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How Far Do Banks' Intermediation Functions Influence Economic Growth In Nigeria?

Ikechukwu. S. Nnamdi[1*] Samuel. L. Penu[2]
snnamdi95@gmail.com penusam@yahoo.com
* - Department of Finance and Banking, University Of Port Harcourt, Port Harcourt, Nigeria.
*E-mail of the corresponding author: snnamdi95@gmail.com

ABSTRACT
Motivated by the need to examine in the light of recent data, the nature of interrelationships between banks' intermediation functions and Nigeria's economic growth, this study employs time series data which were obtained from Central Bank of Nigeria's Statistical Bulletin over the period 1981 to 2015. Stationarity, Multiple Regression, Johansen's Cointegration, Error Correction Estimates and Pair-Wise Granger Causality tests were employed. The long run results represent improvements over the short-run estimates with credit to private sector and total deposit liabilities generated by Nigerian banks being causally dependent on her GDP, while credit to government sector was found to be operating independent of the economy. In the light of the fact that the results represent an improvement over previous studies, it was argued that greater adherence to market discipline Post 2005/06 Banking Sector Consolidation programme in Nigeria might have contributed to the improved results. Consequently, the study recommends sustenance of those adopted market disciplines, as well as more stringent enforcement of credit contracts to enable the operating banks recover more non-performing credits and invest same to enhance lendings to very efficient units in the private and public sectors of the Nigerian economy.

Keywords: Bank Deposit Liabilities, Credits to Private Sector, Credits to Government Sector, Financial Intermediation, Economic Growth.

1 INTRODUCTION

Banks play substantial roles in driving growth and prosperity of nations. Financial intermediation to a considerable extent brings to bear, the interrelated activities of deposit money banks (DMBs) in the promotion of desired economic progress of countries. Shaw (1976) emphasizes that financial intermediation predominantly involves mobilization and allocation of funds by financial institutions for accumulation of capital needed for further investments. The end results culminate in increased output growth.
The lead studies of Schumpeter (1934), Goldsmith (1969), Shaw (1973), Mckinnon (1973) as well as more recent studies of Nnamdi (2015), Nnamdi and Penu (2017), all agree that financial intermediation is key to the achievement of sustained economic growth of nations. In the face of varying and adversified economic circumstances, empirical evidences continue to significantly suggest that the intermediation function of banks still remain key to national economic growth.

Advancing the pivotal roles of financial institutions in the intermediation process, Popkova and Tinyakova (2013) argue that economic growth can be enhanced through a planned coordination and integration of factor inputs to enhance utility using the available capital stock. The study views provision of credit facilities by deposit money banks for funding of investment projects as akin to lubrication of the productive factors and to a considerable extent, the bedrock of sustainable accumulation of capital stock and consequently, economic growth. Financial intermediation ensures fund allocation to efficient users. In this view, Schumpeter (1934) argues that capacity of entreprenuers to boost economic growth spontaneously derives from the corresponding capacity of the banking system to continuously provide sufficient credit to meet the funding requirements of business.

Further, Ngai (2005) observes that in developing economies with weak and/or undeveloped capital markets, their banking systems have significantly provided valuable financial support for their economic growth process. In this direction, Sanusi (2011) observes that the Nigerian banking system has provided significant leverage for both public and private sector ventures and consequently, contributed to Nigeria's economic growth. In a complementary study, Penu (2016) advocates that efficient allocation of banks' available resources at the optimal price to the needy sectors would constitute a sustainable framework for continued banks' provision of funds in Nigeria's economic growth process.

Financial intermediation process prevails to ensure the continued mobilization and disbursement of financial resources by formal institutions. To facilitate the above, various windows exist to consolidate the process begining from deposit mobilization through credit appraisal to disbursement and recovery. In this vein, Bhole

(2006) contends that the extent of financial sector development and technological adaptations represent the yardstick for measuring a nation's economic advancement. Other studies including Goldsmith (1969), Mckinnon (1973), Ajie et al (2006) and Nnamdi (2015) provide evidences to assert that intermediation functions of banks and other financial institutions notably promote national economic growth and invariably, constitute a significant barometer for measuring the extent of a given economy's development and/or backwardness.

On the other hand, national central banks rely on the control of the operations of banks and other financial institutions in order to formulate and manage national monetary policies. In this perspective, Okereke and Anyanwu (2008), Okpara and Nwaoha (2010) as well as Chuku (2010) agree that the achievement of any nation's monetary policy directives as well as enhancement of the implementation of the legal frameworks for monetary policy management are mainly dependent on the extent to which the intermediation functions of financial institutions are regulated by the apex bank. Within the purview of this study therefore, the prevalence and operations of formal financial intermediaries are predicated on the fact that they characteristically function to provide both savers and borrowers with financial products that tend not only to be specialized in nature, but also, serve their mutual interests.
In this direction, Hempel and Simonson (1999) observe that the operations of financial intermediaries, tend to create two submarkets in order to facilitate flow of funds between economic units. The study argues that in one submarket, financial intermediaries tend to acquire assets through purchase of primary securities from borrowers, while in the second submarket, they tend to sell their own liabilities like deposits. This ensures their capacity to satisfy the characteristic requirements of their various clients thereby, acting as both ultimate borrowers and lenders to the economy. In this framework financial intermediaries commence the intermediation process by raising funds through the issuance of some financial obligations and promises for future settlement at interest and at same time, convert the pooled funds to loans at interest to borrowers along with other non-monetary or services products to economic units. This action consequently, facilitates further investments and economic growth.

Nwankwo (1985) observes that commercial banking operations commenced in Nigeria in the year 1892 with the establishment of African Banking Corporation. Since the commencement of banking operations, the basic intermediation functions of deposit mobilization and on-lending to needy sectors have prevailed. Recent Central Bank of Nigeria's reports provide substantial statistics of bank credit disbursements classified as lendings to private and government sectors of the economy. Various other fundamental events have over the years occured with notable effects. These include for instance, the liberalization policy of 1986 and the very recent 2005/2006 business combinations (mergers and acquisitions) in the Nigerian banking industry. On the whole, comparative studies on the influences of intermediation function elements of banks in Nigeria have been relatively sparse to the best of our knowledge especially in the light of recent literature and statistics. Although Nnamdi (2015), Akpansung and Babalola (2012), Nwakanma et al (2014(a); 2014b) and Onuorah and Ozurumba (2013) have attempted to evaluate the influences of bank credits on Nigeria's economic growth, it is contended here that the intermediation elements employed in the above mentioned studies are either aggregated bank credits or at best, decomposed credits into private and public sector credits thereby, excluding the component of mobilized deposits, which this study incorporates. Further, while adding to existing literature, the need to re-evaluate the subject in the light of most recent data becomes also, expedient.

Having provided an overview above, the balance of this study is in four parts. The theoretical framework and literature review constitute part two, while part three presents the materials and methods. Part four presents the analysis and results, while part five deals with the discussions, conclusions and policy recommendations.

2 THEORETICAL FRAMEWORK AND LITERATURE REVIEW

2.1 Theoretical link Between Financial Intermediation and Economic Growth:

Financial institutions assume crucial roles in financial intermediation process. These institutions transmit the deposit liabilities through the financial market mechanism to borrowers for investment which result in enhanced returns. Accordingly, Andrew and Osuji (2013) as well as Ekpenyong and Acha (2011) assert that without undermining the liquidity preferences of their pool of customers, these deposit liabilities are chanelled into productive enterpreneurial activities. Consequently, wealths are created. In the same vein, substantial number of empirical studies including Shittu (2012), Nwakanma, et al (2014(a); 2014(b)), Nnamdi (2015), as well as Nnamdi and Penu (2017) all allude to the significant interrelationships between the activities of financial intermediaries and economic productivity of the real sector in Nigeria's economy.

The studies of Schumpeter (1934), Goldsmith (1969), Shaw (1973), as well as Patrick (1976) all allude to the stream of theoretical interactions between financial institutions and national economic growth. Three possible interactive modes result from these studies which postulate possibilities of demand-following, supply-leading and contemporaneous relationships between the economy and financial institutions. In the same direction, other studies including Mckinnon (1973) and Levine (1997) explore the potential effects of interest rate liberalization and repression on capital accummulation, investment process and consequently, economic growth of nations. In this perspective, Vittas and Cho (1996) observe that financial institutions under stringent credit conditions, do prefer to offer credit facilities to end-users who have demonstrated reasonable and verifiable evidences of credit utilization and repayment.

2.2 Empirical Review:

Banks' financial operations have over the years, remained relevant in terms of facilitation of trade and general business, employment generation, monetary policy management, investment potentials and consequently, economic growth in Nigeria. In that wise, empirical studies do severally allude to this assertion as reviewed subsequently.

Nwite (2014) examines the efficacy of banks' financial intermediation in Nigeria and effects on the economy. The results based on Multiple Regression and Johansen's Co-integration techniques provide evidence to conclude that lending rates and bank credits to the private sector of Nigeria's economy valuably relate with Nigeria's gross domestic product. The study recommends that the regulatory authorities should pay valuable attention to the intermediation activities of banks and proactively, manage them to maximize their contributions to the nation's economic growth.

Nwakanma et al (2014(b)) examine the capacity of micro finance banking institutions in promoting the growth of the Nigerian economy using ARDL (Auto-Regressive Distributive Lag) analytical technique. Long-Run Co-Integration as well as Granger Causality tests were conducted using time series data over the period 1982 – 2011. The results reveal a significant long run relationship between Nigeria's economic growth and micro credit disbursements. The Causality evidence flows from Nigeria's gross domestic product to micro credits disbursed. The study recommends increased investments in the development and marketing of micro finance deposit and credit products as well as enforcement of credit contracts, in order to enhance the effects of micro finance operations in Nigeria. Ighodaro and Oriakhi (2011) examine the Causal relationships between financial development and economic growth in Nigeria. Data covering Pre and Post Structural Adjustment Programme periods were collected for evaluation. The results reveal significant evidence of long run relationship among the study variables consisting of; (i) financial intermediation ratios, (ii) broad money to income, (iii) loan/deposit ratio and (iv) ratio of money supply to the GDP. The results indicate substantial evidences to assert that there existed supply leading tendency during pre-SAP regime, while the post-SAP era was characterized by a demand-following trend.

Obamuyi et al. (2012) evaluate the effect of bank credits on manufacturing sector's output in Nigeria over the period, 1973 to 2009. Data on credits to the manufacturing sector, inflation rate, aggregate lending rate, exchange rate, capacity utilization and other macro-economic indicators were employed. The results show that volume of bank credits, interest rate and capacity utilization have significant effects on the output of Nigeria's manufacturing sector. In another development, Akpansung and Babalola (2011) examine the nature of interrelationships between bank credits and the performance of Nigeria's economy over the period 1970 to 2008. The employed Granger Causality test shows that bank credits to the private sector of Nigeria's economy valuably promotes gross domestic product. As a result, the study recommends significant reduction in bank lending rates in order to encourage entrepreneurs to engage in more productive activities in Nigeria, thereby, accelerating Nigeria's economic growth.

Penu (2016) examines the relationship which prevails between money market financial institutions' operations and Nigeria's economy over the period 1960 to 2014, (55 years). Unit root (Stationarity), Cointegration, Error Correction, as well as Granger Causality tests were conducted. The results demonstrate evidence of significant long run relationship between the operations of Nigeria's money market institutions and the economy. The Causality results provide evidences that aggregate bank credits and Nigeria's GDP do promote and re-inforce each other. Consequently, the study recommends that banks should be reasonably stringent in credit allocation to ensure efficient utilization of scarce financial resources in the productive sectors of the economy.

In a related study, Nnamdi and Penu (2017) posit that Nigeria's money market functions to enhance financial intermediation in the emerging economy. The study examines the interrelationship between Nigeria's economic growth and various money market investments. Secondary data were sourced from Central Bank of Nigeria's

Statistical Bulletin over the period of 1960 to 2014 (55 years). Employing Stationarity, Multivariate Regression, Cointegration, Error Correction and Granger Causality tests, the results show valuable evidences to conclude that money market investments relate significantly to Nigeria's economic growth. Further evidences show that they significantly promote and re-inforce themselves in the growth process. Consequently, the study recommends development of increased number of dealing instruments through product research and development. Further recommended is widespread publicity in order to attract more investors to patronize the opportunities that prevail in Nigeria's money market, now and in the future.

Tonye and Andabai (2014) evaluate the nature of interrelationships between financial intermediation and Nigeria's economic growth using Vector Error Correction (VEC) technique. The study, evidences a valuable long run interrelationship between banks' intermediation activities and growth in the output of goods and services in Nigeria's emerging economy. However, the study significantly failed to incorporate credits to the private sector and other intermediation indicators like interest rates for a more comprehensive evaluation.

In another development, Nwakanma et al (2014a) evaluate the empirical linkages which prevail between micro credits and Nigeria's economic growth during the period 1981 to 2011 using the Auto-Regressive Distributive Lag bound model. The results reveal that the long run relationships between the study variables are significant. However, the Granger Causality results reveal no significant causality between the study variables. Consequently, the study concludes that Schumpeterian independence hypothesis prevails. Further, Nnamdi (2015) evaluates the comparative efficacies of Deposit Money Bank (DMBs) credits allocation to private and public sectors in relation to Nigeria's economic growth. The results of the study show a substantial long run relationship subsisting among the variables of study. However, the Granger Causality results indicate no causality in any direction. Consequently, the study recommends stringent measures in the enforcement of loan contractual obligations in a bid to ensure that debtors repay as and when due. The study further recommends that formal financial intermediation institutions should float relatively longer term investments and credit facilities to ensure that funding of economic development is achieved using relatively longer tenured funds instead of short dated funding, even under Central Bank of Nigeria's guarantee.

Murty et al (2012) evaluate the long run impact of bank credits on Ethiopian economic growth. The results on the employment of Johansen's Cointegration technique on the time-series data show that a significant long run relationship suffices between bank credits to the private sector and Ethiopia's economic growth. The study recommends establishment of additional financial intermediaries in Ethiopia and emphasizes that financial intermediation drives the banking services industry to accumulate capital for funding of economic growth in a diversified financial system. In this regard, Nnamdi (2007) stresses that deposit funds are mobilized by deposit money banking institutions through some products that are tenured and appropriately priced. This motivates savers to channel their surplus funds to the available windows to earn interest income. The interraction of these activities, to a large extent, consequently enhances financial intermediation functions of banking institutions in Nigeria.

Nnamdi and Mgbataogu (2015) evaluate the nature of interrelationships between bank credits and deposit composition of Nigeria's deposit money banking institutions over the period, 1981–2013. The employment of Unit Root, Cointegration, Error Correction and Granger Causality tests reveal prevalence of significant long run relationship between credits granted by deposit money banks and various types of deposit liabilities. The results of Error Correction test show a significant coefficient of determination while the Causality results indicate significant uni-derectional Causality which flows from demand deposits to loans and advances. Further, bi-directional causality prevailed between fixed deposits and loans and advances. The study recommends enhanced marketing of bank deposit products in order to enhance their deposit base and ensure improved disbursement of quality credits in order to leverage business activities and increase Nigeria's economic growth rate. In a related study, Cookey (2009) evaluates macro economic determinants of banks' lending to the domestic economy and finds that interest rate is not statistically significant in predicting banks' credit expansion in Nigeria, unlike what prevails in developed economies of Europe and United States of America.

3 MATERIALS AND METHODS

For valuable comprehension of the constituents of this section, this part is broken into the following sub-sections:

3.1 Data and Variables Description:

The time series data employed in this study are made up of the annualized values of Nigeria's gross domestic product (GDP). Others consist of total bank deposit liabilities (TBDL), credits to private sector (CPS) and credits

to government sector (CGS) over the period, 1981 to 2015 (35 years). The data were sourced from the Statistical Bulletin of Central Bank of Nigeria as shown in appendix I. Gross domestic product (GDP) constitutes the market value of all goods and services produced in Nigeria over the period of study. Consequently, they are carried at current market prices since they are historical in nature and also, to be on the same base with banks' operational elements. Total banks' deposit liabilities constitute the aggregate of the values of saving deposits, demand deposits and time deposits of all banks operating in Nigeria during the period of this study. These deposits belong to the customers and the banks utilize them to fund credits extended to private and public sector customers in accordance with Central Bank of Nigeria's classification of same.

Credits to the private sector constitute the total loans and advances disbursed by banks to private sector businesses and enterprises which are owned and operated for the purpose of generating profits. As such, the private businesses are presumed to access these credits under more stringent conditions in accordance with the assertions of Levine and Zervous (1998) and Crowley (2008). Credits to government sector focus on credits to all governmental agencies inclusive of Federal, State and Local Governments in Nigeria.

3.2 Model Specifications:

It is obvious that bank deposit liabilities, credits to the private sector and credits to the public (government) sector are significant components of banks' intermediation functions/activities in a typical economy for the promotion of output of goods and services. In accordance with the above assertion, the functional form of the model is specified as follows:

$$GDP = f(TBDL, CPS, CGS) \quad (1)$$

Where:

GDP = Gross Domestic Product
TBDL = Total Bank Deposit Liabilities
CPS = Credits to Private Sector
CGS = Credits to Government Sector

For the purpose of estimation, the relationship in eqn (1) above is re-written as follows:

$$GDP = \beta_0 + \beta_1 TBDL + \beta_2 CPS + \beta_3 CGS + U_i \quad (2)$$

Where: GDP, TBDL, CPS and CGS take their previous notations and β_0, β_1, β_2 and β_3 are the coefficients of the constant term, total bank deposit liabilities, credits to private sector and credits to government sector respectively, while U_i is the stochastic or error term.

3.3 Apriori Expectations:

Theoretically, an increase in the total deposit liabilities generated by banks through various deposit products would certainly, subject to Central Bank's loan/deposit ratio specifications, increase their capacity to extend credits to both private and public sectors of the economy as well as other non-credit or service related products. Accordingly, a positive relationship is theoretically expected between total deposit liabilities generated by banks and Nigeria's gross domestic product, i.e. $\beta_1 > 0$. Enhanced bank credits to the private sector would theoretically, increase investment in the economy and resultantly promote the businesses in the real sector for increased production of goods and services. Consequently, a positive relationship is expected between GDP and total credit to the private sector, i.e. $\beta_2 > 0$. Further, bank credits to the government sector provide leverage opportunities to government programmes and agencies. These have multiplier effects on economic activities. These credits to government sector resultantly, enhance government spending on critical infrastructure and injection of funds for economic growth. It will accordingly, induce positive changes in gross domestic product, i.e. $\beta_3 > O$. In summary, it is expected that, $\beta_1 > O$; $\beta_2 > O$; $\beta_3 > O$.

3.4 Specification of Analytical Tools and Tests:

Specifically focused at evaluating the interretationships between banks' functional intermediation proxies and Nigeria's economic growth, this section intends to examine the nature of relationships prevalent among the study variables and also, the extent to which the study variables promote and/or re-inforce themselves in the growth process. For better appreciation, this sub-section is further divided as follows;

3.4.1 Stationarity (Unit Root) Tests:

As a pre-requisite for analysis of time series data, stationarity tests are employed to ascertain whether or not unit roots prevail. The prevalence of unit roots implies that the data set is non-stationary and its use for estimation would result in spurious estimates. The decision rule requires that the Augmented Dickey-Fuller (ADF) test statistic for the observed variables in absolute terms, must be higher than the MacKinnon's critical values at 1%, 5% and 10% levels respectively according to Gujarati et al. (2004), Brooks (2009), and Maddala (2007).

3.4.2 Multiple Regression (Ordinary Least Squares):

Multiple regression technique addresses prevailing relationships between explained variable and the associated explanatory variables in the short-run. Sensitivities of the dependent variable to variations in the explanatory variables are approximated using the OLS multiple regression technique. The extent of explained variation is consequently indicated by the co-efficient of determination (R^2) which reveals the extent to which the set of independent variables account for variations in the dependent variable. To evaluate the level of significance, at 95% confidence level, the probabilities of the resulting t-values for the respective coefficients must be at least 0.05. For determination of appropriateness of the line of fit, the F-statistic must at least, be significant at 0.05 level in accordance with Maddala (2007).

3.4.3 Johansen's Co-Integration Tests:

Johansen's Cointegration test is employed for determination of the prevalence of long run relationships among a multivariate set, where the independent variables are at least two. The decision rule is that the Trace statistic must be higher in value than the Critical value at 0.05 level of significance to confirm prevalence of a significant long run relationship among the set of study variables.

3.4.4 Error Correction Estimates:

Error Correction Estimation technique is employed to determine the extent of dynamic deviations due to possibility of short-run distortions in the set of employed variables. Adjustments of the consequential short run deviations to eventual long run equilibrium are essentially crucial because of their implications for policy formulations as observed by Nwakanma and Mgbataogu (2013).

3.4.5 Granger Causality Tests:

The conduct of Granger Causality tests seeks to ascertain the extent to which the variations in Y set of variables are attributable to variations in X set of variables and in addition, whether the inclusion of the lagged values of X is capable of improving the explanation of Y and vice versa. Essentially, Nnamdi and Penu (2017) observe that Granger Causality test seeks to reveal the extent to which changes in a set of paired variables in a time series data set tend to support, reinforce or invigorate each other in the economic growth process. This position aligns with Maddala (2008), Brook (2009) and Gujarati, et al. (2009).

4 PRESENTATION OF RESULTS

The results of the tests are presented in this section as follows:

4.1 Presentation of Stationarity (Unit Root) Tests Results:

The results of the Stationarity tests are presented in table 1 below:

Table 1: Results of Stationarity (Unit Root) Tests:

Differenced Variables	ADF-statistic	MacKinnon's Test Critical Values at			Order of Integration	Prob.
		1%	5%	10%		
D(GDP)	-4.312888	-4.262735	-3.552973	-3.209642	1(1)	0.0418
D(TBDL)	-4.328924	-3.724070	-2.986225	-2.632604	1(1)	0.0098
D(CPS)	-4.509734	-3.711457	-2.981038	-2.603944	1(1)	0.0130
D(CGS)	-3.337532	-3.724070	-2.986225	-2.632604	1(1)	0.0000

D(GDP), D(TBDL), D(CPS) and D(CGS) represent the differenced variants of gross domestic product, total bank deposit liabilities, credits to private sector and credits to government sector.

Source: Extracts from E-views 9.0 Output.

The results of the stationarity tests shown in table 1 above reveal that the absolute values of the ADF test statistic for all the constituent variables are respectively higher than their associated Mackinnon critical values at 1%, 5% and 10% level respectively. In addition, all the variables are found stationary at the first difference and are integrated of order 1(1). Consequently, they are confirmed useful and adequate for employment in further estimations.

4.2 Presentation of Multiple Regression (OLS) Results

The results of multiple regression analysis are presented in table 2 below:

Table 2. Results of the Multiple Regression (OLS) Tests:
Dependent Variable: Gross Domestic Product (GDP).

Variables	Coefficient	Std. Error	t-Statistic	Prob.
C	20900.28	1832.153	11.40750	0.0000
D(TBDL)	16.01805	2.998520	5.341985	0.0000
D(CPS)	-1.095460	3.065990	-0.357294	0.7234
D(CGS)	1.392292	0.878954	1.584033	0.1237
R-squared = 0.765975; Adjusted R-squared = 0.742572 Durbin-Watson stat. = 1.826796 S.E. of regression = 8805.608		F-statistic = 32.73044; Prob(F-statistic) = 0.000000 Mean dependent var = 31178.47 S.D. dependent var = 17355.28		

D(GDP), D(TBDL), D(CPS) and D(CGS) are differenced variants of the study variables.
Source: Extracts from E-views 9.0 Output
The results of the multiple regression test show that in the short-run, total bank deposit liabilities (TBDL) is positively and significantly related to Nigeria's GDP at 0.05 level as indicated by the coefficient of 16.01805 and p-value of 0.0000. This reflects in strong terms, the sensitivity of Nigeria's GDP to variations in banks' intermediation potentials with respect to total bank deposit liabilities. Further, credit to the private sector shows negative and insignificant relationship with GDP while credit to the governent sector is positive but insignificantly related to gross domestic product. The coefficient of Determination (R^2) value 0.765975 implies that variations in these explanatory variables jointly explain 76.59% of the changes in Nigeria's GDP in the short run. On the whole, the estimation has a good line of fit as typified by prob (f-statistic) value of 0.000000. Further, the Durbin-Watson (DW) value of 1.826796 is within tolerable range.

4.3 Presentation of Johansen's Co-Integration Test Results:
Johansen's Cointegration test results for the study variables are presented in table 3 below:

Table 3: Results Of Johansen's Co-Integration Tests:
Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.806893	113.8873	47.85613	0.0000
At most 1 *	0.717756	59.61837	29.79707	0.0000
At most 2 *	0.365726	17.87396	15.49471	0.0215
At most 3	0.082737	2.849899	3.841466	0.0914

Trace test indicates 3 cointegrating eqn(s) at the 0.05 level
* Denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values
Source: Extracts from E-Views 9.0 Output.

The results of Johansen's Co-integration test shown in table 3 above confirm the prevalence of three (3) co-integrating equations. These evidence significant long run relationships among the variables of study.

4.4 Presentation Of Error Correction Estimation Results
The results of Error Correction estimation executed in this study are shown in table 4 below:

TABLE 4: Error Correction Estimation Results

Dependent Variable: D(GDP)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	23042.28	1720.468	13.39303	0.0000
D(TBDL)	5.390277	4.084557	1.319672	0.1976
D(CPS)	7.641560	3.731341	2.047940	0.0500
D(CGS)	2.390552	0.821001	2.911754	0.0070
ECM(-1)	**-0.983229**	0.294380	3.339998	0.0024

R-squared = 0.830703; F-statistic = 34.34737; Durbin-Watson stat = 1.847199;
Adjusted R-squared = 0.806517; Prob(F-statistic) = 0.000000

D(GDP), D(TBDL), D(CPS), D(CGS) are the differenced variants of the variables under study.

Source: Extracts from E-views 9.0 Output.

The results of Error Correction Estimation presented in table 4 above reveal that changes in the explanatory variables jointly account for 83.07% of the variations in Nigeria's GDP in the long run after adjustments for shocks in the system. The ECM coefficient of 0.983229 in absolute terms, suggests the speed of adjustment of Nigeria's GDP back to equilibrium after short run distortions in the study's explanatory variables. Further, the coefficients of 7.641560 and 2.390552 with p-values of 0.0500 and 0.007 respectively indicate significant long run sensitivities of Nigeria's GDP to variations in credits to private and government sectors in their intermediation functions in Nigeria. However, total bank deposit liabilities reflect a positive but insignificant coefficient of 5.390277 with p-value of 0.1976 in the long run. On the whole, the probability value of 0.000000 for the F-statistic indicates a good line of fit even in the long run, while the Durbin-Watson value of 1.847199 remains within acceptable range.

4.5 Presentation of Pair-Wise Granger Causality Results

The results of the Pair-Wise Granger Causality tests are shown in table 5 below:

Table 5: Results Of Pair-Wise Granger Causality Tests

Null Hypothesis:	Obs	F-Statistic	Prob.
D(TBDL) does not Granger cause D(GDP)	32	2.58604	0.0939
D(GDP) does not Granger cause D(TBDL)		8.93150	0.0011
D(CPS) does not Granger cause D(GDP)	32	3.00107	0.0665
D(GDP) does not Granger cause D(CPS)		7.41760	0.0027
D(CGS) does not Granger cause D(GDP)	32	1.93639	0.1637
D(GDP) does not Granger cause D(CGS)		2.36721	0.1129

D(GDP), D(TBDL), D(CPS), D(CGS) represent the differenced variants of the study variables.

Source: Extracts from E-views 9.0 Output.

The results of Pair-Wise Granger Causality test indicated in table 5 above show that uni-directional causalities prevail between gross domestic product and each of total bank deposit liabilities and credit to private sector with causality flowing from GDP to total bank deposit liabilities and credit to private sector respectively. Further, no causality is observed between GDP and credit to government sector as they seem to be operating independently.

5 DISCUSSIONS, CONCLUSIONS AND POLICY RECOMMENDATIONS

The results of this study provide evidence of improvements in the long run. The short run evaluation as shown in table 2 reveals that only bank deposit liabilities seem to have a significant influence on Nigeria's GDP, while credits to both private and public sectors of the economy failed the significance test. This outcome could probably be attributed to the high importance of service and other non-credit related banking products/functions offered by banks which inadvertently, influence economic growth. However, the long run analysis shown in tables 3 and 4 depict improved results. The influence of the intermediation functions of financial institutions becomes more pronounced in the error correction estimates which though in conflict with the short run results

(OLS) shown in table 2, still goes further to confirm that Nigeria's GDP is significantly sensitive to leverages provided by banks to both private and public sectors of the economy in the long run.

It could be realised that the Nigerian government is obviously a significant spender of funds with respect to both capital and recurrent outlays all of which, provide multiplier effects on Nigeria's economy. The sensitivity of Nigeria's economy to changes in bank credits to the private sector which stands at 7.641560 is significantly higher than 2.390552 associated with changes in bank credits to the government sector. This goes a long way to confirm that bank credits to the private sector are more productive than credits to the government sector. It justifies the private sector as a more efficient user of funds compared to the government sector, probably because private sector bank credits are disbursed under more stringent conditions. Further, it agrees with the assertions of Levine and Zervous (1998) as well as Crowley (2008).

Further, the Granger Causality results significantly allude to the fact that intermediation functions of banks in Nigeria, where they significantly interface with the economy, are highly dependent on the economy. To this extent, both deposit mobilization and banks' credits to the private sector tend to depend on expansions in business activities in the Nigerian economy in place of promoting same. These results however, represent an obvious improvement over those of earlier studies by Nwakanma et al (2014(a); 2014(b)) as well as Nnamdi (2015) where the prevailing relationships were typically of schumpeterian independent nature. In essence, financial intermediation functions, efficiency and capacity of Nigerian banks are on the increase. On the whole, these results might have emanated from greater adoption of market oriented banking policies since 2005/2006 banking sector consolidation in Nigeria whereby, banking operations thereafter, do not significantly obviate market discipline.

In the light of the above, it is concluded that intermediation functions, potentials and capacities of Nigerian banks have significantly improved. Consequently, it is recommended that;
(i) The government should sustain all market oriented banking policies so far adopted Post-2005/06 Banking Consolidation Programme in Nigeria for the purpose of banking operational efficiency and (ii), Credit contracts should be well enforced in order to improve the credit culture of Nigerians and accelerate recovery of non-performing credits which are still stagnating the capacity of existing banks to engage in further disbursement of credit facilities to both the private and public sectors of the Nigerian economy.

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Appendix I

Nigeria's Gross Domestic Product (GDP), Total Bank Deposit Liabilities (TBDL), Credit to Private Sector (CPS) and Credit to Government Sector (CGS) for the period 1981-2015 (N'Billion)

YEAR	GDP	TBDL	CPS	CGS
1981	15258.00434	11.3553	8.57005	10.5924
1982	14985.07832	13.0745	10.66834	11.6371
1983	13849.72517	14.7487	11.66804	13.9589
1984	13779.25549	16.3032	12.46293	17.5446
1985	14953.91305	17.9372	13.07034	19.0734
1986	15237.98729	19.1077	15.24745	13.2405
1987	15263.92911	24.7236	21.08299	16.3912
1988	16215.37093	30.5952	27.32642	16.1281
1989	17294.67594	28.2829	30.40322	12.4325
1990	19305.63316	40.9058	33.5477	17.5209
1991	19199.06032	56.9492	41.35246	15.632
1992	19620.19034	106.6974	58.12295	15.9529
1993	19927.99325	152.4403	127.1177	40.1642
1994	19979.12344	184.6661	143.4242	49.8862
1995	20353.20225	232.7146	180.0048	32.257
1996	21177.92091	266.8332	238.5966	59.633
1997	21789.09784	315.1465	316.2071	50.815
1998	22332.8669	358.7877	351.9562	58.7886
1999	22449.40972	551.2116	431.1684	199.4899
2000	23688.28033	822.5375	530.3733	294.4492
2001	25267.54202	1089.558	764.9615	243.8854
2002	28957.71024	1285.394	930.4939	493.6668
2003	31709.44739	1523.694	1096.536	407.2579
2004	35020.54908	1847.989	1421.664	642.5256
2005	37474.94916	2156.49	1838.39	694.1933
2006	39995.50455	3440.806	2290.618	1083.001
2007	42922.40793	5235.968	3680.09	2056.98
2008	46012.51531	8353.925	6941.383	1875.734
2009	49856.09908	9622.356	9147.417	12948.67
2010	54612.26418	10252.12	10157.02	13134.79
2011	57511.04177	12670.78	10660.07	15077.85
2012	59929.89304	15204.86	14649.28	16373.49
2013	63218.72173	17081.29	15751.84	18088.23
2014	67152.78584	19699.92	17129.68	18791.33
2015	69023.92994	21355.45	18674.15	20132.18

Source: Central Bank of Nigeria, Statistical Bulletin, 2010 and 2016.