DETERMINANTS OF BANKS' PROFITABILITY IN A DEVELOPING ECONOMY: EVIDENCE FROM NIGERIA

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Abstract. *The unimpressive banks' performance in Nigeria over the last decade has remained a source of concern for all and sundry. This study investigates the effects of bank capital, bank size, expense management, interest income and the economic condition on banks' profitability in Nigeria. The fixed effects regression model was employed on a panel data obtained from the financial statements of 20 banks from 2006 to 2012. The results indicate that improved bank capital and interest income, as well as efficient expenses management and favourable economic condition, contribute to higher banks' performance and growth in Nigeria. Thus, government policies in the banking system must encourage banks to regularly raise their capital and provide the enabling environment that will accelerate economic growth in the country. Bank management must efficiently manage their portfolios in order to protect the long run interest of profit-making.*

Key words: Banks' profitability, developing economy, policies in the banking system, Nigeria

1. Introduction

Banks' performance in Nigeria over the last decade remained unimpressive. The profit before tax (PBT) of the banks fluctuated, especially between 2002 and 2005, and has declined progressively since 2008. For instance, the profit before tax which was 80.8% in 2000 fell dramatically and recorded a loss of 13.95%. Although PBT peaked at 287.62% in 2007, it nose-dived to 49.14% in 2008 (see Obamuyi, 2012). This implies that the opportunities for banks in Nigeria to make profits are gradually reducing. The declining profits could have been caused by the global economic crises, the festering crises in the banking sector and the fact that some of the criteria usually employed to measure the performance of the banks have been compromised by the Central Bank of Nigeria (Obamuyi, 2011). As Olokoyo (2011) argues, the current trend in Nigerian banking and finance sector suggests that the days of cheap profits are now over and only banks with well conceptualized lending and credit administration policies and procedures can survive the emerging competition. The implication of all the statements above is that

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banking habits have been seriously threatened thereby discouraging savings culture and hence reducing the amount of funds that can be mobilized by banks. By extension, the profitability of the banks, regarded as a key measure of financial performance for any company, has been negatively affected. The foregoing confirms the worry of Sharma and Mani (2012) that the performance of banks has become a major concern for economic planners and policy makers due to the fact that the gains of the real sector of the economy depend on how efficiently the banks are performing the function of financial intermediation. As Saona (2011) argues, an efficient financial system improves banks' profitability by increasing the amount of funds available for investment, while enhancing the quality of services provided for the customers. Thus, important role of banks arises because, by facilitating the use of external finance, they assist in reconciling the financial interest of the deficit economic units, which invest more than they save, with those of the surplus economic units, which save more than they invest (Ojo, 2010), thereby generating reasonable income in the process.

Although the monetary authorities have taken some measures (such as banks' consolidation, review of prudential guidelines and bail-out strategy) to stabilize the financial system and build confidence in the banking system, it is still germane to know what factors affect banks profitability in order to influence policy making in the banking sector in Nigeria. Thus, the study investigates the effects of capital, size, expenses management and economic condition on banks' profitability in Nigeria. It is hereby hypothesized that, 'there exists a significant relationship between banks' profitability and each of the banks' capital, size, expenses management and economic condition in Nigeria. The study becomes relevant because it will invoke the attention of the policy makers and the bank management to pursue policies that have long lasting positive implications on the entire banking system in Nigeria. The study provides additional knowledge for researchers and the general public about factors affecting banks' profitability in Nigeria.

The outline of the study is as follows: after the introduction, there is the literature review, which is also followed by the methodology of the study. The results and conclusion are presented in sections four and five respectively.

2. Literature Review

2.1 Theoretical Issues

This study examines some of the theories relating to capital and profitability as well as bank size and profitability. The theories include the signaling theory, expected bankruptcy cost hypothesis, risk-return hypothesis, market power and efficiency structures hypotheses.

The relationship between capital and profitability is explained by signaling theory (Berger, 1995; Trujillo-Ponce, 2012), expected bankruptcy cost hypothesis and risk-return hypothesis (Athanasoglou, Brissimis & Delis, 2005; Olweny & Shipho, 2011).

The signaling hypothesis suggests that a higher capital is a positive signal to the market of the value of a bank (see Ommeren, 2011). As Berger (1995) and Trujillo-Ponce (2012) observe, under the signaling theory, bank management signals private information that the future prospects are good by increasing capital. Thus, a lower leverage indicates that banks perform better than their competitors who cannot raise their equity without further deteriorating the profitability (Ommeren, 2011). On the other hand, bankruptcy hypothesis argues that in a case where bankruptcy costs are unexpectedly high, a bank holds more equity to avoid period of distress (Berger, 1995). As the literature review pointed out, the signaling hypothesis and bankruptcy cost hypothesis support a positive relationship between capital and profitability. However, the risk-return hypothesis suggests that increasing risks, by increasing leverage of the firm, leads to higher expected returns. Therefore, if a bank expects increased returns (profitability) and takes up more risks, by increasing leverage, the equity to asset ratio (represented by capital) will be reduced. Thus, risk-return hypothesis predicts a negative relationship between capital and profitability (Dietrich and Wanzenrid, 2009; Ommeren, 2011; Saona, 2011; Sharma and Gounder, 2012).

Consequently, the Market Power (MP) and Efficiency Structure (ES) theories explain the relationship between the bank size and profitability. Olweny and Shipho (2011) observe that the market power posits that performance of banks is influenced by the market structure of the industry and that the Efficiency Structure (ES) hypothesis maintains that banks earn high profits because they are more efficient than the others. Concluding on the MP and ES theories, Olweny and Shipho (2011) argue that MP theory assumes that the profitability of a bank is a function of external market factors, while the ES assume that bank profitability is influenced by internal efficiencies.

2.2 Empirical Evidence

The empirical review of the study is done by identifying similarities and differences across the various economies studied by previous researchers. The factors affecting banks' profitability have been empirically examined by many authors, especially in the developed countries. Demirgüç-Kunt and Huizinga (1999), using bank level data for 80 countries in the 1988-1995 periods, showed that differences in interest margins and banks' profitability reflect a variety of determinants: the characteristics of the bank, macroeconomic conditions, explicit and implicit bank taxation, deposit insurance regulation, overall financial structure, and several underlying legal and institutional indicators. Athanasoglou *et al.* (2005) studied the effect of bank-specific, industry-specific and macroeconomic determinants of bank profitability, using an empirical framework that incorporates the traditional Structure-Conduct-Performance (SCP) hypothesis. The results indicated that all bank-specific determinants, with the exception of size, affect bank profitability significantly in the anticipated way. Saona (2011) examined the determinants of the profitability of the US banks during the period 1995-2007. The empirical analysis combined bank specific (endogenous) and

macroeconomic (exogenous) variables through the GMM system estimator. He found a negative link between the capital ratio and the profitability, which supports the notion that banks are operating over-cautiously and ignoring potentially profitable trading opportunities. Scott and Arias (2011) also investigated the primary determinants of profitability of the top five bank holding companies in the United States. The findings of Scott and Arias (2011), which were also highlighted by Rahman and Farah (2012), show that profitability determinants for the banking industry include capital to asset ratio, annual percentage changes in the external per capita income and internal factor of size (as measured by an organization's total assets). Staikouras and Wood (2004) constructed the OLS and fixed effect models to examine the determinants of European bank profitability from 1994 – 1998. The authors found that the profitability of European banks is influenced not only by factors related to their management decisions but also to changes in the external macroeconomic environment.

Khrawish (2011) accessed the Jordanian commercial bank profitability from 2000 through 2010, and categorised the factors affecting profitability into internal and external factors. The author found that there is significant and positive relationship between return on asset (ROA) and the bank size, total liabilities/ total assets, total equity/ total assets, net interest margin and exchange rate of the commercial banks and that there is significant and negative relationship between ROA of the commercial banks and annual growth rate for gross domestic product and inflation rate. Dietrich and Wanzenrid (2009) analysed the profitability of commercial banks in Switzerland over the period 1999 to 2006. Their findings revealed that the most important factors are the GDP growth variable, which affects the bank profitability positively, and the effective tax rate and the market concentration rate, which both have a significantly negative impact on bank profitability. Macit (2011) investigated the bank specific and macroeconomic determinants of profitability in participation banks for Turkish banking sector using ROA and ROE. He found that for the bank specific determinants of profitability, the ratio of non-performing loans to total loans has a significant negative effect on profitability. The result is consistent with the study by Davydenko (2010) in the Ukraine. Macit (2011) also found that the log of real assets has a significant positive effect on profitability. Riaz (2013) investigated the impact of the bank specific variables and macroeconomic indicators on the profitability of banks in Pakistan during the period of 2006- 2010. When ROA is taken as a dependent variable, he determined that the credit risk as well as the interest rate has a significant influence on the commercial banks' profitability in Pakistan.

Flamini, McDonald and Schumacher (2009) investigated the determinants of bank profitability in 41 Sub-Saharan African (SSA) countries, using a sample of 389 banks. The study proved that apart from credit risk, higher returns on assets are associated with larger bank size, activity diversification, and private ownership. The results also indicate that bank returns are affected by macroeconomic variables, suggesting that macroeconomic policies that promote low inflation and stable output growth do

boost credit expansion. Sharma and Gounder (2012) investigated the profitability determinants of deposit–taking institutions in Fiji, over the 2000–2010 period. The study used panel data techniques of fixed effects estimation and generalized method of moments (GMM). The authors discovered that Market power (measured by the Lerner Index) is a key determinant of profitability. Thus, institutions were allowed to pass on to their clients the interest costs of raising deposit liabilities and the overall cost of operations. Naceur and Goaied (2008) observed a positive relationship between capital and net interest margin or profitability in Tunisia, but determined that the bank size impacts negatively on profitability, which implies that Tunisia banks are operating above their optimal level. Olweny and Shipho (2011) evaluated the effects of banking sectoral-factors on the profitability of commercial banks in Kenya, using panel data from 2002 to 2008 of 38 commercial banks. The authors concluded that the bank-specific factors are more significant factors influencing the profitability of commercial banks in Kenya than market factors. The study revealed that profitable commercial banks are those that strive to improve their capital bases, reduce operational costs, improve assets quality by reducing the rate of non-performing loans, employ revenue diversification strategies as opposed to focused strategies and keep the right amount of liquid assets.

Aburime (2008) investigated the determinants of bank profitability in Nigeria, using a panel data from 1980-2006. He found that real interest rates, inflation, monetary policy, and exchange rate regime are significant macroeconomic determinants of bank profitability in Nigeria, while banking sector development, stock market development, and financial structure are insignificant. Also, Oladele, Sulaimon and Akeke (2012) found that operating expense, relationship between cost and income, and equity to total assets significantly affects the performance of banks in Nigeria. Ani *et al.* (2012) established that capital and asset composition positively affect bank profitability, while bank size has negative effect on profitability in Nigeria. Also, Babalola (2012) used four models (an aggregated model coupled with three other decomposed models) to investigate the determinants of profitability in Nigeria. His findings showed that in the short run, capital adequacy ratio is the determining factor for bank profitability. The literature reviewed above has shown the consistency of some of the internal (bank-specific) factors like capital, size and credit risks in determining bank profitability across different economies of the world. The external (macroeconomic) factors of gross domestic product growth rate and interest rate have also been prominent in the determination of bank profitability. Consequently, the review shows that return on assets (ROA) and return on equity (ROE) are the most common criteria employed as measures of profitability by most researchers. However, a search in the literature on the determinants of banks' profitability indicates that only scanty empirical research, using few banks and/or economic variables, can be found in Nigeria. Therefore, the study contributes to the literature by empirically re-confirming (or otherwise) the results of the previous studies, especially with regard to Nigeria's situation.

3. Methodology

3.1 Data Collection

The panel secondary data (comprising cross-sectional and time-series data) for the study were obtained from the reports of the 20 banks in existence as at the end of 2012. The cross-sectional element is reflected by the different Nigerian banks and the time series element is reflected in the period of study (2006 – 2012). As Saona (2011) observes, the main advantage of using panel data is that it allows overcoming of the unobservable, constant, and heterogeneous characteristics of each bank included in the study. The names of the banks in alphabetical order are: Access Bank, Citibank, Diamond Bank, Ecobank Nigeria, Enterprise Bank (formerly Oceanic Bank), Fidelity Bank Nigeria, First Bank of Nigeria, First City Monument Bank, Keystone Bank Limited (formerly Bank PHB), Guaranty Trust Bank, Mainstreet Bank Limited (formerly Afribank), Skye Bank, Stanbic IBTC Bank Nigeria Limited, Standard Chartered Bank, Sterling Bank, Union Bank of Nigeria, United Bank for Africa, Unity Bank Plc, Wema Bank and Zenith Bank. Data on GDP growth were compiled from the Central Bank of Nigeria Statistical Bulletin.

3.2 Description of Variables

3.2.1 Dependent Variable

Researchers have employed different measures of profitability to determine the factors affecting banks' performance. For instance, the measures of profitability employed (and the authors) include: return on assets (Flamini *et al.,* 2009; Scott & Arias, 2011; Oladele *et al*, 2012; Babalola, 2012); return on equity (Saona, 2011); return on assets and return on equity (Athanasoglou *et al.,* 2005; Dietrich & Wanzenrid, 2009; Rasiah, 2010b; Khrawish, 2011; Ali, Akhtar & Ahmed, 2011; Macit, 2012; Sharma & Gounder, 2012; Riaz, 2013); return on assets, return on equity and return on deposits (Jahan, 2012); return on assets and net interest margins (Demirgüç-Kunt & Huizinga, 1999; Naceur & Goaied, 2008); return on assets, return on equity and net interest margins (Sufian & Habibullah, 2009; Naceur & Omran, 2011; Qin & Pastory, 2012); return on assets, return on equity, profit margin (BTP/TA) and net interest margins (Hassan & Bashir, 2005).

The return on assets (ROA) is a financial ratio used to measure the relationship of earnings to total assets. ROA is regarded as the best and widely used indicator of earnings and profitability supplemented by return on equity (ROE) and return on deposits (ROD) (Jahan, 2012). Studies have shown that ROA assesses how efficiently a bank is managing its revenues and expenses, and also reflects the ability of the management of the bank to generate profits by using the available financial and real assets (see Jahan, 2012). The net interest income (NIM) refers to the net income accruing to the bank from non-interest activities (including fees, service charges, foreign exchange, and direct investment) divided by total assets. The bank's before-tax profit over total assets (*BTP/TA*), as a measure of the bank's profit margin, is calculated from the bank's

income statement as the sum of non-interest income over total assets minus overhead over total assets minus loan loss provision over total assets minus other operating income (Hassan & Bashir, 2005).

For this study, bank profitability is proxied by return on assets (ROA), defined as the banks' after tax profit over total assets. ROA is considered as the key proxy for bank profitability, instead of the alternative return on equity (ROE), because an analysis of ROE disregards financial leverage and the risks associated with it (Flamini *et al.*, 2009).

3.2.2 Independent Variables

Bank-Specific Determinants

Most of the studies on bank profitability have categorized the determinants of profitability into internal and external factors (Rasiah, 2010b; Naceur & Omran, 2011; and Khrawish, 2011). Furthermore, Sastrossuwito and Suzuki (2012) refer to the internal factors as the bank-specific determinants of profitability, while the external factors refer to the macroeconomic determinants of profitability.

Capital: Capital refers to the amount of own funds available to support a bank's business and, therefore, bank capital acts as a safety net in the case of adverse development (Athanasoglou *et al.*, 2005). Capital is calculated as the ratio of equity to total assets. The ratio measures how much of the banks' assets are funded with owners' fund and is a proxy for capital adequacy of a bank by estimating the ability to absorb losses (Ommeren, 2011). Based on past literature, the relationship between capital and profitable is said to be unpredictable (Sharma & Gounder, 2005). This is because while positive relationship had been found by some studies (Berger 1995; Demirgüç-Kunt & Huizinga, 1999; Hassan & Bashir, 2005; Athanasoglou *et al.* 2005; Dietrich & Wanzenrid, 2009; Davydenko (2010); Olweny & Shipho, 2011; Ommeren, 2011; Ani *et al.*, 2012; and Rao & Lakew, 2012), other studies found a negative relationship between capital and profitability (Saona, 2011; Ali *et al.*, 2011; Qin & Pastory, 2012). Staikouras and Wood (2004) argue that a positive (negative) coefficient estimate for capital indicates an efficient (inefficient) management of banks' capital structure.

Bank Size: Bank size accounts for the existence of economies or diseconomies of scale (Naceur & Goaied, 2008). The variable is measured as the natural log of total assets (Saona, 2011). Economic theory suggests that market structure affects firm performance (Haron, 1996) and that if an industry is subject to economies of scale, larger institutions would be more efficient and could provide service at a lower cost (Rasiah, 2010a). Also, the theory of the banking firm asserts that a firm enjoys economies of scale up to a certain level, beyond which diseconomies of scale set in. This implies that profitability increases with increase in size, and decreases as soon as there are diseconomies of scale. Thus, literature has shown that the relationship between the bank size and profitability can be positive or negative (Staikouras & Wood, 2004; Athanasoglou *et al.*, 2005; Flamini *et al.*, 2009; Dietrich & Wanzenrid, 2009; Naceur & Omran, 2011).

Expenses Management: Expenses management relates to the idea of efficient management of banks' resources. For this study, the variable measures the ratio of operating expenses to total assets. As Athanasoglou *et al.* (2005) observe, a negative relationship is expected between expenses management and profitability, since improved management of the expenses will increase efficiently and hence raise profits.

Macroeconomic Determinants

Interest Rate: The bank lending rate is expected to have a positive impact on bank profitability. This is because interest rate directly impacts bank interest income and expenses, and the net result that further affects profitability.

Dummy of Real GDP Growth: the real GDP growth is used as a proxy of business cycle in which banks operate, and controls for variance in profitability due to differences in business cycles which influence the supply and demand for loans and deposits (Staikouras & Wood, 2004; Ommeren, 2011). In this study, GDP is used as a dummy in defining favourable/unfavourable conditions, i.e., a dummy of the shift in economic activities (GDP) from favourable (1) to unfavourable (0) conditions. Thus, higher (lower) GDP indicates favourable (unfavourable) business opportunities under which a bank can achieve higher (lower) profitability. This is because an increase in economic activities of the country signals that customers' demand for loans will increase, and with improved lending activities, banks are able to generate more profits.

3.3 Method of Analysis

The paper made use of both descriptive and econometric analyses. The descriptive approach was used to analyze the means and further shows the normality of the distribution. A preliminary estimation of the correlation coefficients of the variables was carried out in order to determine the explanatory variables that would finally appear in the regression model.

The econometric approach examines the main factors affecting banks' profitability in Nigeria by applying fixed effects model. The results of the fixed effects would be compared to that obtained from the random effects through the Hausman (1978) specification test. The specification of the model for the study is based on the empirical works of Demirgüç-Kunt and Huizinga (1999), Athanasoglou *et al.* (2005), Flamini *et al.* (2009) and Saona (2011). Five explanatory variables are included in the regression analysis. The empirical model takes the following form:

$$ROA_{it} = \alpha + \sum_{k=1}^{k} \beta k Y_{it}^{k} + \varepsilon_{it} \qquad (1)$$

$$\varepsilon_{it} = v_{i} + u_{it},$$

where ROA_{it} is the return on asset (bank profit over total assets) and represents the profitability of bank i at time t, with i = 1, 2, ..., N, t = 1, 2, ..., T, α is a constant term, Y_{it} is a vector of k explanatory variables and ε_{it} is the disturbance with v_i the unobserved bank-specific effect and u_{it} the idiosyncratic error.

Based on the reviewed literature, vector Y consists of some independent variables, categorized as internal factors (Y^p_{it}), and external factors (Y^q_{it}). Hence, Y_{it} can be divided into two groups as:

$$ROA_{it} = \alpha + \sum_{p=1}^{P} \beta p Y^p_{it} + \sum_{q=1}^{Q} \beta q Y^q_{it} + \varepsilon_{it} \qquad (2)$$

The internal (bank-specific) control variables (Y^p_{it}) are bank capital (ratio of equity to total assets), bank size (natural log of total assets) and expenses management (ratio of operating expenses to total assets). The external (macroeconomic) control variables (Y^q_{it}) refer to the variables of bank interest (lending) rate and the dummy of the GDP growth rate.

Meanwhile, some reliability tests were also carried out in the study. The coefficient of determination (R^2), also known as the goodness of fit that describes how well the model fits a set of observation, was employed to measure the degree of relationship existing among the variables. The statistic would show the percentage of total variation in dependent variable that is explained by the independent variables. The Durbin-Watson (D-W) statistic was also used to find out whether there is the incidence of autocorrelation among the variables in the model.

4. Analysis and Results

4.1 Results of the Descriptive Statistics

Table 1 presents the results of the descriptive statistics of both the dependent and independent variables for the panel data analysis of the study.

From the results in Table 1, the analysis of the means shows the following descriptive statistics: profitability (M = 0.018, SD = .008); capital (M = 0.185, SD = 0.058); bank size (M = 5.803, SD = 0.298); expenses management (M = 0.036, SD = 0.013); interest rate (M = 0.216, SD = 0.023); and GDP dummy (M = 0.429, SD = 0.495). The analysis indicates that the bank size has the highest means (M = 5.503), with the deviation from the mean at 29.8%. The lowest standard deviation for profitability (0.008) indicates that the data are clustered around the mean and thus more reliable. The Jargue-Bera statistic indicates that all the data series are normally distributed. This is indicated by the probability values of JB statistic which for those series are significantly different from zero at 1% significant level. In any case, evaluating normality indicates that the acceptable range of - 1.0 to + 1.0 was satisfied for all the variables.

TABLE 1: **Descriptive Statistics for the Variables**

	Profitability (ROA)	Capital	Bank Size	Expenses Management	Interest Rate	Dummy of GDP
Mean	0.017873	0.184985	5.803475	0.036113	0.216386	0.428571
Median	0.017788	0.165529	5.861511	0.039897	0.218600	0.000000
Maximum	0.033912	0.273878	6.180629	0.053369	0.246100	1.000000
Minimum	0.004223	0.086377	5.241929	0.019274	0.182100	0.000000
Std. Dev.	0.008205	0.058220	0.297715	0.013391	0.022927	0.495124
Skewness	0.402427	-0.003260	-0.714299	-0.098053	-0.320979	0.288675
Kurtosis	3.194664	2.205381	2.359084	1.249007	1.666516	1.083333
Jarque-Bera	27.99876	25.78472	100.1097	126.7643	89.43681	163.6169
Probability	0.000001	0.000003	0.000000	0.000000	0.000000	0.000000
Sum	17.51540	181.2850	5687.406	35.39060	212.0580	420.0000
Sum Sq. Dev.	0.065909	3.318342	86.77271	0.175549	0.514591	240.0000
Observations	980	980	980	980	980	980

4.2 Discussions of Econometric Results

Table 2 below presents the results of the correlation analysis for the study in order to determine the level of association among the variables.

TABLE 2: **Results of Correlation Analysis**

	Profitability (ROA)	Capital	Bank Size	Expense Management	Interest Rate	Dummy of GDP
Profitability	1.000000					
Capital	0.463869	1.000000				
Bank Size	0.461605	0.266741	1.000000			
Expense Management	0.094419	0.390377	-0.634071	1.000000		
Interest Rate	0.587544	0.582986	0.840168	-0.346919	1.000000	
Dummy of GDP	0.584098	0.279562	-0.196947	0.702975	-0.135515	1.000000

The results in Table 2 indicate that a positive correlation exists between profitability and each of the independent variables (capital, bank size, expenses management, interest rate and the economic condition of the country). Thus, the correlation coefficients indicate that an improvement in bank capital, bank size, expense management, interest rate and the economic condition of the country leads to higher profits for the banks.

The results of the correlated random effects - Hausman test (not shown here), performed to decide between fixed or random effects, indicate that the fixed effects model is more suitable than the random effects model (chi2 = 0.001). The regression results in Table 3 are based on the fixed effects model.

TABLE 3: **Results of the Fixed Effects Regression**

Dependent Variable: Profitability (ROA)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
Constant	0.066257	0.005025	13.18541	0.0000
Capital	0.012692	0.003304	3.841583	0.0001
Bank Size	-0.020236	0.001013	-19.97304	0.0000
Expenses Management	-0.538509	0.023125	-23.28645	0.0000
Interest Rate	0.359810	0.010755	33.45668	0.0000
Dummy of GDP	0.019362	0.000358	54.15272	0.0000
R-squared	0.893006	Mean dependent variable		0.017873
Adjusted R-squared	0.874554	S.D. dependent variable		0.008205
S.E. of regression	0.002906	Akaike info criterion		-8.708214
Sum squared residual	0.007052	Schwarz criterion		-7.985056
Log likelihood	4412.025	Hannan-Quinn criterion		-8.433094
F-statistic	48.39693	Durbin-Watson statistic		2.026122
Prob(F-statistic)	0.000000			

From the results in Table 3, the fixed effects coefficients of the regressors indicate how much profitability changes when there is a change in the capital of each bank, bank size, expenses management, interest rate and economic condition of a country. From Table 3, the overall regression is statistically significant, $F = 48.40$, $p = .001$, thus supporting the fact that capital, size, expenses management, interest rate and the economic situation of a country are important factors in determining the profitability of the banks in Nigeria. The coefficient of multiple determinations (R^2), which indicates the quality of fitness of the model, shows that about 89.30% of the changes in profitability of the banks in Nigeria are caused by the combined influence of the independent variables of the bank capital, bank size, expenses management, interest rate and the economic situation of the country. With a value of 89.30%, the strong positive relationship between profitability and its determinants is further confirmed. The results of the Durbin Watson Statistics of 2.026 indicates that there is no autocorrelation among the variables included in the model, making the model more reliable.

The relationship between profitability and capital is positive and statistically significant. The results imply that the banks with larger capital are able to diversify their business operations by strengthening their ability to assume risk and attract funds at low cost, which will enhance their liquidity position. The overall effect will be an improvement of their lending, with positive effect on profitability. As Athanasoglou *et al.* (2005) observe, a bank with a sound capital position is able to pursue business opportunities more effectively and has more time and flexibility to deal with problems arising from unexpected losses, thus achieving increased profitability. The results confirm the study by Saona (2011) and Bourke (1989). For instance, Bourke (1989) found that capital ratios are positively related to profitability under the assumption that well capitalized banks may enjoy access to cheaper and less risky sources of funds

and better quality asset markets. Berger (1995) and Saona (2011) attribute the two potential explanations for the positive relationship between the bank's profits and the capital ratios to the expected bankruptcy costs hypothesis and the signaling hypothesis. The result is consistent with the works of Naceur and Goaied (2008), Scott and Arias (2011), and Oladele *et al.* (2012).

Bank size has a negative but statistically significant effect on banks' profitability (ROA). The results indicate that banks are likely to earn fewer profits as compared to small banks. The negative relationship could be that, as the banks are becoming extremely large, the bureaucratic procedures have negatively affected their performances. For instance, the forced mergers and acquisitions of banks in Nigeria in 2006, where the number of banks were reduced from 89 banks to 24 groups of banks in 2006, could have caused the returns of the banks to decline. Thus, policy makers should be cautious and understand, as Shih (2003) argues, that the acclaimed synergy from banks' mergers is not automatic, and that the returns from the bank merger are more likely to be negative than positive. The results confirm the works of Staikouras and Wood (2004) and Ani *et al.* (2012) that growing banks may face diminishing marginal returns which will cause average profits to decline with size.

The expenses management variable has a negative and significant effect on banks' profitability as expected. This finding implies that efficient management of banks' expenses, by reducing the cost of operations, improves the performance of the banks. The most important policy lesson to the banks is that reducing the cost of operations reduces the incidence of failure of the banks and hence strengthens the confidence of the shareholders and the public through improved financial performance of the banks. Thus, as stated by Efficiency Structure (ES) hypothesis, an efficiently managed bank will earn higher profits than the less efficient ones.

In line with the researcher's expectation, the variable of interest rate was positive and statistically significant. This implies that the profits of banks tend to increase with increasing rate of interest. This is understandable in Nigeria because, oftentimes, most banks charge high rate of interest on loans and advances because of their perceived risk of doing business in the country. Since the borrowers have no readily available alternative sources of borrowing to finance their investments, the availability doctrine, rather than the cost doctrine, has been the only option. This means that they are ready, at whatever cost, to obtain loans from the banks as far the loans are available. The higher interest rates benefit the banks in terms of higher profits, but at the expense of the overall economic development of the country.

Expectedly, the dummy of GDP variable has positive and statistically significant relationship with profitability. The positive effect is an indication that higher GDP represents improved business opportunities, which ultimately leads to higher profitability. The result is consistent with theory as documented in the studies by Dietrich and Wanzenrid (2009), and Flamini *et al.* (2009).

5. Conclusions

The paper investigates the effects of capital, size, expenses management, interest rate and economic condition on banks' profitability in Nigeria. These factors affecting banks' profitability were categorized as bank-specific variables (bank capital, size and expense management) and macroeconomic variables (interest rate and GDP, proxy for business cycle).

Several sources of theoretical and empirical reviews were used to support the relationship between profitability and each of its determinants. The theories include the signaling theory, expected bankruptcy cost hypothesis, risk-return hypothesis, market power and efficiency structures hypotheses. The econometric model of fixed effects regression was employed for the study, using a panel data (comprising cross-sectional and time-series data) of 20 banks in Nigeria between 2006 and 2012.

The results confirm some previous findings that the bank capital, expenses management, interest rate and the economic situation of the country have statistically significant effects on banks' profitability in Nigeria. The results indicate that improved bank capital and interest income, as well as efficient management of banks' expenses and favourable economic condition contribute to higher banks' performance and growth in Nigeria. Accordingly, the impact of GDP growth rate on profitability indicates that banks can achieve higher (lower) profitability under favourable (unfavourable) conditions. Government policies in Nigerian banking sector must encourage banks to regularly raise their capital and provide the enabling environment that will accelerate economic growth in the country. These results have important implications for banks' survival and growth. It is hoped that the study will guide the policy makers and bank regulators in the formulation and implementation of macroeconomic policies which may affect the stability of the banking system in Nigeria.

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