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INTEREST RATE AND FINANCIAL PERFORMANCE OF COMMERCIAL BANKS IN NIGERIA

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Abstract

Commercial banks play an important role in the operation of an economy since they are the financial intermediaries that channel funds from savers to borrowers for investment which is an important thing for a country's economic growth. The analysis of the effect of interest rate on financial performance of Commercial Banks in Nigeria is important. The findings indicated that real interest rate is negatively and significantly associated with the performance of commercial banks in Nigeria. The study recommends that commercial banks operating in Nigeria should make plan to adjust their lending rates and financial activities when the rate of real interest rate set by the Central Bank of Nigeria increases since real interest rate has a negative effect on commercial banks financial performance. The study also recommends that commercial banks should be aware of the changes in interest rate and adjust their rates accordingly since an increase in interest rate worsens the performance of commercial banks.

Key Words: *Interest rate, Performance of Commercial Banks, Nigeria*

As Sayedi (2013) stated that interest rates plays a crucial role in attraction of investors. Without interest rates stability, domestic and foreign investors will stay away and resources will be diverted elsewhere. Econometric evidence of investment behavior indicates that in addition to conventional factors (past growth of economic activity, real interest rates, and private sector credit), private investment is significantly and negatively influenced by uncertainty and macroeconomic instability.

Buyinza (2010) on the other hand, states that banks are said to be heavily dependent on the funds mainly provided by the public as deposits to finance the loans being offered to the customers. There is a general notion that deposits are the cheapest sources of funds for banks and so to this extent deposits have positive impact on banks profitability if the demand for bank loans is very high. That is, the more deposits commercial bank is able to accumulate the greater is its capacity to offer more loans and make profits. The demand for bank loans may be low as a result of high interest rates caused by instability of the macroeconomic environment, say increases in inflation and poor performance of GDP growth. When the demands for banks loans are low and the commercial bank has more deposits, then this could lead to a decrease in earnings and this may result in low profit for the banks. This is because deposits like Fixed, Time or Term deposits attract high interest from the banks to the depositors.

Theoretical Review

The study was hinged on the market power theory.

The market power theory

The theory is mostly applied in banking and it states that the performance of bank is influenced by the market structure of the industry. According to Tregenna (2009), there are two distinct approaches within the theory namely the Structure-Conduct-Performance (SCP) and the Relative Market Power hypothesis (RMP).

According to the RMP hypothesis, the profitability of commercial banks is influenced by market share. The assumption underlying this hypothesis is that, only large banks with differentiated products can influence prices and increase profits. They are able to exercise market power and earn non-competitive profits. Smaller banks don't have the ability to influence prices and increase profits (Tregenna, 2009).

The SCP approach on the other hand, states that the level of concentration in the banking market gives rise to potential market power by banks, which may raise their profitability. Banks in more concentrated markets are most likely to make abnormal profits by their ability to lower deposits rates and to charge higher loan rates as a results of collusive (explicit or tacit) or monopolistic reasons, than firms operating in less concentrated markets, irrespective of their efficiency (Tregenna , 2009). The discussion of the market power theory shows that bank profitability is a function of external market factors. The theory is relevant to the study as it explains how profitability of the commercial banks can be linked to market factors which form the macro economic factors.

Conceptual Framework

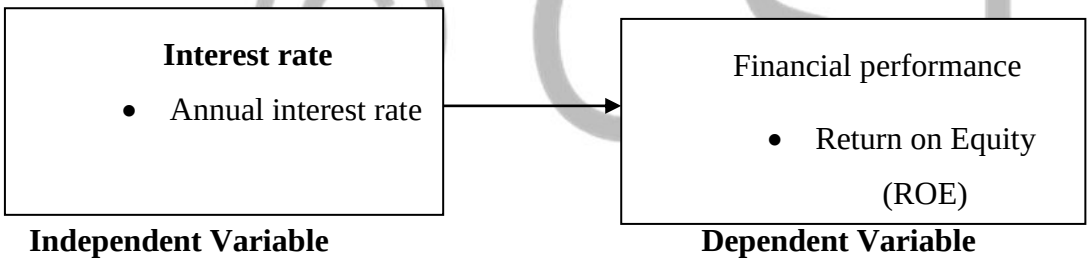

Figure 1: Conceptual Framework

Research Methodology

The study used Panel data regression model to establish the relationship between the predictor and the independent variables. Panel data refers to the pooling of cross-section data over several time periods. The data employed in this study was panel in nature since for each of the 23 banks (or cross-sections) data on selected variables influencing Return on Equity (Inflation Rate) was tabulated over the period 2006 – 2015.
The general form of the panel data model is written as follows:

$$Y_{it} = \alpha_i + X'_{it}\beta + \varepsilon_{it}$$

Specifically, in this study, the regression equation is stated as:

$$Y_{it} = \alpha_i + \beta_1 X'_{1t} + \varepsilon_{it}$$

Where:

Y_{it} => Return on Equity (ROE)

X'_{it} => X'_{1t} = Interest Rate (INTRATE) in period t;

Research findings

Descriptive Statistics

The study was conducted using the descriptive statistics involving mean, standard deviation, minimum and maximum value of the study variables as presented in Table below

Descriptive Statistics

Table 1.1 Descriptive Statistics

Variable	Observation	Mean	Std. Dev.	Min	Max
ROE	230	0.08	0.14	(0.38)	0.22
Interest rate	230	4.49	16.79	(42.31)	23.71

From table 1.1 above, results indicated that the mean ROE recorded in the study period was 0.08 with a standard deviation of 0.14 which indicated a large variation in ROE over the study period in the Nigerian banking sector. The minimum ROE recorded was 38 percent and the largest was 22 percent.

The findings further indicated that the mean exchange rate per US Dollar recorded in the study period in Nigeria was 149.19 Naira per US Dollar with a standard deviation of 20.10 which indicated a small variation in Naira per US Dollar over the study period in the Nigerian economy.

The real interest rate in the study period was 4.49 percent with a standard deviation of 16.79 which indicated a large variation in the percentage of real interest rate in Nigeria in the study period.

Correlation Analysis

The study further assessed the correlations among the predictor variables using the pair-wise correlation matrix. The correlation analysis helped in determining whether multicollinearity problem existed in the data before a regression model was run. The result in Table 1.2 shows the correlation matrix of Pearson correlation coefficients. The starred values indicate significance at 5% level of significance.

Table 1.2 Correlation

			Interest rate	ROE
Interest rate	Pearson Correlation	-.492*	1	
	Sig. (2-tailed)	0.000		
ROE	Pearson Correlation	0.085	-.131*	1
	Sig. (2-tailed)	0.201	0.047	

* Correlation is significant at the 0.05 level (2-tailed).

The findings also indicated that real interest rate is negatively and significantly associated with financial performance of commercial banks. This implied that an increase in the real interest rate is associated with poor performance of commercial banks.

Trend Analysis

Trend analysis of the variables was also established.

1.3.1 Trend Analysis of ROE

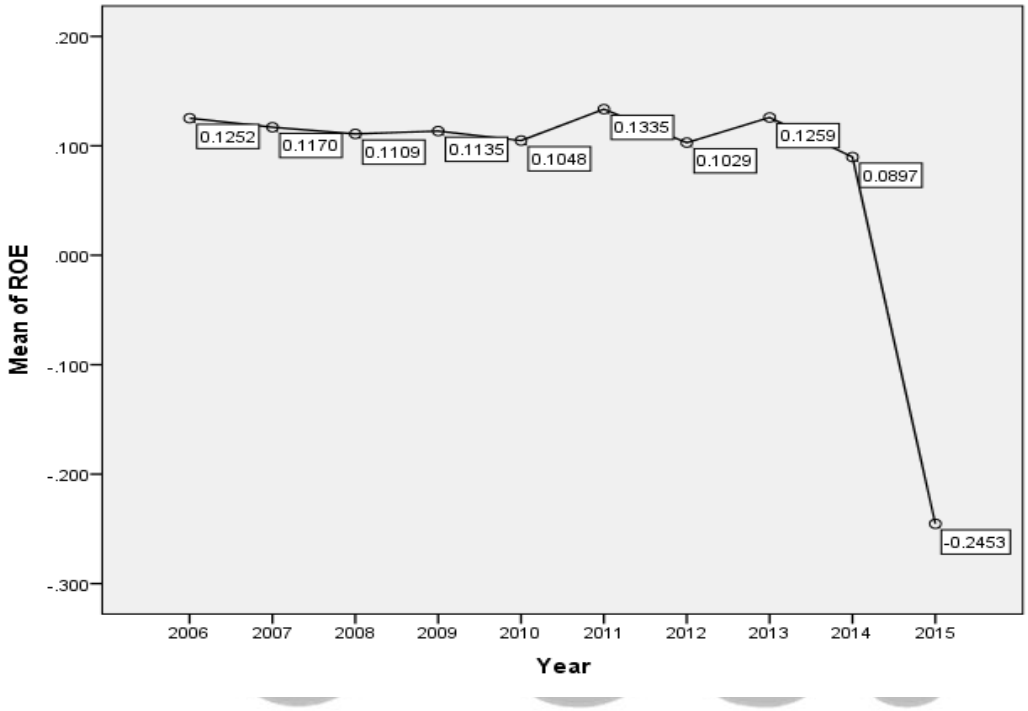

Figure 1.1: Trend Analysis of ROE

The study findings from figure 1.1 indicated that the yearly mean ROE for all the commercial banks in Nigeria had unsteady trends. From the year 2006 to 2010, the mean ROE was unsteady before recording the highest value in the study period in the year 2011. The lowest

Mean ROE recorded in the study period was in the year 2015.

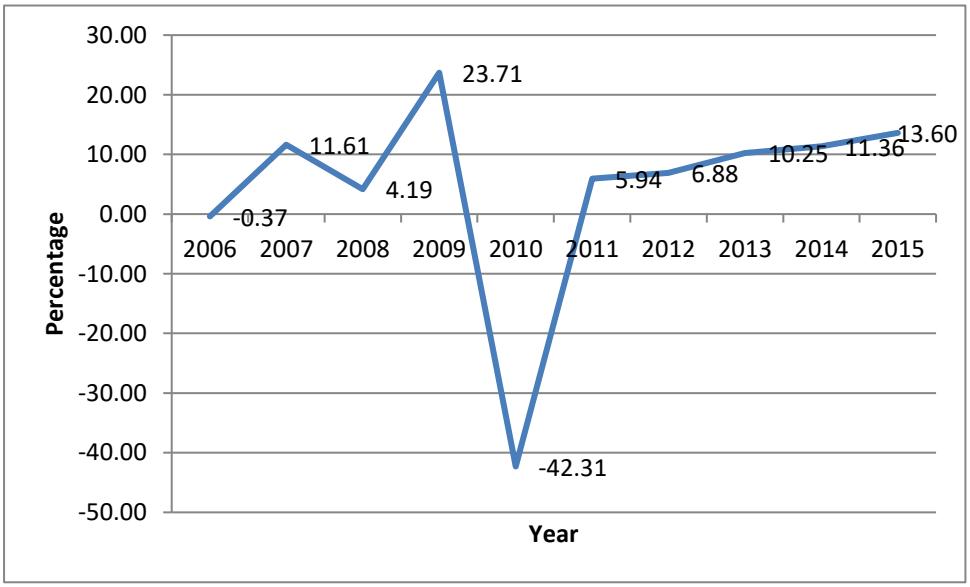

Figure 1.3: Trend Analysis of interest rate

Trend Analysis of Interest rate

Interest rate had steady increasing and decreasing trends over the study period. The year 2010 had the lowest real interest rate value. The real interest rate percentage then started rising steadily from the year 2011.

Regression Analysis

The study used Panel data regression model to establish the relationship between the predictor and the independent variables as described in section 3.5.1 given by:

$Y_{it} = \alpha_i + \beta_1 X'_{1t} + \varepsilon_{it}$

Using the Panel Least Squares method, both the Fixed Effects and the Random Effects models were estimated. The data sample comprised of 23 cross-sections (banks) spread over a ten-year period (2006 – 2015), hence 230 observations.

The summary results for the Fixed Effects Panel Model are as presented in Table 1.3 while details are given in Annex 1.

Table 1.3: The summary results for the Fixed Effects Panel Model

Dependent Variable: ROE

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	4.713677	1.627209	2.896786	0.0042
INTERESTRATE	-3.14E-05	0.000481	-0.065340	0.9480
R-squared	0.494723	Adjusted R-squared		0.430008
Log likelihood	210.6802	Durbin-Watson stat		2.026930
F-statistic	7.644616	Prob(F-statistic)		0.000000

Table 1.4: The summary results for the Random Effects Panel Model

Dependent Variable: ROE

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	4.713677	1.627226	2.896756	0.0041
INTERESTRATE	-3.14E-05	0.000481	-0.065340	0.9480
R-squared	0.401019	Adjusted R-squared		0.390370
F-statistic	37.65946	Prob(F-statistic)		0.000000
Durbin-Watson stat	1.824979			

Table 4.8: Summary results for the RE Panel Model (Corrected for Heteroscedasticity)

Dependent Variable: ROE
Method: Panel EGLS (Cross-section weights)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	4.627652	1.393595	3.320656	0.0011
INFLRATE	0.009937	0.002953	3.365170	0.0009
REALRATE	-4.96E-05	0.000412	-0.120380	0.9043
UNEMPRATE	-0.529045	0.178947	-2.956428	0.0035
EXCHRATE	-0.004347	0.000429	-10.14093	0.0000

R-squared	0.531225	Adjusted R-squared	0.471185
F-statistic	8.847824	Prob(F-statistic)	0.000000
Durbin-Watson stat	1.949662		

The variables INFLRATE, UNEMPRATE and EXCHRATE and statistically significant at 5% significance level.

Interpreting the Equation:

ROE = 4.63 – 0.00005 INTEREST RATE + ε_{it}

One unit increase in interest rate will lead to 0.00005 units decrease in return on equity. The R –squared is 0.531225 and the adjusted R- squared is 0.471185

Table 1.3 Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.612	0.375	0.364	0.108899

The study findings presented in Table 1.7 indicated that the correlation of the joint predictor variable (interest rate) with ROE of commercial banks in the study period is positive as revealed by a Pearson coefficient value (R) of 0.612. The finding also indicated that the predictor variable (interest rate) jointly explain up to 37.5% of the changes in ROE of commercial banks and the remaining percentage, 62.5%, is explained by other variables not studied by the current study. The study further established the model fitness. The result for the model fitness is presented in Table 1.4.

Table 1.4 Model Fitness

	Sum of Squares	df	Mean Square	F	Sig.
Regression	1.598	4	0.4	33.697	.000
Residual	2.668	225	0.012		
Total	4.267	229			

The F calculated, 33.697, is significant at 5% level of significance as indicated by a p-value of 0.00 which is significant at 5% level of significance implying that the model fit well. The study lastly established the model coefficients. The results are presented in Table 4.5.

Table 1.5 Model Coefficients

Indicator	B	Std. Error	t	Sig.
(Constant)	4.681	1.718	2.725	0.007
Interest rate	-0.001	0.001	-0.053	0.958

Results indicated that the relationship between interest rate and ROE of commercial banks is negative and insignificant as indicated by beta coefficient of -0.001 and p-value of 0.958. The findings imply that an increase in real interest rate leads to poor performance of commercial banks. The study findings are consistent with the findings of a study by Ofoegbu and Iyewumi (2013) which indicated that the effect of interest rate on financial performance of commercial banks in Nigeria is insignificant. The findings also agreed with the findings of a study by Anna *et al.,* (2008) which found that only the rate of inflation reveals a significant relationship with banks' performance while there was no significant relationship between real interest rate and financial performance of Macao commercial banks.

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

Summary of Findings

This section summarizes the findings that were obtained in chapter four. The purpose of the study was to establish the effect of Macroeconomic factors on financial performance of Commercial Banks in Nigeria. The summary of findings is presented in line with the objectives of the study.

Interest rate and financial performance of commercial banks in Nigeria

The second objective of the study was to establish the effect of interest rate on financial performance of commercial banks in Nigeria. The findings indicated that real interest rate is negatively and significantly associated with financial performance of commercial banks. This implies that an increase in the real interest rate is associated with poor performance of commercial banks.

The study sought to test the null hypothesis that there is no statistically significant relationship between interest rate and financial performance of commercial banks in Nigeria. The regression results indicated that the relationship between interest rate and ROE was negative but not significant implying that an increase in interest rate leads to a decrease in ROE. The null hypothesis was not rejected hence there is no statistically significant relationship between interest rate and financial performance of commercial banks in Nigeria.

Conclusions

The study concluded that interest rate has a significant relationship with financial performance of commercial banks in Nigeria.

Recommendations

Based on the conclusions, the study recommends that commercial banks operating in Nigeria should plan on how to adjust their lending rates and financial activities when the rate of real interest rate set by the Central Bank of Nigeria increases since real interest rate has a negative

effect on commercial banks financial performance. The study also recommends that the commercial banks should be aware of the changes in exchange rate and interest rate and adjust their rates accordingly since an increase in interest rate worsens the performance of commercial banks.

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