

# The Impact of Capital Adequacy on Deposit Money Banks' Profitability in Nigeria

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## Abstract

The main objective of this paper is to empirically assess the impact of capital adequacy on Deposit Money Banks' profitability in Nigeria, taking a case study of five selected banks. The empirical analysis covered the period from 1981 to 2011. The data for the study were obtained from secondary sources including the annual reports and financial statements of the selected banks and Central Bank of Nigeria (CBN) statistical bulletin. The study adopted the Engle and Granger two steps procedure in co-integration. The study revealed that capital adequacy plays an important role in explaining banks Returns On Assets (ROA) which is a measure of banks' profitability. The positive and significant relationship between capital adequacy and banks' profitability suggest that banks with more equity capital are perceived to have more safety and such advantage can be translated into higher profitability. The higher the capital ratio, the more profitable a bank will be. Based on the findings, It was recommended that there should be a constant review of minimum capital requirement of deposit money banks in Nigeria to the optimal level. Also Nigeria banks should be well capitalized to enable them enjoy access to cheaper sources of funds with subsequent improvements in profit levels; this would go a long way to help the public maintain confidence in the banks and also accommodate the credit needs of customers.

**Keywords:** Capital Adequacy, Banks' Profitability, Return on Assets (ROA), Deposit Money Banks, Equity to Total Assets Ratio (EQTA)

## 1. Introduction

According to Ejem, Jombo and Oriko (2012), the banking sector in any economy serves as catalyst for growth and development. Banks are able to perform these roles through their crucial functions of financial intermediation, provision of an efficient payment system and facilitating the implementation of monetary policies. In intermediation, banks are involved in the mobilization of savings of the surplus economic units and channeling such funds to the deficit economic units particularly business enterprises for the purpose of expanding productive capacity for economic growth and development. In operating the payment mechanism, the banking system liability serves as a medium of exchange. In execution of monetary policies, banks serve as agents through which the nation's monetary policies are implemented.

For effective performance of the above functions, banks have to maintain proper liquidity to keep their doors open in the short run. This would help maintain adequate profitability to enhance solvency in wooing their existing and new customers and shareholders. Apart from maintaining liquidity, banks are also profit oriented businesses. Banks in Nigeria generate profits by maintaining earning assets, such as loans and advances, investment in bonds, government securities, ordinary and preferred stocks. It is important for banks to generate income for the following reasons:

- a. To meet operating cost.
- b. To meet shareholders interests. The owners of the bank expect to get dividend at the end of the year.
- c. To show management efficiency. The level of management efficiency is measured by the level of profit the bank is able to generate; the bank may go into liquidation if it fails to generate profits.
- d. To measure the growth of the bank. When banks make profit, their shares gain strength and this improves the market price of the banks' shares.

The importance of bank Profitability has made researchers, academics, banks management, shareholders and banks regulatory authorities to develop considerable interest on the factors that determines banks profitability (Athanasoglou, Sophocles and Matthaïos, 2005).

According to Nzotta (2004), to a very large extent, the strength of a bank depends on the capital funds available to it. A bank's capital can be defined as the equity value of a bank equated to the present value of its

future net earnings. Generally, banks capital represents the owners' net worth in a bank and it includes the pay in capital and all additions to the capital resources of the bank. Bank capital helps in maintaining confidence of the public in the bank. It assures the public that depositors' funds are safe, that the bank can accommodate the credit needs of the community, it serves as a means of assessing the strength of a bank, it assures the regulatory bodies that the financial system is not threatened or weakened by any crises in a single bank or group of banks. Bank capital also ensures the safety of a bank, it helps the bank to avoid the risk of insolvency, and also to support the credit risk a bank is called upon to assume in a normal business leading. Here, the larger the capital resources, the more loans a d advances the bank could grant both on the aggregate and for single individuals. A bank's capital resources help the supervisory authorities in assessing the adequacy of its capital in relation to its loans and investments. For example, the monetary policy thrust stipulates capital adequacy ratio of not less than 1:8. The implication is that banks must maintain sufficient level of capital resources consistent with the risk assets it is carrying. Therefore, capital adequacy represents the amount of capital resources needed by banks for its operations, consistent with the amount of risks and risk assets it is assuming.

The generic name "Deposit Money Bank" was adopted for all banks (Commercial and Merchant) operating in Nigeria since the commencement of universal banking in 2001. Banks owe some basic responsibilities to their communities. The traditional functions, which they render in form of financial intermediation, must be efficiently delivered to retain the confidence of their clients.

Since banks play an important role in the operation of an economy, the stability of banks is of paramount importance to the financial system. As such, an understanding of the factors that determine their profitability is essential and crucial to the stability of the economy. In banking literature, the determinants of profitability are empirically well explored although the definition of profitability varies among studies. Disregarding the profitability measures, most of the banking studies have noticed that capital adequacy, market share, loan-loss provisions and expense control are important factors in achieving high profitability. There is thus a need to empirically analyze the impact of capital adequacy on deposit money banks' profitability in Nigeria.

### 1.1 Research Hypothesis

Ho: Capital adequacy has no significant positive impact on bank profitability

## 2. Literature Review

### 2.1 Capital Adequacy

Capital adequacy is the level of capital necessary for a bank as determined by the regulatory and supervisory authorities to assume the banks financial health and soundness. Capital adequacy, the measure of the solvency of a bank, tells whether a bank has enough capital to support the risks in its balance sheet. Adequate capitalization is an important variable in business, and is more so in the business of using other peoples' money such as banking. According to Onoh (2002), a bank capital fund is considered adequate if it is enough to cover the banks operational expenses satisfy customers with dual needs and protect depositors against total or partial loss of deposits in the event of liquidation or loss sustained by the bank.

The essential characteristics of capital are that it should:

1. Represent a permanent and unrestricted commitment of funds.
2. Be freely available to absorb losses and thereby enable a financial institution to continue operating while the problems are solved.
3. Not impose any unavoidable charge on the earnings of the financial institutions and
4. Rank below the claim of depositors and other creditors in the event of the winding up of a financial institution.

### 2.2 Regulatory Measures to bank's Capital Adequacy in Nigeria

Capital adequacy is an important factor in banking owing to its relative importance in Nigeria like what is obtainable in other countries, the monetary authorities specify from time to time, subject to economic dictates, the minimum capital requirement for licensed banks in the system. The ugly experience of the past as regards banks failure has convinced governments of the necessity of establishing minimum capital requirements for insured banks.

Prior to the adoption of the international convergence of Capital by Central Bank of Nigeria (CBN) in 1990, CBN and the Nigeria Deposit Insurance Corporation (NDIC) have applied some subjective measures in determining banks capital adequacy. The process is usually implemented as part of the examination of a bank. It may be guided by some formula that ultimately rests on all information developed in the process of the examination, including assessment of asset quality as well as management controls and capability.

Generally, the CBN and NDIC in determining bank capital adequacy have put certain factors into consideration. These include issues like applying the relevant sections of the law. But the provision of section 13 of the Bank and Other Financial Institution Act (BOFIA) of 1991, a bank, for example is exempted to maintain at all times, a capital fund unimpaired by losses, in such ratio to all or any assets, or to all or any liability, or to both such assets and liabilities of the bank and all its offices in and outside Nigeria as may be specified by the Central Bank of Nigeria.

Some of the various measures include;

- a. The minimum paid up capital as stipulated by the CBN
- b. Capital adequacy figure obtained from a deduction of the risk content of a classified asset from the adjusted capital.
- c. The ratio of adjusted capital to total loans and advanced.

Since the inception of banking regulation in Nigeria, the banking standard used has been that of the minimum required paid-up capital requirements. And this has over the years witnessed a steady growth in amount since the first Nigerian Banking law was passed in 1952.

The 1952 Banking ordinance for example, stipulated a minimum capital of N25,000 for indigenous and N200,000 for expatriates banks. This rose to N600,000 and N1.5 million for expatriates banks respectively, while the minimum start-up capital for a merchant bank was put at N2 million by the 1976 amendment of the banking act of 1968, it rose to N20 million and N12 million for commercial and merchant banks respectively. By the provision of section 9(2) of the Bank and Other Financial Institution Act (BOFIA) of 1991, the minimum start-up capital for commercial and merchant banks were N50 million and N40 million respectively. In 2005, the Central Bank of Nigeria (CBN) increased the minimum capital requirement to N25 billion.

Furthermore, the Nigeria Deposit Insurance Corporation (NDIC) as the sole authority in the bank failure resolution and identified parameters like stock beta coefficient though not strictly based on ratios that measure the degree of correlation between the yields of bank security and those of the banks peers in the market, that is the securities of other banks of similar capital level and size. The higher the beta coefficient deviation, the greater the risk exposure of the bank and the greater the need for additional capital injection to cover the bank against likely losses and vice versa.

The other measure of banks capital adequacy is the Equity to Total Assets Ratio (EQTA). Equity capital is the immediate source of funds for banks. Going by the stipulation of the 1998 Basel Accord, equity capital is the sum of common stock, perpetual preferred stock, surplus funds, bonus issue reserves, capital reserves and contingencies, and minority equity interest in subsidiary companies. Bank assets consist of investment, bills discounted, short term funds, loans and advances, cash, equipment or lease, fixed assets and other assets. The ratio of Equity capital to total asset is a good measure for the capital adequacy of a bank. The higher the ratio in favor of equity capital, the better it is for bank capital to absorb losses in excess of loan loss reserves provided in the period. Thus, the study adopted Equity to Total Assets Ratio (EQTA) as a measure of capital adequacy.

### 2.1.1 Measures of bank profitability

There are three widely known measures of bank profitability. The three indicators are Net Interest margin (NIM), Return on Assets (ROA) and Return on Equity (ROE). These are divergent views among scholars on the superiority of one indicator over the other as a good measure of profitability in banks. Similarly, anyone or a combination of the indicators can be used to measure profitability in banks depending on the objective of the user or analyst. If the objective is to measure how profitable and efficient the management of a bank is in using the bank's total assets to generate income, Return on Assets (ROA) becomes the most vital indicator to employ.

The study adopted Return on Assets (ROA) as a measure of profitability in banks because ROA measures how profitable and efficient the management of a bank is in using the bank's total assets in generating income.

## 2.2 Empirical Review

Capital ratio has long been a valuable tool for assessing capital adequacy and should capture the general safety and soundness of banks. It is generally believed that well-capitalized banks face lower expected costs of financial distress and such an advantage will then be translated into high profitability. In his study of the determinants of banks' performance for twelve countries selected from Europe, North America and Australia, Bourke (1989) notices a significant positive relation between capital adequacy and profitability. He shows that the higher the capital ratio is the more profitable a bank will be.

Similarly, the studies of Berger (1995) and Anghazo (1997) conclude that banks which are well-capitalized are more profitable than the others in the USA. The positive relation between the capital ratio and profitability is not limited to the US banking industry.

In the study of banking profitability across eighteen European countries for the period 1986-1989, Molyneux and Thornton (1992) also found out that capital ratio impacts banks' performance positively, although such relationship is confined to just the state-owned banks.

Demircug-Kunt and Huizinga (1999) conducted a more comprehensive study which examined the determinants of banking performance for 80 countries, both developed and developing, during the period 1988-1995. They concluded that foreign banks have higher profitability than domestic banks in developing countries, while the opposite holds in developed countries. Nevertheless, their overall results showed support for positive relationship between the capital ratio and financial performance.

Ngo (2006), attempted to find out the effect of Endogenous Capital and Profitability in Banking. He investigated the relationship between bank capital and profitability. According to his study and to the best of his knowledge, no previous paper had analyzed the problem in a two-equation structural model. Contrary to what is often reported with surprising frequency in this field of research, his results showed no statistically significant relationship between capital and profitability. Given non-binding capital requirements his finding was consistent with the view that, while raising capital is costly for banks, it is associated with compensating benefits that offset these additional costs. Consequently, when capital structure is endogenously determined in a profit maximizing equilibrium, no systematic relationship between capital and profit is expected.

Hassan et al (2008) analyzed how bank characteristics and the overall financial environment affected the performance of Islamic banks. Utilizing bank level data, the study examined the performance indicators of Islamic banks' worldwide during 1994-2001. A variety of internal and external banking characteristics were used to predict profitability and efficiency. In general, their analysis of determinants of Islamic bank profitability confirmed previous findings. Controlling for macroeconomic environment, financial market structure, and taxation, the results indicated that high capital and loan-to-asset ratios led to higher profitability. Everything remaining equal, the regression results showed that implicit and explicit taxes affected the bank performance measures negatively while favorable macroeconomic conditions impact performance measures positively. Surprisingly, the results indicated a strong positive correlation between profitability and overhead.

Vong and Anna (2009) examined the impact of bank characteristics as well as macroeconomic and financial structure variables on the performance of the Macao banking industry. The results showed that the capital strength of a bank is of paramount importance in affecting its profitability. A well-capitalised bank is perceived to be of lower risk and such an advantage will be translated into higher profitability. On the other hand, the asset quality, as measured by the loan-loss provisions, affects the performance of banks adversely. In addition, banks with a large retail deposit-taking network do not achieve a level of profitability higher than those with a smaller network. Finally, with regard to macroeconomic variables, their study revealed that only the rate of inflation exhibits a significant relationship with banks' performance.

Flamini, Calvin and Liliana (2009) used a sample of 389 banks in 41 SSA countries to study the determinants of bank profitability. They found out that apart from credit risk, higher returns on assets are associated with larger bank size, activity diversification, and private ownership. Bank returns are affected by macroeconomic variables, suggesting that macroeconomic policies that promote low inflation and stable output growth does boost credit expansion. Their results also indicated moderate persistence in profitability. Causation in the Granger sense from returns on assets to capital occurs with a considerable lag, implying that high returns are not immediately retained in the form of equity increases. Thus, their paper gave some support to the policy of imposing higher capital requirements in the region in order to strengthen financial stability. At last, it was the conclusion of their study that, bank profits are high in Sub-Saharan Africa (SSA) compared to other regions.

Bourke (1989) presents evidence that economic growth, if particularly associated by entry barriers to the banking market, will potentially lift banks profits. Other studies recognized the importance of market growth on banks profitability. Secondly, it is generally believed that a rising interest rate should lead to higher banking sector profitability by increasing the spread between the saving and borrowing rates.

Perry (1992) asserts that the effect of inflation on banks profitability depends on whether inflation is anticipated or unanticipated. If inflation is fully anticipated and interest rates are adjusted accordingly, a positive impact on profitability will result.

### 3. Research Methodology

The analysis is based on a sample of five (5) selected Deposit Money Banks in Nigeria, namely; First Bank of Nigeria Plc, United Bank for Africa Plc, Union Bank of Nigeria Plc, Wema Bank Plc and Afribank Plc. The five selected banks constitute the major and most prominent banks during the period under review. Another justification for selecting these banks is based on the fact that these banks have survived the financial distress and consolidation crises in the Nigerian economy. Withstanding the shock and stress experienced in the financial system over thirty years of their operations is an indication of their stability. The study covered the period from 1981 to 2011. For the purpose of regression analysis, data of over thirty (30) years is proper; a small time series will be meaningless for analysis. The data for the study were obtained from secondary sources including the

annual reports and financial statements of the selected banks and the Central Bank of Nigeria (CBN) statistical bulletin. The study adopted the Engle and Granger two steps procedure in co-integration. In addition, t-statistic was employed to determine the significance of capital adequacy on Deposit Money Banks profit.

### 3.1 Model Specification

In this study, the banks' profitability is measured by its Return on Assets (ROA). The ROA defined as net income divided by total assets, reflects how well a bank's management is using the banks real investment resources (Assets) to generate profits (Vong and Anna, 2009). It could be observed from the literature and empirical reviews, that the factors that affect bank profitability are enormous. Among all these variables, the study adopted Equity to Total Assets (capital ratio), market share, economic growth, inflation, liquidity and interest rates because of the availability of such data in the Nigerian banking environment.

The model used for the study captured the above mentioned variables that may affect banks' profitability. The model is:

$$ROA=f(MKS, EQTA, LQDTY, INFLA, R, G, e)$$

Econometrically, our model is specified as follows:

$$ROA = \psi_0 + \psi_1 EQTA + \psi_2 MKS + \psi_3 LQDTY + \psi_4 G + \Phi_1 INFLA + \Phi_1 R + e$$

Where:

ROA = Return on Asset

EQTA = Equity-to-Total Assets

MKS = Market share

LQDTY = Liquidity

G = Economic Growth;

INFL = Annual Inflation Rate

R = Real Interest Rate

e = error term

$\psi_0$  = is the Intercept (constant term);

The signs  $\psi_1, \psi_2, \psi_3,$  and  $\psi_4$  as well as  $\Phi_1,$  and  $\Phi_1$  represent the marginal increases or decreases in the independent variables.

## 4. Analysis and Findings

The Regression results obtained from the five selected banks are presented in the tables below:

(a) Parsimonious Error Correction Model (First Bank)

TABLE 1: Estimates of Parsimonious Error Correction Model (First Bank (FBN) Plc)

(Sample: 1981-2011)

Variable	Coefficients	Standard Errors	t-statistics	Probability
C	0.408029	0.024190	0.168679	0.868
$\Delta MKS_{(-1)}$	0.039737	0.106748	0.372249	0.714
$\Delta MKS$	0.321211	0.018372	17.4836	0.000*
$\Delta EQTA_{(-1)}$	-0.159952	0.065316	2.448890	0.025**
$\Delta LQDTY$	-0.181343	0.010052	-0.180408	0.859
$\Delta INFLA_{(-1)}$	-0.113821	0.177617	-0.640824	0.530
$\Delta R$	-0.572414	0.620047	-0.923177	0.368
$\Delta G$	0.346722	0.014901	2.106315	0.042**
$\Delta G_{(-1)}$	0.567020	0.055501	0.102164	0.920
$ECM_{(-1)}$	-0.336853	0.12219	-2.75659	0.027**

$R^2=0.90641$ ;  $R^2$  (Adjusted)= -0.76404; SER=0.126400; F-Stat.=81.9445 [0.000];

DW=2.13414 [0.062, 1.00]; Schwarz B.I.C.= -7.70679; \* significant at 1% level;

\*\* significant at 5% level \*\*\* significant at 10% level

(b) Parsimonious Error Correction Model (United Bank for Africa)

TABLE 2: Estimates of Parsimonious Error Correction Model  
United Bank for Africa (UBA) Plc  
 (Sample: 1981-2011)

Variable	Coefficients	Standard Errors	t-statistics	Probability
C	0.101462	0.013801	0.073516	0.942
$\Delta$ MKS <sub>(-1)</sub>	0.027672	0.049957	0.553910	0.587
$\Delta$ MKS	1.08745	0.351405	3.09457	0.005*
$\Delta$ EQTA <sub>(-1)</sub>	0.57490	0.23189	2.21771	0.038**
$\Delta$ LQDTY	-1.50580	1.16098	-1.29701	0.213
$\Delta$ INFLA	0.027863	0.023737	1.17384	0.258
$\Delta$ INFLA <sub>(-1)</sub>	-0.000314	0.000878	-0.357944	0.725
$\Delta$ R	0.0001249	0.000911	0.136969	0.893
$\Delta$ G	0.00330642	0.00133615	1.983611	0.073***
$\Delta$ G <sub>(-1)</sub>	-0.0093272	0.032412	-0.287773	0.777
ECM <sub>(-1)</sub>	-0.239491	0.239491	-4.27337	0.001*

$R^2=0.618814$ ;  $R^2$  (Adjusted)= -0.56749; SER=0.069693;F-Stat.=12.36130 [0.058];  
 DW=2.19294 [0.002, 1.00]; Schwarz B.I.C.= -22.6933; \* significant at 1% level;  
 \*\* significant at 5% level \*\*\* significant at 10% level

(c) Parsimonious Error Correction Model (Union Bank)

TABLE 3: Estimates of Parsimonious Error Correction Model  
(Union Bank of Nigeria (UBN) Plc  
 (Sample: 1981-2011)

Variable	Coefficients	Standard Errors	t-statistics	Probability
C	0.497449	0.945470	0.526139	0.605
$\Delta$ MKS <sub>(-1)</sub>	0.734760	0.318842	2.30447	0.033**
$\Delta$ MKS	0.705451	0.350210	2.01437	0.059***
$\Delta$ EQTA <sub>(-1)</sub>	0.034472	0.034230	2.10709	0.327
$\Delta$ LQDTY	-0.465998	0.544170	-0.856347	0.403
$\Delta$ INFLA <sub>(-1)</sub>	0.619933	0.627419	0.988068	0.336
$\Delta$ R	-0.389061	0.227827	-1.70770	0.105
$\Delta$ G	0.247909	0.220778	1.70770	0.276
$\Delta$ G <sub>(-1)</sub>	0.720198	0.23944	0.300780	0.767
ECM <sub>(-1)</sub>	-0.322280	0.145599	-2.21347	0.040**

$R^2=0.476557$ ;  $R^2$  (Adjusted)=0.214835; SER=0.494535;F-Stat.=1.82085 [0.133];  
 DW=1.48430 [0.000, 0.839]; Schwarz B.I.C.= -98.4550; \* significant at 1% level;  
 \*\* significant at 5% level \*\*\* significant at 10% level

(d) Parsimonious Error Correction Model (Wema Bank)  
 TABLE 4: Estimates of Parsimonious Error Correction Model (Wema Bank)  
 (Sample: 1981-2011)

Variable	Coefficients	Standard Errors	t-statistics	Probability
C	-0.609586	0.261639	-0.232988	0.818
$\Delta$ MKS <sub>(-1)</sub>	0.087061	0.040304	2.13806	0.041**
$\Delta$ MKS	-0.072770	0.056534	-1.28719	0.214
$\Delta$ EQTA <sub>(-1)</sub>	0.185254	0.102635	2.10498	0.088***
$\Delta$ LQDTY	0.0877028	0.035294	2.573447	0.034**
$\Delta$ INFLA <sub>(-1)</sub>	0.0002965	0.000167	1.77493	0.093***
$\Delta$ R	0.0004770	0.000610	0.781444	0.445
$\Delta$ G <sub>(-1)</sub>	0.0062298	0.597756	-1.04220	0.311
ECM <sub>(-1)</sub>	-0.456618	0.205820	-2.21853	0.040**

$R^2=0.740187$ ;  $R^2$  (Adjusted)=0.6460281; SER=0.013537; F-Stat.=3.55844 [0.011];  
 DW=1.80428 [0.000, 0.978]; Schwarz B.I.C.= -70.2601; \* significant at 1% level;  
 \*\* significant at 5% level \*\*\* significant at 10% level

(e) Parsimonious Error Correction Model (Afribank)  
 TABLE 5: Estimates of Parsimonious Error Correction Model (Afribank)  
 (Sample: 1981-2011)

Variable	Coefficients	Standard Errors	t-statistics	Probability
C	-0.111346	0.891656	-0.124875	0.902
$\Delta$ MKS <sub>(-1)</sub>	0.305482	0.148974	2.05058	0.055***
$\Delta$ MKS	0.371352	0.140789	0.026376	0.979
$\Delta$ EQTA <sub>(-1)</sub>	0.026320	0.092790	0.283652	0.780
$\Delta$ LQDTY	0.128379	0.070777	1.81385	0.086***
$\Delta$ INFLA <sub>(-1)</sub>	-0.900185	0.704901	-1.27704	0.218
$\Delta$ R	-0.238042	0.212231	-1.12162	0.277
$\Delta$ G	0.168236	0.024639	6.82815	0.000*
$\Delta$ G <sub>(-1)</sub>	0.118432	0.024611	4.81223	0.000*
ECM <sub>(-1)</sub>	-0.255930	0.118115	-2.15222	0.031**

$R^2=0.812615$ ;  $R^2$  (Adjusted)=0.718923; SER=0.046723; F-Stat.=8.67324 [0.000];  
 DW=1.46195 [0.000, 0.821]; Schwarz B.I.C.= -35.5731; \* significant at 1% level;  
 \*\* significant at 5% level \*\*\* significant at 10% level

#### 4.1 Test of Hypothesis

$H_0$ : capital adequacy has no significant positive impact on bank profitability

$H_1$ : capital adequacy has a significant positive impact on bank profitability

From the regression results presented in tables 1, 2, 3, 4 and 5 above, the calculated t-statistics value for Equity to Total Assets Ratio (EQTA) are:

First bank = 2.4489  
 United Bank for Africa = 2.2177  
 Union Bank = 2.1071  
 Wema Bank = 2.1049  
 Afribank = 0.2837

Chosen level of significance: 0.05 (5%)

Degree of freedom:  $N-K = 31-10 = 21$

Table t-statistic ( $t^*$ ) in two tailed: 2.08

Decision Rule: If the calculated t-statistic ( $t$ ) is greater than the table t-statistic ( $t^*$ ), then the null hypothesis ( $H_0$ ) is rejected and the alternative hypothesis ( $H_1$ ) accepted. And the reverse is the case.

Interpretation of Results: Since the calculated t-statistic ( $t$ ) values of Equity to Total Assets Ratio (EQTA) which is used as a measure of capital adequacy for four (4) out of the five (5) selected banks which are First bank Plc, United Bank for Africa Plc, Union Bank Plc and Wema Bank Plc is greater than the table t-statistics ( $t^*$ ) value of

2.08 at 21 degree of freedom, we say that the impact of capital adequacy on banks' profitability for the banks is positive and statistically significant at 0.05 level.

We therefore reject the null hypothesis and accept the alternative hypothesis which states that capital adequacy has a significant positive impact on bank profitability in Nigeria.

## 5. CONCLUSION AND RECOMMENDATIONS

The empirical result of the study shows that banks capital adequacy has a significant positive impact on banks profitability in Nigeria. Banks with more equity capital are perceived to have more safety and such advantage can be translated into higher profitability. The higher the capital ratio, the more profitable a bank will be.

The results of the study are consistent with the findings of Bourke (1989), Berger (1995), Anghazo (1997), Molyneux and Thornton (1992), Demirguc-Kunt and Huizinga (1999), Vong and Anna (2009) who all concluded that there exist a positive significant impact of capital adequacy on banks' profitability.

Based on the findings, it was recommended that:

1. There should be a constant review of minimum capital requirement of deposit money banks in Nigeria to the optimal level.
2. Nigeria banks should be well capitalized to enable them enjoy access to cheaper sources of funds with subsequent improvements in profit levels. This would go a long way to help the public maintain confidence in the banks and also accommodate the credit needs of customers.

## References

- Abreu, M. & Mendes, V. 2000. "Commercial Bank Interest Margins and Profitability: Evidence for Some EU Countries". Paper presented on the 50<sup>th</sup> International Atlantic Economic Conference, March 14.
- Al-karasneh, I., Cadle, P. J & Ford, J. L. 2000. "Market Structure, Concentration and Performance: Jordanian Banking System 1980-1993". Department of Economics, University of Birmingham, Discussion Paper 2, pp. 21-43.
- Angbazo, L. 1997. "Commercial bank interest margins, default risk, interest rates, and off –balance sheet banking". *Journal of Banking and Finance*, 21, 55-77
- Athanasoglou, P. P., Sophocles N. B. & Matthaïos D. D. 2005. "Bank-specific, industry-specific and Macroeconomic determinants of bank Profitability". Bank of Greece Working Paper, No. 25 June 2005
- Athanasoglou, P. P. & Manthos D. D. 2006. "Determinants of Bank Profitability in the South Eastern European Region". Bank of Greece Working Papers series number 47.
- Athanasoglou, P. P., Manthos D. D. & Sophocles N. B. 2008. "Bank-specific, industry-specific and macroeconomic determinants of bank profitability, *Journal of International Financial Markets, Institutions and Money*". Volume18; pp: 121-136; April 2, 2008
- Berger, A. N. 1995. "The Relationship between Capital and Earnings in Banking, *Journal of Money, Credit and Banking*". Vol. 27, no. 2, pp 432-456.
- Berger, A. N. 1995. "The Profit-Structure Relationship in Banking Test of Market Power and Efficient-Structure Hypothesis, *Journal of Money, Credit and banking*". pp. 405.
- Bourke, P. 1989. "Concentration and other determinants of bank profitability in Europe, north America and Australia, *Journal of Banking and Finance*". Vol. 13, pp 65-79
- Boyd, J. & Runkle, D. 1993. "Size and Performance of Banking Firms: Testing the Predictions of Theory, *Journal of Monetary Economics*". Vol. 31, pp 47-67.
- Central Bank of Nigeria 2011. "Central Bank of Nigeria Statistical Bulletin". Abuja: Central bank of Nigeria.
- Demirgüç-Kunt, A. & Huizinga, H. 1999. "Determinants of Commercial Banks Interest Margins and Profitability: Some International Evidence". *World Bank Economic Review*,13, pp. 379-408
- Ejem, C. A., Jombo, C.O. & Oriko, B.O. 2012. *Foundations of Banking, Finance and Insurance in Nigeria: An Eclectic Approach*. Aba: M&N Computer Graphics
- Ejoh, N. O. 2011. *The Determinants of Deposit Money Banks' Performance in Nigeria*. Unpublished PhD Thesis, University of Calabar, Calabar.
- Flamini, V., Calvin, M. & Liliana S. 2009. "The Determinants of Commercial Bank Profitability in Sub-Saharan Africa, 2009 International Monetary Fund Working Paper", Vol 15, pp1-33
- Guru B., Staunton, J. & Balashanmugam, B. 2002. "Determinants of Commercial Bank Profitability in Malaysia", University Multimedia Working Papers, Vol2, pp168-209



- Hassan, K. & Abdel-Hameed M. B. 2008. "Determinants of Islamic Bank Profitability, Economic Research Forum". Paper 2, pp 1-32
- Hughes, J.P., Mester, L.J. and Moon, C.G. 2001. "Are scale economies in banking elusive or illusive? Evidence obtained by incorporating capital structure and risk-taking into models of bank production, Journal of Banking and Finance". Vol 25, pp 2169-2208.
- Jhinghan, M. L. 2004. Money, Banking, International Trade and Public Finance. 7<sup>th</sup> ed, Vrinda Publication, Delhi.
- Jiang, G., Tang, N., Law, E. & Sze, A. 2003. "Determinants of Bank Profitability in Hong Kong", Hong Kong Monetary Authority Research Memorandum, September 2.
- Karasulu, M. 2001. "The Profitability of the Banking Sector in Korea, IMF Country Report"
- Mester, L. J. 1992. "Traditional and nontraditional banking: an information-theoretic approach, Journal of Banking and Finance". Vol 16, pp 545-566.
- Miller, S. & Noulas, A. 1997. "Portfolio Mix and Large-bank Profitability in the USA Applied Economics Journal". Vol. 29, pp 505-12.
- Molyneux, P. & Thornton, J. 1992. "Determinants of European Bank Profitability: A Note, Journal of Banking and Finance". Vol. 16, No. 6, pp 1173-1180.
- Murphy, B. M. 2008. The Determinants of Bank Performance in China. Global Information Network - 2009-09-03, USA
- Naceur, S. B. 2003. The Determinants of the Tunisian Banking Industry Profitability: Panel Evidence, Universite Libre de Tunis Working Papers. Vol 11(3), pp 317-319
- Ngo, P. T. H. 2006, "Endogenous capital and profitability in banking. Australian national University, college of Business and Economics, School of Economics Working Papers, 464, 131-154
- Nyong, M. O. 1989. "The effect of quality of management on the profitability of commercial banks: a comparative analysis based on Nigerian banking experience". The Developing Economies 27 (3), pp 115-137
- Nyong, M. O. 1990. "Market Structure, Risk and Profitability in Banking: The Quiet Life Hypothesis and the Relative Economic Efficiency. Development Policy Review" Vol 8, pp 179-201.
- Nzotta, S. M. 2004. Money, Banking and Finance (Theory and Practice). 2<sup>nd</sup> ed, Hudson-Jude Nigeria Publishers.
- Onoh, J. K. 2002, Dynamics of Money Banking and Finance in Nigeria – an emerging market. Astra Meridian Publishers, Aba, Nigeria
- Perry, P. 1992. "Do banks gain or lose from inflation?, Journal of Retail Banking". Vol 14(2), pp 25-30
- Rhoades, S. A. 1985. "Market Share as a Source of Market Power: Implications and Some Evidence, Journal of Economics and Business". Vol.37, pp. 343-383.
- Shepherd, W. G. 1982. "The Elements of Market Structure. The Review of Economics and Statistics". Vol.23, pp.35.
- The Banking Hall 2008. An Encyclopedia of Banking Business in Nigeria.
- Vong, A. P. I. & Anna, P. I. 2009. Determinants of Bank Profitability in Macao. Macao: University of Macao Press.
- Williams, B. 2003. "Domestic and International Determinants of Bank Profits: Foreign Banks in Australia, Journal of Banking and Finance". Vol 27 (6), pp1185–1210.
- Wong, Y. F., & Cheung, O. L. 1997. "A Comparative Study of the Lending and Performance of Banks in Macau: Portuguese, Foreign, PRC and Local Banks, Proceedings of the third South China International Business Symposium". University of Macau, pp 221-240

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