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An Analysis on the Impact of Firm Size on Profitability of Listed Deposit Money Banks in Nigeria

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Author's contribution

The sole author designed, analysed, interpreted and prepared the manuscript.

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ABSTRACT

This paper examines the impact of firm size on the profitability of listed Deposit Money Banks (DMBs) in Nigeria, carried out based on the historical panel data analysis. To achieve this objective; an ex-post factor research design was employed. Data were generated from the annual reports and accounts of the sampled quoted Deposit Money Banks (DMBs) from 2005 – 2014. Fixed-effect and random-effect Generalized Least Square (GLS) regression technique was used as tool of data analysis. The findings establish that the independent variable (firm size) has insignificant positive effect on the DMBs' profitability proxies represented by ROA and ROE. It was concluded that Firm Size does not have significant impact on the profitability of the listed DMBs in Nigeria. The paper recommends that DMBs should maintain optimum firm size through effective management of service operations which is crucial for controlling labor cost by using the smallest possible amount of inputs which include labor and other operating cost to bring out maximum result toward improving the corporate profitability significantly.

Keywords: Firm size; profitability; deposit money banks.

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1. INTRODUCTION

Commercial banks play a crucial role in the economic resource allocation of countries by channeling funds from depositors to investors [1]. This indicates that banks work as a key players in the financial sector and ultimately maintain the financial stability of any nation's economy. They offer important services of providing deposit and loan facilities for personal and corporate customers, making credit and liquidity available into business organizations and facilitate the nation's payments systems (Ikhide, 2000). Besides, banks are also the vehicles of transmitting effective monetary policy of the Central Bank and in a way they share the responsibility of stabilizing economy [2].

The soundness of the banking sector is very critical to the health of the entire economy [3]. On the other hand, the wellbeing of banks to a larger extent depends on their financial performance which invariably indicates the strength and weakness of a bank [4]. In addition to that, financial problems of Nigerian banks were rooted to inadequate capital leading to technical insolvency, high operational loss due to low earnings and high operational costs, high incidence of non-performing loans associated with poor assets quality, weak management, declining margins and gross insider abuse [5]. Likewise, the Central Bank of Nigeria carry out recapitalization exercise in 2004 aimed at raising the capital base of all Nigerian Deposit Money Banks (DMBs) to a minimum of N25 billion so as to ensure sound and stable financial system [6]. Nonetheless, financial performance is evaluated by a number of factors including profitability. This is the case because the banks must generate necessary income to cover their operational expenses [1].

Bank size as firm attributes account for size related economies and diseconomies of scale. Economies of scale emerge as a financial firm grows in size (usually measured by its total sales).The cost of production per unit of output tends to fall as a smaller firms grows into a larger one due to greater efficiency and the spreading of a greater volume of output over firm's fixed costs. [7,8]. Naceur [9] in Tunisia and Jiang et al (2003) in Hong Kong, entail that larger banks achieve a lower level of profit than smaller ones. It shows that banks with a large retail deposit – taking network do not necessarily gain a cost advantage. However, the research conducted by Yakumar [10] is not consistent with that of Naceur [9] and Jiang et al (2003), it reveals that the effect of bank size on profitability is positive.

This indicates that the research findings involving the relationship of firm Size and profitability is still debatable. Moreover, there exists a number of studies on determinants of banks profitability but as far as the impact of firm size on profitability is concerned there exists a few and scanty studies globally including Nigeria, hence necessitating this research to fill the glaring gap. Therefore, the aim of this paper is to evaluate the impact of firm size on profitability of listed deposit money banks in Nigerian with a view to determine their relationship for the period of 2005 to 2014. The period is considered adequate in making a justifiable conclusion. This is consistent with duration used in earlier studies like Ponce [11] and Soumadi & Aldaibat [12]. Moreover, the period 2005 is justified because the banking reforms and consolidation exercise became operational in 2004. This will enable finding the subsequent effect of the reform on financial performance of DMBs. The paper targets the banks due to their critical role to the soundness of the entire economy.

The following hypothesis is formulated in null form and tested in order to achieve the paper objective:

Ho1: Firm Size has no significant impact on profitability of listed Banks in Nigeria.

2. LITERATURE REVIEW

2.1 The Concept of Firm Size

Firms may have different organizational forms, which may be an individual enterprise, a partnership, a joint stock company, a corporate body, a cooperative enterprise or a public utility agency. Again a firm may be a producer, seller, trader, exporter or a financier. In any one of these capacities, firms show similar basic tendencies. In order to maximize its profits, a firm has to maintain as large a difference between what it spends on resources and what it earns in the form of revenue or returns. The difference between the two is the firm's profit. So the firm has to keep its cost of operating a business as low as possible. On the other hand, it has to charge a high price and sell as much quantity of stocks as possible.

For Alchian and Demsetz [13] the firm therefore is an entity which brings together a team which is

more productive working together than at arm's length through the market, because of informational problems associated with monitoring of effort. In effect, therefore, this is a "principal-agent" theory, since it is asymmetric information within the firm which Alchian and Demsetz emphasize must be overcome. According to Cyert and March [14] a firm consists of individuals and groups with their own interests, aims and firm's performance is a result of conflicts and negotiation processes between these groups.

Williamson [15] sees the limit on the size of the firm as being given partly by costs of delegation (as a firm's size increase its hierarchical bureaucracy does too), and the large firm's increasing inability to replicate the high-powered incentives of the residual income of an owner-entrepreneur. This is partly because it is in the nature of a large firm that, its existence is more secure and less dependent on the actions of any one individual, and because intervention rights from the centre characteristic of a firm tend to be accompanied by some form of income insurance to compensate for the lesser responsibility, thereby diluting incentives. Zingales [16] affirm that richer countries or countries with higher average human capital have larger firms. Therefore, firm size and economic development are positively related.

You [17] give the determinants of firm size in the following approach:

The conventional microeconomic approach (or the technological approach) in which firm size is determined by technical and allocation efficiency; The transaction cost approach (or the institutional approach) in which firm size is determined by transaction cost efficiency; The industrial organization approach in which firm size and its distribution (market structure) are determined by market power.

On the basis of the foregoing, this paper considers the concept of the firm in relation to what bounds the size and output variety of firms. This includes how firms may be able to combine labor and capital so as to lower the average cost of output, either from increasing, decreasing, or constant returns to scale for one product line or from economies of scope for more than one product line. The paper is contrary to views of Alchian and Demsetz [13] Cyert and March [14] which emphasized on group of individuals as a firm size. However, in a more real sense firm size is determine by technical and allocation efficiency, transaction cost efficiency and market power in addition to variety of output firm produces, to this end the paper align to You [17] as the most appropriate explanation that captures the concept of firm size.

2.2 The Concept of Profitability

Profitability is the primary goal of all business ventures. Without profitability the business will not survive in the long run. So measuring current and past profitability and projecting future profitability is crucial and paramount to every corporate organization. According to Ayanda et al. [18] the term profitability refers to the ability of the business organization to maintain its profit year after year. Profitability of a bank according to Podder [19] is the efficiency of a bank at generating earnings. Profitability apart from ensuring the sustainability of the companies it has also wider implications of the economy as a whole. Similarly, every business should earn sufficient profits to survive and grow over a long period of time. It is the index to the economic progress, improved national income and rising standard of living.

In a simplest model, the company's revenue less the costs that are incurred by producing and selling the goods and services sold equal profit (or loss). Furthermore, profit could either be normal or supernormal. Normal profit is that minimum level of profit necessary to keep a firm in that line of business (that is, revenue equal to explicit expenses). This level of normal profit enables the firm to pay a reasonable salary to its workers and managers. On the other hand abnormal profit also known as supernormal profit is extra profit above or in excess of normal profit.

2.3 Empirical Literature

In order to examine the nature of the relationship between Firm Size and Profitability, the following empirical studies will guide:

Tharu and Shrestha [20] conducted a study aimed to examine the sound effects of bank size on the profitability of commercial banks in Nepal. The study employed panel research design for the period spans from 2013 to 2018 of the 28 banks randomly selected. Descriptive and inferential statistics were used as statistical tools. SPSS Version 20 was used for data analysis. The finding of the study shows no significant relationship between profitability and bank size (Assets).

Aladwan (2015) determine bank size influence on profitability of listed commercial banks in the Jordanian stock exchange within different size bank categories. Data for Jordanian commercial banks for 2007 to 2012 were used to classify banks for three categories according to their asset size. Return on Equity (ROE) was used as proxy for Profitability. Simple regression was adopted by using dummy variables for categories to proxy asset size as independent variable. The study revealed a significance difference in the profitability of these different sized banks.

Ali and Ghazali [21] consider the effect of bank size on the profitability of Commercial and Islamic Banks in Pakistan for the period 2008-2012. Using data from 5 Commercial and 5 Islamic Banks. The variables of the study were return on assets and firm size of all Banks looking at the number of branches. The regressions result reveals that, there is positive relationship between Firm size and Profitability in Commercial Bank, whereas no relationship between firm size and profitability in Islamic Banks was reported because they were able to generate more profit with their small size.

Niresh & Velnamphy [22] explore the effects of firm size on profitability using correlation and regression over the period 2008 – 2012. Total assets and total sales were used as proxy for firm size whereas return on assets and net profit, were utilized as indicators of profitability. The finding reveals that no relationship exists between firm size and profitability of the manufacturing firms listed in Colombo stock exchange Sri Lanka.

Yakumar [10] in his study focus on the relationship between firm structure and profitability of Indian automobile companies. The results demonstrated that firm size, age and growth are important indicators of profitability with positive impacts whereas liquidity and leverage had a negative impact on profitability. Further, the study had found empirical evidence that past profitability, capital-output ratio, and market share are also important determinants of profitability.

Javaid, Anwar, Zaman and Abdul Gafoor [23] employ pooled ordinary least square (POLS) model to examine the determinants of top 10 banks' profitability in Pakistani focusing on internal factors for a period of 2004 – 2008. The study reveals that higher total assets may not necessarily lead to higher profits due to lack of economies of scales. Besides, higher loan add to profitability but not significant whereas equity and deposits have considerable impact on profitability. They concluded that total assets, equity/total assets, deposit/total assets, and loan/total assets were the important internal determinants of profitability of bank in Pakistan.

Becker-Blease, Kaen, Etebari and Baumann [24] study the relationship between firm size and profitability within 109 SIC for digits manufacturing industries. The result was obtained using descriptive analysis and their findings demonstrate that the relationship between profitability and firm size is industry specific due to the variation of result among the industries under study. The result of 47 industries show that profitability increases at decreasing rate and eventually declines, whereas no relationship is found between profitability and size in up to 52 industries. On the other hand profitability continues to increase as firms become larger in up to 11 industries. It was concluded that larger firms earn high returns while the small firms fall short to earn, or that accounting returns behave differently than market returns with regard to firm size.

Viverita et al. [25] study found the average Middle East bank size was some US $2 billion with Asia Islamic banks averaging US $900 million and African banks just US $151 million. The other finding is the age of each bank was correlated against the various efficiency results jointly with profitability. It could be expected that newer banks may have had a chance to implement newer technologies. In this case, technical efficiency results were not correlated with the bank's age.

Augustinus and Rachmadi [26] study the sample of 238 listed companies in Jakarta Stock Exchange (JSX). Their result showed that firm size is positively related to firm's profitability and no relation to market capitalization. They also find that, more important variable inducing firm performance were macro factors rather than firm-specific factors. In addition, their finding also show that ownership structure is material on firm performance and growth due to the fact that firms with greater part of foreign ownership have much higher performance measurement in both ROA and Market capitalization growth than domestically - owned firm.

Ehi-oshio, Adeyemi and Enofe [27] empirically investigated the impact of firm attributes on

corporate profitability in developing economies. Using ordinary least square regression to analyze the existence of relationship among the explained and explanatory variables of the forty (40) randomly selected companies for a period of five years. The study founds a positive relationship of firm size and financial leverage on corporate profitability whereby the cash liquidity and capital structure indicate negative relation with regards to corporate profitability.

Valentine [28] examined the key attributes that determined corporate performance so as to do away with those having negative influences and to improve those with positive impact on business. Multiple Linear Regression model was employed using the Eviews software to explain the relationship among different variables. The results show positive relationship between Net Profit Margin and the change in Turn Over, Company Size, Dividend Yield and Price to Earnings Ratio and Net Sales Growth while change in current assets seems to have negative force.

Soumadi & Aldaibat [12] carried out a study aimed to estimate growth strategy for the Housing Bank for Trade and finance (BHTF) in Jordan measured by total assets percentage growth and profit percentage growth, the study also show a relationship of growth strategy measured by return on assets (ROA) and return on equity (ROE). The findings indicate that there is statistical significant relationship at ($P< 0.05$) between ROE and growth percent in profit but the country result was obtained between ROA and growth percent in profit. It also revealed that ROE and growth percent in total assets were significantly related and this is in line with the result obtained for ROA and growth percent in assets.

Akbar and Karaduman [29] analyzed the effect of firm size on the profitability of manufacturing companies listed in the Istanbul Stock Exchange by using a panel data set over the period 2005 to 2011. Profitability was measured using Return on Assets, while both total assets and total sales were used as the proxies of firm size. According to the results of the study, firm size, both in terms of total assets and in terms of total sales, had a positive impact on the profitability of Turkish manufacturing companies.

Charles, Nma and Jushua [30] examine the effect of firm characteristics on profitability of listed consumer goods companies in Nigeria using multiple regressions as a tool for analysis. The population of the study consists of twenty two (22) listed consumer goods companies in which eighteen were selected to form the sample of the study for the period of six years (2011-2016). The results show that firm size, sales growth and leverage have significant effects on profitability. In contrast, firm age and liquidity are not significantly affecting profitability of listed consumer goods companies in Nigeria. The study therefore recommended that, consumer goods companies in Nigeria should conduct careful evaluation and take into consideration the firm characteristics (firm size, sales growth, and leverage) that affect the profits of the company before making major business decisions as this will help in improving their profitability.

3. METHODOLOGY

3.1 Research Design and Model Specification

3.1.1 Research design

For the purpose of this study, Ex-*post facto* research design was employed. This is due to the fact that all the variables required for the study were extracted from the annual reports and accounts of quoted banks in the Nigerian stock exchange. Thus, this is a correlational study because it attempts to establish the relationship between firm size and profitability. The design is believed to be adequate and appropriate for the measurement of the impact of firm size on profitability in the listed Nigerian Deposit Money Banks (DMBs). The population of this study covers all the sixteen (16) banks that make up the total number of banks listed in the Nigerian stock exchange (NSE). A filter is employed to arrive at the working population of eight banks and considered as the sample of this paper thereby making sampling not necessary. Regression technique was used as tool for testing the hypothesis of this paper.

3.1.2 Model specification

This study adopts and modifies the models of Lipunga [31].

This is expressed as:

$$CPRTP = f (FSZ, TTAST, FAGE, PBIT)$$

Accordingly, the multivariate specification of this probabilistic mode will assume the form of:

Model I:

$$ROA = \alpha_0 + \alpha_1 FSZ_{it} + \alpha_2 PBIT_{it} + \alpha_3 FAGE_{it} + \alpha_4 TTAST_{it} + e$$

Model II:

$$ROE = \alpha_0 + \alpha_1 FSZ_{it} + \alpha_2 PBIT_{it} + \alpha_3 FAGE_{it} + \alpha_4 TTAST_{it} + e$$

Where:

CPRTP = Corporate Profitability
ROE= Return on Equity
FSZ = Firm Size
PBIT = Profit before Interest and Tax
FAGE = Firm Age
TTAST = Total Assets
α_0 = parameters to be estimated
e = Error term
$\alpha_1 - \alpha_4 =$ are partial derivatives or the gradient of the independent variable.

4. RESULTS AND DISCUSSION

The regression result reveals that firm size measured by the natural log of the total sales is positively related to profitability, though the relationship is statistically insignificant. Therefore, Null hypothesis have been tested and depicted that FS has no significant influence on the dependent variable (ROA , ROE) as the P-value of 0.37 and 0.38 in both OLS and RE respectively (See Appendix I & II) are higher than 0.05. In general, for a null hypothesis to be rejected the P-value has to be lower than 0.05 (for a 95% confidence level) or an alpha of 0.10 (for a 90% confidence interval), meanwhile the P-value in both OLS robust and RE regression is higher than 0.05, consequently this provides evidence for the acceptance of null hypothesis. Moreover, the acceptance of null hypothesis signifies variation in management efficiency in controlling operational costs and as such managerial efficiency among the directors of the DMBs is diverse. As a result, losses were sustained by Access Bank PLC and GT Bank PLC in 2009; Sterling Bank PLC in 2008, 2009, 2010 and 2011; Union Bank PLC in 2011; and UBA PLC in 2007, 2008 and 2009 (See Appendix III). Whereas profits were generated by few players in the industry.

The results of this paper as presented above is in line with the findings of Tharu and Shrestha (2019) who found insignificant relationship of firm size and profitability in Nepal commercial banks. In addition to that, Ali and Ghazali [21] found no relationship between firm size and profitability in Pakistan Islamic Banks. This is the case, because they were able to generate more profit with their small size. This means that, lack of or insignificant influence of bank size on profitability was due to diseconomies of scale that may be drive in from growth in size.

However, the study of Aladwan [32] was contrary to the findings of this study. His study revealed a significance difference in the profitability of the different sized commercial banks listed in the Jordanian stock exchange within different size bank categories. Furthermore, Ali and Ghazali [21] establish that, Firm size influence Profitability of Pakistan Commercial Bank significantly positive.

This indicate that, larger firm gain cost advantage and achieves a level of profitability higher than those with a smaller network.

5. CONCLUSIONS

In the light of the findings of this paper, the size of firm is an important pointer of corporate profitability in the Nigerian listed DMBs. Larger firms are said to be able to provide services more inexpensively as compared to small ones. They are able to spread their fixed expenses due to economies of scale, greater efficiency and the spreading of a greater volume of output in order to gain cost advantage of the cost of delegation.

6. RECOMMENDATIONS

Following the conclusion drawn, the Deposit Money Banks should maintain optimum firm size through effective management of service operations which is crucial for controlling labor cost and generate higher profitability. Therefore, management can achieve that by using the smallest possible amount of inputs which include labor and other operating cost to bring out maximum result toward improving the corporate profitability significantly. In addition to that, management of DBMs can also allocate resources to various uses in order to select the ones with the highest expected value.

DISCLAIMER

The products used for this research are commonly and predominantly use products in our area of research and country. There is absolutely no conflict of interest between the authors and

producers of the products because we do not intend to use these products as an avenue for any litigation but for the advancement of knowledge. Also, the research was not funded by the producing company rather it was funded by personal efforts of the authors.

COMPETING INTERESTS

Author has declared that no competing interests exist.

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APPENDICES

APPENDIX I

STATA VERSION 14.0 GENERATED REGRESSION RESULTS FOR RETURN ON ASSET (ROA)

```
Number of obs   =        80
F(7, 72)        =      4.93
Prob > F        =    0.0001
R-squared       =    0.3240
Adj R-squared   =    0.2583
Root MSE        =     .2864

------------------------------------------------------------------------------
         roa |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
        Size |   5.49e-10   6.13e-10     0.90   0.373    -6.73e-10    1.77e-09
        pbit |   1.22e-09   7.82e-10     1.57   0.122     -3.34e-10    2.78e-09
         age |   .0000379   .0032421     0.01   0.991    -.0064251    .006501
     assets |  -2.70e-11   5.34e-11    -0.51   0.614    -1.33e-10    7.94e-11
       cons |   .0001424   .0915261     0.00   0.999    -.1823116    .1825963
------------------------------------------------------------------------------

Random-effects GLS regression                   Number of obs      =        80
Group variable: id                              Number of groups   =         8

R-sq:                                           Obs per group:
     within  = 0.1816                                         min =        10
     between = 0.9743                                         avg =      10.0
     overall = 0.3240                                         max =        10

                                                Wald chi2(5)       =         .
corr(u_i, X) = 0 (assumed)                      Prob > chi2        =         .

------------------------------------------------------------------------------
         roa |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
        Size |   5.49e-10   6.13e-10     0.90   0.370    -6.52e-10    1.75e-09
        Pbit |   1.22e-09   7.82e-10     1.57   0.117    -3.08e-10    2.76e-09
         Age |   .0000379   .0032421     0.01   0.991    -.0063165    .0063924
      assets |  -2.70e-11   5.34e-11    -0.51   0.613     -1.32e-10    7.76e-11
       _cons |   .0001424   .0915261     0.00   0.999    -.1792455    .1795302
-------------+----------------------------------------------------------------
     sigma_u |            0
     sigma_e |  .29938309
         rho |            0   (fraction of variance due to u_i)
------------------------------------------------------------------------------


Fixed-effects (within) regression               Number of obs      =        80
Group variable: id                              Number of groups   =         8

R-sq:                                           Obs per group:
     within  = 0.1849                                         min =        10
     between = 0.9109                                         avg =      10.0
     overall = 0.3144                                         max =        10
```

```
                                        F (7,65)          =      2.11
corr(u_i, Xb)  = -0.4461                Prob > F          =    0.0552

------------------------------------------------------------------------------
 roa      |    Coef.       Std. Err.      t         P>|t|    [95% Conf.  Interval]
----------+-------------------------------------------------------------------
 size     |  5.74e-10   6.95e-10     0.83   0.412   -8.14e-10     1.96e-09
 pbit     |  1.45e-09   9.22e-10     1.57   0.121   -3.92e-10     3.29e-09
 age      |  .0009016   .0194829     0.05   0.963    -.0380084    .0398117
 assets   | -3.60e-11   8.74e-11    -0.41   0.682   -2.11e-10     1.39e-10
_cons     | -.0535588   .3892086    -0.14   0.891    -.8308621    .7237445
----------+-------------------------------------------------------------------
    sigma_u |   .0546838
    sigma_e |  .29938309
    rho     |  .03228569   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0: F(7, 65) = 0.13                     Prob > F = 0.9954
```

APPENDIX II

STATA VERSION 14.0 GENERATED REGRESSION RESULTS FOR RETURN ON ASSETS (ROE)

```
      Number of obs      =        80
      F(7, 72)           =     12.93
      Prob > F           =    0.0000
      R-squared          =    0.5569
      Adj R-squared      =    0.5138
      Root MSE           =    5.7677

------------------------------------------------------------------------------
         roe |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
        size |  -1.07e-08   1.23e-08    -0.87   0.387    -3.53e-08    1.39e-08
        pbit |   1.33e-07   1.57e-08     8.47   0.000     1.02e-07    1.65e-07
         age |  -.0544857   .0652715    -0.83   0.407    -.1846021    .0756306
      assets |  -5.28e-10   1.07e-09    -0.49   0.625    -2.67e-09    1.61e-09
       _cons |   2.309443   1.842627     1.25   0.214    -1.363766    5.982653
------------------------------------------------------------------------------

Random-effects GLS regression                   Number of obs      =        80
Group variable: id                              Number of groups   =         8

R-sq:                                           Obs per group:
     within  = 0.5629                                         min =        10
     between = 0.5595                                         avg =      10.0
     overall = 0.5569                                         max =        10

                                                Wald chi2 (7)      =     90.50
corr(u_i, X)   = 0 (assumed)                    Prob > chi2        =    0.0000
```

```
------------------------------------------------------------------------------
roe      |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
size     |  -1.07e-08   1.23e-08    -0.87   0.384    -3.49e-08    1.34e-08
pbit     |   1.33e-07   1.57e-08     8.47   0.000     1.02e-07    1.64e-07
age      |  -.0544857   .0652715    -0.83   0.404    -.1824155    .0734441
assets   |  -5.28e-10   1.07e-09    -0.49   0.623    -2.63e-09    1.58e-09
_cons    |   2.309443   1.842627     1.25   0.210    -1.302039    5.920926
-------------+----------------------------------------------------------------
sigma_u  |           0
sigma_e  |   5.1871633
rho      |           0   (fraction of variance due to u_i)
------------------------------------------------------------------------------

Fixed-effects (within) regression               Number of obs      =        80
Group variable: id                              Number of groups   =         8

R-sq:                                           Obs per group:
     within  = 0.5737                                         min =        10
     between = 0.1003                                         avg =      10.0
     overall = 0.3520                                         max =        10

                                                F(7,65)            =     12.50
corr(u_i, Xb)  = -0.4627                        Prob > F           =    0.0000

------------------------------------------------------------------------------
roe      |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
size     |  -1.34e-08   1.20e-08    -1.11   0.269    -3.75e-08    1.06e-08
pbit     |   1.39e-07   1.60e-08     8.69   0.000     1.07e-07    1.71e-07
age      |   .3039979   .3375642     0.90   0.371    -.3701644    .9781603
assets   |  -1.26e-09   1.52e-09    -0.83   0.409    -4.29e-09    1.77e-09
_cons    |  -4.988404   6.743496    -0.74   0.462     -18.4561    8.479288
-------------+----------------------------------------------------------------
sigma_u  |   5.6461187
sigma_e  |   5.1871633
rho      |   .54228941   (fraction of variance due to u_i)
------------------------------------------------------------------------------

F test that all u_i=0: F(7, 65) = 3.43                     Prob > F = 0.0035
```

APPENDIX III

LISTED NIGERIAN DEPOSIT MONEY BANKS DATA SHEET

Table I. Access bank PLC Data sheet

Year	Fsze	Pbit	Fage	Ttast	Roa	Roe
2005	4267828	7,689,094	7.0000	317,868,678	0.0242	1.8016
2006	4699957	8,043,145	8.0000	328,615,194	0.0245	0.2837
2007	6579657	19,042,106	9.0000	1,003,945,437	0.0190	0.1108
2008	7637621	26,185,429	10.0000	710,326,082	0.0369	0.1414
2009	7237622	-34,815,650	11.0000	693,783,938	-0.0502	-0.2068
2010	7237622	16,168,870	12.0000	808,823,772	0.0199	0.0922
2011	2451819	31,356,396	13.0000	1,629,003,195	0.0192	12.7890
2012	2741557	46,142,422	14.0000	1,745,471,746	0.0264	16.8307
2013	1444820	43,530,591	15.0000	1,835,466,000	0.0237	30.1287
2014	1274107	52,022,290	16.0000	2,104,360,540	0.0247	40.8304

Source: Generated by the author from annual reports and Accounts in NSE 2005-2014 Data of DMBs

Table II. First bank PLC data sheet

Year	FSZE	PBIT	FAGE	TTAST	ROA	ROE
2005	5087388	44,862,798	34.0000	897,363,783	0.0499	8.8184
2006	5238000	46,284,000	35.0000	911,427,000	0.0508	8.8362
2007	9945000	84,341,000	36.0000	1,528,234,000	0.0552	8.4807
2008	12432000	53,799,000	37.0000	2,009,914,000	0.0268	4.3275
2009	14504000	13,297,000	38.0000	2,174,058,000	0.0061	0.9168
2010	16316000	41,299,000	39.0000	2,305,258,000	0.0179	2.5312
2011	16316000	39,672,000	40.0000	3,490,871,000	0.0114	2.4315
2012	16316000	83,289,000	41.0000	3,128,326,000	0.0266	5.1047
2013	16316000	76,853,000	42.0000	3,747,826,000	0.0205	4.7103
2014	16316000	81,360,000	43.0000	4,131,635,000	0.0197	4.9865

Source: generated by the author from annual reports and Accounts 2005-2014 Data of DMBs

Table III. FCMB PLC data sheet

Year	FSZE	PBIT	FAGE	TTAST	ROA	ROE
2005	6200000	22,738,371	1.0000	452,899,000	0.0502	3.6675
2006	4000000	15,716,000	2.0000	486,485,000	0.0323	3.9290
2007	6840000	27,368,000	3.0000	732,038,000	0.0374	4.0012
2008	7462000	35,329,000	4.0000	959,184,000	0.0368	4.7345
2009	93257000	27,863,000	5.0000	1,066,504,000	0.0261	0.2988
2010	11658000	48,456,000	6.0000	1,152,002,000	0.0421	4.1565
2011	14715590	62,080,206	7.0000	1,608,652,646	0.0386	4.2187
2012	14715590	103,027,923	8.0000	1,734,877,860	0.0594	7.0013
2013	14715590	107,091,256	9.0000	2,102,846,415	0.0509	7.2774
2014	14715590	116,385,843	10.0000	2,355,876,622	0.0494	7.9090

Source: generated by the author from annual reports and Accounts 2005-2014 Data of DMBs

Table IV. GT bank PLC data sheet

Year	FSZ	PBIT	FAGE	TTAST	ROA	ROE
2005	1129839	997,283	9.0000	5,276,423	0.1891	0.8827
2006	11675461	728,181	10.0000	5,276,423	0.1380	0.0624
2007	156735855	2,226,708	11.0000	5,276,423	0.4220	0.0142
2008	249846821	7,892,548	12.0000	6281545	1.2565	0.0316
2009	221318165	-11,632,428	13.0000	6,281,545	-1.8518	-0.0526
2010	277111049	4,954,843	14.0000	6,281,545	0.7888	0.0179
2011	580048213	5,640,306	15.0000	7,851,931	0.7183	0.0097
2012	580225940	7,499,651	16.0000	7,851,931	0.9551	0.0129
2013	707797181	9,310,198	17.0000	10,796,407	0.8623	0.0132
2014	824539426	10,747,985	18.0000	14,395,209	0.7466	0.0130

Source: generated by the author from annual reports and Accounts 2005-2014 Data of DMBs

Table V. STERLING bank PLC data sheet

Year	FSZ	PBIT	FAGE	TTAST	ROA	ROE
2005	5790000	15,588,000	12.0000	829,383,000	0.0188	2.6922
2006	5790000	17,577,000	13.0000	70,009,4000	0.0251	3.0358
2007	5790000	33,012,000	14.0000	1,128,890,000	0.0292	5.7016
2008	6755000	-67,337,000	15.0000	1,238,797,000	-0.0544	-9.9685
2009	6755000	-279,786,000	16.0000	1,160,706,000	-0.2410	-41.4191
2010	6755000	-23,382,000	17.0000	1,000,691,000	-0.0234	-3.4614
2011	6755000	-18,892,730	18.0000	1,108,277,200	-0.0170	-2.7969
2012	6755000	27,668,890	19.0000	119,726,730	0.2311	4.0961
2013	6755000	29,971,839	20.0000	1,328,792,700	0.0226	4.4370
2014	6755000	32,398282	21.0000	1,290,987,000	0.0251	4.7962

Source: generated by the author from annual reports and Accounts 2005-2014 Data of DMBs

Table VI. UNION bank PLC data sheet

Year	FSZ	PBIT	FAGE	TTAST	ROA	ROE
2005	3500000	11,892,000	35.0000	799,862,000	0.0149	3.3977
2006	3530000	12,811,000	36.0000	884,137,000	0.0145	3.6292
2007	5748000	29,525,000	37.0000	1,191,042,000	0.0248	5.1366
2008	8622000	56,815,000	38.0000	1,673,333,000	0.0340	6.5895
2009	10778000	13,662,000	39.0000	1,548,281,000	0.0088	1.2676
2010	12934000	15,885,000	40.0000	1,617,969,000	0.0098	1.2282
2011	124423000	-26,600,000	41.0000	1,920,435,000	-0.0139	-0.2138
2012	124423000	52,010,000	42.0000	2,272,923,000	0.0229	0.4180
2013	124423000	56,058,000	43.0000	2642,296,000	0.0212	0.4505
2014	124423000	56,200,000	44.0000	2,762,573,000	0.0203	0.4517

Source: generated by the author from annual reports and Accounts 2005-2014 Data of DMBs

Table VII. UBA PLC data sheet

Year	FSZ	PBIT	FAGE	TTAST	ROA	ROE
2005	5035000	4,556,000	35.0000	120,987,000	0.0377	0.9049
2006	5035000	356,000	36.0000	123,842,000	0.0029	0.0707
2007	5035000	-56,799,000	37.0000	132,959,000	-0.4272	-11.2808
2008	5035000	-28,306,000	38.0000	108,825,000	-0.2601	-5.6219
2009	5160000	-8,864,000	39.0000	94,059,000	-0.0942	-1.7178
2010	6411000	1,314,200	40.0000	216,984,000	0.0061	0.2050
2011	6998000	1,546,500	41.0000	232,768,000	0.0066	0.2209
2012	96780098	1,657,897	42.0000	229,760,000	0.0072	0.0171
2013	19287233	1,947,308	43.0000	330,872,475	0.0059	0.1009
2014	19287233	3,093,940	44.0000	283,949,493	0.0109	0.1604

Source: generated by the author from annual reports and Accounts 2005-2014 Data of DMBs

Table VIII. WEMA bank PLC data sheet

Year	FSZ	PBIT	FAGE	TTAST	ROA	ROE
2005	1628723	2,738,389	14.0000	293,744,884	0.0093	1.6813
2006	1728723	2,992,738	15.0000	308,287,338	0.0097	1.7312
2007	1928723	2,969,283	16.0000	289,485,859	0.0103	1.5395
2008	2256373	3,093,940	17.0000	327,384,849	0.0095	1.3712
2009	2468831	3,349,292	18.0000	382,562,312	0.0088	1.3566
2010	2563748	3,229,182	19.0000	297,383,844	0.0109	1.2596
2011	2738474	3,102,983	20.0000	417,374,894	0.0074	1.1331
2012	4236377	3,892,838	21.0000	408,273,839	0.0095	0.9189
2013	3465750	4,002,938	22.0000	426,367,474	0.0094	1.1550
2014	3647383	5,647,383	23.0000	475,857,584	0.0119	1.5483

Source: generated by the author from annual reports and Accounts 2005-2014 Data of DMBs

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