# The Impact of Market Share 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 market share on Deposit Money Banks' profitability in Nigeria, taking a case study of five selected banks. The theoretical underpinning highlighted the Relative Market Power (RMP) Hypotheses. 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 market share played an important role in explaining the banks Return on Assets (ROA) which is a measure of banks' profitability. The strong, positive and significant relationship between market share and banks' profitability suggest that banks' profit margins increase more with market share. It was recommended that banks should increase their market share by rendering more attractive services including offering attractive loans and deposit rates. Also, Deposit Money Banks that are not doing very well in terms of profitability because of their small market share can merge together if they wish in order to benefit from the advantages of economies of scale thereby widening their profit margins.

**Keywords:** Market Share, Banks' Profitability, Return on Assets (ROA), Deposit Money Banks

## 1. Introduction

According to Nzotta (2004), banks play very important roles in the economic development of any country. As an important component of the financial system, they channel scarce resources from surplus economic units to deficit units. Thus, to a reasonable extent, they exert a lot of influences on the pattern and trend of economic development, through their lending and deposit mobilization activities.

Following the adoption of universal banking in 2001, the Banks and Other Financial Institutions Act (BOFIA) 1991 was amended and banking business is now defined as "The business of receiving deposit on current, savings or other accounts, paying or collecting cheques drawn or paid in by customers, provision of finance, consultancy and advisory services relating to corporate and investment matters; making or managing investments on behalf of any person and the provision of insurance, marketing services and capital market business or such other services as Governor of the Central Bank of Nigeria by gazette designate as banking business".

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.

The bank must also sustain the interest and confidence of the public by being sufficiently responsive to their needs, honoring all maturing obligations, avoiding actions that will lead to distress and failure in the system. Banks must also meet the credit needs of their customers and thus sustain the productive process.

From the foregoing, we could easily discern five main constituencies for banking operations.

a. The regulatory authorities consisting of the Central Bank of Nigeria (CBN) and the Nigerian Deposit Insurance Corporation (NDIC) expect the banks not to take excessive risk, conduct prudent banking, and maintain adequate liquidity while also being profitable.

b. The surplus unit or depositors expects the banks to maintain maximum liquidity and pay high interest on the funds place with them.

c. The deficit unit expects the banks to response to their credit needs at low or competitive cost.

d. The shareholders expect banks to maximize profits and thus, afford maximum returns on investments.

e. The public at large expects the banks to be good corporate citizens and also ensure the exploitation of opportunities for profitable operations.

The importance of bank performance in terms of Profitability and Liquidity has made researchers, academics, bank management, shareholders and banks regulatory authorities to develop considerable interest on the factors that determines banks performance.

According to Hassan and Abdel-Hameed (2008), evaluating the performance of the Nigerian deposit money banks is essential for managerial as well as regulatory purposes. While managers are keen to determine the outcome of previous management decisions, banks regulators are concerned about the safety and soundness of the banking system. Depositors and shareholders are interested in the performance of their banks as per their Liquidity and Profitability levels.

As financial intermediaries, 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 determinants of 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 market share, capital ratio, loan-loss provisions and expense control are important factors in achieving high profitability. There is thus a need to empirically analyze the impact of market share on deposit money banks' profitability in Nigeria.

### 1.1 Research Hypothesis

Ho: Changes in the market share of Deposit Money Banks has a strong, positive and significant impact on banks' profit margins.

### 1.2 Organisation of the study

The rest of the paper is organized in four sections. The theoretical framework as well as the review of the relevant literature regarding the determinants of banks' profitability is contained in section 2. Section 3 identifies the research methodology and model specification. Section 4 represents the analysis and findings while the conclusions and recommendations are stated in section 5.

### 2. Theoretical framework and literature review

### 2.1 Theoretical Framework

The theoretical framework for the study is the Relative Market Power (RMP) hypothesis. The Relative market power (RMP) hypothesis asserts that the positive relationship between structure and performance arises because firms with large market shares and well-differentiated products exercise market power in pricing their products and hence earn abnormal profits (Shepherd, 1982; Berger, 1995). This suggest that merger activities is motivated by the prospective benefits from greater market power created by increasing concentration or market shares of the merging firms.  The theory is built on the following assumptions:
1. Market share is the key exogenous variable, a high level of market share leads to a larger profit.
2. There is a positive unidirectional relationship between market share and profitability.
3. Market share is assumed to represent the relative market power (RMP) of the firms with large shares.
4. Profit and concentration are only spuriously related because both variables are correlated with market value.
5. Market share is positively related to market power, ceteris paribus.

Under Relative Market Power (RMP) hypothesis, market share is the key exogenous variable. Firms with large market shares have well-differentiated products because of advertising, location, or other advantages are able to exercise market power in pricing their products. Therefore, the positive profit-market share relationship occurs because market share affects output prices and this in turn affects profits.

Furthermore, the Relative Market Power (RMP) hypothesis also helps to explain why the concentration coefficient is insignificant because profit and concentration are only spuriously related because both variables are correlated with market share. Some argue that the common finding of a positive, dominating coefficient estimate for market share and an insignificant coefficient for concentration justifies acceptance of the Relative Market Power (RMP), which relates market share to market power. On the whole, the RMP hypothesis asserts that only firms with large market shares and well-differentiated products are able to exercise market power in pricing their products and earn supernormal profits (Berger, 1995).

### 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 Literature Review

Athanasoglou, Sophocles and Matthaios (2005) examined the effect of bank-specific, industry-specific and macroeconomic determinants of bank profitability, using an empirical framework that incorporates the traditional Structure-Conduct-Performance (SCP) hypothesis. To account for profit persistence, they applied a Generalized Method of Moment (GMM) technique to a panel of Greek banks that covers the period between 1985 and 2001. The estimation results showed that profitability persisted to a moderate extent, indicating that departures from perfectly competitive market structures may not be that large. All bank-specific determinants affect bank profitability significantly in the anticipated way. However, no evidence was found in support of the SCP hypothesis.

Athanasoglou and Manthos (2006) studied Bank Profitability in the South Eastern European Region with the aim of examining the profitability behavior of bank-specific, industry related and macroeconomic determinants, using an unbalanced panel data set of South Eastern European (SEE) credit institutions over the period 1998 to 2002. The estimation results indicated that, with the exception of liquidity, all bank-specific determinants significantly affect bank profitability in the anticipated way. A key result was that the effect of concentration is positive, which provides evidence in support of the Structure-Conduct-Performance hypothesis, while at the same time some relevance of the efficient-structure hypothesis cannot be rejected. In contrast, a positive relationship between banking reform and profitability was not identified, whilst the picture regarding the macroeconomic determinants is mixed.

Murphy (2008), in his article "The Determinants of Bank Performance in China" examined the determinants of performance for four different types of Chinese banks from 1999-2006, and tried to assessed which of four measures described performance best. The independent variables included the standard financial ratios. It also quantified influences from listing, the type of bank, the extent of foreign ownership, bank reforms and macroeconomic variables. The results suggested economic value added and the net interest margin can also be used with other traditional measures of profitability, namely Return on Average Equity (ROAE) and Return on Average Asset (ROAA). The type of bank is influential but bank size is not. While listing improved performance, neither the percentage of foreign ownership nor bank reforms had any discernable effect. Some macroeconomic variables and financial ratios were significant with the expected signs.

In Macao, the study of Wong and Cheung (1997) is by far the principal one which concludes that the banking industry in Macao is rather concentrated, with one single group of banks generating the highest level of profits. However, the factors which explain such a good performance were not empirically explored in the study.
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.

In the study of banking profitability across 18 European countries for the period 1986 to 1989, Molyneux and Thornton (1992) also found out that capital ratio impacts banks profitability positively, although such relationship is confined to just the state-owned banks.

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 market share 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 theoretical and empirical literature review, that the factors that affect bank profitability are enormous. Among all these variables, the study adopted market share, capital ratio, 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:
$$ROA = \psi_0 + \psi_1 MKS + \psi_2 EQTA + \psi_3 LQDTY + \psi_4 G + \Phi_1 NFLA + \Phi_1 R + e$$

Where:
ROA      = Return on Asset
MKS      = Market share
EQTA      = Equity-to-Total Assets;
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 | 0.015** |
| $\Delta EQTA_{(-1)}$ | -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
Source: Computed Regression Results

(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 |
| $\Delta MKS_{(-1)}$ | 0.027672 | 0.049957 | 0.553910 | 0.587 |
| $\Delta MKS$ | 1.08745 | 0.351405 | 3.09457 | 0.025** |
| $\Delta EQTA_{(-1)}$ | 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 |
| $\Delta INFLA_{(-1)}$ | -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*** |
| $\Delta G_{(-1)}$ | -0.0093272 | 0.032412 | -0.287773 | 0.777 |
| $ECM_{(-1)}$ | -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

Source: Computed Regression Results

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

| Variable | Coefficients | Standard Errors | t-statistics | Probability |
|---|---|---|---|---|
| C | 0.497449 | 0.945470 | 0.526139 | 0.605 |
| $\Delta MKS_{(-1)}$ | 0.734760 | 0.318842 | 2.30447 | 0.033** |
| $\Delta MKS$ | 0.705451 | 0.350210 | 2.01437 | 0.059*** |
| $\Delta EQTA_{(-1)}$ | 0.034472 | 0.034230 | 1.00709 | 0.327 |
| $\Delta LQDTY$ | -0.465998 | 0.544170 | -0.856347 | 0.403 |
| $\Delta INFLA_{(-1)}$ | 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 |
| $\Delta G_{(-1)}$ | 0.720198 | 0.23944 | 0.300780 | 0.767 |
| $ECM_{(-1)}$ | -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
Source: Computed Regression Results

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

| Variable | Coefficients | Standard Errors | t-statistics | Probability |
|---|---|---|---|---|
| C | -0.609586 | 0.261639 | -0.232988 | 0.818 |
| $\Delta MKS_{(-1)}$ | 0.087061 | 0.040304 | 2.13806 | 0.041** |
| $\Delta MKS$ | -0.072770 | 0.056534 | -1.28719 | 0.214 |
| $\Delta EQTA_{(-1)}$ | 0.185254 | 0.102635 | 1.80498 | 0.088*** |
| $\Delta LQDTY$ | 0.0877028 | 0.035294 | 2.573447 | 0.034** |
| $\Delta INFLA_{(-1)}$ | 0.0002965 | 0.000167 | 1.77493 | 0.093*** |
| $\Delta R$ | 0.0004770 | 0.000610 | 0.781444 | 0.445 |
| $\Delta G_{(-1)}$ | 0.0062298 | 0.597756 | -1.04220 | 0.311 |
| $ECM_{(-1)}$ | -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
Source: Computed Regression Result

(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 |
| $\Delta MKS_{(-1)}$ | 0.305482 | 0.148974 | 2.15058 | 0.045** |
| $\Delta MKS$ | 0.371352 | 0.140789 | 0.026376 | 0.979 |
| $\Delta EQTA_{(-1)}$ | 0.026320 | 0.092790 | 0.283652 | 0.780 |
| $\Delta LQDTY$ | 0.128379 | 0.070777 | 1.81385 | 0.086*** |
| $\Delta INFLA_{(-1)}$ | -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* |
| $\Delta G_{(-1)}$ | 0.118432 | 0.024611 | 4.81223 | 0.000* |
| $ECM_{(-1)}$ | -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
Source: Computed Regression Results

### Test of Hypothesis

$H_o$: Changes in market share of Deposit Money Banks has no strong, positive and significant impact on banks' profit margins.
$H_i$: Changes in the market share of Deposit Money Banks has a strong, positive and significant impact on banks' profit margins.

From the regression results presented in table 1, 2, 3, 4 and 5, the calculated t-statistics value for market share are:
First bank              = 17.486
United Bank for Africa  = 3.0946
Union Bank              = 2.3045
Wema Bank               = 2.1381
Afribank                = 2.15058
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 (Ho) is rejected and the alternative hypothesis (Hi) accepted. And the reverse is the case.

Interpretation of Results: Since the calculated t-statistic (t) values of Market Share (MKS) for all the selected Deposit Money Banks in Nigeria are positive and greater than the table t-statistics (t*) value of 2.08 at 21 degree

of freedom, we say that the impact of Market Share on Banks Profit margin for all the selected banks is strong, positive and statistically significant at 0.05 level.

We therefore reject the null hypothesis (Ho) and accept the alternative hypothesis (Hi) which states that changes in the market share of deposit money banks has a strong, positive and significant impact on banks' profit margins in Nigeria.

## 5. Conclusion and recommendations

The empirical result of the study shows that larger banks on the average achieve a higher Return on Assets than smaller ones in Nigeria. Market share plays an important role in explaining the banks' Return on Asset (ROA). The positive relationship between market shares and bank profitability suggests that bank income increase more with market share.

The findings of the study are consistent with the Relative Market Power (RMP) hypothesis. The results are also consistent with the findings of Flamini, Calvin and Liliana (2009) who found out that apart from credit risk higher returns on assets are also associated with larger bank size.
Based on the findings, it was recommended that banks should increase their market shares by rendering more attractive services including offering attractive loans and deposit rates. Also, Deposit Money Banks that are not doing very well in terms of profitability because of their small market share can merge together if they wish in order to benefit from the advantages of economies of scale thereby widening their profit margins.

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