FIRMS ATTRIBUTES AND FINANCIAL PERFORMANCE ON LISTED DEPOSIT MONEY BANKS IN NIGERIA

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Abstract
Examining the effect of the financial performance of organizations has gained importance in the wholesale refinance literature; however, the study investigated determinants of financial performance of listed DMBs in Nigeria for ten years from 2011-2020. The study adopts the correlation design so that to correlate the relationship between variables. The population of this study comprises the Seventeen listed deposit money banks in Nigeria as at 31 December, 2020. A total of thirteen which represent seventy-seven percent of the banks were duly used as sample for the study. The audited annual reports were obtained from Nigerian stock exchange. The result provides evidence Bank size, Capital adequacy ratio and Income diversification have insignificant impact return on assets of the banks. In the determining the effects of moderating impact on firm age is that Capital adequacy ratio, Bank size, Income diversification has a statistically insignificant influence on the return on assets of listed deposit money banks in Nigeria. Based on the findings, the bank management should also continue to put policies and strategies in place to ensure effective management of bank size and efficiency for increased profitability, on the other part, shareholders should ensure management is properly diversified the banks’ income in a way that would yield more revenue and ensure short term cash should not be channeled to capital investment.

Keywords: Bank age, Bank size, Capital adequacy ratio, Deposit money banks, Income diversification.

1. Introduction
Financial performance plays a high level affair in economic resources distribution of any nations. Financial performance has implication in terms of economic growth of any nations; great financial performance will attract more investors while poor financial performance will discourage investors, from investment which lead to
financial failure and crisis, this can affect economic growth of a country (Mark et al., 2019). According to Oladipupo (2015) Profitability has an aims of financial direction, as long as the aims of financial direction is to generate owners’ wealth, profit is one of the determinants financial performance. The aims of any business are to make profit; profitable businesses are capable to award its owners with a highly ROI and also make sure that there rises sustainability of a business.

According to Oyinpreye (2016), the power of any bank depends on the capital adequacy. A bank’s capital is the detachment value of a bank to the current value of its future net income. Capital adequacy measure the level of solvency for the bank, it indicates whether a bank has absolute capital to help the danger in its balance sheet. A larger bank are always has advantage over little banks for handling the measurement of economies in businesses and will tend to have more profit (Haruna, 2015). The model linkage that live between bank size and profitability are very important and its can create a factors that can impact the profitability. Bank size are defined as a barrel and diversity of services banks possesses and can make available concurrently to its customers (Terraza, 2018). Income diversification defined a bank to generate income other than the traditional interest income and it is calculated with total non-interest income all over total assets. Banks needs change the traditional way of generating income toward opening more diversification services so that to have more competition in banking sector as well as non-banking sector and capital market. Income diversification is an additional alternative of sources of income. It includes other earned charges for other bank services and service charges on deposit accounts (Ibenta, 2018). Bank Age focused on company age means number of years that the banks have been in existing legally. Morgan, et al (2004) defined bank age is a number of years’ banks has been active in operations. These is all about old generation banks and new generation, a bank that has age over other banks definitely most have exposure over the banks that have few years in existence and is measured as the number of years break up from the operation.

In the year 2018, Skye bank has changed identity to Polaris bank because of financial crisis where all the staff will be retained under the new ownership structure (Daily trust, Punch, Guardian and Sun, 07 November, 2018). It is well-known fact that bank failures don’t happen one day normally over a reasonable period; same of the reasons of banks failure includes poor management, non-performing loan and insider abuses. Polaris bank has acquired or taken over all the assets and liabilities of sky bank (Sun, and Guardian, 10 November, 2018). In the year 2019, Access bank and Diamond bank are merged where all the assets
acquired, it is clear that the compliance from both banks has showed the agreement as a friendly amalgamation. Access bank has not clearly expressed their reasons for this merger. It means that Access bank has to respect what Diamond bank had achieved over the years, they reached agreement that the Diamond bank mobile app would remain intact and prolific products of Diamond bank will be retained the safety of the staff. This means the customers that have accounts with both banks they would not be merged by default, no shutting down branches and others agreement (Guardian, Sun and Daily trust 17 March, 2019). In the year 2013 and 2017 Unity bank plc made a total loss ofN-22,636,924 andN-14, 917,938 respectively as a result of poor management and non-performing loans from customers where earning per share drops to N-127.62 and N- 58.74 respectively (Unity bank annual report, 2017 and 2013).

The objectives on this study are to:

i. Investigate the impact of capital adequacy ratio on financial performance of DMBs in Nigeria

ii. Examine the effect of bank size on financial performance of DMBs in Nigeria

iii. Determine the impact of income diversification on financial performance of DMBs in Nigeria

iv. Determine the moderating effect of bank age on the linkage between bank attributes (capital adequacy ratio, bank size and income diversification) and financial performance of DMBs in Nigeria.

Base of the above objectives, hypotheses has been formulated in null form:

H$_{01}$: There is no significant linkage between Capital adequacy ratio and financial performance of DMBs in Nigeria.

H$_{02}$: There is no significant linkage between Bank size and financial performance of DMBs in Nigeria.

H$_{03}$: There is no significant linkage between Income diversification and financial performance of DMBs in Nigeria.

H$_{04}$: Moderating ratio of bank age on the linkage between (Capital adequacy ratios, bank size and income diversification) has no significant effect on financial performance of DMBs in Nigeria.

The previous literature, there few studies that conducted on banks attributes on financial performance of DMBs in Nigeria by using income diversification and
bank age as an independent and moderating variable respectively. This investigation is going to balance the interval by using capital adequacy ratio, bank size and income diversification as independent variable and return on asset as dependent variable, this study also introduces bank age as moderating variable that can moderate linkage that exists between explanatory and dependent variable.

The paper has the following other sections. Section two reviews literature and theoretical in order to provide a basis for the research. Section three contains the methodology adopt by this study. Section four contains an argumentation of the results and findings of this study. Section five includes conclusion and recommendations of the study.

2. Literature Review
This concept provides a guide and details of the independent, dependent and moderating variables with the interrelationship between and among variables. A conceptual framework has been used in this research work to explain the possible courses of action or to show a thought or approach to an idea.

2.1 Capital Adequacy Ratio and Financial Performance
The impact of capital adequacy ratio on banks performance cannot be underrated back of capital adequate influences the amount of funds obtainable for loans, which constantly impact the level and degree of danger absorption Mark et al (2019). It is clear that bank capital is act as safeguard cushions against losses drive-by certain kinds of dubiety. The perspective looks at capital as a reserve to avoid default and capital also acts as a bumper to protect depositors and other creditors upon misplacement at the operating and liquidation stage (Osunsan et al., 2015).

2.2 Bank Size and Financial Performance
Bank size record the existence of economies or diseconomies of scale Naceur& Goaied (2008). The variable is calculated as the natural log of total assets (Saona, 2011). Economic theory indicates that market structure influence banks performance (Ozili, 2019) and that if an company is subject to economies of scale, bigger institutions would be more efficient and could provide service at a small cost (Rasiah, 2010).

2.3 Income Diversification and Financial Performance
Banks have to move away from their heritage activities, as far as sacrifice more diversified services as they face more competition within the banking industry as well from non-banking industries and capital markets. Income diversification is an
option means of income other than earning from loans. It contains fees gained from sacrifice unit trust services, services charges on deposit accounts, and charges for other bank services (Ibenta, 2018).

2.4 Bank Age and Financial Performance
Researchers have commenced to emolument more concentration in the role of age on performance of surviving banks (Coad et at, 2013). Studies have examined the age impact on new banks (Stam & Wennberg, 2009). Performance and characters across banks of distant banks age and wage payment levels. Hui, et al. (2013) nevertheless pointed out the studies on companies age and performance is scarce in less developed parts of the world. Previous studies have shown that banks performance is a many-sided experience, as (Delmar et al, 2016).

Theoretical framework
The research framework is as follows

![Diagram]

Figure 1
This study for bank attributes on financial performance of listed DMBs in Nigeria are examined in range of portfolio theory and Agency theory.

The Agency Theory
The agency theory look out the firm as a linkage between the principal (shareholders) and agents (managers) in which decision-making power is delegated to the agent, purely it cannot be warranted that the decision of the agent be aligned with the interests of the principal (Gurbaxani & Whang, 1991).

Portfolio theory
Portfolio theory is the most consequential and plays a role in banking effort. According to Abdulazeez et al. (2016) portfolio equilibrium classic of asset diversification, the easier way of holding of each asset in a capital owners’
portfolio is a blast of policy decisions adjudicate by a number of proxy such as the vector of rates of return held in the portfolio, a vector of risks that linkage with the ownership of each financial assets and the size of the portfolio. Base on this studies portfolio theory has been adapted. The portfolio theory describes that income diversification and wants portfolio to be masterpiece of conventional banks are output of making decisions by the management.

3. Methodology

This study uses correlation research design, because it is likely to demonstrate the statistical interrelation between two or more variables. This study will match of all the Seventeen (17) Nigerian DMBs where are listed on the Nigerian Stock Exchange (NSE) as at 31st December, 2020. This research will adopt a filter-sampling technique, to arrive at thirteen (13) representing 77% of the population will be screened as a sample for this study, this investigation secondary sources of data collection where used, panel data will be generated from annual reports of the selected DMBs in Nigeria.

Measurement of Variables

Table 1: Variables measurement

<table>
<thead>
<tr>
<th>Variables</th>
<th>Ratio/symbol</th>
<th>Proxy/ Definition</th>
<th>Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Profitability</td>
<td>Return on Asset = ROA</td>
<td>Earnings before interest and tax</td>
<td>Yunusa, 2019) (Oyinpreye, 2016)</td>
</tr>
<tr>
<td>Capital adequacy Ratio</td>
<td>Total equity to risk weighted assets = CAR</td>
<td>Total equity</td>
<td>(Assfaw, 2018) (Ani et al, 2012)</td>
</tr>
<tr>
<td>Bank size</td>
<td>Logarithm of total assets = BSIZE</td>
<td>Natural Log of total assets</td>
<td>(Yunusa, 2019) (Eyigege, 2018)</td>
</tr>
<tr>
<td>Income diversification</td>
<td>Non-interest income to total assets = IND</td>
<td>Non – Interest income</td>
<td>(Muhammed, 2015) (Adina, 2013)</td>
</tr>
<tr>
<td>Bank age</td>
<td>Logarithm of age from date of listing = BAge</td>
<td>Natural Log of bank age</td>
<td>(Osunsan et al., 2015)</td>
</tr>
</tbody>
</table>

Source: Compiled by the Authors (2022)
Model Specification
ROA\textsubscript{it} = \alpha + \beta_1\text{CAR}_\text{it} + \beta_2\text{BSIZE}_\text{it} + \beta_5\text{IND}_\text{it} + \epsilon_\text{it} \tag{1} \\
ROA\textsubscript{it} = \alpha + \beta_1\text{CAR}_\text{it} + \beta_2\text{BSIZE}_\text{it} + \beta_3\text{IND}_\text{it} + \beta_4\text{BAGE}_\text{it} + \beta_5\text{CAR}_\text{it}\times\text{AGE}_\text{it} + \beta_6\text{BSIZE}_\text{it}\times\text{AGE}_\text{it} + \beta_7\text{IND}_\text{it}\times\text{AGE}_\text{it} + \epsilon_\text{it} \tag{2}

Where as:
ROA = Return on Assets, CAR = Capital adequacy ratio, BSIZE = Bank size, IND = Income diversification, AGE = Bank age, \(\alpha\) = Constant, \(\beta_1\) - \(\beta_7\) = Coefficient of the variables, \(\epsilon\) = Error term, \(i\) = Bank, \(t\) = Time

4. Results and Decisions

Table 2: Descriptive Statistics of the Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Std. Div</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROA</td>
<td>0.070</td>
<td>0.021</td>
<td>-0.02</td>
<td>0.18</td>
</tr>
<tr>
<td>CAR</td>
<td>0.542</td>
<td>0.248</td>
<td>0.06</td>
<td>0.89</td>
</tr>
<tr>
<td>BSIZE</td>
<td>23.273</td>
<td>7.761</td>
<td>18.520</td>
<td>56.10</td>
</tr>
<tr>
<td>IND</td>
<td>0.205</td>
<td>0.217</td>
<td>0.03</td>
<td>0.84</td>
</tr>
<tr>
<td>BAGE</td>
<td>1.208</td>
<td>0.375</td>
<td>0.23</td>
<td>1.89</td>
</tr>
</tbody>
</table>

Source: STATA 13 Output

The above Table 2 acts that measure of Financial Performance which proxy by Return on Asset (ROA) of the listed DMBs has a minimum value of -.02 and the maximum is .18. This implies that the banks that have lower percentage of 2 and higher percentage of 18. This indicated that, banks that have 2% ROA documented lower financial performance, otherwise a higher financial performance. The mean is 0.007, which indicates 7% average financial performance in the sampled banks. The capital adequacy ratio (CAR) indicate that a fewer of .06 and largest of .89. The smallest ratio of capital adequacy is 6% and the largest ratio is 89%. This means that there is at least six percent of capital adequacy ratio and at most banks have eighty-nine percent capital adequacies of entire sampled listed Nigerian DMBs. In addition, mean is .542, which shows most of the banks have averagely 54% of capital adequacy of listed Nigerian DMBs. The standard deviations are .248, which suggested that, the data deviate from mean value by approximately 25%.

The bank size (BSIZE) indicate that a smallest and largest of 18.52 and 56.10 respectively. This means that the smallest capital is 18.52billion of listed Nigeria DMBs and the highest number is 56.10billion. This shows that some firms have violated the minimum requirement of twenty billion capitalization policy by Central Bank of Nigeria (CBN). The mean is 23.273 which indicate that on the average it can be said there are banks that have approximately twenty-three billion capitals of Nigeria DMBs. On average the banks have meet-up with the requirement
of the CBN. Furthermore, income diversification (IND) has means of 0.205. This indicated the average 21% of the directors in the main board have accounting and financial knowledge. The smallest and largest level of the board financial expertise is 0.03 and 0.84 respectively. This indicated that some of the deposit money banks have three percent diversify their income, but some banks have diversified about eighty-four percent of their income to other activities. Finally, the bank age (BAGE) indicates that a minimum of .23 and maximum of 1.89. This indicates little age of the sampled banks is 23 years, while there are some banks that are more than one hundred and eighty-nine years. The mean is 1.208 which indicates that on the average it can be said there are banks that have approximately one hundred and twenty years of listed deposit money bank in Nigeria.

Table 3: Correlation Matrix

<table>
<thead>
<tr>
<th>Variables</th>
<th>ROA</th>
<th>CAR</th>
<th>BSIZE</th>
<th>IND</th>
<th>AGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROA</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAR</td>
<td>-0.3348</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BSIZE</td>
<td>0.2758</td>
<td>0.0037</td>
<td>1.0000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IND</td>
<td>0.0308</td>
<td>0.1298</td>
<td>0.1658</td>
<td>1.0000</td>
<td></td>
</tr>
<tr>
<td>BAGE</td>
<td>0.0760</td>
<td>-0.0449</td>
<td>0.1778</td>
<td>-0.0632</td>
<td>1.0000</td>
</tr>
</tbody>
</table>

Source: STATA 13 Output

The table shows that CAR has negative association with ROA of listed DMBs in Nigeria. The indicates that an improvement in CAR lead to the decrease of ROA of the listed DMBs in Nigeria. While IND and BAGE have positive association with ROA of the sampled firms. The correlation result in respect to the regressor themselves is that CAR has a positive association with BSIZE, and IND, but has negative relationship with BAGE only. Similarly, BSIZE has a positive interrelation with IND and BAGE. Finally, IND has a negative association with BAGE.

Table 4: Random Effect Regression Result

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>T. Value</th>
<th>P. Value</th>
<th>Tolerance/ VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>.0720</td>
<td>8.69</td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td>CAR</td>
<td>-.0251</td>
<td>-3.35</td>
<td>0.001</td>
<td>.981406/1.02</td>
</tr>
<tr>
<td>BSIZE</td>
<td>.0007</td>
<td>3.39</td>
<td>0.001</td>
<td>.948882/1.05</td>
</tr>
<tr>
<td>IND</td>
<td>.0089</td>
<td>1.01</td>
<td>0.314</td>
<td></td>
</tr>
<tr>
<td>R-Square</td>
<td></td>
<td></td>
<td></td>
<td>0.1905</td>
</tr>
<tr>
<td>Wald Ch2</td>
<td></td>
<td></td>
<td></td>
<td>28.75</td>
</tr>
<tr>
<td>F-Significant</td>
<td></td>
<td></td>
<td></td>
<td>0.0000</td>
</tr>
<tr>
<td>HettestProb&gt; Chi2</td>
<td></td>
<td></td>
<td></td>
<td>0.0665</td>
</tr>
</tbody>
</table>

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4.1 Capital Adequacy Ratio and Financial Performance
The regression result in table 6 shows that the coefficient of CAR is -0.251 and a t-value of -3.35 with a P-value of 0.001 which is significant at 1% level of significance. This indicates that CAR is negatively and significantly affecting the financial performance of listed DMBs in Nigeria. However, the output is unexpected as is not in line with the researchers’ prior expectation; adequate capital to run a business would lead to good financial result. The result is contrary with agency theory because Management is expected to act on the shareholders’ interest. This is contrary with the findings of (Mark et al., 2018).

4.2 Bank Size and Financial Performance
This indicates that Bank Size has a coefficient of 0.007 and a t-value of 3.39 with a P-value of 0.001, which is significant at 1% level of significance. The result shows that, Bank Size is positively and significantly affecting the Financial Performance of the listed DMBs in Nigeria. This suggests that the larger size of the bank, the effectiveness of the financial performance. The result is not unexpected as it’s in line with the researchers’ prior expectation, big banks are expected to provide all necessary facilities that could be used to improve financial commitments. The finding of this output is not with concept or line of findings from Ani, et. al. (2012); Aremu, et.al. (2013) and Monday et al. (2019) that found BSIZE is insignificant influence on the financial performance.

4.3 Income Diversification and Financial Performance
This shows that the coefficient and the t-value of income diversification (IND) .0089 and 1.01, respectively with the P-value of 0.314 where is insignificant at any level of significance. The result shows that IND is not significant impact on the Financial Performance of the listed DMBs in Nigeria. The result is not in line with reality that diversification of income from the traditional system would increase inflow which as well improve the financial performance. The statistical result is contrary or inverse to the finding of Chinye, et. al. (2013) and Ibenta (2018) who arrived significant association.

Table 5: Regression Result for Hypotheses

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAR</td>
<td>-.0017</td>
<td>0.945</td>
</tr>
<tr>
<td>BSIZE</td>
<td>.0008</td>
<td>0.249</td>
</tr>
<tr>
<td>IND</td>
<td>-.0533</td>
<td>0.024</td>
</tr>
<tr>
<td>BAGE</td>
<td>.04898</td>
<td>0.025</td>
</tr>
</tbody>
</table>
10

**CARAGE**  
-0.0121  
0.498

**BSIZAGE**  
-0.0002  
0.675

**INDAGE**  
0.0435  
0.018

*Source: STATA 13 Output*

**H_01:** The hypothesis one stated that: CAR has no significant effect on the financial performance of the DMBs in Nigeria.

The result reveals that CAR with a coefficient of -0.0017 and a p-value of 0.945 has negative and insignificant impact on the financial performance of the listed DMBs in Nigeria. Therefore, the result provides basis of not to reject the Null hypothesis one of the study. Therefore, the hypothesis one is hereby fail to reject.

**H_02:** BSIZE has no significant effect on the financial performance of listed DMBs in Nigeria.

This result reveals BSIZE which has a coefficient of 0.0008 and a p-value of 0.249 is positive and insignificant related to the financial performance of listed DMBS in Nigeria at any level of significance. The result is not rejects the Null hypothesis three of the study. Thus, the hypothesis three is hereby fails to reject.

**H_03:** The hypothesis one stated that: IND has no significant effect on the financial performance of the listed DMBs in Nigeria.

The result reveals that IND with a coefficient of -0.0533 and a p-value of 0.024 has negative and significant impact on the financial performance of the listed DMBs in Nigeria at 5% level of significance. Therefore, the result provides basis of rejecting the Null hypothesis five of the study. Therefore, the hypothesis five is hereby rejected.

**H_04:** BAGE has no significant impact on the financial performance of the listed DMBs in Nigeria.

The result shows that BAGE has positive and significant influence on the financial performance of the listed DMBs in Nigeria, given the coefficient of 0.04898 and a p-value of 0.025 which is statistically significant at 5% level of significance. The result provides an evidence of rejecting the Null hypothesis six of the study. Hence, the hypothesis six is hereby rejected.

**5. Conclusion and Recommendations**
The study concludes that, CAR, BSIZE have insignificant influence on the ROA of listed DMBs in Nigeria. Indicating that a change of CAR, BSIZE does not leads to change of ROA of listed DMBs in Nigeria. IND has a significant negative impact on the ROA of listed DMBs in Nigeria. This shows that an increase of IND leads to the decrease of ROA of listed DMBs in Nigeria. In the determining the effects of moderating impact on BAGE. It conclusively indicated that BAGE is negative but no significant moderating the relationship between CAR, BSIZE and ROA of listed DMBs in Nigeria. This means that BAGE cannot moderate the relationship of CAR, BSIZE and ROA. BAGE has statistically positive moderating effect on IND and ROA. This reveals that BAGE has improved the relationship between IND and ROA of listed DMBs in Nigeria. From the findings and conclusions of the study, the study makes the following recommendations: The CBN should pay attention to the cost incurred by banks on deposits maintained with then as this may have significant on the banks’ capital and performance. The bank management should also continue to put policies and strategies in place to ensure effective management of bank size for increased profitability. On the other part, shareholders should ensure management is properly diversified the banks’ income in a way that would yield more revenue and ensure short term cash should not be channeled to capital investment.

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