European Journal of Accounting Auditing and Finance Research

Vol.2,No.10, pp.85-95, December 2014

Published by European Centre for Research Training and Development UK (www.eajournals.org)

THE IMPACT OF MACROECONOMIC VARIABLES ON THE PROFITABILITY OF LISTED COMMERCIAL BANKS IN NIGERIA

Professor Ifuero Osad Osamwonyi
Department Of Banking and Finance
Faculty of Management Sciences
University of Benin
P.M.B 1154
Nigeria

Chijuka Ify Michael
Department Of Banking and Finance
Faculty of Management Sciences
University of Benin
P.M.B 1154
Nigeria

ABSTRACT: *Due to the immense contribution of commercial banks to the economic development in Nigeria, this research investigate the impact of macroeconomic variables on profitability of banks in Nigeria from 1990-2013. Pooled Ordinary least method is used to determine the effect of three major factors; gross domestic product (GDP), interest rate (INTR) and inflation (INFR) on return on equity (ROE) which proxies' profitability. The findings from the empirical point of view show a positive relationship of gross domestic product (GDP) with return on equity (ROE). Interest rate and inflation rate have a negative relationship with return on equity (ROE). Gross domestic product have a significant positive effect on Return on equity(ROE) while interest rate have a significant negative effect on return on equity(ROE) but inflation is not significant at all levels of significance.*

KEYWORD: Macroeconomic Variable, Profitability, Commercial Banks in Nigeria

INTRODUCTION

Financial institution plays a major role in oiling the wheel of growth in any economy of the world. They are financial intermediaries between end users of deposit and various investors. They facilitate various business activities. Commercial banks in Nigeria have undergone a remarkable and a tremendous change over the years both in the number of institutions, ownership structures as well as depth and breadth of operations designed to position it as Africa's financial hub. Financial landscape has been produced as a result of the reforms, characterized by strong and large banks, improved financial infrastructure and efficient payment system. This is shown in the average capital adequacy ratio (CAR) of commercial banks which stood at 16.7 per cent at the end of March 2014. (CBN news bulletin 2013), the main objective of the reform is to ensure a sound and efficient financial system. The reforms are necessary to enable the banking system develop

ISSN 2053-4086(Print), ISSN 2053-4094(Online)

the required resilience to support the economic development of the nation by efficiently performing its function as the pillar of financial intermediation (Aburime, 2008).

In Africa, Nigeria is the second largest economy with respect to gross domestic product (GDP) and second to South Africa. Since 2003, GDP growth has averaged 6 to7%. GDP per capita has moved from below 700$ in 2004 to $1418 in December 2009 showing economic growth. Nevertheless, wealth distribution is heavily lopsided with54% of the entire population classified as leaving below the poverty line (CBN Annual Report 2013). Owing to the tight monetary policy since 2011, an objective of single digit inflation has been focused on. In December2011, inflation declined to 10.3% and jumped to 12.6% in January 2012. This was as a result of the partial removal of fuel subsidy. Three different measures were put in place in January 2012 in other to reduce inflationary pressure. Cash reserve requirement (CRR) was raised from 1.0% to 8.0%, monetary policy rate (MPR) was raised from 6.25% to 12.0% and the Liquidity Ratio (LR) was raised from 25.0% to 50.0%. (CBN, Annual Report, 2012) shows that movement in money supply has been sluggish. The high interest rate is as a result of the relatively high inflation in the economy. Commercial bank in Nigeria increased their maximum lending rates from 22% - 33% to 25% - 27% in May 2012, leading to high operating costs followed by decaying infrastructure.

Rose (1999) says that profitability is the net after – tax income of banks usually proxies by return on assets and return on equity ratios. This ratio are affected by numerous external factors real gross domestic product, level of import and export, Nigeria, commercial banks have always played major roles in the economic development and their operations are always affected by macroeconomic conditions(CBN news bulletin 2011). In the past decades, Nigerian banks have experience challenges in economic indicators. In foreign literatures, a lot of work has been done, Tanna and Pasiousras (2005) Staikouras and Wood (2004) gives evidence of significant contribution of factors that are external towards earnings of banks, but in Nigeria, only Aburime (2008) have done a research into this topic covering only up to 2006.

Rationale of the Research

The object of the research is macroeconomic variable and profitability of banks in Nigeria. It is often argued that macroeconomic variables affects banks profitability (Sufian and Chong 2008). However, the recent evidence for the period of the global financial crisis is rather scarce till date in Nigeria. This paper will attempt to contribute to research by studying the impact of selected macroeconomic variables on listed banks during the year 2013. The study is conducted in the context of Nigeria.It has been observed that various studies made different conclusions about the significance of each individual factor that was assumed to determine banks profitability. This can be explained by the selection of the sample of companies that are analysed in the studies, by the methods and approaches to the investigation, by the environment of the firm that are explored. It can be assumed that the differences in these factors imply discrepancies that are observed in the findings of other scholars.

The current study contributes to the literature as it analyses the impact of macroeconomic variables on banks profitability in Nigeria. It is assumed that the variety of observations and factors that can affect banks profitability will provide a deeper insight into commercial bank performance. It is expected that the generalisation of the findings will be possible and the observations that will be

ISSN 2053-4086(Print), ISSN 2053-4094(Online)

obtained herein will be applicable to different cases and environments. The number of observations allows the researcher to expect that the findings of the study will be applicable to different companies. The results can be important and valuable to company managers who are interested in knowing how government policies factor there returns, market requirements and company objectives. Besides, it is expected that the findings can be used by policy makers who can adjust the appropriate regulations in order to address the issues that are related to the levels of growth in enterprises.

As Nigeria is dominated by commercial Bank, it is important to associate their profitability with the progress in the country and hence, a study to identify the impact of macroeconomic variables on the profitability of commercial banks would bring more light to the strategies designed in interest of the institutions development. The purpose of this research is to study the relationship between macroeconomic variables and profitability of listed commercial banks in Nigeria. The paper is segregated as follows: section 2 provides the review of related articles. Section 3 defines the data, methodology and develops hypotheses. Section 4 presents the findings and interpretation. Finally, section 5 summarizes empirical results and gives suggestion for future work.

LITERATURE REVIEW

Numerous studies exists on banks profitability based on the types of bank and number of countries included in the study sample. ROA and ROE have been considered in most countries of the world as proxies for profitability.Mamatzakis and Remoundos (2003) studied seventeen (17) Green commercial banks using bank data from 1989-2000. Their findings showed no considerable link of Real interest rate and Consumer Price Index (CPI) with ROE and ROA of banks. Also, Ahtanasoglou, brissimis, and Delis (2005) carried out a research on Greek banks using GMM estimator approach which revealed a significant positive effect of interest rate and inflation on profitability. Demirguc-Kunt and Huizinga (1999) conducted a research on commercial banks of 80 countries using applied linear regression. Their findings showed a positive but an insignificant contribution of macroeconomic factors on banks profitability. Demirguc-Kunt and Detragiache (1998) used a multivariate logitmodel in the year 1980-1994 on 45-65 developing and developed countries, result showed a significant impact of external factors towards banking sector failure Naceur (2003) studied Tunisian banking sector profitability. A sample of Ten (10) major deposit banks was used from 1980 to 2000. The balanced panel data was applied findings showed no significant impact of inflation rate and annual growth rate on banks in Tunisia.

The performance of banking industry in Europe was reviewed between the period 1994 to 1998 by Staikouras and Wood (2004). The ordinary least square technique and fixed effects model was used and the findings showed that interest rate has a positive significant effect but GDP growth has a significant negative impact on ROA. Goddard, Molyneux, and Wilson (2004) used a cross sectional regression on the profitability of 583 union domestic banks in Europe and the result revealed a significant positive effect of gross domestic product on profitability. Hassan and Bashir (2003) used 43 Islamic banks Eight (8) years financial data. Their findings showed a significant positive impact on profitability of those banks. Bashire (2003) applied a linear estimation on 14 Islamic banks return between 1993 to 1998 on Eight (8) middle Eastern countries. The result showed a positive impact of the variables that was used. Haron and Azmi (2004) proved a direct

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relationship between inflation rate and ROA but indirect relationship between real interest rate and ROA from 1984-2002 on five (5) major Islamic banks-using statistical means.

Wong, Wong, Fong and Choi (2006) found that Gross Domestic Product (GDP) and inflation (INFR) have a significant impact on asset returns using a feasible generalized least square method. Anwar and Herwany (2006) focused on Indonesian banking industry. The result showed a significant relationship of inflation, real interest rate and economic growth with ROA but the result was the opposite with ROE. Sufian and Habibullah (2010). Also found the same relationship in Indonesia. Kosmidou, Tanna, and Pasiouras (2005) carried out a research on United Kingdom (UK) commercial banks profitability. The results revealed a strong positive relationship of inflation rate, interest rate and Gross Domestic Product (GDP) on (2006) applied a linear regression model to appraise 71-132 banks in South-Eastern Europe between the year 1998 and 2002 sing unbalanced panel data. Their findings shows that during the periods of high inflation, earnings was high and an insignificant effect of GDP similar result was also found by Havrylchyk and Jurzyk (2006) from a study of banks in Eastern and Central Europe.

Flamini, McDonald, and Schumacher (2009) applied a linear regression on 387 banks annual data in 41 countries in sub-Saharan African between the years 1998 to 2006. The results showed a positive impact of Gross Domestic Product (GDP) and CPI asset returns but Francis (2011) used a random effect estimation and showed a negative relationship of inflation. Mercia, Evren, and Hassan (2002), and Panayiotis, Anthanasoglou, Brissimis, and Mathaios (2005), carried out a research large samples of banks profitability in developing and developed countries. The result showed positive relationship of all the variables. Ramlall (2009) studied quarterly financial data categorization of 31 local commercial banks in Taiwanese and found a negative impact of Gross Domestic Product (GDP) and real interest rate. Rasiah (2010) studied the impact of macroeconomic variables on banks profitability using applied pooled regression methods and found positive impact of the determinants Al-Tamimi (2010), found a positive relationship between GDP and revenue using a simple regression model on banks in UAE between 1996 and 2008. Pasiouras and Kosmidou (2007) studied foreign and domestic commercial banks in fifteen countries in Europe. Findings reveal a significant impact of macroeconomic condition on ROA. Ghazali (2008) studied 60 Islamic banks domiciled in 18 countries. The results showed that Gross Domestic Product (GDP) and inflation has a positive influence on banks revenue. Aburime (2008) researched on the profitability of banks in Nigeria and found that inflation rate and interest rate have a significant relationship with ROA and this affects banks profitability positively. Suffian and Chong (2008) applied a linear regression on bank profitability in philipines. Their findings revealed an insignificant positive impact of market capitalization and gross domestic product (GDP) on ROA but found a negative impact of inflation. Vong and Chan (2008) studied five large banks in Macao using a balanced panel data. The result of the linear model showed a strong impact of inflation on ROA, but the result showed that interest rate and GDP did not reveal any effect.

Shaher, Kasawneh and Salem (2011) found a positive relations hip between domestic product and Earningsmith 320 questionnaires that was distributed among banks related individual;s Khrawish (2011) studied macroeconomic indications that affects Jordanian listed banks. The result revealed a negative impact of inflation and gross domestic product (GDP) with ROA and ROE Solovjova (2011) carried out a comparative study of large five banks during the financial melt dopwn in

ISSN 2053-4086(Print), ISSN 2053-4094(Online)

Lativan commercial banks. The result showed that gross domestic (GDP) growth had a positive impact on profits but inflation affected ROA negatively. Alper and Anbar (2011) found that GDP growth inflation rate and interest rate least effect assets of banks and return on equity.

An empirical study was carried out by Danema (2011) on the determinants of profitability of Ethiopian commercial banks seven leading banks 10years balance sheet data was used. The findings showed a gross domestic product. Davydenko (2011) used fixed effects estimation method. The result pointed that inflation and gross domestic product have a positive relationship with ROA of banks in Ukrain. Scott and Aria (2011) studied the earnings of largest five banks in the United States. Their findings showed that GDP affects the profit levels of U.S. directly. Hoffmann (2011) researched on U.S. Banks using pooled OLS estimation approach and GMM. The result from both techniques showed no relationship. Sutian (2011) studied 11-29 commercial banks in Korea during the period 1992-2003. The outcome of the result pointed a negative impact of gross domestic product on ROA but had a positive impact of inflation was shown.

Sharma and Mani (2012) carried out an empirical research on Indian Commercial Banks between the years 2006 to 2011. They found an insignificant relationship between inflation and gross domestic product on ROA. Zeitun (2012) observed influential macroeconomic factors on banks of Gulf cooperation council countries: the result from cross sectional, time series and panel data showed that GDP has a positive relationship with ROA and ROE ratios but inflation has a negative relationship with those ratios. Ali, Akhtar and Ahmed (2011) carried out a research in banks in Pakistan between the years 2006 to 2009. The result showed a significant positive relationship of CPI and growth rate with returns on equity ratio and assets. Also, Gul, Irshad, and Zaman (2011) analysed 15 top Pakistani commercial Banks portability for the 2005 to 2009. Gul et al (2011) found strong positive relationship external variables and performance of bank indicators

Methodology and Model Specification

The research method adopted in this study is the Ordinary Least Squares (OLS). The need for this technique is that, it is used to estimate the parameters of a single – equation model. Besides, the estimator yields estimates that are best, linear, and unbiased estimators (BLUE) with the desirable properties of consistency, efficiency and being unbiased. However, these properties are made possible after all the assumptions of the OLS method have been fulfilled. The research will rely mainly on secondary data. The data sources include: Central Bank of Nigeria (CBN) Annual Reports and Statement of Accounts, and Statistical Bulletins of various issues.

Model Specification

From the research methodology, the model shall contain Return on equity (ROE), which represents commercial banks profitability as the dependent variable; the explanatory variables include gross domestic product (GDP), interest rate (INTR), exchange and inflation (INF) are the independent variables.

Therefore, the equation specified for estimation is in the following functional form:

ROE = f (GDP, INTR, INF)

Equation (3.1) can be transformed into an econometric model as follows:

$ROE = \beta_0 + \beta_1 GDP + \beta_2 INTR \beta_3 INF + \varepsilon.$

Where: β_0 = Intercept; $\beta_1 - \beta_3$ = Coefficients of the regressors as defined above; ε = stochastic term.

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A Priori: $\beta_1 > 0$; $\beta_{2,}$ β_3, < 0.

Regression Result

The dependent variable is banks return on equity (ROE) and 15 observations used for estimation from 1990 – 2013

ROE= 2.063GDP-0.237INTR-0.095INFR+E

(16.654) (-2.885) (-1.034)

$R^2 = 0.9901$, F-Statistic = 4813.78, DW-Statistic = 2.105 Source:

Authors' Estimation, 2014.

From the above regression result, we examine the impact of gross domestic product (GDP), interest rate INTR and inflation (INF) on return on equity (ROE) which represents commercial banks profitability. The result conforms to the a-priori expectation, the coefficients of the explanatory variables have the correct signs as expected and conforms to the theoretical expectations. The R^2 value of 0.9901 simply tells us that about 100 percent of the systematic variation in the dependent variable (ROE) is explained by changes in our explanatory variables: gross domestic product (GDP), interest rate (INTR) and inflation rate (INFR) from 1990 to 2013. The overall level of statistical significance using the F-statistic of 4813.78, show that the model is significant at the one (1) percent level, which implies that there is a significant linear relationship between the three regressors and the dependent variable in the above model.

As regards the t-values, the coefficients of gross domestic product (GDP) and interest rate(INTR) were statistically significant at the five (5) percentage level of significance, except inflation (INFR) that was not significant at level all levels of significance. It can, therefore, be said that all the variables mentioned above have significant impact on (ROE) in Nigeria, except inflation rate (INFR) which has no significant relationship or positive impact on return on equity (ROE). The Durbin Watson (DW) statistic of 2.105, shows absence of autocorrelation in the model. Therefore, valid prediction(s) can be made with the equation.

The findings in this study shows that:

(i) A unit increase in gross domestic product (GDP) would increase return on equity (ROE) by about 2.063 units. (ii) A unit increase in inflation rate (INFR) will result to about 0.237 units decrease in ROE. (iii) A unit increase in interest rate will lead to about0.095 unit's decrease in ROE.

(ii)

IMPLICATIONS OF FINDINGS

The findings of this study has important implication(s) for policy makers and regulators in Nigeria banks, Management need to be cautious in setting up economic policy that will not affects profitability negatively. They also need to know how macroeconomic policies affects the operation of banks to ensure judicious use of deposits and maximization of profit which should impact positively on the economy.

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CONCLUSION AND POLICY RECOMMENDATIONS

The importance of macroeconomic variables cannot be over-emphasized in the role performed by commercial banks to contribute effectively to the growth of any country and the profitability of banks. The higher the risk associated with the macroeconomic variables such as gross domestic product (GDP) interest rates and inflation, the lower the return on banks profitability. The study attempts to empirically examine the effects of macroeconomic variables on banks profitability in Nigeria. From the empirical result, all the variables of interest were in line with theoretical expectations. Considering the t-values, all the other variables were statistically significant except inflation. The policy implications of this study is that banks should reduce their lending rate and explore strategies that will lead to lower operational cost of deposit attraction and also diversifying their sources of deposits . High interest rates in lending reduces borrower's ability to collect credit. Policy makers should implement policies that promotes lending like lowering monetary policy rate (MPR), low rate of inflation through effective application of contractionary and expansionary monetary policy, and growth in output should be formulated as these would lead to credit expansion and invariably returns and profitability of commercial banks that could impact on the economy positively.

Government should implement sustainable macroeconomic policies that will promote sustainable growth, business friendly and conducive environment that will enhance capacity utilization of industries so as to allow for high level of credit demand and absorption in the economy. Banks should strive to improve their operational efficiency internally and productivity in deploying both financial and human capital in managing and generating a well-diversified risk assets portfolio as this will ensure that both interest sensitive risk assets and liabilities are utilized towards maximizing returns.

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ISSN 2053-4086(Print), ISSN 2053-4094(Online)