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DETERMINANTS OF CORPORATE PROFITABILITY IN QUOTED MONEY BANKS IN NIGERIA

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ABSTRACT

This study examines the determinants of corporate profitability in quoted money banks in Nigeria. The specific objectives are to: Examine the relationship between inflation and corporate profitability, investigate the relationship between interest rate and corporate profitability, evaluate the effect of GDP growth on deposit money banks' profitability, ascertain the impact of capital adequacy and corporate profitability and to examine the relationship between banks size and corporate profitability.

The data for this research work are basically secondary in nature. Data is extracted from the annual reports of the concerned companies and the Central Bank of Nigeria statistical bulletin

Finding of this work showed that the relationship between interest rate and profitability is positive but not statistically significant, the analysis shows that gross domestic product is positively related to firm profitability in accordance with theoretical expectations, but not statistically significant to profitability, regarding capital adequacy, estimation results in this study revealed that capital adequacy has a positive and significant effect on profitability at 1% level of significance, and the study confirms a positive and significant relationship between firm size in Nigeria banking sector as a case study at 1% significance level respectively.

Keywords- Profitability, Capital adequacy,, money banks, Gross domestic product

INTRODUCTION

1.1 BACKGROUND TO THE STUDY

A firm requires long-term survival only through maximization of its profit and looks further for its sustainability.(Shahnawaz (2007) tried to establish a link between profitability and trade. By employing panel analysis, it is observed that capital formation and openness of an

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industry considerably affect price-cost margins. In the period 2002-2007, firm-specific indicators like firm size, leverage, liquidity, etc., generally affected corporate profitability. Nevertheless, from 2009, the integration of domestic economy with the global economy made the economy more susceptible to external disturbances. The importance of macroeconomic factors such as exchange rate, interest rate, and the economic growth rate determines the augmentation of corporate profitability (Nandi et al., 2015).

Corporate performance is directly affected by exchange rates as well as interest rates. An increase in interest rate probably leads to increase in interest outgo, which in turn augments expenditure and so reduces profitability. According to the empirical findings of several studies, firm effect is more prominent in comparison to the relatively less contributions of the impact of year, country, and industry on profitability Brito and Vasconcelos, 2006). Furthermore, several studies observed that the impact of industry-level factors can be explained in relation to less than 5 percent variation in profitability (Schiefer and Hartmann, 2009). Therefore, in this study, we examined the effect of crucial firm-level factors on profitability of the firm at the time of crisis. These firm-level indicators are total size, liquidity, and debt-equity ratio. Apart from all these indicators, the study includes macroeconomic indicators such as exchange rate, volatility of exchange rate, exports, imports, IIPCG (proxy for growth), and interest rate.

1.2 STATEMENT OF THE RESEARCH PROBLEM

Firms' financial performance directly affects the stability of the countries' economic systems in today's capitalist world economy, the factors affecting firm profitability deserve special attention (Akbas & Karaduman, 2012). Profitability is the major tenet of most corporate entities; hence it's relative importance in the analysis of corporate growth and survival. There are lots of factors that can have impact on the profitability of firms. Among these factors, capital structure, firm size, cash liquidity and financial leverage have been considered for analysis in this study as determinants of corporate profitability.

1.3 OBJECTIVES OF THE STUDY

The broad objective of this study is to establish the determinants of coporate profitability in Nigeria. The specific objectives are to:

i. Examine the relationship between inflation and corporate profitability.
ii. Investigate the relationship between interest rate and corporate profitability.
iii. Evaluate the effect of GDP growth on deposit money banks' profitability.
iv. Ascertain the impact of capital adequacy and corporate profitability.
v. Examine the relationship between banks size and corporate profitability

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1.4 HYPOTHESES

In order to achieve the objectives of the study, the following hypotheses were formulated to be tested regarding the determinants of corporate profitability in Nigeria.

H_1: There is no significant relationship between inflation and corporate' profitability.

H_2: There is no significant relationship between interest rate and deposit money banks' profitability.

H_3: GDP growth has no significant effect on corporate profitability.

H_4: Capital adequacy has no significant impact on corporate profitability.

H_5: There is no significant relationship between bank size and corporate profitability.

1.5 SCOPE OF THE STUDY

Identifying the determinants of Determinants of corporate profitability in Nigeria profitability in Nigeria is the major focus of this study. This study focuses on deposit money in Nigeria, it covers the period from 2016--2023 using panel data analysis. The study examined the effect of the internal and external factors determinants on profitability of Nigeria deposit money banks by focusing on independence variables such as profitability, inflation, interest rate, GDP growth, capital adequacy and banks size.

LITERATURE REVIEWS

2.1 The Concept of Profitability

Profitability measures the performance of a firm and it is defined as the ability of a firm to generate profit. A profit is what is left of the revenue a business generates after it pays all expenses directly related to the generation of the revenue, such as producing a product, and other expenses related to the conduct of the business activities. Deposit Banks are in business to make profit hence any loan facility granted is expected to yield some profit in form of interest. The amount of profit depends on the rate of interest charged. Such interest rates which are fixed by the central bank of Nigeria must be higher than the interest paid to the depositors. That is to say, the profits made by banks include the difference between the interest charged borrowed to customers and the interest paid to depositors (Unugbro, 2010). For the measurement of profitability, return on assets (ROA) and return on equity (ROE) has been used in many studies. Return on assets shows the efficiency of the management to

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generate income. It is useful for comparing the companies in the same industry. It indicates how capable the management has converted assets into net earnings and it is calculated as net profit/total asset. While return on equity on the other hand is a measure of the rate of return flowing to investors or shareholders. It estimates the net benefit that the shareholders have received by investing their capital in the financial institution, that is, the outcome for putting their wealth at risk. The ratio can be derived by dividing net income by the total equity. Earlier studies have also shown that deposit bank profitability is typically measured by return on asset (ROA), return on equity (ROE) and net interest margin (NIM). For instance, return on asset used by (Flamini et al, 2009), return on equity (ROE) used by (Goddard et al, 2004) and net interest margin (NIM) used as a proxy for banks profitability by (Demirguc-Kunt& Huizinga, 1999). Many regulators believe that return on asset (ROA) is the best measure of deposit bank profitability (Hassand& Bashir, 2003). Rivard and Thomas (1997) opined that profitability is best measured by return on asset (ROA), in that return on asset (ROA) is not distorted by high equity multipliers and return on asset (ROA) gives an idea as to how efficient management is at using its assets to generate earnings.

Inflation Rate

In regards to macroeconomic perspectives,inflation rate has positive association with banks' return on assets (ROA). This further implies that inflation is highly anticipated by the banks during the period of study and enables them to adjust the interest rates and earn higher profits during that time.

(ii) ***Interest Rate:***

The bank lending rate is expected to have a positive impact on deposit bank' profitability. This is because interest rate directly impacts deposit bank interest income and expenses, and the net result that further affect profitability. The interest rate of bank's policy can be seen from two perspectives, the bank's policy regarding interests it pays on deposits received by it and the bank's policy regarded the interests it received on credit given by it.

The interest paid by a deposit bank, on its deposit liabilities is a cost source and tend to contract the bank's income. The profit function of a deposit bank includes the interest it pays on deposits (Fries et al, 2002). Likewise, the interest received by a bank on credits given by it is a revenue source and tends to expand the bank's income. The profitability of a deposit bank is influenced with by its interest rate policy (Bobakova, 2003). Prior research revealed a positive association between interest rate and profitability (Aburimen, 2001; Alper & Anber, 2011; Demirguc-Kunt&Huizing, 1999). While Guru et al. (2002) attempt to identify the determinants of successful deposit banks in Malaysia, the findings of his study shows that among the macro-indicators, high interest ratio was associated with low bank profitability. Aburimen (2001) also found a negative relationship between interest rate and profitability.

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(iii) GDP Growth

GDP growth is one of the commonly and most widely used macroeconomic variable used to determine bank profitability. Economic growth (GDP) is usually considered as the main indicator of a country standard of living as it shows the direction of the economic growth at a time. Prior research had suggested that economic growth played an important role in stabilizing the economy and thus will have a positive impact on deposit banks' profitability (Bashir, 2000; Pasiouras & Koosmidou, 2007). An important finding of the study is that the economic growth positively and significantly affects deposit banks' profits (Athanasoglou, 2005). This is because the default risk is lower in upturn than in down turn economy. Furthermore, higher economic growth may lead to a greater demand for both interest bearing and non-interest bearing financial services. Vong and Chan (2008) also explain that banks credit risk can be reducing if the nations' growth rate is above par in which could further increase bank efficiency and improve the debt servicing capacity of domestic borrowers. While a poor of macroeconomic condition could result in banking crisis, with an increase in non-performing loan (NPL) and decrease in revenue.

Ang (2007) study shows that banking sector development causes economic growth by improving investment performance and thus enhance economic development. Chinaemerem and Chigbu (2012) investigated the impact of banking sector development variables on economic growth in Nigeria from 1960-2008 with the use of granger in causality test, co-integration and error correction method (ECM). Two indicators of banking sector development were employed; they are money supply (MS) and credit to private sector (CPS). The empirical result indicates that money supply (MS) and credit to private (CPS) were positively related to economic growth of Nigeria in the period observed. Naceur and Goaied (2000) examined the impact of bank-specific, industry-specific and macroeconomic determinants of deposit banks' net interest margins and return on asset in the Tunisian banking industry for the 1980-2000 period concluded that GDP per capital growth have no impact on Tunisian bank' profitability.

(iv) Capital Adequacy

Capital adequacy is another internal factor for the measurement of the profitability and amount retained by the deposit bank to meet the unexpected loss and danger involved. High of this ratio shows the high profitability and lower ratio causes in the decrease of the profitability. Capital adequacy ratio is mostly used as a measure of the financial strength of the banks with or any financial institution.

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Various studies suggest that deposit banks with higher levels of capital perform better than their undercapitalized peers. Abreu and Mendas (2006) traced a positive impact of equity level on profitability. There is a positive link between a greater equity and profitability among EU banks (Staikourasand Wood, 2003). Naceur and Goaied (2008) observed a positive relationship between capital and net interest margin or profitability in Tunisia. Oladele, Sulaimon and Adeleke (2012) found that operating expenses, relationship between cost and income, and equity to total asset significantly affect the performance of banks in Nigeria. Ani et al. (2012) established that capital and asset consumption positively affect deposit bank profitability in Nigeria. Goddard et al. (2004) supports the prior findings of positive relationship between capital/asset ratio and banks earnings. Also, Babalola (2012) used four models (an aggregate model coupled with three other decomposition models) to investigate the determinants of profitability in Nigeria. His findings showed that in the short run, capital adequacy ratio is the determining factor that back profitability.

Capital adequacy is calculated as the ratio of equity to total assets. According to Ommeren (2011), 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 loses. The relationship between capital and profitability is said to be unpredictable. This is because while positive relationship between capital and profitability has been found by some researchers, other also fined a negative relationship between them. Hoffimann (2011) tried out the determinants of profitability of the deposit money banks operating in us for the period of 1995-2007. The study undertakes the internal and external factors affecting the profitability of banks in US economy. The study found that there is a negative relationship between the capital ratio and profitability which affirms believe that deposit banks are working most carefully and dismissing potentially profitable trading chances.

(v) Firm Size.

Deposit Bank size is usually estimated by the size of the total asset of a particular bank, size of the bank shows the economies and diseconomies of scale. The theory of 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. The study conducted by Staikouras, Lord and Dietrich (2003) and Wanzenrid (2009) shows that the relationship between deposit bank size and profitability can be positive or negative. This study found that high capitalization leads to high profitability and size of the deposit bank increases the profitability; its means deposit banks are enjoying the benefit of economies of scale.

An analysis of the internal and external factors of the deposit money banks of Turkey for the period of 2002-2010 was done by Alpera & Anber (2011). The study reveals that deposit

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banks size have a positive impact on the deposit bank profitability. Kosmidou (2008) conducted a research on the determinants of deposit bank profitability and took bank size variable, as considered to an important determinants of deposit bank performance. One of the relevant questions underlying bank policy is which size optimizes deposit bank profitability? Because there are no clear cut points this indicates the relation of appropriate deposit bank size and its profitability. The effect of growing size on profitability has proved positively to a certain extent. However, for banks that become extremely large, the effect of size can be negative due to bureaucratic and other reasons (Athanasoglou et al, 2005). Ani etal. (2012) investigated the determinants of profitability of deposit banks in Nigeria for the period of ten years from 2011-2010 including the observation of 147 banks. Pool ordinary least square was used to estimate the coefficient. The study finds that bank size does not increase the profit of any commercial banks in Nigeria.

2.2 EMPIRICAL LITERATURE

A number of studies have investigated the determinants of corporate' profitability in most countries all over the world. Most of the studies consider internal factors and external factors. The factors affecting corporate profitability have been empirically examined by many authors, especially in the developed countries. Khrawish (2011) access the Jordanian deposit money bank profitability from 2000 through 2010, and categorized the factors affecting profitability into internal and external factors. The author found a significant and positive relationship between return on asset (ROA) and the bank size, total liability/total asset, total equity/total asset, net interest margin and exchange rate of the deposit banks and that there significant and negative relationship between return on asset (ROA) of the deposit banks and annual growth rate for gross domestic product and inflation rate.

The internal determinants originate from bank accounts (balance sheet or profit or loss accounts). The internal determinants of deposit bank profit can be defined as those factors that are influence by the banks' management and policy objectives. Management effects are the results of difference in bank management objectives. Policies, decisions, and action reflect in the differences in bank operating results, including profitability. The internal profitability determinants include; capital adequacy, credit risk, deposit liability, the level of liquidity, loan and advance, expense management, efficiency and productivity, bank size and non-interest income (Athanasoglou et al, 2006; Kasmidou, 2008 andSufian, 2011).

The external determinants of deposit bank profitability are concerned with those factors which are not influence by specific bank's decision and policy, but by event outside the influence of the bank. According to Athanasoglou et al, (2006), Kasmidou, 2008 andSufian, 2011, several external the determinants are included in the performance examination of deposit banks profitability: the financial market structure; the economic condition of the country, the legal and political environment all may influence the performance of banks.

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Alperaand Anbar (2011) analyzed the internal and external factors of the deposit banks of turkey for the period of 2002-2010. The study indicates that non-interest income and bank size have the positive impact on the deposit bank profitability. On the side of the external factors only the real interest rates impact on the profitability of the deposit bank positively. Madishetti, (2013) examined the determinants of profitability of Tanzania deposit banks for the period of 2006-2012. Internal determinants use the variable like liquidity risk, credit risk, operating efficiency, business assets and capital adequacy and external determinants use the variable GDP growth rate and inflation rate. These variables are explanation. The study found that external factors do not influence the profitability of deposit money banks, whereas the internal factors do determine the profitability. Suana. And Habibullah. (2009) examined the determinants of profitability of the US deposit banks during the period 1995-2007. The empirical analysis combined bank specific (endogenous) and macroeconomic (exogenous) variable through the GMM system estimator. A negative link was found between capital ratio and profitability, which supports the notion that banks are operating over-cautiously and ignoring potentially profitable trading opportunities.

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. Saira, (2011) also examined the profitability of top 10 the commercial banks of Pakistan for the period 2004-2008. Pool ordinary least square has been used to check the impact of internal factors including asset, loan, equity and deposits on the profitability of banks on dependent variable called return on asset (ROA). The study found that internal factors stated above affect the bank's profitability. Bank size or total assets does not lead any profitability of commercial banks but equity and deposits have a significant influence on the profitability of commercial banks.

2.3 THEORETICAL FRAMEWORK

Every research that stands its test of time is always built on theories. This study therefore examines some of the theories relating to the determinants of deposit money banks' profitability. Thus these theories include the signaling theory, market power and efficiency structure theory, economy theory and theory of banking firm and endogenous growth theory.

2.3.1 Signaling Theory

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The relationship between capital and profitability is explained by signaling theory (Berger, 1995; and Ponce, 2012). The signaling theory hypothesis suggests that a higher capital is a positive signal to the market value of the bank (Ommeren, 2011). An observation was made by Berger (1995) and Ponce (2012) that under the signaling theory, bank management signals private information that the future prospects are good by increasing capital. Bank capital are those funds attributed to the proprietors as published in the balance sheet. Bank equity capital can be seen in two dimensions as stated by (Aburimen, 2008).

The amount contributed by the owners of a bank (paid up share capital) that gives them the right to enjoy all the future earnings and the amount of owner's fund available to support a bank's business which include reserve, and is also referred to as total shareholders' funds. These funds perform a number of functions but a consensus exist that the fundamental and overriding function is to provide a cushion against losses not covered by current earnings and to protect depositors and other creditors against loss in the event of liquidation. Bank's capital is widely used as one of the determinants of deposit bank profitability since it indicates the financial strength of the bank (Athanasoglou et al, 2005).

Earlier studies suggest that banks with high level of capital perform better than their undercapitalized peers. Abreu and Mendes (2001) traced a positive impact on equity level on profitability. There exists a positive link between greater equity profitability among EU banks (Staikouras and Wood, 2003). He also supported the prior finding of positive relationship between capital/asset ratio and bank's earnings.

2.3.2 Market Power and Efficiency Structure Theory

The market power and efficiency structure theory explain the relationship between the deposit bank size and profitability. A firm usually has market power by virtue of controlling a large portion of the market. Firms in such industries become more profitable size. Therefore, over time the industry is dominated by a few large firms. This dominance makes it difficult for startup firms to succeed. Generally, market power refers to the amount of influence that a firm has on the industry in which it operates. According to Olweny and Shipho (2011), the market power posit that performance of bank is influence by the market structure of the industry and that the efficiency structure hypothesis maintains that banks earn high profit because they are more efficient than the others. The market power theory assumes that the profitability of a bank is a function of external market factors, while the efficiency structure assumed that deposit bank profitability is influenced by internal efficiencies.

According to the efficiency hypotheses, a positive concentration-profitability relationship may reflect a positive relationship between size and efficiency. It state that efficient banks in the market leads to increase in the firms' size and market share due to the aggressive behavior. This behavior of the efficient banks allowed such firms to concentrate and earn high profits

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with further enhancing their market share. According to Smirlock (1985), firms can maximize profits either by maintaining the present level of product price or service charge and expanding the firm size. The efficiency structure hypotheses theory finally stated that the positive relationship between profit and concentration result from the lower cost achieve through superior management and efficiency production process (Goldberg et al, 1996).

METHODOLOGY

3.1 RESEARCH DESIGN

A research design specifies the methods and procedures used to acquire the information needed for research. It enables the researcher know the kind of design adopted in a study. The research design for this study takes the form of an explanatory survey as it to explains the relationship between profitability (dependent variable) and inflation, interest rate, GDP, capital adequacy and bank size (independent variables).

3.2 SAMPLE AND SAMPLING TECHNIQUE

The sample of the study entails a segment of the population we are interested in. The sample consists of five (5) banks listed on the Nigeria Stock Exchange group for the period 2016-2023 The banks are, First Bank of Nigeria Plc, United Bank for Africa (UBA) Plc, Guarantee Trust Bank (GTB)Plc, Zenith Bank Plc and Unity Bank Plc (FCMB). The firms were selected using convenience sampling technique.

3.3 SOURCES OF DATA

The data for this research work are basically secondary in nature. Data is extracted from the annual reports of the concerned companies and the Central Bank of Nigeria statistical bulletin

3.4 MODEL SPECIFICATION

In order to examine the determinants of deposit money bank banks profitability in Nigeria, an econometric model is specified. The model basically relates profitability (PROF) as a function of inflation (INF), interest rate, (INTR), economic growth (GDP), capital adequacy (CAPA), and bank size (BANS).

The model is specified below;

$$PROF_{it} = \beta o + \beta_1 INF_{it} + \beta_2 INTR_{it} + \beta_3 GDP_{it} + \beta_4 CAPA_{it} + \beta_5 BANS_{it} + U_{it} \ldots\ldots 4.1$$

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Where, i = 1, ...5, with 5 the number of companies, the cross-sectional dimension;

t = 1, …10, with 10, the number of years, the temporal dimension,

$PROF_{it}$ = Profitability,

INF_{it} = Inflation,

$INTR_{it}$ = Interest rate,

GDP_{it} = Economic growth,

$CAPA_{it}$ = Capital adequacy,

$BANS_{it}$ = Bank size,

βo = a constant or intercept,

U_{it} = the Stochastic or error terms capturing other variables that can determine bank profitability i in current period, t. The apriority expectation is β_1; β_2; β_3; β_4 and $\beta_5 > 0$. In other words, we do expect all the exogenous variables to have statistically significant relationship with profitability.

DATA PRESENTATION, ANALYSES AND DISCUSSION OF RESULT

4.1 DATA PRESENTATION AND ANALYSES

This study examines the determinants of deposit money banks profitability in Nigeria based on a panel least squares (PLS) methodology. Specifically, it analyses the impact of bank specific and macroeconomic variables on banks' profitability. The bank specific variables of interest are: capital adequacy (CAPA) and bank size (BANS) while the macroeconomic indicators are: inflation rate (INF), interest rate (INTR) and gross domestic product (GDP). The regressing, banks' profitability (PROF) (proxies by return on assets) was regressed on the repressors – inflation rate (INF), lending interest rate (INTR), gross domestic product (GDP), capital adequacy (CAPA) and bank size (BANS) using the panel least squares (PLS) technique based on the fixed effect estimation (FE). Return on assets (ROA) (obtained from the ratio of profit before tax and bank total assets) is the dependent variable of the study. All other variables are exogenous or explanatory.

4.1.1 Panel Least Squares Estimation

To achieve the objectives of the study it employed a long period panel of ten (10) years (2005-2014) and a relatively small unit panel of five deposit money banks in Nigeria. The banks were:

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1. First Bank of Nigeria Plc (FBN)
2. United Bank for Africa Plc (UBA)
3. GT Bank Plc (GT)
4. Zenith Bank Plc (ZENITH)
5. Unity Bank Plc (UB)

The study uses the panel data method of data analysis to fully exploit the time and unit dimensions of the data sets. The simple panel equation of the study predicting banks' profitability (PROF) from the internal and external factors is given by equation 4.1 below:

$PROF_{it} = \beta o + \beta_1 INF_{it} + \beta_2 INTR_{it} + \beta_3 GDP_{it} + \beta_4 CAPA_{it} + \beta_5 BANS_{it} + V_{it}$……..4.1

Where, i = 1, ...5, with 5 the number of banks, the cross-sectional dimension;

T = 1, …10, with 10, the number of years, the temporal dimension,

V_{it}= the error terms.

For example, $CAPA_{it}$is interpreted as 'capital adequacy' of bank i during period t.

4.1.2 Descriptive Statistical Analysis

To confirm the nature of correlation between the variables so as to determine the extent of the within-unit clustering, we extracted the correlation matrix using E Views 7.0 as shown on table 4.1 below:

TABLE 4.1: CORRELATION MATRIX OF VARIABLES

	PROF	INF	INTR	GDP	CAPA	BANS
PROF	1.0000	-0.1262	-0.0419	0.1791	0.5405	0.4114
INF	-0.1262	1.0000	0.1179	-0.4927	-0.1439	0.0405
INTR	-0.0419	0.1179	1.0000	-0.2901	0.0187	-0.0573
GDP	0.1791	-0.1439	-0.2901	1.0000	0.1095	0.1583
CAPA	0.5405	-0.1439	0.0187	0.1095	1.0000	0.5132
BANS	0.4114	0.0405	-0.0573	0.1583	0.5132	1.0000

SOURCE: Author's computation based on E Views 7.0 Output

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Table 4.1 above shows that all the independent variables have very low correlation coefficients. Thus, the independent variables are not highly correlated and thus the presence of serial correlation is highly unlikely. Similarly, only the relationships between CAPA and PROF have a high correlation coefficient while the relationships between PROF and other independent variables have low correlation coefficients. This suggests that only capital adequacy is likely to have a significant impact on profitability.

4.1.3 Fixed Effect Model Estimation

In order to estimate the impact of bank specific variables and macroeconomic indicators on bank profitability (proxies by return on assets) in Nigeria, we regressed the dependent variable, banks profitability (PROF) on the independent variables - inflation rate (INF), lending interest rate (INTR), gross domestic product (GDP), capital adequacy (CAPA) and bank size (BANS) in a panel least squares regression analysis using the cross section fixed effects (FE) estimator. The fixed effects estimation technique is used because it is not possible to use the random effects (RE) estimation.

In this study, the number of cross sections is five; the same as the number of coefficients. The initial results show the presence of autocorrelation in the temporal dimension. To correct for serial correlation, the Cochrane-Orcutt autoregressive (AR) technique is employed based on autoregressive one, AR (1) procedure. Convergence is achieved after 12 iterations after adjustments in period, 2005-2014 in a balanced panel of 45 observations. The final results are contained on Table 4.2 below:

Table 4.2: Panel Least Squares Multiple Regression Analysis

Dependent Variable PROF	**Variables**	**Coefficient**	**t-statistic**	**Probability**
	C	-114.90	-0.3558	0.7242
	INF	-10.4310	-1.2307	0.2269
	INTR	8.0358	0.3605	0.7207
	GDP	0.0007	0.8038	0.4271
	CAPA	265.92	3.3636	0.0019*
	BANS	8.77E-07	5.2441	0.0000*
	AR(1)	-0.9341	-7.4942	0.0000
R^2	0.74			

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Adj. R^2	0.66			
F-statistic	9.6299			
Pro (F-statistic)	0.000000	DW	2.1	

Source: Data Computation by researcher, November, 2024.

KEY: * indicate 1% level of statistical significance**.**

From table 4.2 above, it can be seen that the R^2 statistic is 0.74 while the adjusted R^2 statistic is 0.66. This is an indication that 66% of systematic variation in bank profitability (PROF) is explained by changes in the explanatory variables of the model. Similarly, the F-statistic, 9.63, is statistically significant at 1% (probability value is 0.0000). These statistics indicate that our model satisfies the overall goodness of fit statistical test.

In addition, the Durbin-Watson statistic of 2.1 (approx. 2.0) indicates the absence of autocorrelation in the model. Also, the t-values are generally of low values while the R^2 statistic is not too high. These suggest that there is no problem of heteroscedasticity in the model; whose presence destroys t-values and R^2. Thus, our econometric model meets both statistical and diagnostic criteria and represents a good and consistent estimator that can be useful for policy purpose.

Thus, the panel least squares regression equation in an adjusted sample of ten years range, 2016--2023, for five cross sections of Nigerian deposit money banks in some total balanced panel observations of 45 after adjusting for the presence of autocorrelation using the Cochrane-Orcuff autoregressive (AR) technique becomes:

PROF = -114.90 - 10.43INF + 8.04INTR + 0.001GDP + 265.92CAPA + 8.77E 07BANS + υ;

(5.24) (-1.23) (0.36) (0.80) (3.36) (5.24

4.2 RESULTS AND DISCUSSION OF FINDINGS

The analysis shows that lending interest rate (INTR), gross domestic product (GDP), capital adequacy (CAPA) and bank's size (BANS) are positively related to bank profitability (proxies by return on assets, ROA) in accordance with theoretical expectations. However, inflation rate (INF) is negatively related to profitability also in accordance with theory.

The above directional relationships indicate that the higher the lending interest rate, the higher are the earnings from loan assets and therefore, the higher the profitability (PROF) of banks; and vice versa. In this instance, a unit increase in lending interest rate leads to 8.04 unit rise in profit. Similarly, the higher the rate of economic performance as indicated by growth in gross domestic product (GDP), the higher is the profitability of the banks. Also, the

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higher the level of banks capital in relation to loan assets, the higher is the amount of loans bank can create and hence the higher is banks' profitability (i.e. ROA), and vice versa. In the same vein, the higher is the size of the bank in terms of its total assets, the higher is the bank's profitability. On the other hand, the higher the rate of inflation, the lower is the profitability of banks (ROA).

Furthermore, the analyses show that only capital adequacy (CAPA), and bank's size (BANS) have statistically significant relationships with banks profitability (PROF) respectively. Both capital adequacy (CAPA), and bank's size (BANS) are statistically significant with bank profitability (PROF) at 1% level of significance (Prob. values, 0.0019 and 0.0000 and t-values of 3.36 and 5.24 respectively). Other variables, namely inflation rate (INF), lending interest rate (INTR), and gross domestic product (GDP) are not statistically significant with profitability (PROF).

The fact that capital adequacy (CAPA), and bank's size (BANS) is statistically significant with banks' profitability indicates that these internal bank variables are some of the most significant bank specific variables that determine the profitability of Nigerian banks. The macroeconomic variables (inflation rate (INF), lending interest rate (INTR), and gross domestic product (GDP) are not significant in this study. They do not appear to be major determinants of bank profitability in Nigeria.

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 SUMMARY OF FINDINGS

(i.) Concerning the interest rate, the regression result in this research implies that the relationship between interest rate and profitability is positive but not statistically significant.

(ii.) The analysis shows that gross domestic product is positively related to firm profitability in accordance with theoretical expectations, but not statistically significant to profitability.

(iii.) Regarding capital adequacy, estimation results in this study revealed that capital adequacy has a positive and significant effect on profitability at 1% level of significance.

(iv.) The study confirms a positive and significant relationship between firm size in Nigeria banking sector as a case study at 1% significance level respectively.

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Generally, according to the regression result, the analysis shows that capital adequacy (CAPA), and firm size (BANS) are statistically significant with firm profitability indicating that these internal firm variables are some of the most significant firm specific variables that determine the corporate profitability. The macroeconomic variables (inflation rate (INF), lending interest rate (INTR), and gross domestic product (GDP) are not significant in this study. They do not appear to be major determinants of deposit money bank profitability in Nigeria.

5.2 CONCLUSION

From the findings, capital adequacy and firm size are the major determinants of corporate profitability in Nigeria. Other macroeconomic variables such as inflation rate, lending interest rate and gross domestic product does not have significant impact on corporate profitability in Nigeria.

5.3 RECOMMENDATIONS

Based on the findings, the recommendations are as follows:

(i.) Since the study confirms a negative and not significant relationship between inflation and corporate profitability, there would be need for firm to predict inflation accurately from the inflationary environment and this will enable the firm management to adjust their interest rates accordingly and make profits during inflationary period.

(ii.) The large deposit money banks should improve managerial efficiency and the system to reduce the diseconomy scale of large size bands.

(iii.) Government policies in Nigeria banking sector must encourage banks to regularly raise their capital and provide the enabling environment that will accelerate economic growth in the country.

(iv.) Deposit money banks in Nigeria should adequately plan and maintain their capital in order to conduct their business in a prudent manner.

(v.) Finally, the managers' of the nation's deposit money banks should initiate policies that promote banks profitability particularly through efficient mobilization of bank deposits and increase in bank capital either through bank recapitalization or internal financing through reinvestment of profits. However, unnecessary non-interest charges that end up creating conflict between banks and their customers should be reduced to the barest minimum as much as possible as they do not represent significant contributor bank profitability.

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