Effects of Firm-Specific Characteristics and Macro-Economic Factors on Financial Performance of Banks in Nigeria

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Abstract  
This study investigates if and how firm-specific characteristics and macro-economic factors affect the financial performance of deposit money banks in Nigeria between 2005 and 2014. We made use of data obtained from the annual reports of 15 deposit money banks operating in Nigeria and from the Annual Report and Statement of Accounts of the Central Bank of Nigeria. Multiple regressions technique was employed using panel data with the random effects method used for the estimation of the model. The results showed that Fund Source, Loan Quality, Liquidity, Management Quality, and Direction of Efforts were bank-specific characteristics that contributed significantly to the financial performance of the banks whereas Capital Strength was found to be insignificant. Also, the three macroeconomic factors considered, i.e. economic growth, inflation, and the annual lending rate, were found to be significant factors that affected the financial performance of deposit money banks in Nigeria in the study period. It is recommended that stronger effective corporate governance be ensured in order to boost up the performance of these banks by eliminating corruption and promoting and ensuring transparency in these banks.

**Keywords:** Bank Specific Characteristics, Economic Growth, Inflation, Annual Lending Rate, Financial Performance

Introduction  
The financial sector is recognized worldwide as an important vehicle of achieving economic growth through efficient allocation of resources to productive units. Banks are the major components of the financial sector. They provide a platform to interact for the different sectors of the economy. They also encourage high level of specialization, expertise, economies of scale and an environment conducive for the implementation of various economic policies of government. Such policies are intended to achieve, among other things, economic growth, exchange rate stability, and high levels of employment (Favero, Giavazzi, & Flabbi, 1999).

A way of determining the performance of an organization is to compare the actual output or results with the goals and objectives set before the commencement of operations that produced the output. This is usually done with respect to effectiveness, efficiency, financial viability, and relevance (Rojas & Laidlaw, 2015). In studies on performance of firms, three specific areas of firm outcomes are
usually considered. The first is financial performance. This involves focusing on profitability variables like return on assets, profit after tax, return on investment, etc. The second area is product market performance. This has to do with assessment of the acceptability of a firm’s product(s) or service(s) and may be in terms of volume of sales, the monetary value of sales, i.e. turnover, and percentage share of the market. The third area of performance is on shareholder return. This entails the measurement of what accrues or has accrued to shareholders over a period of organizational operations and may be assessed by total shareholder return, economic value added, market price of shares, etc. (Richard, Devinney, Yip, & Johnson, 2009).

This study is premised on the fact that it has been stated at several forum that if a broad-based growth of the Nigerian economy is to be achieved, then, among other things, the banking industry will have to mobilize funds effectively and utilize such funds efficiently. There is no gainsaying the fact that, in both the short run and long run, the potential for economic growth and transformation in Nigeria is immense. It is also widely known that effectiveness and efficiency of the banking sector is key to realising the growth objective of government. This is so as banks play an essential role in the proper functioning of payments systems and their performance is directly related to improved productivity in the economy (Ikhide, 2009). It is therefore important for efforts to be directed towards monitoring and formulation of policies that will enhance the effectiveness of banks operating in Nigeria as well as their efficiency in allocating resources to different sectors of the economy. The above may be jeopardise when firm-specific characteristics and macro-economic factors impedes bank’s performances. Studies identifying these characteristics and factors in Nigeria are greatly inadequate. It is based on the foregoing that this study is undertaken.

The principal objective of this study is to determine if and how firm-specific characteristics and macro-economic factors have affected the financial performance of listed deposit money banks in Nigeria in the period 2005-2014.

2. Previous Research
2.1. Conceptual Issues

Performance in profit making organizations can be seen in the utility created and distributed to final consumers and the surplus generated for the owners. Specifically in banking, Okigbo (1981) puts it forward that banking performance lies with provision of efficient banking services, greater mobilization of savings and channelling these savings between surplus and deficit units. This is the concept of operational performance. In that wise, the operational efficiency in terms of cost involved in operating in the market, pricing efficiency and allocation efficiency are very crucial in measuring performance.

Another concept of performance from literature is financial performance. In this regard, banking income is the measure of financial performance and forms the basis for other performance indicators (rate of return, profits, net interest margin, return on equity etc.).

Measuring the financial performance of banks can be considered from two different approaches of accounting and econometrics. The accounting approach uses simple financial ratios to assess the performance of firms and, largely, has been the measures used for assessing bank performance (Ncube, 2009). Particularly, the financial performance of banks has been measured previously largely with the use of ratio analysis even though it has a number of limitations.

For instance, Uhomoibhi (2008) asserts that actions of the management and their investment decisions that actually may lead to lower performance are not considered under ratio analysis. In the same vein, Mukherjee, Ray, & Miller (2001) reported that using simple financial ratios provide a restricted position of the process and also fail to provide interactions of the different factors. This in turn leads to outcomes that are seemingly contradictory results. And, according to Berger & Humphrey (1997), alternate methods such as non-parametric and parametric approaches have been developed as a result of the limitations of ratio analysis as well as advances in management sciences.
In order to realize the objective of identifying the other factors that affect the financial performance of banks in Nigeria apart from efficiency and effectiveness, this study uses measurements which have been considered in other related studies. Whether for single countries and panel of countries an observable thread common in most studies is that the financial statement measurements which are used as the dependent and independent variables in the performance model are first computed in the form of ratios. They are discussed hereunder.

2.2. Measures and Determinants of the Financial Performance of Banks

Profitability Ratios- Return on Assets (ROA) and Return on Equity

In several research studies profitability ratios are presented as measures of financial performance with the computations done using figures reported in the annual reports of the target organizations. Rasiah (2010) posits that the use of profitability ratios is not influenced by price-level changes because changing rates of inflation have no effect on the real value of profits reported. As such, how well a bank is performing financially can be revealed by Return on Assets (ROA) as well as Return on Equity (ROE), (Bourke, 1989 and Molyneux & Thornton, 1992).

ROE measures the rate of return that is generated on the equity of shareholders. For banks, it can be found by taking net income after taxes as a proportion of total equity capital both Tier 1 and Tier 2. ROE indicates what a bank has earned on the investment of its shareholders. ROA, on the other hand, is simply Net Income after Taxes divided by Total Assets. It is a signal of organizational performance by its showing how effective and efficient the management of a bank has been in its usage of assets to generate earnings. Generally, the notion is a high ROA is a sign of high performance of an organization. In this wise, ROA is a veritable useful tool for the comparison of profitability among banks and the assessment of the entire banking system.

Bentum (2012) reports Rivard and Thomas as arguing that it is better to measure the profitability using ROA for the fact that high equity multiplier cannot be distorted by it. In the same vein, as financial intermediaries end up having lower ROA, it is common for banks to use financial leverage to raise their ROE to levels that are comparable and competitive, (Hassan & Bashir, 2003). It is in this wise that this paper adopts ROA as the measure of financial performance.

2.3. Internal Factors/Bank Specific Characteristics

The determinants of the performance and profitability of banks can be categorized into internal factors and external factors (Uhomoiibhi, 2008). The factors that are deemed to be within the control of the banks are the internal factors and they majorly have significant influences on the cost of operations as well as revenue. These internal factors have been further classified by some authors as financial statement variables and non-financial statement variables. Those factors which are related directly to the income statement and the financial position of the banks are financial statement variables while non-financial statement variables are features of the banks such as size, location, number of branches, etc. of the individual banks. The focus in this study is on financial statement variables. They are as follows:

(i) **Fund Source (FUS):** The most important source of funds for banking business is deposits and it is common to see ‘Depositors Funds’ in the statement of financial position. Other sources include interbank borrowing, shareholders, ploughed back profits, etc. To ascertain the influence of sources of fund on profitability, deposits are measured against the total assets of the bank. The attraction of deposits as a source of funds for banks can be attributed to its cheapness: interest rate paid on deposits is not up to what the banks collect from their lending activities. Khrawish (2011) provide empirical evidence that a reasonably sufficient demand for loans will lead to a significant impact on financial performance of banks.

(ii) **Capital Strength (CAS):** It is **useful** to consider capital strength as a determinant of profitability of banks for the fact that it is a source of funds which is often large. Authors like
Demirguc-Kunt & Huizinga (1999) and Berger (1995) even argue that, due to its effect on leverage and risk, the structure of a bank’s capital—i.e. shareholders’ funds, reserves and retained earnings—has significant influence on how profitable the bank becomes. Though, the assets of a bank could be financed by not only capital but also by debt, financing by debt poses a higher level of risk particularly credit risk and liquidity risk. A bank which, for instance, experiences lower or even no profit because of credit default or liquidity problems must still fulfil its obligation of servicing its debt. Conversely, if such a bank has enough capital, it may be able to undertake higher risks and surely be able to withstand liquidity and credits risks.

In order to survive financial crises which may occasion their economies and as well offer depositors a confidence in the financial system generally, banks that operate in developing countries cannot but have a capital structure that is strong (Sufian & Chong, 2008). Earlier, Molyneux (1993) has posited that a bank that possesses a strong equity base can reduce its cost of capital and such could consequently lead to higher profitability. That Capital Strength is positively related to banks’ profitability and overall performance is evidenced in studies like Sufian & Chong (2008), Goddard, and Molyneux, & Wilson (2004).

Capital adequacy ratio would usually show the relative safety and soundness of the banks. In this study, Capital Strength is measured by the ratio of total equity to total assets.

(iii) **Loan Quality (LOQ):** The level of credit risk to which the bank is exposed can be known when a comparison is made between the amount of loan loss that is provided for and the total amount of loans in the balance sheet. Other things being equal, loan loss provision would be negatively related to profitability for the fact that ‘bad loans’ is one of the most serious elements in reduction of profits. Among others, Miller & Noulas (1997) document that the profitability of a bank decreases as its exposure to high credit risk increases. In essence, profits will increase when lower provisions are made for loan losses.

(iv) **Liquidity (LIQ):** It is the rule in most jurisdictions that a licensed bank must hold a certain level of liquid assets. The essence of this legal requirement is to have the assurance that bank runs are effectively dealt with if and when they occur (Rasiah, 2010). A bank would be termed highly liquid only and only if it possesses enough cash and other liquid assets and is also able to quickly raise funds from other sources to promptly meets its obligations and other financial commitments as they fall due.

As a result of the global financial crises of 2007/2008, the Committee of banks in Basel came up with the requirement of liquidity coverage ratio (LCR). This makes it mandatory for banks to have evidence of enough liquid assets of high quality so as to respond adequately to stress funding situations. More often than not, the ability to raise funds quickly to answer depositors who wish to collect part or all of their deposits from time to time is the dividing line between sound and distressed banks. Bourke (1989) and Rasiah (2010) support the notion of positive relationship between liquidity and profitability whereas Eichengreen & Gibson (2001) as cited by Rasiah (2010) suggest that liquidity has a negative impact on the profitability of banks.

(v) **Management Quality (MGQ):** A major way of knowing the quality of a management team is the control that the team has over the expenses of the organization. In banks, the negative impact that expenses can have on profitability is obvious. One way of having an edge over competitors in the industry, therefore, is for a bank to have lower expenses. However, caution must be taken that quality of service is not compromised in the seeking of lower costs. Moreso as employees are bound to withhold measures of their productivity to the extent that they believe that equity does not prevail. In this study, management quality is measured as non-interest expenses divided by total assets.

(vi) **Direction of Efforts (DOE):** The essence of including this variable is mostly to provide information on the effectiveness of banks. The major mandate of a bank is to channel funds from surplus-spending units to deficit-spending units for investment purposes. This should, all things being equal, lead to economic growth as well as serve as a major means of earnings for
commercial banks. To Abreu & Mendes (2003), more loans naturally translates to higher revenue and, consequently, higher profit. DOE is measured as total loans and advances divided by deposits.

2.4. External/Macroeconomic Factors

The factors are normally beyond the control of the management of organizations are referred to as external factors. In the banking industry, factors such as economic growth (or GDP growth), interest rate, competition/market share/firm size, and inflation are known to affect the whole economy and are usually outside the purview and correction of any bank. These external determinants are indirect as well as uncontrollable, have an enormous impact on bank’s profitability. Several studies, for example Bentum (2012), Khrawish (2011), Karkrah & Ameyaw (2010), Vong & Chan (2009), and Sufian & Chong (2008), have stressed the importance of these external factors in the design of models of determinants of profitability. The external factors considered in this study are Gross Domestic Product (GDP), inflation (INF), and annual lending rate (ALR).

3. Questions

This paper is guided by the following questions:

Q1: How are the bank-specific characteristics that significantly affect the financial performance of listed deposit money banks in Nigeria?

Q2: Which of the macroeconomic factors (if any) significantly affect the financial performance of banks that operate in Nigeria?

4. Research Method

Data for the performance of the quoted banks were extracted from their published financial statements for the period 2005-2014. Macroeconomic data used in the study were extracted from the publications of the Central Bank of Nigeria for the same period.

Certain relevant figures from the financial statements of 15 of the listed Nigerian banks that operated in Nigeria between 2005 and 2014 were first determined. The ratio of net profit to total asset, i.e. Return on Assets (ROA) was used as the measure of financial performance. This profitability indicator shows how well the organization has achieved the overall objectives of the firm. In case of banks, this Return on Assets (ROA) assesses how well each bank has used its assets to produce a given output. This ratio computed for each of the banks for the ten-year period served as the dependent variable.

There are several variables from literature that could be considered as factors influencing the performance of banks (positively or negatively). However, this study is centred on nine of them. They are as follows:

- **Fund Source** which was measured as total deposits divided by total assets.
- **Capital Strength** which was measured by the book value of shareholders equity divided by total assets.
- **Loan Quality**: This was computed by the total loan loss provisions by total loans & advances.
- **Liquidity**: This was measured by Loan & Advances over Total Assets.
- **Management Quality**: This was measured by the non-interest expense divided by total assets
- **Direction of Efforts** measured as Loan & Advances over Deposits
- **Gross Domestic Product**: This is taken as GDP growth rate
- **Inflation**: This is the annual inflation rate.
- **Annual Lending Rate**: This is measured by the Annual Prime Lending Rate

These independent variables, capital strength, fund source, loan quality, liquidity, management quality, and direction of efforts depend on the deposit money banks, i.e. they are firm-specific, while
GDP, Inflation, and Annual Lending Rate are macroeconomic variables which are totally outside the control of the deposit money banks.

For the determination of the factors that affected the financial performance of the banks in the period under study, the ROA for the selected banks were computed and subsequently employed as the dependent variable in a Panel Regression Model. Theses ROA scores were then regressed on this set of nine independent variables that are meant to explain the financial performance.

In the light of the foregoing variables mentioned, the regression model estimated is specified as follows:

\[
\text{ROA}_{jt} = \beta_0 + \beta_1 \text{FUS}_{jt} + \beta_2 \text{CAS}_{jt} + \beta_3 \text{LOQ}_{jt} + \beta_4 \text{LIQ}_{jt} + \beta_5 \text{MGQ}_{jt} + \beta_6 \text{DOE}_{jt} + \beta_7 \text{GDP}_{jt} + \beta_8 \text{INF}_{jt} + \beta_9 \text{ALR}_{jt} + \Psi_{it}
\]

where, ROA_{jt} is the overall performance score of the jth bank in period t.

FUS = Fund Source  CAS = Capital Strength  LOQ = Loan Quality  LIQ = Liquidity  
MGQ = Management Quality;  DOE = Direction of Efforts;  GDP = Gross Domestic Product  
INF = Inflation;  ALR = Annual Lending Rate; and  \(\Psi_{it}\) =Composite error term

The panel regression analysis was carried out with the Stata software to check how the ROA was influenced or determined by Fund Source, Capital Strength, Loan Quality, Liquidity, Management Quality, Direction of Efforts, Gross Domestic Product, Inflation, and Annual Lending Rate. In other words, which of these variables is a significant determinant of financial performance in Nigeria’s banking industry over the study period and to what extent?

For the fact that the model is panel regression model, the Hausman specification test was carried out to determine which of fixed and random effects results are more appropriate to be interpreted. The test was done with the hypothesis that there is no significant difference between the estimators of the Fixed Effects Model (FEM) and estimators of the Random Effects Model (REM). The decision rule employed is that if the probability of the differences in the coefficients of the fixed and random effects is less than or equal to 0.05, the study will use the fixed effects result. Otherwise, the null hypothesis shall be accepted implying that the random effects estimates are better.

5. Results, Finding and Discussion

The results of the Hausman specification test for both models showed that the differences between fixed effects and random effects coefficients for all of the variables are not significant. It is observed that each of the probabilities is higher than 0.05. The result of the Hausman test therefore proves that there is actually no significant difference between the estimators of the Fixed Effects Model and the estimators of Random Effects Model. Based on this, this study finds that it is more appropriate to use the Random Effects Model. From the full result of the Panel regression, the summary of the random effects results is presented in the table below:

| Id Vs | Coefficient | t-value | P>|t|
|-------|-------------|---------|-------|
| FUS   | 0.110787    | 2.83    | 0.0053|
| CAS   | -0.050312   | -1.60   | 0.1102|
| LOQ   | -0.040020   | -5.08   | 0.0000|
| LIQ   | -0.199247   | -3.12   | 0.0022|
| MGQ   | -0.474167   | -4.10   | 0.0001|
| DOE   | 0.108442    | 2.67    | 0.0085|
| GDP   | 2.465924    | 3.94    | 0.0001|
| INF   | 0.376058    | 4.65    | 0.0000|
| ALR   | 0.907102    | 3.79    | 0.0002|
| Constant | -0.397144 | -4.05   | 0.0001|

Adjusted R-Squared = 0.5431

Source: Author’s computation using STATA software
From the table above, the fitting of the model is shown by the Adjusted R-squared figure of 0.5431. This implies that the independent variables had at least 54% explanatory effect on the performance variable, ROA. Considering the individual independent variables used, all were found to be significant determinants of ROA except Capital strength. To buttress its insignificance even at 10%, the t-statistic was 1.6 while the co-efficient was negative. From this it can be inferred that, to a large extent, performance of Nigerian banks did not depend on their having substantial capital in the study period. This outcome is contrary to the findings of several studies like Berger (1995), Molyneux (1993) and Goddard et al. (2004).

The result showed Fund Source to be a significant determinant of financial performance positively. This shows that the banks have been deriving a significant portion of their assets from deposits. In other words, Nigerian banks served effectively to mobilize deposits over the study period. In the same way, Direction of Efforts measured by the fraction of total deposits that was given as loans and advances bore a positive sign. This suggests that Nigerian deposit money banks performed creditably in channeling their deposits mobilized from the public to loan efforts and this has impacted positively on their profitability performance over the study period. This observation supports Khrawish (2011) and Abreu & Mendes (2003) on the notion of positive relationship between Direction of Efforts and financial performance. It is however contrary to the findings of Vong & Chan (2009). Loan Quality also showed as a significant factor in the performance. As expected, its co-efficient is negative since the banks’ provisions for loan loss increased significantly year by year.

Liquidity and Management Quality deserve to be mentioned together as the results seem to lend credence to the findings of a risk assessment audit exercise ordered on the banks by the CBN regime in 2008/2009. Both are significant determinants but with negative values contrary to expectations of the study and observed best practices worldwide. An implication of this is that the banks on the average possibly ‘overtraded’ by giving out so much loans and advances that they did not have sufficient liquidity that would make them to pay depositors when they required their money. This seems to corroborate a finding of the risk assessment of the CBN.

It can be noted that several of the banks that operated in the study period had non-performing loans of significant proportions in their books. The situation was so serious that the CBN had to step in and bail out several banks by injecting funds into them. Some of the banks had their management directly (albeit, according to the law) taken over by the CBN in order to save the industry from systemic distress and collapse. Many of the sampled banks even took over the assets and liabilities of some of the troubled banks. It also happened that the global financial crisis from which the Nigerian economy was not immune began to manifest in 2008 and its effects were still been experienced up to 2011.

No industry in Nigeria felt the direct impact of the global financial crisis more than the banking industry. This was because, as it was discovered later, management of many banks had acted irrationally- they directed much loan-efforts to non-priority sectors, e.g. merchandise; Several top bankers were indicted for misappropriating substantial amounts from their banks; there were cases of nepotism and over-bloated staff strength; unjustifiably high financial emolument packages were being paid out to staff; sharp practices (for example, foreign exchange round-tripping) was observed in all but few of the banks; and some banks had become so insolvent that their shareholders’ equity had been eroded. All these negatives were results of bad management practices. Hence, the highly significant negative impact of management quality on the performance of the banks is justified for the study period.

Concerning the external factors, estimates of the model were all significant determinants of the financial performance of banks in Nigeria in the period 2005-2014. On GDP, the finding of this study agrees with the findings of Sufian & Chong (2008) and Hassan & Bashir (2003) which advanced the argument of the significance and positive association between economic growth and the performance of banks. This follows from one of the conclusions from the growth theories, particularly the theory of financial intermediation. This is that the growth of an economy should positively impact firms in the
financial sector including banks, all things remaining equal. This conclusion is based on the general notion that higher economic growth may lead to a greater demand for both interest and non-interest services of the banks hence improving the profitability of banks and vice versa.

In the same way, both Annual Lending Rate (ALR) and Inflation (INF) significantly impact on the performance of the banks and, hence, the profitability of the banks before and after the crisis. A suggested reason for this significance is that inflation, which showed upward trend for much of the period of the study, possibly forced the banks to increase their lending rate to in order to meet the cost associated. The expectation here is to maintain the level of profitability. High cost of credit from the banking system is actually one of the greatest challenges beclouding the investment environment in Nigeria.

The annual inflation rate has been a major factor in determining the lending rates of banks globally. A rise of inflation manifests itself in a higher lending rate and, all things being equal, a higher lending rate manifests in higher profits, even if much of it would be paper profits as the Nigerian experience has been with the banking industry in the past decade. Thus, ALR and INF showed to be positively significant determinants of the profitability of Nigerian banks in the period 2005-2014.

The results of this study as regards Annual Lending Rate and profitability agrees with several empirical evidence that shows a significant positive relationship between interest rate and profitability. Such include Sufian & Chong (2008) and Karkrah & Ameyaw (2010) as well as Khrawish (2011), for Nigeria, Philippines, Ghana, and Jordan respectively. The findings on inflation above concur with Bourke (1989), Molyneux & Thornton (1992), Pasiouras & Kosmidou (2008), and Rasiah (2010). The cited studies assessed the effect of inflation on the profitability of banks and agree on the observation that there is a significant positive relationship between the rate of inflation and bank profitability.

However, the findings above are contrary to Aminu (2012) which indicated that the impact of macroeconomic factors on the profitability of Nigerian banks is negative.

6. Summary and Concluding Remarks

The thrust of this paper has been the examination of factors that influenced the financial performance of deposit money banks in Nigeria for the period 2005-2014. Analysis revealed that Fund Source, Loan Quality, Liquidity, Management Quality, and Direction of Efforts were bank-specific characteristics that contributed significantly to the financial performance of the banks. On the other hand, Capital Strength was found to be insignificant. In the same wise, the three macroeconomic factors considered, i.e. economic growth, inflation, and the annual lending rate were found to be positively significant factors that affected the operational performance of deposit money banks in Nigeria in the study period. Thus, it is concluded that profitability of banks in Nigeria is significantly affected by firm-specific as well as macroeconomic factors.

This paper suggests that the regulators of the banking system in Nigeria be proactive in checking and inspecting the books of the banks regularly. This is with a view to checking in time the overtrading tendencies of the banks. Carrying out this should minimize the sort of management excesses that nearly led to a distress of the Nigerian banking industry in 2008/2009. Another recommendation is that stronger requirements of corporate governance be ensured in order to boost the performance of these banks. Such would include steps that will help to eliminate corruption and promote and ensure transparency in Nigerian. Also, the CBN should ensure that loans are available to borrowers at affordable rates. This step if considered will lead to a higher growth rate of GDP growth rate and this would translate to such enlargement of the economy that would have significance in line with the profitability of the Nigerian banks.

We suggest further research using other bank characteristics such as external factors as well as non-financial verables as they affect bank performance. Again, the considerations of parameters used in this study but experimenting them using primary data or using triangulation: secondary,
questionnaire, and interview of these elements to find out possible outcomes. The study can even be replicated in another country’s condition for purposes of comparison.

References


