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# Econometrics Analysis of Capital Adequacy Ratios and the Impact on Profitability of Commercial Banks in Nigeria

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***Abstract:*** *This paper examines the econometrics analysis of capital adequacy ratios and the impact on the profitability of Commercial Banks in Nigeria from 1980 – 2013. The objective is to investigate whether there is a dynamic long run relationship between capital adequacy ratios and the profitability of commercial banks. Time series data were sourced from Stock Exchange factbook and financial statement of quoted commercial banks and the Johansen co-integration techniques in vector error correction model setting (VECM) as well as the granger causality test were employed. The study has Return on Asset (ROA), Return on Investment (ROI) and Return on Equity (ROE) as the dependent variables and the independent variables are Adjusted Capital to Risk Asset Ratio (ACRR), Capital to Deposit Ratio (CTD), Capital to Net Loans and Advances Ratio (CNLAR), Capital to Risk Asset Ratio (CRA) and Capital to Total Asset Ratio (CTAR). The empirical result demonstrated vividly in the models that there is a positive long run dynamic and significant relationship between return on asset and capital to risk asset ratio and capital to deposit ratio while others are negatively correlated. The findings also revealed that there is bi-directional causality running from ROA to ACRR and ROA to CNLAR. We therefore recommend that financial policies should be strengthened to deepen the capital base of Nigerian Commercial banks to enhance bank profitability and sustain economic growth.*
***Key Words:*** *Capital adequacy ratios, commercial banks, profitability, co-integration, Granger causality test.*

## I. Introduction

Over the last two decades, both nationally and internationally Banks regulatory authorities and supervisory agencies have put in place policies and programmes aimed at strengthening and tightened capital adequacy requirements for financial institutions with the aim of increasing the stability of National banking system. Abreu & Mendes (2000) also emphasized the need for regulatory cum supervisory agencies to tightened the capital requirement of banks for needed efficiency and effectiveness. The importance attached by the regulators is as a result of the BASEL capital accord which was introduced in 1998 that set common minimum capital for banking in regulatory countries. Banking regulation in its sense is the framework of laws and rules under which banks operate .Bank regulations are a form of government regulation which subject banks to certain requirements, restrictions and guidelines. Hence, supervision refers to the banking agencies monitoring of financial conditions at banks under their jurisdiction and the enforcement of the bank regulation and polices for the purpose of protection of depositors, monetary and financial stability, efficient and competitive financial system and consumers protection.(Akani,2012).The latest capital adequacy framework is commonly known as BASEL 111. The update framework is intended to be more risk- sensitive than BASEL 1 & 11 but it is also lot more complex.

In Nigeria, Central Bank of Nigeria Act of 1959 as amended gives CBN power as regulatory institution to other financial system to achieve set monetary and macroeconomic goals. Section 9 (1) BOFIA states that the bank shall from time to time, determine the minimum paid-up share capital requirement of each category of banks licensed under this Act. The capital requires banks to handle their capital in relation to risk assets. The theory and cornerstone of bank capital adequacy has it focus on the measures and regulations from the apex bank towards ensuring that banks have enough capital to take care of their numerous financial obligations. The absorptive capacity of every bank is a critical function of its capital base. Bank capital is determine by factors such as bank size, the level of risk involved in its operations, the market forces, the lending policy, its management capacity, its portfolio, Central Bank of Nigeria requirement on Reserves and its growth rate (Barrios and Blanco, 2000, Bernauer and Koubi, 2002).

Historically, the issue of bank capital in Nigeria dates back to the banking ordinance of 1952 when banks were for the first time mandated to have a capital base of £12,500 (Onoh, 2002). The regulatory authorities have adopted capital adequacy policy as a regulatory tool and constitute the most proactive measures of repositioning the banking industry to achieve its economic and monetary policy objectives.

Theoretically, banks profitability is a critical function of its internal and external operating environment. Internally bank profit is as a result of capital adequacy, corporate governance, credit structure and management efficiency and effectiveness while at the macro level, bank profits is determine by macroeconomic

and monetary policy variables. However, there has been great debate among bankers, regulators and policy makers on the concept and what constitute bank capital adequacy and its effect with operating efficiency of the banking system. Furthermore, a bank capital is considered adequate if it is enough to cover the banks operational expenses satisfy customer's withdrawal needs and protect depositors against total or partial loss sustained by the banks. In the CAMELS analysis of banking system soundness, capital adequacy is one determinant among other variables. One critics against the BASEL capital adequacy is the neglect of other internal and external factors that can affect the operational efficiency of the banking industry rather than capital adequacy such as management quality and sensitivity to market risk. A bank can be capitally adequate if poorly managed will still collapse. This was the case of Nigerian banking industry less than five years after recapitalization and consolidation of banks from ₦2billion to ₦25billion; some banks were found functioning marginally by Central Bank of Nigeria examination team in 2009 (Ken-Ndubusis & Akani 2015). The outcome of the examination team led doubt on the effect of capital adequacy on the profitability of Nigerian commercial banks which result to the bailed-out of some banks in 2007 to a tune of N620 billion according to the Central Bank of Nigeria Governor Sanusi Lamido Sanusi with this lofty objectives of ensuring sound and adequate capital base for Nigeria banks so as to reposition it for overall efficiency and enhancement of the National Economy, Therefore, it is against this background among others that this study seeks to econometrically analyse the effects of capital adequacy ratios, banking soundness and its impact on bank profitability of quoted commercial banks using evidence from Nigeria.

## II. Literature Review

**Theories of Banks Capital Adequacy: Buffer Theory of Capital Adequacy**

The objective of ensuring that bank capital is adequate is to withstand and absorb monetary and macro-economic shocks which bank operation is very sensitive. However, banks may prefer to hold a buffer of excess capital to reduce the profitability of falling under the legal capital requirements, especially if their capital adequacy ratio is very volatile (Ikpefan, 2013). Capital adequacy has in recent time gone beyond that of banking supervision instrument and become a monetary policy tool of achieving financial stability. Section 7 (2) of BOFIA states that any banks that fail to comply with the capital adequacy within such period as may be determined by the CBN shall be a ground for revocation of license. Section 13 states that bank shall maintain at all times capital funds unimpaired by losses in such ratio to all or any assets or to all or nay liabilities or both such assets and liabilities of the bank and all its offices in and outside Nigeria as may be specified by CBN. The revocation of some banks license in 2005 after the consolidation and recapitalization reforms were reference to these sections. The buffer theory of Calem and Rob (1996) predicts that a bank approaching the regulatory minimum capital ratio may have an incentive to boost capital and reduce risk in order to avoid the regulatory costs triggered by a breach of the capital requirement. The collapse of some Nigerian Banks has been traced to high risk taking couple with poor capitalization.

**Portfolio Regulatory Theory**

The operational philosophy of every bank is profit making to maximize shareholders wealth. The theory stated that the regulation of bank is necessary to maintain safety and soundness of the banking system, to the extent which put them in a position to meet its liabilities without difficulties. This made the regulatory authorities to enforce greater solvency and liquidity on individual banks than making it optional (Ikpefan, 2013).

Peltzman (1970) argued that if the asset portfolio is seemed too risky or capital inadequate; the relevant supervisory agency will attempt to enforce a change in negative externalities resulting from bank default that are not reflected in market requirements. It is assumed that unregulated bank will lake excessive portfolio and leverage risks in order to maximize its shareholders value at the expense of deposit insurance, (Benson et al 1986, Furlong and Keeley, (1989). Capital requirement can reduce these moral hazards incentives by forcing banks shareholders to absorb a larger part of the losses, thereby reducing the value of the deposit insurance put option.

**Managerial Discretion/ Expenses Theory**

The agency theory states that the separation of management from owners can sometimes result in conflict of interest between the management and the owners. Management can sometimes pursue personal interest at the expense of the shareholders. This lead to excessive risk taken, overtrading that affect negatively the capital base of the bank.

**Measurement of Bank Capital Adequacy Ratio**

Traditionally, bank capital is measured by Capital Assets Ratio (CAR). The banking sector crisis prior to the establishment of Nigerian Deposit Insurance Corporation (NDIC) may have been examined using this ratio.

**Capital to Deposit Ratio**

The banking Act of 1969 provided that the paid-up capital and statutory reserve of banks operating in Nigeria should not fall below 10% of a bank's total deposit. It is expected that for every unit of 10 deposit liabilities there should be at least 1 unit of bank Capital for the protection of the deposit. There has been criticism about this ratio. Opponent of the ratio argued that it will lead to fall in the operating profit of the banks as significant proportion of the bank's capital will held in idle cash or near cash which is low interest income. The principle of striking balance between liquidity, safety and liquidity by banks would not be achieved if higher level of cash or near cash instruments were kept by banks.

**Equity Capital- Total Assets Ratio**

The ratio of equity capital or primary capital to total assets is another good measure for the capital adequacy of banks. A high ratio position the bank in a better measure to absorb shocks in the operating environment.

**Capital to Risk Assets Ratio**

Bank operation and the operating environment is characterized with risk, this ratio measures the depth of exposure of a bank to risk assets and the number of times risk assets can be covered by capital, the higher the ratio of risk assets to total capital, the worse the capital adequacy disposition of the bank.

**Adjusted Capital to Risk Assets Ratio**

This ratio is used to measure the strength of adjusted capital to risk assets of the bank.
Adjusted capital is defined as:
Total Capital (AC) - (55% Bank Premises)
Risk Assets (R.A) is calculated as:
Total Assets - (Liquid Assets + 55% Bank premises)
Therefore AC – RA Ratio =

$$\frac{TC - (55\ BP)}{TA - (LA + 55\ BP)}$$

**Adjusted Equity Capital to Risk Assets Ratio**

This is the variant of the adjusted capital to risk assets ratio. It indicates the extent to which a unit of adjusted equity capital is able to cover a unit or units of risk assets at a given period of time. Adjusted equity capital is defined as: Total Capital - (Subordinated notes + debentures + 55% Bank premises).

**Capital to Weighted Risk Assets**

Bank assets differ and the degree of risk also differs. Appropriate weight can be assigned to match each class of bank assets according to the perceived degree of risk exposure of the assets with the assets quality. This was adopted by the Basle of International settlement to determine the standard of Bank capital adequacy.

**Capital – Net Loans and Advances Ratio**

This measures bank capital to loans and advances in the banking system. This rating is influence by the monetary and macroeconomic condition of the country.

## III. The Basel Capital Accord

**Tier 1 Capital**

This includes only permanent shareholders' equity (issued and fully paid ordinary shares/common stock and perpetual non-cumulative preference shares) and disclosed reserves (created or increased by appropriations of retained earnings or other surpluses).

In the case of consolidated accounts, this also includes minority interests in the equity of subsidiaries which are not wholly owned. This basic definition of capital excludes revaluation reserves and cumulative preference shares.

There is no limit on the inclusion of Tier 1 capital for the purpose of calculating regulatory capital. For this purpose, the equity shares with the following characteristics are included in Tier 1 capital:
Issued directly by the bank;

- Clearly and separately identified in the balance sheet –
- Have no maturity (are perpetual);
- Fully paid;
- Cannot be refunded beyond the possibility of the liquidation of bank or reduction of share capital;
- Do not give to the holder rights to a minimum remuneration nor are there any clauses that require the compulsory payment of dividends.

- The dividends are paid solely out of distributable profits or retained earnings distributable; classified as equity instruments in accordance with IFRS.
-

## IV. Tier 2 Capitals

**Revaluation Reserve**

- **Fixed Asset Revaluation Reserve:** This relates to revaluation of fixed assets in line with market values reflected on the face of the balance sheet. Prior approval of the CBN must be obtained by any bank before the recognition of the revaluation surplus on fixed assets in its books, which can only be done taking into consideration the following:
- The valuation must be made by qualified professionals and the basis of the revaluation as well as the identities of the valuers must be stated.
- The difference between the market and historic values of the eligible fixed assets being revalued shall be discounted by 55%.
- The revaluation of fixed assets is applicable to own premises only; and
- The revaluation of fixed assets (own premises only) is permissible within a minimum period of seven years after the date of the purchase of the asset or the last revaluation.

**Other revaluation reserves:** The inclusion of other revaluation reserves created by the adoption of the international Financial Reporting Standards (IFRS) as part of the Tier 2 capital shall be subject to the limitations that will be specified by the CBN from time to time.

**General provisions/General loan-loss reserves**

For the purpose of the standardized credit risk measurement approach, provisions or loan-loss reserves held against future (presently unidentified), losses are freely available to meet losses which subsequently materialize and therefore qualify for inclusion in Tier 2 capital. Provisions ascribed to specific or identified deterioration of particular assets or known liabilities, whether individual or grouped (collective), are excluded.

Furthermore, general provisions/general loan-loss reserves eligible for inclusion in Tier 2 will be limited to a maximum of 1.25 percentage points of credit risk weighted assets and subject to the approval of the CBN.

**Hybrid (Debt/equity) capital instruments**

These include financial instruments which combine characteristics of equity and debt capital. Essentially, they should meet the following requirements:

- They are unsecured, subordinated and hilly paid-up;
- They are not redeemable at the initiative of the holder or without the prior consent of the CBN.
- They are available to participate in losses without the bank being obliged to cease trading (unlike conventional subordinated debt);
- Although the capital instrument may carry an obligation to pay interest that cannot permanently be reduced or waived (unlike dividends on ordinary shareholders equity), it should allow service obligations to be deferred (as with cumulative preference shares) where the profitability of the bank would not support payment.
- Hybrid capital instruments that are redeemable must have a maturity of at least 10 years. The contract must clearly specify that repayment is subject to authorization by the Central Bank of Nigeria. Cumulative preference shares, having these characteristics, would be eligible for inclusion in this category.

**Subordinated term debts**

Subordinated debts issued by banks shall form part of the Tier 2 capital provided that the contracts governing their issue expressly envisage that:

- In the case of the liquidation of the issuer, the debt shall be repaid only after all other creditors not equally subordinated have been satisfied.
- The debt has an original maturity of at least five years; where there is no set maturity; repayment shall be subject to at least five years' prior notice.
- Early repayment of the liabilities may take place only at the initiative of the issuer and shall be subject to approval of the CBN.
- The contracts shall not contain clauses whereby, in cases other than those referred to in points a) and c), the debt may become redeemable prior to maturity.
- During the last five years to maturity, a cumulative discount (or amortization) factor of 20% per year will be applied to reflect the diminishing value of these instruments as a continuing source of strength. Unlike instruments included in hybrid capital above, these instruments are not normally available to

participate in the losses of a bank which continues trading. For this reason, these instruments will be limited to a maximum of 50% of Tier 1 Capital.

**Table1. Trend of Minimum Paid-up Capital of Banks in Nigeria (1952 – 2010)**

| Year | Type of Bank | Minimum Capital Requirement |
|---|---|---|
| 1952 | Commercial Banks | £12,500.00 |
| 1969 | Commercial Banks | £300,000.00 |
| 1979 | Commercial Banks<br>Merchant Banks | ₦600,000.00<br>₦2,000,000.00 |
| 1988 (February) | Commercial Banks<br>Merchant Banks | ₦5,000,000.00<br>₦3,000,000.00 |
| 1988 (October) | Commercial Banks<br>Merchant Banks | ₦10,000,000.00<br>₦6,000,000.00 |
| 1989 | Commercial Banks<br>Merchant Banks | ₦20,000,000.00<br>₦12,000,000.00 |
| 1991 | Commercial Banks<br>Merchant Banks | ₦50,000,000.00<br>₦40,000,000.00 |
| 1997 | Commercial Banks<br>Merchant Banks | ₦500,000,000.00<br>₦500,000,000.00 |
| 2000 | Commercial Banks<br>Merchant Banks | ₦1,000,000,000.00<br>₦1,000,000,000.00 |
| 2001 | Commercial Banks<br>Merchant Banks | ₦2,000,000,000.00<br>₦2,000,000.000.00 |
| 2005 – till date | Commercial Banks | ₦25,000.000.000.00 |

**Source:** Odeleye, 2014.

## V. Empirical Review

Vong and Anna (2009) studied the impact of bank characteristics as well as macro-economic and financial structure variable on the performance the macro banking industry. The result obtained indicates that capital strength of a bank affect positively profitability. A well capitalized bank is perceived to be of lower risk and such an advantage will be translated into higher profitability. On the other hand, assets quality as measured by the loan loss provision affects the performance of banks negatively.

Flamien, Calvin and Lilianna (2000) examined the determinants of bank profitability 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 associated with larger bank size, activity diversification, and private ownership. Bank returns are affected macroeconomic variables, suggesting that macroeconomic policies that promote low inflation and stable output growth do 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 considerate lag, implying that high results are not immediately retained in the form of equity increases.

John and Oke (2013) examined the effect of the Basle capital standard on the performance of selected commercial banks in Nigeria using the ordinary least square method. The variables examined were Earnings per share and profit after tax as the functioning loans and advances, shareholders funds, total assets and customer's deposit. Findings indicate that capital adequacy standard exerts a major influence on bank performance.

Asikhia and Sokefun (2013) studied the effect of capital adequacy on the profitability of Nigerian banks using both primary and secondary data from 2006 – 2010. The findings from primary data shows no significant relationship but the secondary data results shows positive and significant relationship between capital adequacy and bank profitability.

Ikpefan (2013) examined the impact of capital adequacy, management and performance of Nigerian commercial banks from 1986 – 2006 using time series data obtained from Central Bank of Nigeria statistical bulletin and Annual financial statement of sampled banks. The overall capital adequacy ratios of the study shows that shareholders fund/Total Assets which measured capital adequacy of bank (risk of default) have negative impact on ROA. The efficiency of management measured by operating expenses indicates negative impact ROC.

## VI. Methodology and Data

This section of the paper concentrate on the general methods employed in analyzing the data sourced from Stock Exchange Factbook and Financial statement of Commercial Banks in Nigeria.

**Model Specification**

The models below are specified in this study.

**Model I**

ROA = f (ACRR, CTD, CNLAR, CRA, CTAR)…….1

It is empirically stated as

ROA $= \alpha_0 + \alpha_1 ACRR + \alpha_2 CTD + \alpha_3 CNLAR + \alpha_4 CRA + \alpha_5 CTAR + \mu$ ……2

**Model II**

ROI = f (ACRR, CTD, CNLAR, CRA, CTAR)……3

It is empirically stated as

ROI $= x_0 + x_1 ACRR + x_2 CTD + x_3 CNLAR + x_4 CRA + x_5 CTAR + \mu$ ……4

**Model III**

ROE = f (ACRR, CTD, CNLAR, CRA, CTAR)……5

It is empirically stated as

ROE $= \beta_0 + \beta_1 ACRR + \beta_2 CTD + \beta_3 CNLAR + \beta_4 CRA + \beta_5 CTAR + \mu$ ……6

Where

ROA = Return on Assets
ROI = Return on Investment
ROE = Return on Equity
ACRA = Adjusted Capital to Risk Assets Ratio
CTD = Capital to Total Deposit Ratio
CNLAR = Capital to Net Loans and Advances Ratio
CRA = Capital to Risk Assets Ratio
CTAR = Capital to Total Assets Ratio
$\beta_0$ = Regression Intercept
$\beta_1$ - $\beta_6$ = Coefficient of the independent variables to the dependent variable
μ = Error term

## VII. Estimation Procedure

**Unit Root Test**

Most of time series have unit root as demonstrated by many studies including Johansen (1991), Kutosoyiannis, (1997) and Campbell and Peron (1991). Therefore, their means of variance of such time series are not independent of time. Conventional regression technique based on non-stationary time series produce spurious regression and statistic may simply indicate only correlated trends rather true relationship Granger, (1969). Spurious regression can be detected in regression model by low Durbin Watson and relatively moderate $R^2$.

Therefore, to distinguish between correlation that arises from share trend and one associated with an underlying causal relationship; we use both the Augmented Dickey fuller (Dickey and Fuller, 1979, 1981)

$X_t = \mu + \Theta X_{t-1} + \varepsilon_t$ ……7

The null hypotheses for the ADF statistic test are $H_0$.

Non stationary (unit root) and $H_0$: Stationary respectively

**Co-integration**

To search for possible long run relationship amongst the variables, we employ the Johansen and Juselius (1990) approach. Thus, the study constructed a p-dimensional (4x1) vector auto regression model with Gaussian errors that can be expressed by its first differenced error correction form as

$\Delta Y_t = \Gamma_1 \Delta Y_{t-1} + \Gamma_2 \Delta Y_{t-2} + ..... + \Gamma_{k-1} \Delta Y_{t-k+1} - \Pi Y_{t-1} + \mu + \varepsilon_t$ ……8

Where $Y_t$ are the data series studied, $\varepsilon_t$ is i. i. d, N(0,∑) $\Gamma_i$ + -1 + $A_1$ + $A_1$ + $A_2$ + $A_3$ + ……. + $A_i$ for i = 1,2,3……..,k-1, Π = I – $A_1$ – $A_2$ - ……-$A_k$. The Π matrix conveys information about the long term relationship among the $Y_t$ variables studied. Hence, testing the cointegration entails testing for the rank r of matrix Π by examine whether the eigenvalues of Π are significantly different from zero.

Johansen and Juselius (1990) proposed two tests statistics to determine the number of cointegrating vectors (or the rank of Π), namely the trace and the maximum eigen-value (λ-trace) is computed as;

$\lambda trace = -T \sum_{j=r+1}^{n} In(1 - \lambda_j)$ ……9

The trace tests the null hypothesis that at most r cointegration vector, with more than r vectors being the alternative hypothesis. The maximum eigenvalue test is given as:

$\lambda_{\max} = -TIn(1 - \lambda_{r+1})$ ……..10

It tests the null hypothesis of r cointegrating vectors against the alternative hypothesis of r + 1 cointegration vectors. In the equation (3) and (4), is the sample size and λ is the largest canonical correlation.

**Granger Causality**

In case we do not find any evidence for cointegration among the variables, the specification of the Granger causality will be a vector autoregression (VAR) in the first difference form. However, if will find evidence of cointegration, there is the need to augment the Granger-type causality test model with a one period lagged error term. This is a crucial step because as noted by Engel and Granger (1987).

$$Y_t = \alpha_o + \sum_{i=1}^{n} \alpha_1^y Y_{t-1} \sum_{i=1}^{n} X_{a1} X\mu \quad \text{.....11}$$

**Error Correction Model (ECM)**

Co-integration is a prerequisite for the error correction mechanism. Since co-integration has been established, it is pertinent to proceed to the error correction model.

**A-priori Expectation of the Result**

The a-priori expectation of the variables proposes that an increase in the explanatory variables lead to increase in the dependent variables (ROA = $\alpha_1, \alpha_2, \alpha_3, \alpha_4, \alpha_5 > 0$ ROI = $x_1, x_2, x_3, x_4, x_5 > 0$., and ROE = $\beta_1, \beta_2, \beta_3 \beta_4. \beta_5 > 0$

**Presentation of Data and Analysis of Results**

Our adopted Ordinary Least Square (OLS) regression approach used cointegration, unit root, Granger Causality Test and Vector Error Correction Models to ascertain the relationship between the independent and the dependent variables in the models.

**Table 2: Results of Static OLS Regression of Model 1-3**

| MODEL | VARIABLE | COEFFICIENT | STANDARD ERROR | T-STATISTICS | PROBABILITY |
|---|---|---|---|---|---|
| 1. ROA | Intercept | -238.1116 | 203.5605 | -1.169733 | 0.2520 |
| | ACRR | 6.426764 | 2.925835 | 2.196557 | 0.0365 |
| | CTD | 4.479738 | 2.455054 | 1.824700 | 0.0787 |
| | CNLAR | 4.305221 | 4.033909 | 1.067258 | 0.2950 |
| | CRA | 0.282239 | 0.267923 | 1.053434 | 0.3011 |
| | CTAR | 5.914733 | 3.320010 | 1.781541 | 0.0857 |
| | $R^2$ | 0.589595 | - | - | - |
| | $ADJR^2$ | 0.516308 | - | - | - |
| 2. ROI | Intercept | 387.5133 | 2693.215 | 0.143885 | 0.8866 |
| | ACRR | -17.51493 | 38.71036 | -0.452461 | 0.6544 |
| | CTD | -12.37557 | 32.48161 | -0.381002 | 0.7061 |
| | CNLAR | 9.332170 | 53.37077 | 0.174855 | 0.8625 |
| | CRA | 0.031640 | 3.544762 | 0.008926 | 0.9926 |
| | CTAR | 33.34960 | 43.92551 | 0.759231 | 0.4541 |
| | $R^2$ | 0.023852 | - | - | - |
| | $ADJR^2$ | -0.150460 | - | - | - |
| 3. ROE | Intercept | -376.7139 | 866.5797 | -0.434714 | 0.6671 |
| | ACRR | 12.16268 | 12.45560 | 0.976483 | 0.3372 |
| | CTD | 18.42310 | 10.45144 | 1.762734 | 0.0889 |
| | CNLAR | -3.953650 | 17.17280 | -0.230228 | 0.8196 |
| | CRA | -0.512167 | 1.140577 | -0.449042 | 0.6569 |
| | CTAR | -3.796889 | 14.13365 | -0.268642 | 0.7902 |
| | $R^2$ | 0.249922 | - | - | - |
| | $ADJR^2$ | 0.115979 | - | - | - |

**Source: Author's computation as extracted from E-View**

From the above table, the result shows that 58.9% and 51.6% variation in return on assets of the quoted commercial banks can be traced to variation in the independent variable. 2.3% and -1.5% variations in return on investment can be traced to the independent variable while 2.4% and 1.1% variation in Return on Equity can also be traced to the independent variables. The regression intersect indicates negative effect of the independent variables on the dependent at constant except ROI. However, the probability values shows that the overall fits of the regression is not significantly significance and hence not good .This shows the needs for rigorous analysis of the time series properties

**Table 3: Autocorrelation and overall significance of Regression Model**

| AUTOCORRELATION | MODEL | DURBIN WATSON STATISTICS | AUTOCORRELATION PRESENCE | TYPE |
|---|---|---|---|---|
| Test | 1 | 1.150546 | Presence | Positive |
| | 2 | 1.70999 | Presence | Positive |
| | 3 | 2.675402 | Presence | Negative |
| | **Model** | **F-Statistics** | **Probability** | **Remark** |
| **Model Overall Significant F-Test** | 1 | 8.045048 | 0.000084 | Very high |
| | 2 | 0.136836 | 0.982338 | Very low |
| | 3 | 1.865889 | 0.132417 | Very low |

**Source: Author's computation as extracted from E-View**

The result presented in the above table, shows the positive presence of serial auto correlation in the models except model 3, the overall significance shows that the models are insignificant except model 1,with an F-statistics value of 8.045048 and an auto correlation presence of 0.000084 very high.

**Table 4: Unit Root Test**

| VARIABLE | CRITICAL 1% | 5% | 10% | ADF STATISTICS | LAG | REMARK |
|---|---|---|---|---|---|---|
| **At Level** | | | | | | |
| **ROA** | **-3.6496** | **-2.9558** | **-2.6164** | **-1.470927** | **2** | **Non-stationary** |
| **ROI** | **-3.6496** | **-2.9558** | **-2.6164** | **-3.731362** | **2** | **Non-stationary** |
| **ROE** | **-3.6496** | **-2.9558** | **-2.6164** | **-1.897567** | **2** | **Non-stationary** |
| **ACRR** | **-3.6496** | **-2.9558** | **-2.6164** | **-1.954931** | **2** | **Non-stationary** |
| **CTD** | **-3.6496** | **-2.9558** | **-2.6164** | **-2.432367** | **2** | **Non-stationary** |
| **CNLAR** | **-3.6496** | **-2.9558** | **-2.6164** | **-4.256205** | **2** | **Non-stationary** |
| **CRA** | **-3.6496** | **-2.9558** | **-2.6164** | **-0.942772** | **2** | **Non-stationary** |
| **CTAR** | **-3.6496** | **-2.9558** | **-2.6164** | | **2** | **Non-stationary** |
| **At Difference** | | | | | | |
| **ROA** | **-3.6576** | **-2.9591** | **-2.6181** | **-6.423502** | **2** | **Stationary** |
| **ROI** | **-3.6576** | **-2.9591** | **-2.6181** | **-9.821765** | **2** | **Stationary** |
| **ROE** | **-3.6576** | **-2.9591** | **-2.6181** | **-5.740112** | **2** | **Stationary** |
| **ACRR** | **-3.6576** | **-2.9591** | **-2.6181** | **-4.476269** | **2** | **Stationary** |
| **CTD** | **-3.6576** | **-2.9591** | **-2.6181** | **-4.246440** | **2** | **Stationary** |
| **CNLAR** | **-3.6576** | **-2.9591** | **-2.6181** | **-6.561444** | **2** | **Stationary** |
| **CRA** | **-3.6576** | **-2.9591** | **-2.6181** | **-4.674357** | **2** | **Stationary** |
| **CTAR** | **-3.6576** | **-2.9591** | **-2.6181** | **-4.062893** | **2** | **Stationary** |

**Source: Author's computation as extracted from E-View**

The Unit Root test result shows that the variables are non-stationary at levels but stationary at first difference as proved by ADF statistics and the Mackinnon critical values at 1%, 5% and 10%. This means the acceptance of H0 at level and rejection of H0 at first difference.

**Table 5: Johensen Co-integration Test**

| MODEL | HYPOTHIZED NULL | EIGEN VALUE | LIKELIHOOD RATIO | CRITICAL VALUE AT 5% | CRITICAL VALUE AT 1% | REMARK |
|---|---|---|---|---|---|---|
| **1. ROA** | **r ≤ 0** | **0.674001** | **110.3051** | **94.15** | **103.18** | **Significant** |
| | **r ≤ 1** | **0.636175** | **74.43759** | **68.52** | **76.07** | **Significant** |
| | **r ≤ 2** | **0.458904** | **42.08297** | **47.21** | **54.46** | **Significant** |
| | **r ≤ 3** | **0.309556** | **22.42989** | **29.68** | **35.65** | **Significant** |
| | **r ≤ 4** | **0.268407** | **10.57646** | **15.41** | **20.04** | **Significant** |
| | **r ≤ 5** | **0.017823** | **0.575480** | **3.76** | **6.65** | **Significant** |
| **2. ROI** | **r ≤ 0** | **0.658396** | **98.01114** | **94.15** | **103.18** | **Significant** |
| | **r ≤ 1** | **0.586020** | **63.63982** | **68.52** | **76.07** | **Significant** |
| | **r ≤ 2** | **0.416816** | **35.41784** | **47.21** | **54.46** | **Significant** |
| | **r ≤ 3** | **0.321686** | **18.16176** | **29.68** | **35.65** | **Not Significant** |
| | **r ≤ 4** | **0.157077** | **5.741131** | **15.41** | **20.04** | **Significant** |
| | **r ≤ 5** | **0.008495** | **0.272991** | **3.76** | **6.65** | **Not Significant** |
| **3. ROE** | **r ≤ 0** | **0.831241** | **150.5834** | **94.15** | **103.18** | **Significant** |
| | **r ≤ 1** | **0.770606** | **93.64628** | **68.52** | **76.07** | **Significant** |
| | **r ≤ 2** | **0.482412** | **46.53225** | **47.21** | **54.46** | **Significant** |
| | **r ≤ 3** | **0.383104** | **25.45781** | **29.68** | **35.65** | **Significant** |
| | **r ≤ 4** | **0.245994** | **10.00007** | **15.41** | **20.04** | **Significant** |
| | **r ≤ 5** | **0.029697** | **0.964690** | **3.76** | **6.65** | **Not Significant** |

**Source: Author's computation as extracted from E-View**

The results presented in the above table choose the stable and long run relationship between the independent and the dependent variables in the models.

**Table 6: Normalized Co integration Results**

| MODEL | VARIABLE | COEFFICIENT | STANDARD ERROR | TYPE | REMARK |
|---|---|---|---|---|---|
| 1. | ROA | 1.000000 | | | |
| | INTERCEPT | 1633.382 | - | positive | Expected |
| | ACRR | -40.62043 | 12.3888 | negative | Not expected |
| | CTD | 4.112973 | 4.59127 | positive | Expected |
| | CNLAR | -20.39480 | 10.2994 | negative | Not expected |
| | CRA | 2.809383 | 1.19436 | positive | Expected |
| | CTAR | -5.017786 | 7.65356 | negative | Not expected |
| | LOG LIKELIHOOD | -655.3835 | - | - | - |
| 2. | ROI | 1.000000 | | | |
| | INTERCEPT | -2086.768 | | Negative | Not expected |
| | ACRR | -69.35457 | 37.5032 | Negative | Not expected |
| | CTD | 138.3753 | 34.6023 | Positive | Expected |
| | CNLAR | 83.02660 | 56.9245 | Positive | Expected |
| | CRA | -1.349252 | 3.95319 | Negative | Not expected |
| | CTAR | -106.5648 | 54.6902 | Negative | Not expected |
| | LOG LIKELIHOOD | -744.6391 | - | - | - |
| 3. | ROE | 1.000000 | | | |
| | INTERCEPT | -281.6523 | | Negative | Not expected |
| | ACRR | -22.90771 | 4.73459 | Negative | Not expected |
| | CTD | -11.65479 | 3.54564 | Negative | Not expected |
| | CNLAR | 18.42263 | 6.90917 | Positive | Expected |
| | CRA | 2.163054 | 0.51784 | Positive | Expected |
| | CTAR | -3.88578 | 1.45485 | Negative | Not expected |
| | LOG LIKELIHOOD | | | - | - |

**Source: Author's computation as extracted from E-View**

The table above reveals the long run relationship between the dependent and the independent variables in the models.

**Table 7: Pair wise Granger Causality Test: Model I**

Pairwise Granger Causality Tests
Sample: 1980 2013
Lags: 2

| Null Hypothesis: | Obs | F-Statistic | Probability |
|---|---|---|---|
| ACRR does not Granger Cause ROA | 32 | 2.01188 | 0.15330 |
| ROA does not Granger Cause ACRR | | 8.57628 | 0.00131 |
| CTD does not Granger Cause ROA | 32 | 1.04961 | 0.36392 |
| ROA does not Granger Cause CTD | | 2.73121 | 0.08313 |
| CNLAR does not Granger Cause ROA | 32 | 0.28276 | 0.75590 |
| ROA does not Granger Cause CNLAR | | 2.63429 | 0.09013 |
| CRA does not Granger Cause ROA | 32 | 1.03221 | 0.36985 |
| ROA does not Granger Cause CRA | | 1.04329 | 0.36607 |
| CTAR does not Granger Cause ROA | 32 | 4.50762 | 0.02046 |
| ROA does not Granger Cause CTAR | | 1.66549 | 0.20794 |

**Source: Author's computation as extracted from E-View**

From the VEC result above, the casual relationship running through ACRR and ROA is uni-directional running from ROA to ACRR. There is no causal relationship running through CTD and ROA. There is causal uni-directional relationship running ROA to CNLAR. There is no causal relationship running through CRA, CTAR and ROA.

**Table 8 Pair wise Granger Causality Tests: Model II**

Pairwise Granger Causality Tests
Sample: 1980 2013
Lags: 2

| Null Hypothesis: | Obs | F-Statistic | Probability |
|---|---|---|---|
| ACRR does not Granger Cause ROI | 32 | 1.46073 | 0.24983 |
| ROI does not Granger Cause ACRR | | 2.26862 | 0.12283 |
| CTD does not Granger Cause ROI | 32 | 0.22232 | 0.80211 |
| ROI does not Granger Cause CTD | | 0.22564 | 0.79949 |
| CNLAR does not Granger Cause ROI | 32 | 0.31881 | 0.72971 |
| ROI does not Granger Cause CNLAR | | 0.18810 | 0.82961 |
| CRA does not Granger Cause ROI | 32 | 21.8839 | 2.2E-06 |
| ROI does not Granger Cause CRA | | 0.01081 | 0.98925 |
| CTAR does not Granger Cause ROI | 32 | 0.05453 | 0.94704 |
| ROI does not Granger Cause CTAR | | 0.61787 | 0.54654 |

**Source: Author's computation as extracted from E-View**

The above VEC shows no causal relationship running through the variables

**Table 9: Pair wise Granger Causality Tests: Model III**

Pairwise Granger Causality Tests
Sample: 1980 2013
Lags: 2

| Null Hypothesis: | Obs | F-Statistic | Probability |
|---|---|---|---|
| ACRR does not Granger Cause ROE | 32 | 3.38260 | 0.04887 |
| ROE does not Granger Cause ACRR | | 1.94977 | 0.16183 |
| CTD does not Granger Cause ROE | 32 | 7.75001 | 0.00219 |
| ROE does not Granger Cause CTD | | 15.9686 | 2.6E-05 |
| CNLAR does not Granger Cause ROE | 32 | 3.03218 | 0.06487 |
| ROE does not Granger Cause CNLAR | | 0.85715 | 0.43560 |
| CRA does not Granger Cause ROE | 32 | 1.96829 | 0.15923 |
| ROE does not Granger Cause CRA | | 0.00287 | 0.99714 |
| CTAR does not Granger Cause ROE | 32 | 2.31227 | 0.11833 |
| ROE does not Granger Cause CTAR | | 0.63402 | 0.53817 |

**Source: Author's computation as extracted from E-View**

From the VEC result above, there is uni-directional relationship running from ACRR and CTD to ROE while other variables have no causal relationship.

**Table 10: Vector Error Correction :Model I**

Sample(adjusted): 1983 2013
Included observations: 31 after adjusting endpoints
Standard errors & t-statistics in parentheses

| Cointegrating Eq: | CointEq1 | | | | | |
|---|---|---|---|---|---|---|
| Error Correction: | D(ROA) | D(ACRR) | D(CTD) | D(CNLAR) | D(CRA) | D(CTAR) |
| CointEq1 | 0.028702 | 0.050103 | -0.041011 | -0.004180 | 0.132503 | 0.001864 |
| | (0.14152) | (0.01419) | (0.01543) | (0.01156) | (0.20073) | (0.01357) |
| | (0.20281) | (3.53142) | (-2.65752) | (-0.36154) | (0.66010) | (0.13740) |
| C | 7.974492 | 0.794473 | 0.263053 | -0.208429 | -0.745918 | 0.442187 |
| | (8.37177) | (0.83931) | (0.91291) | (0.68389) | (11.8747) | (0.80259) |
| | (0.95255) | (0.94658) | (0.28815) | (-0.30477) | (-0.06282) | (0.55095) |
| R-squared | 0.455009 | 0.753661 | 0.522560 | 0.411662 | 0.640000 | 0.239111 |
| Adj. R-squared | 0.038251 | 0.565284 | 0.157458 | -0.038244 | 0.364707 | -0.342746 |
| Sum sq. resids | 29844.77 | 299.9726 | 354.8860 | 199.1607 | 60045.29 | 274.3000 |
| S.E. equation | 41.89958 | 4.200648 | 4.568988 | 3.422767 | 59.43127 | 4.016876 |
| F-statistic | 1.091783 | 4.000816 | 1.431272 | 0.914995 | 2.324791 | 0.410944 |
| Log likelihood | -150.4686 | -79.16750 | -81.77314 | -72.81903 | -161.3045 | -77.78074 |
| Akaike AIC | 10.61088 | 6.010807 | 6.178912 | 5.601228 | 11.30997 | 5.921338 |
| Schwarz SC | 11.25849 | 6.658414 | 6.826519 | 6.248835 | 11.95758 | 6.568945 |
| Mean dependent | 11.89313 | 0.630968 | 0.468065 | 0.000000 | 0.436452 | 0.601613 |
| S.D. dependent | 42.72468 | 6.371088 | 4.977648 | 3.359136 | 74.56378 | 3.466503 |

| | |
|---|---|
| Determinant Residual Covariance | 2.16E+09 |
| Log Likelihood | -597.0572 |
| Akaike Information Criteria | 44.32627 |
| Schwarz Criteria | 48.48946 |

**Source: Author's computation as extracted from E-View**

The objective of the Vector Error Correction Model is to ascertain the speed of adjustment from equilibrium. From the table above, the model shows a positive sign which is contrary to the rule of vector error correction.

**Table 11: Vector Error Correction :Model Ii**

Sample(adjusted): 1983 2013
Included observations: 31 after adjusting endpoints
Standard errors & t-statistics in parentheses

| Cointegrating Eq: | CointEq1 | | | | | |
|---|---|---|---|---|---|---|
| Error Correction: | D(ROI) | D(ACRR) | D(CTD) | D(CNLAR) | D(CRA) | D(CTAR) |
| CointEq1 | -0.284522 | 0.001197 | 0.000885 | 0.000359 | -0.008313 | 0.000756 |
| | (0.07769) | (0.00076) | (0.00078) | (0.00064) | (0.01041) | (0.00066) |
| | (-3.66247) | (1.57537) | (1.12932) | (0.56015) | (-0.79897) | (1.13783) |
| C | 27.20491 | 1.028938 | 0.820843 | -0.156465 | 1.326003 | 0.679558 |
| | (83.8974) | (0.82044) | (0.84594) | (0.69172) | (11.2371) | (0.71794) |
| | (0.32426) | (1.25414) | (0.97033) | (-0.22620) | (0.11800) | (0.94654) |
| R-squared | 0.921639 | 0.730073 | 0.529872 | 0.309782 | 0.630310 | 0.301812 |
| Adj. R-squared | 0.861716 | 0.523658 | 0.170362 | -0.218031 | 0.347606 | -0.232096 |
| Sum sq. resids | 3437189. | 328.6962 | 349.4506 | 233.6482 | 61661.63 | 251.6961 |
| S.E. equation | 449.6527 | 4.397166 | 4.533863 | 3.707292 | 60.22586 | 3.847812 |
| F-statistic | 15.38038 | 3.536924 | 1.473875 | 0.586916 | 2.229573 | 0.565289 |
| Log likelihood | -224.0378 | -80.58487 | -81.53390 | -75.29445 | -161.7163 | -76.44774 |
| Akaike AIC | 15.35728 | 6.102250 | 6.163478 | 5.760932 | 11.33653 | 5.835338 |
| Schwarz SC | 16.00489 | 6.749857 | 6.811085 | 6.408539 | 11.98414 | 6.482945 |
| Mean dependent | 22.26484 | 0.630968 | 0.468065 | 0.000000 | 0.436452 | 0.601613 |
| S.D. dependent | 1209.181 | 6.371088 | 4.977648 | 3.359136 | 74.56378 | 3.466503 |

| | |
|---|---|
| Determinant Residual Covariance | 2.98E+11 |
| Log Likelihood | -673.4317 |
| Akaike Information Criteria | 49.25366 |
| Schwarz Criteria | 53.41685 |

**Source: Author's computation as extracted from E-View**

The above model shows the radical shift from equilibrium with the negative sign of -0.284522 and the T-statistics of -3.66247, this means that it will take 7.7 years (-0.284522 / -3.66247) to adjust to equilibrium.

**Table 12: Vector Error Correction :Model Iii**

| Sample(adjusted): 1983 2013 | | | | | | |
|---|---|---|---|---|---|---|
| Included observations: 31 after adjusting endpoints | | | | | | |
| Standard errors & t-statistics in parentheses | | | | | | |
| Cointegrating Eq: | CointEq1 | | | | | |
| Error Correction: | D(ROE) | D(ACRR) | D(CTD) | D(CNLAR) | D(CRA) | D(CTAR) |
| CointEq1 | -0.279991 | -0.001030 | -0.005670 | 0.001305 | 0.039408 | -0.003300 |
| | (0.11495) | (0.00252) | (0.00109) | (0.00193) | (0.02784) | (0.00184) |
| | (-2.43574) | (-0.40837) | (-5.19057) | (0.67626) | (1.41531) | (-1.79023) |
| C | 50.44757 | 0.910739 | 0.833191 | -0.292432 | -5.174322 | 0.927383 |
| | (43.2975) | (0.95041) | (0.41148) | (0.72683) | (10.4878) | (0.69430) |
| | (1.16514) | (0.95826) | (2.02484) | (-0.40234) | (-0.49336) | (1.33571) |
| R-squared | 0.864926 | 0.673322 | 0.899681 | 0.312708 | 0.709569 | 0.411104 |
| Adj. R-squared | 0.761634 | 0.423510 | 0.822966 | -0.212869 | 0.487475 | -0.039228 |
| Sum sq. resids | 825605.6 | 397.8030 | 74.56829 | 232.6579 | 48441.74 | 212.2964 |
| S.E. equation | 220.3748 | 4.837373 | 2.094366 | 3.699427 | 53.38084 | 3.533840 |
| F-statistic | 8.373601 | 2.695312 | 11.72761 | 0.594981 | 3.194903 | 0.912892 |
| Log likelihood | -201.9303 | -83.54262 | -57.59188 | -75.22861 | -157.9761 | -73.80904 |
| Akaike AIC | 13.93099 | 6.293072 | 4.618831 | 5.756685 | 11.09523 | 5.665099 |
| Schwarz SC | 14.57860 | 6.940680 | 5.266438 | 6.404292 | 11.74284 | 6.312706 |
| Mean dependent | 11.76194 | 0.630968 | 0.468065 | 0.000000 | 0.436452 | 0.601613 |
| S.D. dependent | 451.3772 | 6.371088 | 4.977648 | 3.359136 | 74.56378 | 3.466503 |
| Determinant Residual Covariance | | 1.13E+10 | | | | |
| Log Likelihood | | -622.7813 | | | | |
| Akaike Information Criteria | | 45.98589 | | | | |
| Schwarz Criteria | | 50.14908 | | | | |

**Source: Author's computation as extracted from E-View**

The model also shows the negative coefficient of the equation which will take approximately on year (-0.279991 / -2.43574) to adjust equilibrium. Also the $R^2$ is given as 0.864926 making 86 percent of variations in the explained variable which shows a strong relationship and it is also supported with a higher adjusted $R^2$ of 0.761634 accounting for 76 percent change in the variables

## VIII. Discussion Of Findings

One of the proactive measures by Nigerian government to leverage Nigerian banks from shocks and reposition it to serve its purpose has been the frequent review of bank capital such as the last recapitalization that increase capital base of the banks from ₦2billion to ₦25billion and reduce the number of banks from 89 to 25 immediately after the consolidation and now to 21 as a result of the mergers and acquisitions of some the banks. The objective of this study was to examine the effects of capital adequacy on the profitability of commercial banks and the bank Profitability was proxied by ROA, ROI and ROE while capital adequacy were proxied by adjusted capital to risk ratio, capital to total deposit ratio, capital to net loans and advance ratio, capital to risk assets and capital to total assets ratio.

Findings revealed that the independent variables have positive effects on Return on Assets, capital to loans and advances ratio, capital to risk assets and capital to total assets have positive effects on Return on Investment, Adjusted capital to risk assets ratio and capital to total deposit have positive effect on Return on Equity. The positive effects of the variables confirm the a-priori expectation of the result and the objective of the review of bank capital. It confirms the innovative theory of profit and the managerial efficiency of capital theory of investment. The finding of banks determines the profitability. It also confirms other empirical findings such as Nwobloji (2013), Kosmidou (2008), Dermergue Kunt and Huizinga (1999).

The insignificant relationship of the variables on the profitability of the commercial banks confirms the findings of Olalekan and Addeyinka (2013). This is contrary to the findings of Jamam (2011), Pasiouras and Kosmidu (2007) and Ben Nacuer (2003). The insignificant effect can be traced to management shocks for instance the withdrawal of all government funds from the banking sector in 1992 to check excess liquidity in the economy that led to banking crisis of the 1990s and external monetary policy shocks such as the global financial crisis of 2007.

However, adjusted capital to risk ratio and capital to total deposit have negative effects on Return on Investment, capital net loans and advances ratio, capital to risk assets ratio and capital to total assets ratio have negative effect on Return on Equity. This finding contradicts the expectation of the result and other empirical finding such as Crouhy, Galai and Mark (2006) and Mpuga (2002). The negative effect can also be traced to poor intermediation and high operational cost of Nigerian banks as well as high volatility of the banking sector to credit risk.

## IX. Conclusion And Recommendations

Adjusted capital to risk assets was found to be positively related to Return on Assets and Return on Equity but negatively related to Return on Investment. Capital to deposit ratio was found to be positively related to Return on Assets and Return on Equity but negatively related to Return on Investment.

Capital to net loans and advances ratio was found to be positively related to return on assets, Return on Investment but negatively related to Return on Equity. Capital to risk assets was found to be positively related to Return on assets, Return on Investment but negatively related to Return on Equity. Capital to total assets ratio was found to have positive effect on Return on assets, Return on Investment but negative effect on Return on Equity.

Adjusted capital to risk assets is positively related to Return on Assets and Return on Equity but negatively related to Return on Investment. Capital to deposit ratio is positively related to Return on Assets and Return on Equity but negatively related to Return on Investment. Capital to Net loans and advances ratio is positively related to return on assets, Return on Investment but negatively related to Return on Equity. Capital to risk assets is positively related to Return on assets, Return on Investment but negatively related to Return on Equity. Capital to total assets ratio have positive effect on Return on assets, Return on Investment but negative effect on Return on Equity. This study focused on effect of capital adequacy on the profitability of quoted deposit money banks from the findings, the study makes the following recommendations;

That banking sector capital base should further be reviewed and increase to enhance the operational efficiency of the banks for better profitability performance, there should be full compliance to all capital adequacy reforms by the deposit money banks to ledge and protect the banks against shocks and losses that will affect negatively the profitability performance of the banks. The management of deposit money banks should inbuilt the habit efficiency and effectiveness in bank management to reduce operational and administrative lost of the banking sector to enhance profitability. There should be effective risk management mechanism in the banking sector to leverage banks the negative effect of risk assets on the profitability of the banks. Monetary policy should be integrated with the profitability objectives of the banks to leverage the banks the effective of monetary policy shocks on the profitability of the deposit money banks. Banks operating environment should be reformed and made investible to enhance profitability. There should be effective intermediation mechanism from the deposit money banks to enhance deposit mobilization for better performance.The capital market should be deepened to enhance mobilization of Tier 1 and Tier 2 equity capital for the banking sector.

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