below:

$H_0$ : Increase in liquidity does not lead to increase in profitability.

$H_1$ : Increase in liquidity leads to increase in profitability

Using the t-test statistic, the t-calculated = 7.879 while the t-table value = 2.262 at 5% sig. level.

Therefore, since the  $t^t < t^c$  (i.e.  $2.262 < 7.879$ ), the alternative hypothesis is accepted and the null, rejected, meaning increase in liquidity among Nigerian commercial Banks leads to increase in their profitability. This also signified that the value of b is statistically significant.

## 5. Conclusion

The paper deduced that there is a direct correlation between Bank's liquidity and profitability. The study shows that the role of liquidity has been a great influence on Banks profitability.

Efficiency in liquidity management therefore, will help to ensure that Banks' liquid funds are adequate for its operations at any given time and hence, boost their profitability because liquid funds are converted to loanable funds and advances to customers from which eventually profits are generated in form of interest for the Banks.

It is therefore of note that the monetary authority should not impose regulations that can jeopardise the liquidity of Nigerian Banks since a rise in Banks liquidity will help boost bank's profit and hence assist the banks to grow to standard as expected in the economy.

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