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## PROFITABILITY OF COMMERCIAL BANKS IN NIGERIA: THE ROLE OF FINANCIAL CRISIS

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### ABSTRACT

*This paper investigated determinants of bank's profitability and accounted for the role of financial crisis in Nigeria using four big commercial banks in Nigeria. The bank specific factors include operating efficiency ratio and liquidity ratio while the macroeconomic factors include lending interest rate, consumer price index and financial crisis. The data for this study was collected from the annual report of these banks over the periods of 2003 to 2014 and CBN Statistical Bulletin and the data were analysed applying Ordinary Least regression (OLS) estimation technique. The result from the panel regression suggested that operating efficiency ratio and inflation rate were negatively related to bank profitability in Nigeria. In addition, the result showed that lending interest rate have significant ( $p < 0.05$ ) impact on profitability of bank and that 2008 financial crisis did not have significant effect on banks' profitability during the study period. The study therefore suggested that operating efficiency ratio, lending interest rate and financial crisis liquidity ratio and inflation rate are major endogenous determinants of bank profitability in Nigeria. It recommends that regulatory authorities should promote policies that will bring about low inflation whereas bank management should concentrate more on reducing expenses*

*Keywords: operating efficiency ratio, liquidity ratio, lending interest rate, inflation rate financial crisis*

## 1. INTRODUCTION

Financial system plays a vital role in the economic growth and development of a country. The importance of an efficient financial sector lies in the fact that, it ensures domestic resources mobilization, generation of savings, and investments in productive sectors. In fact, it is the system by which a country directs its most profitable and efficient sectors to most productive sources of future growth. The main role of a financial system is not only to transfer funds from savers to investors but also to ensure that funds are being transferred to the sectors which are most important for an economy. Banks are the most crucial financial intermediaries in most economies that render a bundle of different services. On the other hand banks insolvencies can result in systemic crisis. Therefore, it is important to understand the factors which really affect the banking sector's profitability.

The financial crisis has struck a heavy blow to the global economy. It has been tagged as the worst crises after the great depression in 1930s as result of its negative on-going effect on the financial institutions around the world and the global economy. The global financial crisis has caused the downfall and casualties to some well-known and trusted financial institutions in the western world and the developing economies like Nigeria are not spared.

Aburime (2008), Oladele, Sulaimon and Akeke (2012), Babalola (2012) and Ani et al. (2012) were among studies that investigated the relationship between bank profitability and its determinants using different measures of profitability. Obamuyi (2013) conducted a study on 20 commercial banks of Nigeria over 2006 - 2012 and employed fixed effect model to determine the relationship of different bank specific and macroeconomic variable. The study reported that bank capital, size, interest income & expense management efficiency and favorable economic conditions contribute to higher bank performance and growth. Alemu (2015) found in his for Ethiopia that bank size, capital adequacy and gross domestic product have statistically significant and positive relationship with bank's profitability. On the other hand, variables like liquidity risk, operational efficiency, funding cost and banking sector development have a negative and statistically significant relationship with banks' profitability. Aside that the existing studies have reported mixed results on the effect of bank-specific and macroeconomic factors on the profitability of commercial banks in Nigeria, the extant literature did not consider the role of financial crisis on the nexus of bank-specific/macroeconomic variable – profitability.

The main objective of this study is to determine the effects of bank-specific and macroeconomic factors on the profitability of commercial banks using a panel of 4 commercial banks in Nigeria. This study is set to help commercial banks identify the relationship between the internal and external factors on profitability and work on their abilities to increase efficiency and their profitability. The paper follows as: section 2 defines the data and method, section 3 presents the findings and interpretation of results while section 4 summarizes empirical results.

## 2. DATA AND METHOD

The purpose of this research is to examine the relationship between bank specific and macroeconomic indicators (inflation rate, liquidity ratio, operating efficiency ratio, financial crisis and lending interest rate) and bank profitability simply measured by return on equity. Return on equity is the dependent variable while the bank specific and macroeconomic indicators are the independent variables. The data used in this study was obtained from the annual financial reports of 4 selected commercial banks in Nigeria namely: Diamond Bank, Eco Bank, First Bank and the United Bank of Africa popularly known as UBA. The study

period covers 2003 to 2014, making a total of 12 observations for each bank. The data on consumer price index and interest rate variables were obtained from the Central Bank of Nigeria statistical Bulletin. This study employed both time series and panel data analysis. Ordinary least squared (OLS) and Pooled OLS methods of estimation technique were used.

### **Description of Data/Measurements**

**Return on equity (ROE):** Return on equity (ROE) is one of the proxies used to measure profitability. ROE equals the firm's net income divided by shareholders' equity. This is measured by dividing the net profit after tax by the shareholder's equity. The ROE ratio is important to investors in the firm because it measures the return on the money that investors have invested in the firm. The higher the percentage of the ROE, it is the better and this means that the firm is efficiently using the investors' money.

**Inflation Rate (INF):** This is one of the macroeconomic factors that could influence the bank profitability. It is proxied by consumer price index, which reflects changes in the cost to an average consumer of acquiring a basket of goods and services that may be fixed or changed at specified intervals such as yearly. Inflation rate directly affect bank profit because it will change the interest rate of the loan. Ogowewo and Uche (2006) showed that there is a negative relationship between inflation rate and bank profitability. They believed that the bank is always get affected by high inflation rate. The high inflation rate means a higher consumer price index will cause the instability of macroeconomic and brings the risk into a bank. Hence, it decreases the bank profitability.

**Operating efficiency ratio (OER):** the operating efficiency ratio is measured in operating expenses over operating income. The relationship between operating efficiency ratio and return on equity are negatively related (Bourke, 1989; Munyambonera (2013)). This is based on the premise that cutting the expenses cost could improve the efficiency ratio and hence raise the profitability of a financial institution.

**Liquidity ratio (LIQ):** Liquidity means the possible inability of banks to accommodate decreases in liabilities or to fund increases on the assets' side of the balance sheet, liquidity is considered an important determinant of bank profitability. A larger share of loans to total asset should imply more interest revenue because of higher risk. Thus, one would expect a positive relationship between liquidity and profitability (Bourke, 1998). However, liquidity ratio could be a source of that will lead to bank failures. Molyneux and Thornton (1992) stated that liquid assets are important to a bank because it is a type of asset which can be easily converted into cash. Therefore, the liquid assets could influence the rate of return of a bank such that a high liquidity ratio will lead to a low return on equity for a bank. Therefore, suggesting a negative relationship between liquidity ratio and profitability (Wang, 2002; Raheman and Nasr, 2007).

**Financial crisis (CRISIS):** This is a situation characterized by a sharp shortage of liquidity in the financial systems around the world. Studies have proved that financial crisis will directly affect profitability of banks since banks found it hard to keep a high leveraged during the financial crisis periods. Hence return on equity decreased significantly (Abidin and Rasiah, 2009; Propst, 2012). The study uses dummy variable to capture the financial crisis period, assigning 1(one) for the period 2007 and 2008 while other years take 0(zero). It is expected that there is a negative relationship between the financial crisis and return on equity.

**Lending Interest rate (INTRATE):** It is defined as the bank rate that usually meets the short term financing needs of the private sector. It is expected that there is a positive nexus exist between lending interest rate and profitability.

**Model Specification:**

Following earlier studies such as (Naceur, and Goaid, 2001), we thus state our estimated models as;

$$ROE = \psi_0 + \psi_1 OER_t + \psi_2 LIQ_t + \varepsilon_t \tag{1}$$

Equation (1) begets equation (2) when inflation, financial crisis period and interest rate are added as control variables.

$$ROE = \varphi_0 + \varphi_1 OER_t + \varphi_2 LIQ + \varphi_3 INF + \varphi_4 CRISIS_t + \varphi_5 INTRATE_t + v_t \tag{2}$$

Where:  $\psi_0$  and  $\varphi_0$ = intercepts,  $\psi_i$  and  $\varphi_j$  = slopes,  $\varepsilon$  and  $v$  = error terms,  $t$  = time period

**PRESENTATION OF RESULT AND DISCUSSION**

The results of OLS estimates for individual sample bank and pooled data analysis are presented in tables 1 to 5.

**Table 1: Least Regression Result for Diamond Bank (Dependent Variable -ROE)**

REGRESSOR	COEFFICIENT	PROB.
OER	0.53913	0.007***
LIQ	-0.65915	0.000***
INTRATE	0.036651	0.000***
INF	-0.0022927	0.009***
CRISIS	0.086191	0.034**
<b>R-Squared</b>	0.94873	
<b>DW-Statistic</b>	2.0867	
<b>Serial Correlation</b>	0.52058	0.471
<b>Functional Form</b>	9.9662	0.002
<b>Normality</b>	0.61785	0.734
<b>Heteroscedasticity</b>	0.69302	0.405

Source: Author’s Computation

**Table 2: Least Regression Result for Eco Bank (Dependent Variable -ROE)**

<b>REGRESSOR</b>	<b>COEFFICIENT</b>	<b>PROB.</b>
OER	0.53913	0.161
LIQ	-0.65915	0.650
INTRATE	0.036651	0.048**
INF	-0.0022927	0.447
CRISIS	0.086191	0.229
<b>R-Squared</b>		
	0.64921	
<b>DW-Statistic</b>		
	1.7035	
<b>Serial Correlation</b>	0.085882	0.769
<b>Functional Form</b>	0.12418	0.725
<b>Normality</b>	0.31055	0.856
<b>Heteroscedasticity</b>	3.4255	0.064

Source: Author's Computation

**Table 3: Least Regression Result for First Bank (Dependent Variable -ROE)**

<b>REGRESSOR</b>	<b>COEFFICIENT</b>	<b>PROB.</b>
OER	-0.051449	0.819
LIQ	-0.39295	0.023**
INTRATE	0.046703	0.003***
INF	-0.0027991	0.004***
CRISIS	0.072898	0.227
<b>R-Squared</b>		
	0.83655	
<b>DW-Statistic</b>		
	2.0463	
<b>Serial Correlation</b>	0.067976	0.794
<b>Functional Form</b>	0.008781	0.925
<b>Normality</b>	0.53121	0.974
<b>Heteroscedasticity</b>	0.28567	0.593

Source: Author's Computation

**Table 4: Least Regression Result for UBA Bank (Dependent Variable -ROE)**

<b>REGRESSOR</b>	<b>COEFFICIENT</b>	<b>PROB.</b>
OER	-0.94074	0.034**
LIQ	0.63579	0.035**
INTRATE	0.014385	0.347
INF	0.000360	0.693
CRISIS	-0.25163	0.057*
<b>R-Squared</b>		
	0.83655	
<b>DW-Statistic</b>		
	2.0463	
<b>Serial Correlation</b>	1.3709	0.242
<b>Functional Form</b>	3.6670	0.056
<b>Normality</b>	1.0874	0.581
<b>Heteroscedasticity</b>	0.1937	0.660

Source: Author's Computation

**Table 5: Least Regression Result for Panel of 4 Commercial Banks (Dependent Variable -ROE)**

<b>REGRESSOR</b>	<b>COEFFICIENT</b>	<b>PROB.</b>
OER	-0.10018	0.493
LIQ	-0.098783	0.098*
INTRATE	0.021006	0.000***
INF	-0.0007572	0.156
CRISIS	0.024889	0.528
<b>R-Squared</b>		
	0.27811	
<b>DW-Statistic</b>		
	1.3057	
<b>Serial Correlation</b>	5.5535	0.018
<b>Functional Form</b>	0.71035	0.399
<b>Normality</b>	6.2879	0.043
<b>Heteroscedasticity</b>	1.44831	0.229

Source: Author's Computation

**Table 6: Comparison of estimated coefficient**

Variables	Expected Relationship	Diamond Bank	ECO Bank	First bank	United Bank of Africa (UBA)	Pool of Sample Banks
OER	-	+	+**	-**	-	-**
LIQ	+/-	-	-**	-	+	-
INTRATE	+	+	+	+	+**	+
INF	-	-	-**	-	+**	-**
CRISIS	-	+	+**	+**	-	+**
<b>Notes :</b> +,- = There are different opinions. + = Positive relationship. - = Negative relationship. ** = Factor not significant						

Operating efficiency ratio is one of the key bank specific determinants of bank profitability that is better measured by the return on equity (Dissanayake, 2012). The results presented in Tables 1 to 6 showed that except for Diamond bank and ECO bank, there is a negative relationship between operating efficiency ratio and profitability. This suggests that reduction in the operating expense will improve efficiency and hence a rise in bank profitability. This result is consistent with Bourke (1989), Khizer, Muhammad & Ahmed (2011), Alkhatib (2012) and Alemu (2015)

For liquidity ratio, the findings for the banks excluding UBA established a negative relationship with the return on equity. This implies that a high liquidity ratio will lead to a low return on equity for the banks. Thus, liquidity ratio is significant in explaining bank profitability. This finding is in line with results reported by studies such as Molyneux & Thornton (1992), Layroudi et al (1999), Wang (2002) and Izhar & Asutay (2007). However, some studies confirm that liquidity ratio is positively affecting the bank's profitability as reported for UBA in Table 4; such studies are Bourke (1989), Sufian & Habibullah (2010), Haron & Azmi (2004) and Wasiuzzaman & Tarmizi (2010).

The a-priori expectation is for interest rate to be inversely related to return on equity, but the results for the 4 banks and its panel report a positive relationship. This finding is consistent with Demirguc-kunt and Huizinga (1999), who indicated a positive relationship between interest rates and banks profitability. However, Guru *et al.* (2002), Naceur (2003) and Soyemi (2013) found that high interest ratio is associated with low bank profitability, contrary to our findings. A plausible reason for this finding might be the existence of finance-gap. Commercial banks in Nigeria remain the main source of finance for entrepreneur and capital expansion. Thus, banks charges as high as 25% on loanable fund and this translate into high profit.

Results in Tables 1-6 further show that there is a negative relationship between inflation rate and profitability for all the banks, including pooled data series, except UBA. This implies that an increase in consumer price index will lead to the decrease of return on

equity. Ogowewo and Uche (2006) and Hasan, Shaari, Palanimally and Mohamed (2013) studies support this finding that inflation rate negatively impact bank profitability. Similarly, apart from UBA, the study found a positive relationship between financial crisis and return on equity. This suggests that an increase in financial crisis will lead to higher of return on equity, although the coefficients are not statistically significant for First banks, ECO bank and Pooled data. This is at variant with the studies of Hidayat and Abduh (2012) and (Ooi 2010). The plausibly reason for higher profitability in banks during global recession and financial crisis might be as a result of foreign capital inflow into Nigerian banks. This might be an investors desire to re-position their investment where the effect of financial crisis if mild and there is relative stable financial environment.

## 5. Summary and Concluding Remarks

This study examined bank specific and macroeconomic indicators of profitability using four commercial banks in Nigeria namely diamond bank, eco bank, first bank and united bank of Africa. The bank specific factors include operating efficiency ratio and liquidity ratio while the macroeconomic factors include lending interest rate, consumer price index and financial crisis. The data for this study was collected from the annual report of these four banks over the periods of 2003 to 2014 and from CBN statistical bulletin. Employing Ordinary Least regression (OLS) ad panel OLS, the study examined the effects of operating efficiency ratio, liquidity ratio, lending interest rate, consumer price index and financial crisis on return on equity.

The result showed that; for Diamond Bank, operating efficiency ratio, lending interest rate and financial crisis have significant ( $p < 0.05$ ) and positive effect on return on equity while liquidity ratio and inflation rate have significant ( $p < 0.05$ ) and negative effect on return on equity. In case of Eco Bank, it is only lending interest rate has significant ( $p < 0.05$ ) and positive return on equity effect whereas liquidity ratio and inflation rate have negative effect on return on equity but not significant even at 10% level. Moreso, financial crisis, operating efficiency ratio and liquidity ratio have positive but insignificant impact on return on equity.

The result for First Bank shows that operating efficiency ratio, liquidity ratio and inflation have expected negative signs, however operating efficiency ratio is not significant. Financial crisis has an insignificant positive effect on profitability. For United Bank for Africa lending interest rate and inflation rate have no significant effects on bank's profitability. Finally, a panel of the four banks reports that lending interest rate and liquidity ratio have significant effects on profitability of banks.

The study suggests that operating efficiency ratio, lending interest rate and financial crisis liquidity ratio and inflation rate are major endogenous determinants of bank profitability in Nigeria. It recommends that regulatory authorities should promote policies that will bring about low inflation whereas bank management should concentrate more on reducing expenses.

## REFERENCES

- Abidin, M.Z. and Rasiah, R. (2009). The global financial crisis and the Malaysian economy: impact and responses. *Joint Report of ISIS, UM and UNDP*, 1-84.
- Abidin, M.Z. and Rasiah, R. (2009). The global financial crisis and the Malaysian economy: impact and responses. *Joint Report of ISIS, UM and UNDP*, 1-84.

- Aburime, T. U. (2008). *Determinants of Bank Profitability: Macroeconomic Evidence from Nigeria* (September 2). Available at SSRN: <http://ssrn.com/abstract=1231064> or <http://dx.doi.org/10.2139/ssrn.1231064>.
- Alemu, S. (2015). *Determinants of Commercial Banks Profitability: The Case of Ethiopian Commercial Banks*. Unpublished thesis, Accounting and Finance department, Addis Ababa University, Ethiopia
- Alkhatib, A. (2012). Financial performance of Palestinian commercial banks. *International Journal of Business and Social Science* 3 (3), 1-10.
- Ani, W.U., Ugwunta, D.O., Ezeudu, I. J. & Ugwuanyi, G. O. (2012). An Assessment of the Determinants of bank Profitability in Nigeria: Bank Characteristics Panel Evidence. *Journal of Accounting and Taxation*, 4 (3), 38 – 43.
- Annual report for diamond bank 2003 to 2014
- Annual report for eco bank from 2003 to 2014
- Annual report for first bank from 2003 to 2014
- Annual report for united bank for Africa from 2003 to 2014
- Babalola, Y. A. (2012). The Determinants of Bank's Profitability in Nigeria. *Journal of Money, Investment and Banking*, 24, 6 – 16.
- Bourke, P. (1989). Concentration and other determinants of bank profitability in Europe, North America and Australia, *Journal of Banking and Finance* 13, 65-79.
- Demirgüç-Kunt, A., Huizinga, H. (1999), Determinants of Commercial Bank Interest Margins and Profitability: Some International Evidence. *The World Bank Economic Review*, 13.
- Dissanayake, D.M.N.S.W. (2012). The determinants of return on equity: evidences from Sri Lanka microfinance institutions. *Journal of Arts, Science and Commerce* 2(2), 1-10.
- Guru, B.K., Staunton, J., Shanmugam, B. (2002), Determinants of Commercial Bank Profitability in Malaysia. University Multimedia Working Papers.
- Haron, S., & Azmi, W. N. W. (2004). Profitability determinants of Islamic banks: A co integration approach. *Creating Dynamic Leaders*.
- Hasan, N.A., Shaari, N.A.; Palanimally, Y.R & Haji- Mohamed, R.K. M. (2013). The Impact of Macroeconomic and Bank Specific Components on the Return of Equity in Malaysia. *Interdisciplinary Journal of Contemporary Research in Business*, Vol. 5, No 2, June 2013, Retrieved
- Izhar, H., and M. Asutay, 2007. Estimating the Profitability of Islamic Banking: Evidence from Bank Muamalat Indonesia. *Review of Islamic Economics*, 11(2): 17-29.
- Munyambonera, E. F. (2013). Determinants of commercial banks' profitability in Sub-Saharan Africa. *International Journal of Economic and Finance*, 5 (9), 134-147
- Naceur, S. B. and M. Goaid, 2001. "The Determinants of Commercial Bank Interest Margin and Profitability: Evidence from Tunisia" Working paper 856365. <http://www.papers.ssrn.com/sol3/papers.cfm>
- Naceur, S.B. (2003), The Determinants of the Tunisian Banking Industry Profitability: Panel Evidence. Universite Libre de Tunis Working Papers.
- Obamuyi, T. M. (2013). Determinants of Banks' Profitability in a developing economy: Evidence from Nigeria. *Organizations and Markets in Emerging Economies*, 4 (2), 97-111

- Ogowewo, T. I. and Uche, C. (2006). (Mis)using Bank Share Capital as a Regulatory Tool to Force Bank Consolidations in Nigeria. *Journal of African Law*, 50 (2), 161-186
- Propst, A.K. (2012). Profitability performance of banks in the EU: a cross country analysis from 2009-2010. *Haverford College Economics Department*, 1-72.
- Raheman, A., Nasr, M., (2007). Working capital management and profitability: case of Pakistani firms. *International Review of Business Research Papers*, 3 (1), 279 - 300.
- Wang, Y, J. (2002). Liquidity Management Operating Performance and Corporate Value: Evidence Form Japan And Taivan. *Journal of Multinational Financial Management*, 12, Issue 2(12), 159-169.