

## Private Vs Public Sector Bank Credits And Economic Growth Nexus In Nigeria: Where Does Efficacy Rest?

Ikechukwu S. Nnamdi

Senior Lecturer, Department Of Finance and Banking, University Of Port Harcourt, Port Harcourt, Nigeria.

### ABSTRACT

Demetriades and Hussien (1996), Levine and Zervous (1998) as well as Crowley (2008) argue that bank credits allocated to the private sector of an economy are more productive than those allocated to the public sector because they are disbursed under more stringent credit conditions. This study basically, attempts to evaluate the comparative efficacies of bank credits allocated to the private and public sectors of Nigeria's economy in relation to economic growth. The Augmented Dickey Fuller (ADF), Johansen's cointegration, error correction model and the standard pair-wise Granger Causality tests were employed in processing data sourced from Central Bank of Nigeria's Statistical Bulletin over the period 1981 to 2011. The results reveal a significant long run relationship between credits allocated to the public and private sectors of the economy and Nigeria's gross domestic product. The Granger Causality tests indicate significant bi-directional causality only between credits to private and government sectors. Significant unidirectional causalities are observed between gross domestic product and credits to both private and public sectors with causality flowing from GDP to those economic sectors. The study concludes that irrespective of the prevailing long run relationship between Nigeria's economic growth and bank credits to the private and public sectors of the economy; (i) Nigerian banks largely play demand-following roles, (ii) None of the bank credits to the government and private sectors is efficient as they two largely fail to promote the economy. Measures including creation of more capital market debt products, which will enable the government source more long term development funds and reduce pressure on operating banks, as well as replication of this study in other economic settings to facilitate understanding of country specifics are recommended for implementation.

**Keywords:** Public Sector Credit, Private Sector Credit, Economic Growth, Efficacy.

Finance theory overtly brings to the fore, the explicit functions of financial markets in advancing the economic growth process of nations. Popkova et al (2010) view economic growth as the enhanced capacity of a nation to advance and possibly, accelerate the periodic output of goods and services through the employment of available stock of capital and other factors of production. Specifically, the study observes that advancement of economic growth and attendant stock of capital could not have become significant without the credit resources provided by financial institutions. Within the ambits of this study, credit is viewed as a conduit through which banking institutions advance financial resources to needy sectors and enterprises therein, in order to facilitate increased productive activities within the economy.

Early studies including Schumpeter (1934) significantly outline the valuable role of financial institutions. The study observes that sporadic advances in economic growth are initiated by innovative entrepreneurial activities. However, the funding of these innovative activities is made possible through the unlimited capacity of financial institutions to provide the needed credit resources for entrepreneurship. The study observes that where entrepreneurship leads, finance follows. In this sense, Meir and Baldwin (1980) remark that Schumpeterian analysis of the economic growth process radically differs from classical and neo-classical views. The Classical and Neo-classical models of economic growth assume that investible resources accumulate from gradual periodic savings of the society which invariably, forces the economic growth process to proceed gradually too. However, the introduction of the banking system which is endowed with inherent capacity to fund unlimited credits for innovative entrepreneurship creates the novelty in Schumpeterian account of the economic growth process.

In the recent past, Ngai (2005) provides a significant support for the earlier position of Schumpeter (1934). The study observes that in a significant number of developing economies with essentially weak capital markets, the banking sector constitutes the most valuable source of financing productive investment activities. Given the importance of the financial sector in the economy, associated adverse developments in the sector could readily affect implementation of national economic policies and overall economic development. In this direction, failure to address and/or manage adverse financial developments has potentials of introducing significant distortions in the economy. Given that significant international contractual relationships and obligations prevail, many of which are financial in nature, Nnamdi and Nwakanma (2013) observe that these distortions could over time, be transmitted to the international economy when significant breach of contractual obligations prevail among nations. In this vein, Okpara and Nwoha (2010), as well as Chuku (2010) argue that implementation of valuable number of monetary policies hinges on the fundamental premise that operations of the domestic financial sector

and institutions therein, could be influenced through market-related and/or regulatory measures in order to meet targeted monetary, economic and developmental objectives.

Deposit money banks perform several functions including disbursement of approved credit facilities to deserving private and public sector related activities. Deriving from this function, Sanusi (2011) argues that the Nigerian banking industry constitutes a veritable tool in the advancement of the economy. Further, the study views banking institutions as veritable tools for effective implementation of both private and public sector development programmes within Nigeria. To justify the above positions, the study argues that these expectations derive from the fact that banks fundamentally function to effectively allocate mobilized financial resources to deserving productive sectors thereby, enhancing productivity, innovation, risk diversification and ultimately, economic growth.

In this direction, some empirical studies have ascertained significant relationships between bank credits and economic growth of nations. Nwanyanwu (2011) finds on employment of ordinary least squares regression technique, a significant relationship between the credits disbursed by Nigerian banks and economic growth. In the same vein, Onuorah and Ozurumba (2013) evaluate the nature of long-run relationship prevailing between bank credits allocated to various sectors of the Nigerian economy and economic growth. The results confirm prevalence of significant long-run relationship between sectorally allocated bank credits and Nigeria's economic growth. However, the Granger Causality results failed to show any significant causality relationships.

Demetriades and Hussein (1996) observe that bank credits allocated to the private sector of an economy tend to be more productive compared with those allocated to the public sector of the economy. This partly provides a significant support for Shaw's (1976) advocacy for financial liberalization measures in accordance with market dictates. Further, as observed by Levine and Zervous (1998) as well as Crowley (2008), the fact that bank credits to the private sector are approved under more stringent conditions provides basis for them to ultimately guarantee better and higher productive effects compared with public sector lending.

Despite the above generalizations on the relative efficacies of private and public sector bank credits in relation to economic growth, empirical literature is still sparse, especially on country-specific basis, with respect to the comparative efficacies of bank credits to the private and public sectors of the economy vis-à-vis economic growth. There is nonetheless, a fundamental need to empirically evaluate the level of prevailing efficacies of bank credits to the private and public sectors within the Nigerian economic setting using current data. This drive invariably, constitutes the core problem of this study. While this study basically attempts to add to the growing body of literature on the subject, it also, aims at exploring the nature of long-run relationship that prevails between private and public sector bank credits vis-à-vis Nigeria's economic growth. Further, the study will examine the nature and directions of prevailing casual relationships between the private and public sectors in relation to economic growth in Nigeria.

The time scope for this study covers the period 1981-2011 (31 years). The results are hoped to be of significant interest to both policy makers and drivers of the private sector of the economy in Nigeria, as they would hopefully add to the list of objective criteria for formulation of new policies and/or modification of existing policies. Having dealt with the introductory part, the rest of this study is divided into four sections. Section 2 provides the theoretical framework and literature review while section 3 deals with the materials and methods. Section 4 presents the results and analysis of same, while section 5 deals with the discussions, conclusions and policy recommendations.

## **2. THEORETICAL FRAMEWORK AND LITERATURE REVIEW:**

### **2.1 Theoretical Framework:**

Banks by nature of their operations are net liability takers. Their intermediation function derives from their capacity to trade on mobilized funds. Credits when efficiently deployed, theoretically constitutes a valuable vehicle for transmission of the effects of banking operations to the economy. Schumpeter (1934) views financial institutions as playing typical demand-following roles and merely function to service and/or support enterprise. In this regard, the causality relationship between the economy and financial development would theoretically remain unidirectional with causality flowing from the economy to the financial sector. Corroborating Schumpeter's position, Robinson (1952) views financial institutions as mere handmaids to domestic enterprise and to that extent, substantially remain passive to the vital factors that induce economic growth. Later studies by Goldsmith (1969) and Shaw (1976) among others, observe largely that effective interest rate management would increase savings, productive investments and consequently, economic growth. Accordingly, these studies largely argue that the extent of financial development and attendant level of financial liberalization policies prevailing in

an economy would overtly, account for the prevailing level of economic growth. Within the purview of these studies, finance fundamentally functions to play supply-leading roles and would theoretically, exert significant causal influence on economic growth.

In another development, Patrick (1976) proposes a contemporaneous or mutually supportive function for financial institutions especially at advanced stages of financial and economic development. Accordingly, financial institutions play both supply-leading and demand-following roles in relation to the economy, thus promoting economic growth and at the same time, depending on the economy for the continued generation of business activities and ventures to service and generate income there from. Significant bi-directional causalities would theoretically prevail in accordance with the expectations of this theory between financial sector and economic growth.

One major outcome of the studies of Shaw (1973), Mckinnon (1973) and Quinones and Remenyi (2000) is the growing relevance attached to the operations of emerging micro credit institutions in the process of financial development. These studies have extensively brought to the fore, the potentials of micro credit institutions to improve the incomes and living standards of the enterprising/active poor. Further, they have also, largely demonstrated that there prevails, a significant advance in the capital accumulation process of developing nations owing to the leverage effects of micro credit operations.

An important consideration in the lending process by banks is the issue of securitization. To this extent, Bhole (2006) observes that banks lend on the following bases: (i) Real bills doctrine (commercial loan theory) whereby they lend to short term, self liquidating investments with assets of the borrower as lien and (ii) Anticipated income basis (cash flow lending) whereby, reliance is on future cash inflows for repayment. In most cases, banks combine the two considerations for most appropriate credit evaluation and recovery.

## 2.2 Review of Previous Studies:

Finance literature is replete with studies that attempt to evaluate the relationship between bank credits and economic growth of nations as a fallout of the expected role of the banking system in economic growth process. Empirical results largely point to the fact that country specifics vary. In this vein, Demetriades and Hussein (1996) evaluate the relative efficacies of bank credits to the private and government (public) sectors of the economy in a sample of sixteen developing countries. The results provide compelling evidence to conclude that bank credits to the private sector tend to yield more productive effects on the economy compared with public sector bank credits. In this direction, Levine and Zervous (1998) as well as Crowley (2008) examine the relative effects of bank credits on American and the Middle East/North African economies respectively. They find overwhelming evidence to acknowledge the superiority of bank credits to the private sector compared with the public sector. The studies justify their results on the basis that bank credits to the private sector of the economy are significantly granted under relatively more stringent conditions than public sector credits which are often, prone to moral hazard tendencies.

Aliero et al (2013) employ the Auto Regressive Distributed Lag Bound (ARDL) technique in evaluating the empirical relationship between Nigeria's economic growth and private sector bank credits over the period 1974-2010, (37 years). The results indicate the prevalence of a significant long run relationship between private sector bank credits and Nigeria's economic growth. However, the pair- wise Granger Causality results indicate that none of the study variables Granger Causes the other. It implies that Schumpeterian independent hypothesis state significantly prevails in Nigeria whereby, the financial and economic sectors largely operate independently. The study calls for significant preference for long tenured bank credits in Nigeria for the operations of the banking sector to have meaningful influence on the nation's economic growth.

Obamuyi et al (2012) evaluate the relationship between bank lending and the growth of the manufacturing sector in Nigeria. Covering the period 1973 to 2009, the study employs Cointegration and Error Correction techniques. The results indicate that lending rates are significantly related to manufacturing output in Nigeria. Ayadi et al (2013) examine the relationship between financial development and economic growth across the Mediterranean using a sample of countries over the period 1985 to 2009. The results indicate that among the variables employed in the study, credits to the private sector of the economies sampled, as well as bank deposits relate negatively to the gross domestic products (GDP). The study attributes this result to the prevailing deficiencies in credit allocation in the sampled economies as well as weak financial allocation and supervision within the Mediterranean region.

Hassan et al (2009) as well as Koetter and Wedow (2010) examine the relative effects of quantity and quality of finance on economic growth of European countries. The results of the studies tend to generally suggest that it is the quality of the financial system measured by cost effectiveness and operational efficiency as opposed to the quantity of the financial system measured by quantum of bank credits disbursed that contributes more significantly to economic growth. In general, they allude to the fact that economic growth would necessarily require better quality credits, but not necessarily greater quantum of credits.

Acrad et al (2013) evaluate the possibility of a threshold beyond which, bank credits to the economy would begin to produce insignificant effects. The results of the study indicate that for economies whose ratios of bank credits allocated to the private sector relative to the GDP have attained 80 – 100% range, further bank credits tend to impact negatively on economic growth. The study therefore, concludes that in such instances, increased credit allocation to the private sector of the economy would create room for potential resource misallocation and therefore, lead to high economic volatility and a significant probability of financial crisis.

Cecchetti and Kharroubi (2012) examine the effect of financial system's size and growth on productivity and economic growth in a sample of fifty (50) countries over the period 1980 to 2009. The results of the study reveal that the size of the financial sector has an inverted u-shaped effect on the growth of both productivity and the economy, thus providing evidence to conclude that more finance is not necessarily, the most efficient choice. Levine and King (1993) study the influence of finance on economic growth of a cross section of eighty (80) countries over the period of 1960 to 1989. Employing bank credits allocated to the private sector as one of the variables of study among others, the results provide evidence to suggest that financial sector relates positively and significantly to economic growth. The study views this as evidence that bank credits have the potential to spur long run economic growth.

Murty et al (2012) evaluate the long run impact of bank credit on Ethiopia's economic growth. Employing the Johansen's Cointegration technique in processing time-series data covering the period 1971/72 to 2010/11, the results show that a significant long run relationship prevails between private sector bank credits and economic growth in Ethiopia. The study attributes this result to the capacity of the banking sector to enhance the capital accumulation process in Ethiopia and recommends establishment of more financial market institutions there in. Nuno (2012) examines the nexus between bank credits and economic growth in the European Union over the period 1990 to 2010. Employing the Dynamic Panel Data (GMM-System Estimator), the results indicate that savings promote economic growth while bank credits and inflation negatively impact on economic growth. The study concludes that a domestic credit boom has an inherent potential to weaken the banking system, discourage savings and investment, increase financial pressure and ultimately, lead to financial crisis.

Akpanung and Babalola (2011) evaluate the nature of long-run relationship between indicators of economic growth and bank credits in Nigeria over the period 1970 to 2008. The results indicate significant long run relationship between the study variables. However, the pair-wise Granger Causality results indicate prevalence of unidirectional causal relationships running from: (i) GDP to private sector bank credits and (ii) Industrial production index to GDP. Bank lending rates however, are found to impede growth in GDP. The study accordingly, calls for review of bank lending rates and enhancement of bank credits to the private sector of Nigeria's economy.

Nwakanma et al. (2014 a) evaluate the potency and relevance of private sector bank credit in Nigeria. Employing data over the period 1981 to 2011, the results of the Auto Regressive Distributed Lag Bound test indicate prevalence of long run relationship between private sector bank credit and Nigeria's GDP. However, Causality does not exist significantly between the study variables thus, supporting the prevalence of Schumpeterian independent hypothesis state. The study calls for policy measures to strengthen banking operations in Nigeria including the enforcement of credit contracts to improve the influence of banking operations on Nigeria's economic growth.

At micro credit level, Nwakanma et al. (2014 b) examine the relationship between micro credit operations and economic growth in Nigeria. Employing ARDL and Granger Causality techniques, the study finds on employment of data over the period 1982 to 2011 that a significant long run relationship prevails between micro credits disbursed in Nigeria and the country's GDP. The Granger Causality results indicate a significant unidirectional causality which runs from GDP to micro credits. The study recommends the development of more micro credit products and marketing of same, as well as enforcement of credit contracts to strengthen micro credit operations and their influence on Nigeria's economy.

### 3. MATERIALS AND METHODS OF ANALYSIS:

For clarity of purpose, this section is subdivided into sub-sections presented hereunder:

#### 3.1 Data and Variable Description:

Data for this study consist of annualized values of gross domestic product (GDP) at current market prices and outstanding values of bank credits allocated and/or disbursed to the private and government (public) sectors of the Nigerian economy. Consisting entirely of published/secondary data obtained from Central Bank of Nigeria's Statistical Bulletin, they cover the period 1981 to 2011, (31 years). The data set employed is presented in table 1 below:

**Table 1: Gross Domestic Product, Bank Credits to Government Sector and Bank Credits to Private Sector in Nigeria, 1981-2011, (₦'b).**

Year	GDP	Bank Credits to Govt. Sector	Bank Credits to Private Sector	Year	GDP	Bank Credits to Govt. Sector	Bank Credits to Private Sector
1981	102.69	1.77	9.295	1997	4300.21	41.99	444.37
1982	110.03	2.82	11.302	1998	4101.03	49.97	326.50
1983	119.12	5.14	12.280	1999	4799.97	190.70	394.03
1984	125.07	8.73	13.190	2000	6850.23	285.63	580.30
1985	144.72	10.26	13.973	2001	7055.3	235.10	797.50
1986	143.63	4.42	18.473	2002	7984.40	484.8	958.94
1987	203.04	7.57	21.698	2003	10,136.4	398.4	1219.99
1988	275.20	7.309	23.851	2004	11673.60	633.71	1530.60
1989	403.76	3.614	27.676	2005	14735.32	685.37	2005.22
1990	497.35	8.702	33.367	2006	18709.80	1074.20	2540.75
1991	574.28	6.82	40.954	2007	20940.91	2048.16	4836.34
1992	909.75	7.134	54.07	2008	24665.24	1866.92	7842.15
1993	1132.20	31.35	106.96	2009	25225.14	2191.41	8970.40
1994	1457.13	41.07	128.70	2010	29498.16	304.41	7759.30
1995	2991.94	23.44	146.63	2011	30872.70	3649.25	9101.30
1996	4135.81	50.82	211.98				

Source: Central Bank of Nigeria, Statistical Bulletin, (Various Issues).

Gross Domestic Product (GDP) is employed as a valuable indicator of economic growth at its current market price values. Defined by Central Bank of Nigeria (2005) as that value of GDP which reflects the appropriate prices that purchasers of goods and service pay for goods consumed at any point in time, it therefore, approximates the historical prices of those periodic goods and services consumed. Bank credits to public and private sectors of the Nigerian economy serve as indicators of both the quality and quantity of bank credits disbursed to the public and private sectors respectively. They are carried at their historical values over the period of study for consistency purposes also.

#### 3.2 Specification of Analytical Tools and Tests:

The key objectives of this study are to examine the nature of empirical long run relationship which prevails between public and private sector bank credits and economic growth in Nigeria. Further this study seeks to examine the nature of causal interrelationships which prevail among the study variables in order to evaluate the extent to which bank credits to the private and public sectors of the Nigerian economy do comparatively promote, support and/or reinforce economic growth.

For clarity, this sub-section is further sub-divided as follows;

##### 3.2.1 Stationarity Tests:

Trend properties are most often associated with time series data. It paves way for spurious estimates when employed for econometric purposes. To address and/or eliminate this problem necessitates that unit-root or stationarity characteristics or otherwise of any time-series data be ascertained. To achieve this, the Augmented

Dickey-Fuller (ADF) test was employed. Maddala (2007), Gujarati and Porter (2009) as well as Brooks (2009) outline the modeling procedure for a chosen time series variable  $Y_t$ , as follows;

$$\Delta Y_t = \alpha_0 + \alpha_1 Y_{t-1} + \sum_{i=1}^{\rho} \delta_i \Delta Y_{t-1} + \epsilon_t \quad \text{--- (1)}$$

Where;

- Y = Variable of choice,
- $\alpha_0$  = Intercept
- $\Delta$  = First difference operator
- $\alpha_i$  (for  $i=1$  and  $2$ ) and  $\delta_i$  (for  $i = 1, 2 \dots \rho$ ) are constant parameters
- $\epsilon_t$  = Stationary stochastic process
- $\rho$  = Number of lagged terms chosen by Akaike information criterion (AIC) to ensure that  $\epsilon_t$  is white noise.

Resulting from equation (1), the hypotheses for testing would consist of;

$H_0$ :  $\alpha_1 = 0$ ; i.e. there exists a unit root, - time series is non-stationary.

$H_A$ :  $\alpha_1 \neq 0$ , i.e. there is no unit root, - time series is stationary.

From the above specifications, the null hypothesis will be rejected if and only if the calculated values of Augmented Dickey-Fuller test statistics are higher on absolute basis relative to the McKinnon's critical values at 1%, 5% and 10% levels respectively. The above condition would imply the non-existence of unit root properties and also, suitability of the time series data for estimation purposes. The converse would imply the acceptance of the null hypothesis and presence of unit root properties in the time series data. However, failure to reject the null-hypothesis at this stage would invariably, necessitate as a matter of methodology, a further conduct of the stationarity test on the further differenced variants of the time series data. A modification of equation (1) above provides for this achievement by incorporating the second differences on the lagged first, inclusive of the k lags of the second differences as shown in equation (2) below;

$$\Delta^2 Y_t = \psi \Delta Y_{t-1} + \sum_{i=2}^{\rho} \phi_i \Delta^2 Y_{t-1} + e_t \quad \text{--- (2)}$$

In the above circumstance, the resulting hypotheses for testing would therefore, constitute;

$H_0$ :  $\psi = 0$ , there exists a unit root, implying that the time series is non-stationary.

$H_A$ :  $\psi \neq 0$ , there exists no unit root, implying that the time series is stationary.

### 3.2.2 Johansen's Cointegration Test:

Johansen's Cointegration test evaluates the extent of long run relationship that prevails among variables within a multivariate framework. Brooks (2009) observes that when a dynamic model with stationary disturbances prevails and the time series associated with same are integrated of order 1(I), then by implication, the variables would also be integrated or order 1(I). The study also asserts that for employment of Johansen's Cointegration, if there prevails a set of g variables (where  $g \geq 2$  which are integrated of order 1(I) and are further observed to be cointegrated, then a Vector Auto Regression (VAR) model needs to be set up. The VAR model would invariably contain g variables mainly in their first differenced form, as well as k- 1 Lags of the dependent variables with a specified T-coefficient matrix. The Johansen's Cointegration model for g variables is expressed in equation (3) below;

$$\Delta y_t = \pi y_{t-k} + T_1 \Delta y_{t-1} + T_2 \Delta y_{t-2} + \dots + T_{k-1} \Delta y_t - (k-1) + u_t \quad \text{--- (3)}$$

Where;

$$\pi = \left( \sum_{i=1}^k \beta_i \right) - 1_g \text{ and } T_i = \left( \sum_{j=1}^i \beta_j \right) - 1_g$$

### 3.2.3 Error/Equilibrium Correction Model (ECM):

An Error/Equilibrium Correction estimation attempts to ascertain the extent of deviations from predicted relationships owing to possible short run shocks in the predictor variables employed in a study. In this direction, Nwakanma and Mgbataogu (2013) argue that such short run dynamics and adjustments to eventual long run equilibrium conditions are vital because they embody significant theoretical and policy implications. Further, Brooks (2009) observes that econometric models often contend with convergence tendencies in the long run, and as such, may have nothing to imply regarding long run equilibrium relationships between study variables. ECM overcomes this difficulty through a purposeful employment of the combinations of the first differenced and the lagged levels of the cointegrated time series variables as expressed in equation (4) below;

$$\Delta y_t = \beta_1 \Delta x_t + \beta_2 (y_{t-1} - \phi x_{t-1}) + \mu_t \text{----- (4)}$$

In equation (4),  $y_{t-1} - \phi x_{t-1}$  represents the error correction model. From the above expression, provided that  $y_t$  and  $x_t$  are cointegrated with coefficient  $\phi$ , then it would imply that  $(y_{t-1} - \phi x_{t-1})$  would be integrated of order 1(o), irrespective of the fact that the constituent series are integrated of order 1(I). Also, in expression (4),  $\phi$  denotes the long run relationship between x and y,  $\beta_1$  represents the short run relationship between changes in x and y, while  $\beta_2$  denotes the speed of adjustment of the series variables back to equilibrium.

### 3.2.4: The Granger Causality Tests:

Granger Causality test seeks to examine the magnitude of variation in a dependent variable Y that is attributable to variations in the values of the explanatory variable X and also, ascertaining whether the addition of lagged values of X can improve the explanation. In general terms, Y is said to be Granger Caused by X if X aids in explaining Y and further, if the Coefficients of lagged X are confirmed significant statistically and vice versa. On the whole, the Granger Causality test is predicated on the following regression expressions;

$$Y_t = \beta_0 + \sum_{i=1}^n \beta_i Y_{t-i} + \sum_{i=1}^n \beta_{i+1} X_{t-i} + \mu_t \text{----- (5)}$$

$$X_t = \alpha_0 + \sum_{i=1}^n \alpha_i X_{t-i} + \sum_{i=1}^n \alpha_{i+1} Y_{t-i} + V_t \text{----- (6)}$$

Where;

$Y_t$  and  $X_t$  are the time series variables under examination,  $\mu_t$  and  $V_t$  are the idiosyncratic terms (white noise errors) which incorporate all changes in the time series  $Y_t$  and  $X_t$  not included in the lagged values. Maximum Lag length specified is two (2).

## 4. PRESENTATION OF RESULTS:

The results of the tests executed are presented in the various sub-sections that follow;

### 4.1 Presentation of Stationarity (Unit Root) Tests:

The results of the stationarity tests conducted on the times series data employed are presented in table 2 below:

Table 2: Results of Stationarity (Unit Root) Tests:

Differenced Variables	ADF Statistic	McKinnon's Critical Values			Order of integration	Prob.
		1%	5%	10%		
D(GDP)	-10.91200	-3.737853	-2.991878	-2.635542	1(1)	0.0000
D(CGS)	-3.77266	-3.679322	-2.967767	-2.622989	1(1)	0.00129
D(CPS)	-3.786739	-3.679322	-2.967768	-2.622990	1(1)	0.0312

Notes: D(GDP), D(CGS), and D(CPS) represent the differenced values of gross domestic product, credit to government sector and credit to private sector respectively.

Source: Author's Computations using E-VIEWS 7.1

The stationarity test results captured in table 2 above indicate that the absolute values of the Augmented Dickey-Fuller test statistics for all the study variables are higher than the absolute values of all their corresponding McKinnon critical values at 1%, 5% and 10% levels respectively. In accordance with the decision rules for this tool, all the time series variables employed for this study are accordingly, confirmed stationary and also, fit for employment in econometric estimates. In the same direction, since all the study variables are stationary at first difference, they are correspondingly said to be integrated of order 1 (I).

#### 4.2 Presentation of Johansen's Cointegration Test Results:

The results of the Johansen's Cointegration tests for all the study series variables are presented in table 3 below:

Table 3: Results of Johansen's Unrestricted Cointegration Rank Test (Maximum Eigen Value):

Obs	Series	Hypothesized No of CE (s)	Eigen value	Maxi-Eigen Statistic	0.05 Critical Value	Prob.**
26	GDP,CGS, CPS.	None*	0.958232	82.56610	21.13162	0.0000
		At Most 1*	0.506102	18.34108	14.26460	0.0107
		At Most 2	0.004798	0.125050	3.84166	0.7236

Max-eigen value test indicates 2 Cointegrating equations at 0.05 level.

\*denotes rejection of null hypothesis at 0.05 level

\*\* MacKinnon – Haug – Michelis (1999) p-values

Source: Author's Computations using E-VIEWS 7.1

The Johansen's Cointegration test results shown in table 3 above are indicative of full rejection of the null hypothesis of no cointegration among the study variables. To that extent, the results show that there is a significant long run relationship between Nigeria's economic growth and bank credits to both the private and government (public) sectors of the economy in the light of the probability values of 0.0000 and 0.0107 for two of the hypothesized no of cointegrating equations. Further, the fact that the cointegration results do not indicate a full-rank condition (a situation where the number of cointegrating equations is equal to the number of study variables) eliminates the problem of multicollinearity among the study variables.

#### 4.3 Presentation of Error Correction Model Estimates:

The Error (Equilibrium) Correction Model estimates results are presented in table 4 below;





## 5. DISCUSSIONS, CONCLUSIONS AND POLICY RECOMMENDATIONS:

The results of the Johansen's Cointegration tests provide compelling evidence to assert that there is a significant long run relationship between economic growth in Nigeria and bank credits to private and public sectors of the economy. However, the results of the Granger Causality tests show that bank credits to both the private and public sectors of Nigeria's economy fail significantly in promoting economic growth. Prevalence of significant uni-directional causalities which flow from Nigeria's GDP (proxy for economic growth) to credits disbursed to both private and public sectors of Nigeria's economy provide compelling evidence to affirm that Nigerian banks largely play demand-following roles and as such, only operate to service rather than promote the growth of Nigeria's economy. Further, failure of credits disbursed to both private and public sectors of Nigeria's economy to promote economic growth provides sufficient basis to stress that bank credit allocations are yet to be conducted on efficacy basis in Nigeria. On the whole, the empirical results obtained so far in Nigeria, sharply contradict the assertions of Demetriades and Hussien (1996), Levine and Zervous (1998) as well as Crowley (2008) who observe that bank credits to the private sector are executed under more stringent conditions and therefore, likely to contribute more to a nation's economic growth compared with credits to the government (public) sector.

The bi-directional causality observed between credits to the private and government sectors reflect largely, the continued government inclination in Nigeria to borrow from operating banks and the wide money market in order to finance government expenditure. Also, the increasing private sector credits regularly needed to service growing business opportunities in both the private and public sectors of Nigeria's economy may significantly account for this result. The adverse effects of expansion in government borrowing from operating banks have earlier been observed by Osiegbu and Nnamdi (2008). The study argues that Nigerian government should rather encourage the development of more capital market debt instruments. These will facilitate floatation of more long-term debt instruments and invariably, enable the various levels of government to finance their capital projects while reducing pressure on the operating banks. For recurrent expenditures also, the study argues that the governments should re-examine other means of raising internally generated revenue in order to address the gaps in their funding requirements instead of resorting to borrowing from the operating banks.

On the whole, it is concluded that; (i) A significant long run relationship does prevail in Nigeria, between economic growth and bank credits to both the private and public sectors of the economy, (ii) Nigerian banks largely play demand-following roles and significantly operate to service rather than promote the economy, (iii) Allocation of bank credits in Nigeria to both private and public sectors of the economy are largely not efficient as they all significantly fail to promote Nigeria's economic growth.

In the light of the above conclusions, it is recommended as follows;

- (a) The Nigerian government should minimize borrowing from operating banks to enable the banks address more effectively, the demands of the growing private sector which is more likely to borrow on basis of efficiency of investment decisions.
- (b) Extensive debt products development should be encouraged in the Nigerian Capital Market to facilitate raising of more long term debt funds necessary for the finance of growing public long term development projects.
- (c) A replication of this study in other economic settings is advocated for a vital appreciation of country specifics with respect to efficacy of bank credit allocations to the private and public sectors of each economy.

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