

BANKING SECTOR REFORMS AND THE PERFORMANCE OF NIGERIAN ECONOMY: A VECTOR ERROR CORRECTION INVESTIGATION (VECM)

Ikeora, Joseph Jackson Emeka (PhD)

Department of banking and Finance
Chukwuemaka Odumegwu Ojukwu University, Igbariam Campus, Anambra State

Igbodika, MaryAnn Nwamaka (PhD)

Department of banking and Finance
Chukwuemaka Odumegwu Ojukwu University, Igbariam Campus, Anambra State

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Andabai, Priye Werigbelegha

Department of Finance and Accountancy, Niger Delta University, Bayelsa State, NIGERIA

ABSTRACT

The study evaluates the relationship between banking sector reforms and performance of Nigerian economy using data spanning (1998-2013). Secondary data were used and sourced from the Central Bank of Nigeria Statistical Bulletin and National Bureau of Statistics. Hypotheses were formulated and tested using Vector Error Correction Model (VECM). The study reveals that the variables do not have unit roots. There is also a long-run equilibrium relationship between banking sector reforms and performance of Nigerian economy and the result confirms that about 76% short-run adjustment speed from long-run disequilibrium. The coefficient of determination indicates that about 55% of variation in the performance of Nigerian economy can be explained by changes in banking sector reforms variables. There is causality between banking sector reforms and performance of Nigerian economy. The study recommends that, the monetary authorities should be more proactive in bank supervision and pursue a supervisory framework based on prudence and professionalism. Monetary and fiscal policies should be properly align towards stimulating and deepening the economy. Banks should ensure effective management of their resources focusing on risk management and ensure good corporate governance.

Keywords: Banking, Sector, Reforms, Performance, Economy.

INTRODUCTION

Banking sector is the most vibrant and dominant sector in the Nigerian financial industry because, whatever difficulties it passes through affects the entire economy (Nzotta, 2014). In July, 2004, the Central Bank of Nigeria launched a 13 point agenda that was aimed to develop bigger banks with stronger balance sheets, ensuring safe and sound banking practice and enhancing effective regulatory capacity to supervise the industry. According to Soludo (2004), the key element of the reform program was the increase in minimum capital base of banks from N2billion to N25billion by December, 2005. According to him the reforms program was driven by the following factors: Nigeria banks were small, and depended on government or public sectors deposits and unable to meet the economy's funding needs and banking penetration was low and retail offerings were limited. For example deposits in the hands of small business and individuals at 80% of the total currency in circulation, because of this, the industry was fragmented and many banks operated as fringe players. Consequently, corporate governance was poor as a result of insider abuse and sharp practices by directors and related parties that were rampant.

Nnanna (2004) stated that, the banking sector reforms by Central Bank of Nigeria was intended to address issues raised specifically to strengthen the banking system with the vision to make Nigeria the financial hub of Africa; and practically reposition Nigerian banks to compete favorably with foreign banks. To encourage consolidation through mergers and acquisitions that will enhance professionalism in the conduct of banking business; and making the banking system safer and sound to engender depositors' confidence. Andabai (2015) also posits that the overall goal is to ensure rapid growth and development of the Nigerian economy with a view to make it one of the 20th largest economies in the world by 2020. Kama (2006) observed that, the banking system in any economy plays a vital role of promoting economic growth and development through the process of financial intermediation.

According to development economists such as Dewett (2005); Dwivedi (2008); Todara and Smith (2006) and Roma (1986), the existence and evolution of vibrant financial institutions and markets constitute an important factor in the process of economic growth and development in a modern economy. Therefore, the followings are some of the ways the banking system assists in promoting economic growth and development (Okafor, 2011): (i) improving the efficiency of resource immobilization by pooling individual savings; (ii) increasing the proportion of societal resources devoted to interest yielding assets and long-term investment which in turn facilitate economic growth; (iii) reducing the risk faced by firms in their production process by providing liquidity and also a veritable platform for an effective monetary policy implementation; thereby enhancing the effective management of the economy. The banking system has been functioning as one of the channels through which government carries out its policy of stabilizing the economy. Through the manipulation of some key variables such as interest rate and the quantum of credit, government will be able to influence borrowing and spending within the economy. These in turn will positively affect employment, production and prices for goods and services by achieving the desired objectives. Consequently, some of the stipulated guidelines for banking sector reforms are: (i) a minimum share-holder's funds of N25 billion must be achieved by all deposit money banks; (ii) through fresh capital injection, where applicable, but most importantly banking system encouraged to explore mergers and acquisitions arrangement with other banks; (iii) withdrawal of public sector funds from banks starting in July 2004; (iv) adoption of risk focused and rule based regulatory framework especially in data/information reporting; (v) all returns by banks will henceforth be signed by the managing director of the bank, the so-called re-called re-engineering or manipulation of account especially hiding of information under the asset/liabilities and off-balance sheet items will attract serious sanctions; (vi) establishing hotlines, confidential internet address for all Nigerians wishing to share any confidential information with governor of CBN; and strict enforcement of the contingency planning framework for systemic banking distress. The establishment of an assets management company is one of the important elements of distress management, promotion of the enforcement of dormant laws, especially those relating to the various liabilities of the board members of the banks (Andabai, 2011).

Theoretical Framework

The theoretical framework underlying this study is anchored on the "Big Push" theory by Rosentain-Rodian (1961). The theory states that, Big Push or large comprehensive program is needed in the form of high minimum amount of investment to achieve economic growth and development in a market-free economy (Jhingan, 2004). According to Nzotta (2014), the rate of economic growth and development is entirely determined by an effective capital formation

and investment. According to him banking industry being a major source of finance for industrial growth is thus crucial for economic growth and development. Ogubunka (2005), observed that, the reform was designed to ensure a diversified, strong and reliable banking sector, which will ensure the safety of depositors' money and play active developmental roles in the economy. According to Uzor (2006), the goal of the reforms' was to help banks to become strong players, and in a manner that will ensure longevity and hence high returns to shareholders and promote greater impact on the Nigerian economy.

Soludo (2005) posits that, the major problems that plagued the banking sector include: (i) weak corporate governance evidenced by high tune-over in board and management staff; (ii) inaccurate reporting; (iii) non-compliance with regulatory requirement and falling ethical standards. (iv) late or non-publication of general accounts and operating results that obviates the impacts of market discipline in ensuring bank soundness; (v) insolvency as evidenced by negative capital adequacy ratio and stock holders fund that were completely eroded by operating losses; (vi) weak capital base even for those banks that had met the minimum capital requirement of N25billion or US \$15billion for new banks when compared with US \$526 million in Malaysia. Thus, the monetary authority (CBN) stipulates for the strengthening of the banking sector to adequately perform its essential function and support the growth of the economy. A key element of the reform program was the increase in minimum capital base of banks from N2billion (US \$ 15million) to N25billion by December 2005. Odufu (2005) stated that, the result of the consolidation efforts indicates that 89 banks were in existence before the consolidation, 65 banks were small while, 9 were larger banks. The remaining 15 banks had their operating licenses revoked preparatory for their formal liquidation.

According to a CBN (2005) report the new banks comprises 21 publicly traded banks, 3 foreign owned private banks and 1 locally owned private bank. As at 2005, the banks had a consolidated balance sheet size of over N4.5trillion US \$35billion and shareholders fund N592billion (US \$4.6billion) the industry attracted fresh local investment a total of N350billion (US \$2.7billion) and US \$660million in foreign direct investment. According to the CBN report, the program brought a number of positive developments to the banking sector in particular and the economy in general. It produced well-capitalized banks which has engendered greater public awareness and a deepening of the capital market. Capital market activities increased and the resulting liquidity in the system also included a significant fall in interest rate. The CBN report further indicates that, the Nigeria banks now have greater potential to finance big transactions with brighter single obligations. Ownership of banks has been diluted which would tamed the monster of insider dealings. Consequently, the benefits will be transfer in the form of reduced bank charges to the customers, despite the shortage of qualified and experienced manpower, poor corporate governance and lower saving rates are some of the challenges facing the sector.

METHODOLOGY

The study adopted ex-post-facto research design. Secondary data were used and collected from the Central Bank of Nigeria (CBN) statistical bulletin and National Bureau of Statistics for the period (1998-2013). The study used annual data, because quarterly data may not be accessed for some of the variables. Gross Domestic Product (GDP) was employed as the dependent variable to measure performance of Nigerian economy while Market Capitalization (MAC), Credit to the Private Sector (CPS) and Foreign Direct Investment

(FDI) were also employed as the independent variables to measure banking sector reforms as indicated in table 1.

Table 1: Banking Sector Reforms and Performance of the Economy (1998-2013)

YEAR	GDP AT CURRENT MARKET PRICE (N' BILLION)	CREDIT TO PRIVATE SECTOR (N'BILLION)	MARKET CAPITALIZATION N'BILLION)	FOREIGN DIRECT INVESTMENT (N'BILLION)
1998	3,989.45	351.96	262.63	161.4
1999	4,679.21	431.17	300.04	510.6
2000	6,713.57	530.37	472.32	774.7
2001	6,895.20	764.96	662.53	1181.7
2002	7,795.76	930.49	764.90	1013.5
2003	9,913.52	1,096.54	1,359.3	1065.1
2004	11,411.07	1,421.66	2,112.5	2478.6
2005	14,610.88	1,838.39	2,900.1	3715.2
2006	18,564.59	2,290.62	5,120.9	5617.3
2007	20,657.32	3,668.66	13,181.7	6570.3
2008	24,296.33	6,920.50	9,563.0	7341.5
2009	24,794.24	9,110.86	7,030.8	6547.8
2010	54,204.80	10,157.02	9,918.2	5411.3
2011	63,258.58	10,660.07	10,275.3	5829.8
2012	71,186.53	14,649.28	14,800.9	7395.3
2013	80,222.13	15,778.31	19,077.4	7034.4

Sources: (i) Central Bank of Nigeria Statistical Bulletin (1998-2013)

(ii) National Bureau of Statistics (1998-2013)

Model specification

According to Kozhan (2010), model specification is the determination of the endogenous and exogenous variables to be included in the model as well as the a priori expectation about the sign and the size of the parameters of the function. The study applied the Ordinary Least Square (OLS) regression function as:

$$Y = f(X_1, X_2, X_3) \dots \dots \dots (i)$$

Therefore, the mathematical representation of the model for this study is stated as:

$$GDP = a_0 + FDI + CPS + MAC + \mu \dots \dots \dots (ii)$$

Where:

GDP = Gross Domestic Product

MAC = Market Capitalization

CPS = Credit to the Private Sector

FDI = Foreign Direct Investment

(a_0, a_1, a_2) = Regression parameters or intercepts

μ = Stochastic estimate

Research Hypotheses

H₀₁: There is no significant long-run relationship between banking sector and performance of Nigerian economy.

H₀₂: There is no causality between banking sector reforms and performance of Nigerian economy.

Data Presentation and Analysis

The tests for stationary of the variables were done using the Augmented Dicker Fuller (ADF) Unit Root Test. The results in table 1 show that all the variables are integrated at levels i.e. 1(1) at the 5% or 1% level of significance.

Table 1: Unit Root Tests Analysis

Variables	ADF test Statistics	Mackinnon critical vale @ 5%	No of the time difference	Remark
GDP	3.64389745	-2.354608	1(0)	Stationary
FDI	-6.7656876	-2.356706	1(1)	Stationary
MAC	5.4658980	-2.077878	1(1)	Stationary
CPS	3.9708990	-2.465667	1(1)	Stationary

Notes: (1)1% level of significance, 5% level of significance, 10% level of significance.(2) The tests accepted at 5% level of significance.(3) Decision rule -The critical value should be larger than the test statistical value for unit root to exist. **Source:** Researcher's Estimation using- E-views 7.0

Test for Co-Integration

Having found that all the variables are stationary at first difference, the next step is to perform Johansen Co-integration procedure to ascertain whether Gross Domestic Product (GDP), Foreign Direct Investment (FDI), Market Capitalization (MAC) and Credit to the Private Sector (CPS) are co-integrated in the same order. The results of the test are presented in table 3 and the null hypothesis of no co-integration among the variables (that is, $r=0$) is tested against the alternative hypothesis of no co-integration is rejected at the 5 percent significance level. However, the null hypothesis that $rd \geq 1$ could not be rejected against the alternative $r=2$, $r=3$ suggesting the presence of a unique co-integrating relationship among variables. Therefore table 3 shows that, a long-run relationship exists among the variables as indicated by the likelihood ratio that is greater than the critical values both at 1 percent and 5 percent level of significance.

Table 2: Multivariate Johansen's Co-integration Test Result.

Null hypothe	Alternative hypothesis	Eigen value	Likelihood ra	Critical vales 5%	Critical value 1%	Hypothesized No. of CE(s)
$r=0$	$r=1$	0.77871	95.85678	56.31	47.43	None **
$rd \leq 1$	$r=2$	0.75202	78.80109	45.42	32.62	At most 1
$rd \leq 2$	$r=3$	0.65820	69.78987	25.36	27.31	At most 2
$rd \leq 3$	$r=4$	0.34524	19.76588	11.62	14.43	At most 3

Source: E-views Econometrics- 5.0

Note:* (**) denotes rejection of hypothesis at 5% (1%) significance level.

Vector Error Correction Model

The existence of long-run co-integrating equilibrium provides for short-run fluctuations, in order to straighten out or absolve these fluctuations, an attempt was made to apply the Error Correction Model (ECM) Ibenta (2012). The error correction coefficient contains information

about whether the past values affect the current values of the variable under study and the significant coefficient implies that past equilibrium errors play a role in determining the current outcomes and the information obtained from the ECM is related to the speed of adjustment of the system towards long-run equilibrium and the short-run dynamics are captured through the individual coefficients of the difference terms.

TABLE 3: Vector Error Correction Estimates

Variables	Coefficient	Std. Error	t-Statistic	Prob.
(ECM ₋₁)	-0.7509176	10.95743	13.30646	0.000087
D(GDP ₋₁)	5.78536	0.007654	0.758345	0.080067
D(GDP ₋₂)	1.94E-05	8.34E-06	2.325182	0.030790
FDI	2.3787934	0.986368	-3.179776	0.013011
MAC	0.7346039	0.243352	1.262268	0.242099
CPS	0.7489665	0.468375	0.635123	0.000586
C	-6.11E-05	0.000565	-0.108270	0.914945
R-squared	0.550099	Mean dependent var		206.9160
Adjusted R-squared	0.536238	S.D. dependent var		67.22186
S.E. of regression	35.87555	Akaike info criterion		10.17485
R-correlation	0.761546	Schwarz criterion		10.41862
Log likelihood	-122.1856	F-statistic		6.546330
Durbin-Watson stat	1.866977	Prob (F-statistic)		0.000000

Source: Authors' computation with the use of E-view 7.0

From table 3, the error-correction coefficient is statistically significant and has a negative sign, which confirms a necessary condition for the variables to be co-integrated. There is also a long-run equilibrium relationship between banking sector reforms and performance of Nigerian economy and the result confirms that about 75% short-run adjustment speed from long-run disequilibrium. The study reveals that there is a causal relationship between financial deepening and performance of Nigerian economy. From table 3 also shows that the coefficient of correlation is $R = 0.761546$ (76%); this means that the banking sector reforms and performance of Nigerian economy are related and the relationship is strong and positive. The coefficient of determination indicates that about 55% of the variations in performance of Nigerian economy can be explained by changes in the banking sector reforms variables (FDI, CPS and MAC) in the economy. This implies that a good portion of economic performance trends in the Nigerian economy is explained by the financial deepening variables. The F-statistics of 6.54633 which is significant at 5% confirms the relationship between banking sector reforms and performance of Nigerian economy and furthermore, the influence of the explanatory variables on the dependent variable is statistically significant and this is also confirmed by the F-probability which is statistically zero; and finally, the value of Durbin-Watson (DW) signifies the absence of autocorrelation.

Table 4: Result of Pairwise Granger-Causality Test (1998-2013) with 2-period Lag length

Null Hypothesis:	Obs	F-Statistic	Probability	Decision
MAC does not Granger Cause GDP	22	7.76541	0.00109	Causality
GDP does not Granger Cause MAC		5.27685	0.00898	Causality
CPS does not Granger Cause GDP	22	4.86594	0.00781	Causality
GDP does not Granger Cause CPS		5.09891	0.00784	Causality
FDI does not Granger Cause GDP	22	7.56478	0.00733	Causality
GDP does not Granger Cause FDI		5.79634	0.01362	Causality

CPS does not Granger Cause MAC	22	9.34262	0.79876	Causality
MAC does not Granger Cause CPS		6.23410	0.09852	Causality
FDI does not Granger Cause CPS	22	8.99752	0.00174	Causality
CPS does not Granger Cause FDI		7.31563	0.00943	Causality
FDI does not Granger Cause MAC	22	8.56439	0.00124	Causality
MAC does not Granger Cause FDI		3.98708	0.00008	Causality

Note: The decision rule of a causality test states that if the probability value of the estimate is higher than the 5% (0.05) level of significance, we accept the null hypothesis, and vice versa.

To determine the direction of causality between the variables, the Engle and Granger (1987) causality test was performed on the variables as indicated in table 4. The Granger causality investigated the predictive content of one variable beyond that inherent in the explanatory variables itself. The results of the Granger causality test indicate that economic growth (GDP) has causality with market capitalization (MAC), Credit to the Private Sector (CPS) and Foreign Direct Investment (FDI). This implies that there is causality between banking sector reforms variables and performance of Nigerian economy.

CONCLUSION AND RECOMMENDATIONS

The Nigeria banking sector has gone through several reforms; no doubt reform is becoming a recurring issue and should be ongoing to ensure best practice and good corporate governance. The survival of a bank may largely depend on the character and the quality management particularly where standard are not compromised Ogbunka, (2005). The study recommends that, monetary authorities should be more proactive in bank supervision and pursue a vibrant supervisory framework based on prudence and ensure best practices. Monetary and fiscal policies should be properly aligned toward stimulating and deepening the economy. Banks should ensure effective and efficient management of their resources focusing on risk management and ensure good corporate governance. Banks should also need to ensure training and retraining of staff for high skill and efficient service delivery to the customers.

CONTRIBUTION TO KNOWLEDGE

The study was able to modify the regression function and expanded the existing contemporary literatures, empirical review and geographical spreads. The existing data of this study can be updated, which will enable researchers and scholars to use it for further studies. Consequently, from the results, the study has also contributed to knowledge by discovering that performance of Nigerian economy has a direct causal relationship with banking sector reforms. The factor responsible for this can be traceable to increased provision of financial services by the financial intermediaries in the economy.

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