

MACROECONOMIC ANALYSIS OF BANKING SECTOR DEVELOPMENT AND ECONOMIC GROWTH IN NIGERIA

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Abstract

The study examined the relationship between banking sector development and economic growth in Nigeria for the period 1977 to 2010. Banking sector development is represented by changes in Trade Openness (TO), Credit to Private Sector (PCR), Domestic Credit (DC), Deposit Liability (DL) and Interest Rate (INT) while economic growth is represented by Real Gross Domestic Product (RGDP). The study used causal comparative research design methodology and utilizes econometric techniques such as Augmented Dickey Fuller (ADF) and Phillips Perron (PP) Unit Root tests as well as Johansen Co-integration, followed by Error Correction Model (ECM) tests to analyze secondary data collected from the Central of Nigeria (CBN) annual reports for a period of thirty three years. The result of the study revealed that TO, DC and INT have positive relationship with RGDP while PCR and DL have negative relationship with RGDP. The result of the study therefore lends very strong support to the existence of a short and long-run relationship between banking sector development and economic growth in Nigeria. The study therefore, recommended amongst others that banking sector reforms should be sustained so as to enhance economic growth in Nigeria.

Keywords: Banking sector, Efficiency, Banking consolidation, Trade openness, Domestic credit, Economic growth.

INTRODUCTION

Banking sector development has over the years received the attention of most scholars as a source of economic growth and development. It has been argued that a well functioning and developed financial system like the banking sector is very vital in ensuring the efficient and effective resource allocation for economic growth and development in a country. This is so because the banking sector worldwide plays a dominant role in performing the financial intermediation function in an economy. The financial intermediation process which channels funds from the surplus units to deficit units of an economy largely depends, inter-alia, on the level of a country's financial or banking system development.

Scott (2010) observed that the banking sector of most African countries do not have sufficient depth to play a catalytic role in promoting the development of a deep financial sector. He stressed that most standard indicators of banking sector depth are low when compared to the rest of the world and that credit to the private sector is limited, assets are highly concentrated in a small number of banks and that the total volume of assets are also very low. In Nigeria, the ability to adequately channel institutional credits from the highly liquid banking system to the deficit productive or the real sectors of the economy has been worrisome to both government and the monetary authorities (Nnanna, Englama and Odoko 2004).

However, the depth of development, efficiency and effectiveness of the financial system varies from country to country. In some countries, the size, adequate facilities, adequate flow of funds to the productive sector with appropriate technology delivery are key macroeconomic indicators or determinants of Banking Sector Development (BSD). As noted by Osujinba, Ohuche and Adenuga, (2004), the stages of development and the efficiency of the financial system varies from country to country and changes overtime in the same country. They opined that developed and sophisticated financial systems are associated with matured economies, while under developed financial systems are features of developing economies.

In the case of Nigeria, the financial system has experienced some radical and structural changes following the adoption of the Structural Adjustment Programme (SAP) in 1986. The structure of the Nigerian financial system has changed significantly, both in size and complexity, from the pre-colonial era through the 1980's and into the 1990s. This is as a result of combination of a number of factors, including the changing policy, environment, technological innovations, the inter relationship between the different units or group of units in the system as well as the inter-play of market forces and some macroeconomic variables (CBN/NDIC, 1995). It was also stressed that the above policy initiatives were aimed at facilitating the emergence of a more efficient system of financial intermediation within the Nigerian economy.

Gallego, Herrero and Saurina (2002) noted that a financial system can develop in terms of financial depth, which include Bank liquid liabilities to GDP or M2 or Bank credit to the Private Sector to GDP. The relationship between banking sector development and economic growth has since been identified by some scholars such as (Shaw, 1073; Demetraides and Hussein, 1996; Levine, 1997; Nzotta, 2004). For a country to have an efficient and effective banking system development, it must have a transparent macroeconomic management policies and general political stability to attract investment. Most importantly, reforms must be undertaken in the critical sectors of the economy in the medium to long term basis.

The aim of this study therefore is essentially to investigate the relationship between the banking sector development and economic growth in Nigeria. Consequently, this paper is structured as follows: section two provides the empirical review; section three describes the research methodology while section four highlights the empirical results and section five presents the conclusions drawn from the findings the study and offers recommendations accordingly.

REVIEW OF LITERATURE

Theoretical framework

The theoretical framework that will guide this study is Agency Theory. The Agency Theory as propounded by Demirguc-Kunt and Demetraides (1998) indicates that bank specific characteristics, macroeconomic conditions, legal and institutional factors among others explain differences in interest margin. They opined that information deficiency and regulatory agency exert a binding constraint on financial system development and that deficiency such as bad loans on bank balance sheet, market concentration and inflation all exerted negative effect on the financial intermediation process.

Empirical review

The relationship between banking sector development and economic growth has been empirically examined by several scholars in different studies in a number of countries, worldwide. Yu and Gau (2010) examined the determinants of Banking Sector Development using three models of banking sector development and the results suggest that higher GDP strengthen the Banking Sector development. However,, the results further indicates that financial liberation appears to destabilize banking sector development while real interest rate and trade openness seems to be statistically significant determinants of Banking Sector Development in Malaysia.

Studies by Beck and Levine (2002) support the financial services, law and finance views. Their findings suggest that the overall financial development along effective contract enforcement mechanisms foster new establishment formation and efficient capital allocation. Galindo and Micco (2001) in their study using a sample of 38 countries found that improvement in effective credit rights reduces the volatility of credit cycle, and that improvement in effective creditors' rights protects the size of the credit market.

Demirguc-Kunt and Huizingha (2001) observed that in the context of developing economies to rapid and uniform liberalization of the Banking system might not bring the desired result or outcomes. Specifically, they noted that higher Banking sector development is related to lower Banking Sector Performance mostly due to tough competition.

However, in a study by Shirai (2001) Isik and Hassau (2003) suggest that financial liberalization may strengthen the Banking system by taking more steps of liberalizing the Banking System development. They noted that a well developed Banking Sector is vital in ensuring efficient and effective resource allocation in an economy.

In Nigeria and in pursuit of a well functioning financial system, the Monetary Authorities have implemented quite a number of banking sector reforms since the deregulation of the economy in 1986. This development has led to the Banking Consolidation exercise in 2005.

De-gregorio and Guidotti (1992) examined the empirical relationship between long-run growth and the degree of financial development and found that Bank credit to the private sector has positive and significant relationship with economic growth in the long run. Their findings further suggest that the main channel of transmission from banking sector development to economic growth is the efficiency of investment rather than the volume.

Also Douia (2013) studied the determinants of Banking sector development using data from 18 emerging economies for the period 2000 -2009, the study used panel data analysis such as random effect, feasible generalized least squares and dynamic generalized method of moment estimation, the results indicate that rule of law, economic growth and workers remittances promote banking sector development. He also found that financial liberalization and liberal trade policies have an insignificant influence on banking sector development. The study therefore recommends that, emerging economies or countries aimed at enhancing banking sector development should establish strong institutional infrastructure and that financial liberalization and trade openness should come at a later stage.

Muzafar and Siang (2009) using data from 27 economies of G-7 countries Europe, Asia of Latin America for the period 1980 – 2001, employs Dynamic panel data analysis and the result shows that real income per capita and institutional quality are statistically significant determinant and that capital market development and trade openness are more prominent in

promoting capital market development, and that in terms of financial liberalization, the empirical results suggest that domestic financial sector reforms tends to promote banking sector development, while stock market liberalization is potent in delivery stock market development. They opined that financial liberalization programmes are more responsive in developed countries than other countries. Also, Hsu and Lin (2000) in their study in China, found that Banking development is positively related to the short and long term economic growth.

Similarly, Abdulsalaun and Ibrahim (2013) in their study on Banking Sector Development and economic growth, observed that credit to private, government expenditure and interest rate spread exert negative influence on growth in the long-run, while liquid liabilities and trade openness are found to be positively related in the long run equilibrium relationship with growth.

In this study we proxy RGDP for economic growth unlike the study by Douia (2013) that used Gross Domestic Product (GDP). Real GDP to us is a better measurement for economic growth. Therefore this study seeks to fill the research gap by focusing on the empirical actual relationship between Banking Sector Development and economic growth in Nigeria.

RESEARCH METHODOLOGY

Research Design

Research design is a framework used as a guide for data collection and analysis. In this research, the researchers employed the use of casual comparative design. This research design is used where the variables are already in existence at the time of the study.

Data Source

Data set is exclusively analyzed, relying heavily on secondary data, sourced from existing relevant literature such as Journals, Central Bank of Nigeria (CBN) annual reports and statements of Accounts and those of the National Bureau of Statistics (NBS). The period under consideration for this empirical analysis starts from 1977 to 2010. The period (1977 – 2010) was selected because of the ready availability of data required for the study from the sources mentioned above to enable the researchers draw conclusions about the long run and short run relationship between banking sector development and economic growth in Nigeria.

Model Specification

In order to capture the precise relationship between Banking Sector Development and Economic Growth in Nigeria, an empirical model is specified. More specifically, this study adopts the Catalyst Douglas Production Function and a multiple regression equation approach.

Thus, the growth equation is stated as:

$$Q = f(k, L) \dots\dots\dots (1)$$

Where;

Q = Output of the economy

K = Capital

L = Labour

Based on the objective of the study, a baseline analytical model was derived and thus estimated with Johansen Cointegrating regression model and followed with an Error Correction Model (ECM). Considering the functional notation, the model is specified as follows;

$$RGDS = f(TO, PCR, DC, DL, INT) \dots\dots\dots (2)$$

The above equation can be restated to carry their parameters as expressed below;

$$RGDP_t = \beta_0 + \beta_1 TO_t + \beta_2 PCR_t + \beta_3 DC_t + \beta_4 DL_t + \beta_5 INT_t + \mu_t \dots\dots\dots (3)$$

Where;

$RGDP$ = Dependent variable (real gross domestic product)

TO = Trade openness

PCR = Credit to Private Sector

DC = Domestic Credit

DL = Deposit Liabilities

INT = Interest Rate

t = Time series (Annual) values

β_0 = Represent the constant term or intercept

$\beta_1 - \beta_5$ = Are the regression Coefficients to be estimated.

μ_t = Error Term

ANALYSIS AND DISCUSSION OF RESULTS

As a first step in the empirical analysis variables are stationary at all levels or at first deference. So as to enable us utilized the necessary estimation model.

Augmented Dickey-Fuller (ADF) and Phillips Perron (PP) Unit-Root Tests

The analysis of data commenced by utilizing Augmented Dickey-Fuller and Phillips Perron Unit-root tests for the variables of interest such as Real Gross Domestic Product (RGDP) Trade openness (TO), Credit to Private Sector (PCR), Domestic Credit (DC), Deposit Liabilities (DL) and Interest rate (INT) to ascertain whether these variables are co-integrated of the some order

1(1) so as to avoid spurious regression, this is so because often than not most time series data exhibits non-stationary behavior, as non-stationary data poses serious problems in econometric analysis leading to meaningless results. See table 1 and 2 below for the results of ADF and PP Unit root test.

The analysis, therefore commenced with the ADF test using the following equation.

$$\Delta Y_t = \alpha_0 + \beta_1 Y_{t-1} + \beta_2 t + \sum_{i=1}^p \beta_i \Delta Y_{t-i} + U_t \quad \dots\dots\dots (4)$$

- Δ = Is the first difference operator
- Y = Is Dependent variable
- t = Is the Time period
- P = represent the lag length
- α_0 = Is the constant term
- U = Is the stochastic term
- β, α = Are the Coefficients

While the model for Phillips Perron (PP) test was specified as follows;

$$\Delta Y_{t-1} = \alpha_0 + \beta_1 Y_{t-1} + e_t \quad \dots\dots\dots (5)$$

Table 1: Augmented Dicker-Fuller (ADF) Unit Root Test Results

Series	ADF Test Statistic	5% Critical Values	10% Critical Values	Order of Integration	Remarks
RGDP	-6.674689	-1.952066	-1.610400	(1)	Stationary
TO	-3.675852	-1.951687	-1.610579	(1)	Stationary
PCR	-5.805084	-1.952066	-1.610400	(1)	Stationary
DC	-2.049576	-1.951687	-1.610579	(1)	Stationary
DL	-2.606830	-1.951687	-1.610579	(1)	Stationary
INT	-7.215638	-1.951687	-1.610579	(1)	Stationary

Table 2: Phillips – Perron Unit Root Test Results

Series	PP Test Statistic	5% Critical Values	10% Critical Values	Order of Integration	Remarks
RGDP	-22.71235	-1.951687	-1.610579	(1)	Stationary
TO	-5.295895	-1.951687	-1.610579	(1)	Stationary
PCR	-2.006360	-1.951687	-1.610579	(1)	Stationary
DC	-2.157066	-1.951687	-1.610579	(1)	Stationary
DL	-2.643181	-1.951687	-1.610579	(1)	Stationary
INT	-7.236116	-1.951687	-1.610579	(1)	Stationary

The Augmented Dickey-Fuller and Phillips Perron Unit root test results from table 1 and 2 above indicates that the series RGDP, TO, PCR, DC, DL and INT were all integrated of order one. The linear combination of the variables integrated of the same order and are said to be co-integrated at order (1). The variables are all integrated at first difference and we observed that the test statistic of both ADF and PP test statistic were greater than the critical values of 5% and 10%. Thus the time series data are said to be stationary at their level after differencing. This further implies that the hypotheses of non-stationary co-integration for all the variables are accordingly rejected.

Johansen's Cointegration Test

The co-integration test provides evidence on the existence of a long run relationship between the variables of interest such as RGDP, TO, PCR, DC, DL, and INT respectively.

Johansen Likelihood Cointegration Test Results

Trend assumption: Linear determination trend Series: DC DL INT PCR RGDP TO

Lags: Interval (in first difference): 1 to 1.

Table 3a: Unrestricted Cointegration Rank Test (Trace) Hypothesized

Hypothesized No. of CECS	Eigen Value	Trace Statistic	0.05 Critical Value	Preb.
None	0.999378	446.0395	95.75366	0.0001
At most 1*	0.965800	209.8106	69.81889	0.0000
At most 2*	0.889366	101.7936	47.85613	0.0000
At most 3*	0.516813	31.34461	29.79707	0.0320
At most 4*	0.182132	8.069367	15.49471	0.4580
At most 5*	0.049829	1.635624	3.841471	0.2009

Trace test indicates 4 cointegrating equ(s) at the 0.05 level

**Denotes rejection of the hypothesis at the 0.05 levels ** Mackinnon-Haug-Michelis (1999) P-Values*

Table 3b: Unrestricted Co-integration Rank Test (Maximum Eigen Value)

Hypothesized No. of CECS	Eigen Value	Max-Eigen Statistic	0.05 Critical Value	Preb.
None	0.999378	236.2290	40.07757	0.0001
At most 1*	0.965800	108.0170	33.87687	0.0000
At most 2*	0.889366	70.44903	27.58434	0.0000
At most 3*	0.516813	23.27524	21.13162	0.0246
At most 4*	0.182132	6.433743	14.26460	0.5582
At most 5*	0.049829	1.635624	3.841466	0.2009

Max-eigen value test indicates 4 cointegrating eqn(s) at 0.55 level

**denotes rejection of the hypothesis at the 0.05 level ** Mackinnon-Haug-Michelis (1999) P-values*

From table 3, the Johansen Co-integration tests showed that both the trace and Maximum Eigen value statistics indicate that there exist 4 co-integrating relationship between RGDP and its determinants at 5% level of significant. This result further indicates that there exists a unique long run relationship between the variables of interest such as RGDP, TO, PCR, DC, DL and INT.

Since there is existence of a long-run relationship between the variables, it also therefore provides for the short term dynamics of the relationship. Thus, in attempt to absolve the fluctuations, an Error Correction Model (ECM) is hereby utilized, this is consequently presented in Error Correction Model in table 4.

Error Correction Model (ECM)

Table 4 Error Correction Model (ECM) Test Results

Dependent Variable: DLOG (RGDP)

Variables	Coefficient	Std Error	t-Statistic	Prob.
C	0.093906	0.122342	0.767574	0.4497
D(TO)	6.62E-08	9.56E-08	0.692950	0.4945
D(PCR)	-6.43E-08	2.94E-07	-0.218841	0.8285
D(DC)	2.35E-08	2.44E-07	0.096176	0.9241
D(DL)	-5.50E-08	2.97E-07	-0.185333	0.8544
D(INT)	0.002053	0.029288	0.070092	0.9447
ECM(-1)	-0.536313	0.15957	-3.359163	0.0024

R-Squared 0.310742; F-Statistic 1.953623

Prob (F-statistic) 0.109567; Durbin – Watson stat 2.22

From table 4 above, the results of the ECM as expected shows a negative sign and was statistically significant. The Error Correction Model (ECM) Coefficient is -0.536313, meaning that the system corrects to its previous period disequilibrium at a spread of 53.6% annually. On the other hand, the R^2 value of 0.3010742 is less than the Durbin Watson statistic of 2.22. This result implies that the estimation is not a spurious model. Furthermore, the R^2 value shows that 31.07% of the total variation in RGDP is well accounted for by the other explanatory variables such as TO, PCR, DC, DL, INT respectively. This result further validates the long run equilibrium relationship between the series.

More importantly, the RGDP can be said to be influenced by changes in TO, DC and INT respectively, except PCR which had a negative influence on RGDP. Meaning that trade openness, Domestic credit and interest rate promotes banking sector development and economic growth in Nigeria.

This result support the findings of Yu and Gau (2010), however, the estimation regression result indicates that TO and INT are positive and was statistically significant at 5% level while PCR and DC have negative influence and was statistically insignificant, but DC have positive influence on banking sector development and economic growth but was statistically insignificant.

CONCLUSION

This study investigated the relationship between Banking Sector Development and economic growth in Nigeria using analytical econometric techniques. The findings indicate that RGDP was particularly influenced by changes in TO, DC and INT. These variables, as they stand are found to contribute to Banking Sector Development, thereby promoting economic growth in Nigeria both in the short and long run respectively. On the other hand, PCR and DL have negative influence and are insignificant in promoting banking sector development and economic growth in Nigeria. These results meet the prior expectations and theory. Nigeria, as developing countries does not have sufficient depth to play the catalyst role in promoting Banking Sector Development. Currently, the banking sector lacks depth and besides credit to the private sector is inadequate and are very limited, also assets of the banks are highly concentrated on small number of banks when compared to developed countries.

This study employed the Augmented Dickey-Fuller (ADF) and Phillip Perron (PP) Unit Tests supported by the Johansen Co-integration Test as well as the Error Correction Model (ECM) in analyzing data obtained from secondary sources. However, other data analysis models such as MARS, CMARS, RCMAR, GAM, GLM, GPLM, etc are available for use in future research studies.

RECOMMENDATIONS

Based on the findings, the following recommendations are hereby proffered.

- ❖ That the banking sector reforms should be sustained
- ❖ That Banks should ensure effective and efficient allocation of their resources to the most productive sectors of the economy so as to enhance growth and development in the country.
- ❖ That credit to the private sector by banks should be increased to drive economic growth.
- ❖ That banks should enhance their fund/deposit mobilization strategies so as to deepen banking sector development in Nigeria.
- ❖ That the asset base of banks should further be increased by monetary authorities so as to be more proactive to meet international standards geared towards the real sector development of the economy and consequently create new jobs and wealth.

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