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The Impact of Bank Credit on the Growth of Nigerian Economy: A Co Integration Approach

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Abstract
This work investigated the impact of bank credit on the growth of Nigerian economy for the period of 1986-2012. The data was sourced from CBN statistical bulletin. To determine the impact of the independent variables on the dependent OLS method of estimation was employed. ADF was used to determine the order of integration, and all the variables were found to be integrated of same order one I(1). The Johansen and Juselius co-integration test was employed and the result showed that there is at most one co-integrating equation in the model, implying that there is a long run relationship between the variables in the model. The result of the OLS regression showed that there is a negative and significant relationship between GDP and TBCPS in the long run. M2 which was used as control variable has a positive and significant impact on GDP at the long run. The ECM showed that 24.03% of the disequilibrium will be corrected yearly. The short run dynamics of the variables indicates that TBCPS also have a negative and insignificant impact on GDP at the short-run. The result of the granger causality test reviles that causation runs from GDP to TBCPS and not the other way round, a case of unidirectional causality. The result also showed bidirectional causality between TBCPS and M2. And based on the forgoing it was recommended that CBN should lower the lending rate by manipulating the monetary policy rate, direct credit control should also be adopted by the CBN in other to improve the contribution of the informal sector. The government should improve on the infrastructural facilities in the country at the same time improve the level of security in this country by tackling the issue of Boko Haram sect and Militancy in Niger Delta.
Key words: Bank Credit, Economic Growth, Co-integration.

1. Introduction

Every economy is made up of different economic agents contending for scarce resources available within the economy with a view to achieve their goals. The need of each of the economic agent within the economy varies in accordance with their functions. To meet with these pressing needs however, each of the economic agents contends for scarce financial resources available within the financial system. For instance, co-operate organizations need fund to procure machineries and equipments needed for the production of goods and services, Farmers obtain credit to purchase seeds, insecticides, fertilizers and erecting of various kinds of farm buildings. Government bodies source for credit to enable them meet with various kinks of recurrent and capital expenditures. Individuals and families on the other hand, take credit which enable them pay for goods and services (Adeniyi 2006).

However, to provide these economic agents with their needed credit, various institutions that render financial services comes to play. These institutions otherwise known as financial institutions have banks as a major player among them. This banking institution is responsible for financial intermediation in the Nigerian financial system, which enable the channel funds from surplus unit of the economy to the deficit unit of the same economy, thereby converting deposit to credit (loan). According to Ademu (2006) in Nwanyanwu (2010), the provision of credit with sufficient consideration to growth potential in the sector as well as price system in the economy is one of the ways to generate employment opportunities and by so doing contributing to the growth of the economy at large. This can be made possible because, bank credit contribute immensely to the expansion of business enterprises, increases scale of production which results to growth in the overall economy.

Therefore, the contribution of bank credit to the growth of the informal sector of the Nigerian economy cannot be overemphasized considering the contribution of this sector to the overall growth of the Nigerian economy. Over 40% of Nigerian populations are employed in the informal sector which has enormous growth potential. And so, the availability of credit to these economic drivers will help to harness their growth potential which will in turn contribute meaningfully to the advancement of the economy. On the same note, the activities of the formal sector of the economy have improved tremendously with the help of bank credit available to them. The sector unlike the informal sector accesses credit easier, because their structure enables them to easily meet with most conditions for bank credit which places them ahead of the informal sector in the credit market. The increase in the contribution of formal sector to the growth of the Nigerian economy is an indication that the sector has improved and this can be attributed to bank credit available to them (Nwanyanwu 2010). It is obvious from the foregoing that bank credit is a vital macroeconomic tool whose contribution to economic growth in Nigeria cannot be underestimated. Reacting to this, Ademu (2006) highlighting the role of bank credit explained that it

can be used to prevent an economic activity from total collapse in the event of natural disaster such as flood, drought, disease or fire. To him, credit can help to revive the economy that suffered such set back in their economic activities.

The important of bank credit to the Nigerian economy has led to sustained increase of credit to productive sectors of the Nigerian economy. Central Bank of Nigeria Annual Report (2010), noted that credit to the core private sector by the Deposit Money Banks grew by 10.26% between 2009 to 2010. Outstanding credit to agriculture, solid minerals, exports and manufacturing in 2010 stood at 1.7, 15.3, 0.6 and 12.8 per cent, respectively. Credit flows to the core private sector in 2010 amounted to N10,140,947 million. Adekanye (1986) observed that in making credit available, banks are rendering a great social service, because through their actions, production is increased, capital investment are expanded and a higher standard of living is realized.

It is against this background that this paper seeks to examine the extent to which bank credit has impacted on the growth of Nigeria economy, with a particular reference to its long term effect. To achieve the objective of this paper, this work will be structured as follows: immediately following this brief introduction is section two which will contain the review of related literature. Section three will take a look at the methodology that will be adopted for the analysis, the forth section will contain the analysis and interpretation of the result while section five will provide the conclusions and policy recommendations.

2. Review of Related Literature

The role of bank credit to the growth of the economy has attracted the attention of many researchers in developed and developing economies of the world. According to Hussain (2004) banking system plays an important role in financial sector and accounts for 95% of this sector and demonstrated a positive relationship with economic growth of Pakistan.

Using two-stage regression model Dey & Flaherty (2005) examine the impact of bank credit and stock market liquidity on GDP growth. They found that bank credit and stock market liquidity are not consistent determinants of GDP growth. Banking development is a significant determinant of GDP growth, while turnover is not. Cappiello *et al* (2010) in their study of European Area found that in contrast to recent findings for the US, the supply of credit, both in terms of volumes and in terms of credit standards applied on loans to enterprises, have significant effects on real economic activity. In other words, a change in loan growth has a positive and statistically significant effect on GDP.

Muhsin and Eric (2000) carried out a study on Turkish economy; it was found that when bank deposit, private sector credit or domestic credit ratios are alternatively used as proxies for financial development; causality runs from economic growth to financial development. Their conclusion was that growth seems to lead financial sector development. Koivu (2002) analysed the finance-growth nexus using a fixed-effects panel model and unbalanced panel data from 25 transition countries during the period 1993-2000. His finding indicates that: the interest rate margin was significantly and negatively related to economic growth, a rise in the amount of credit did not seem to accelerate economic growth. Based on the findings, he concluded that the growth in credit has not always been sustainable and in some cases it may have led to a decline in growth rates.

Chang *et al* (2008) used branch panel data to examine bank fund reallocation and economic growth in China and found a positive association between bank deposits and growth. Vazakidis & Adamopoulos (2009) employed a Vector Error Correction Model (VECM) to investigate the relationship between credit market development and economic growth for Italy for the period 1965-2007 taking into account the effect of inflation rate on credit market development. The empirical results indicated that economic growth had a positive effect on credit market development, while inflation rate had a negative effect.

Using a Vector Autoregression (VAR) approach, Shan & Jianhong (2006) examined the impact of financial development on economic growth in China. They found that financial development comes as the second force (after the contribution from labor input) in leading economic growth in China. Their study supports the view in the literature that financial development and economic growth exhibit a two-way causality and hence is against the so-called "finance-led growth" hypothesis.

By employing a panel dataset covering 29 Chinese provinces over the period of 1990-2001, Liang (2007) employed the Generalized Method of Moment (GMM) technique to empirically examine the relationship between banking sector development and economic growth for the case of China. Empirical results showed that, without an effective and well-developed legal system, banking sector development only partially contributed to China‟s economic growth.

Mishra *et al* (2009**)** examined the direction of causality that runs between credit market development and the economic growth in India for the period 1980 to 2008. In the VAR framework the application of Granger Causality Test provided the evidence in support of the fact that credit market development spurs economic growth. The empirical investigation indicated a positive effect of economic growth on credit market development of the country.

Mukhopadhyay and Pradhan (2010) recently examined the causal relationship between financial development

and economic growth of 7 Asian developing countries (Thailand, Indonesia, Malaysia, the Philippines, China, India and Singapore) during the last 30 years, using multivariate VAR model. The study concluded that no general consensus can be made about the finance-growth relationship in the context of developing countries.

Examining the Nigerian experience, Fadare (2004) empirically identifies the effect of banking sector reforms on economic growth in Nigeria by using the data 1999 - 2009. Variables used for the study are interest rate margins, parallel market premiums, total banking sector credit to the private sector, inflation rate, inflation rate lagged by one year, size of banking sector capital and cash reserve ratios. Results indicate that the relationship between economic growth and other exogenous variables of interest rate margins, parallel market premiums, total banking sector credit to the private sector, inflation rate and cash reserve ratio show the negative and insignificant.

Dele (2007) investigates the banking reform in Nigeria of the perspective of Soludo's by using the data of 40 commercial and merchants bank variables used for the study are lending, interest rate and the foreign exchange policy. The study uses the descriptive statistics to test the hypothesis Hence results indicates that recapitalization has shown significance to reform the banking services and to the growth of economy as whole. Hence the study suggested that a procedure to implement in which interest rate should be operate through monetary policy in order to move the GDP growth continuously toward the unique price and single market for local and international markets.

Kayode et. al (2010) investigated the effect of bank lending and economic growth on the manufacturing output in Nigeria. Using the times series data which covered a period of 36 years (1973 to 2009), the technique he used for analysis the model is the co integration and vector error correction model (VECM) techniques. The empirical outcomes of the study show that production volume utilize in manufacturing and bank rate of lending loans significantly affect manufacturing output in Nigeria. However, at the other hand relationship between manufacturing output and economic growth was found to be significant resulting to a success and progress in the country.

Akpansung & Babalola (2009), examined the impact of bank credit on the growth of Nigerian economy for the period of 1970-2008, using two-stage least square and granger causality test, the result indicates that bank credit has a negative impact on the growth of Nigerian economy with causation running from GDP to bank credit.

Nwanyanwu (2010) employed OLS econometrics techniques in determining the impact of bank credit on the growth of Nigerian economy, she found that bank credit positively and significantly impact on the growth of Nigerian economy.

Based on the forgoing, it is obvious that the debate on this subject matter is far from conclusion as there are varying opinions as to the impact of Bank credit on the growth of GDP both in Nigerian and in other countries of the world. The literature in this subject area in Nigerian appears to be very scanty. And apart from that no recent work has look at the impact of bank credit on Nigeria economic growth with consideration of recent economic policies introduced by the monetary authorities up till 2012. This is the gap that this work seeks to fill.

3. Model Specification

This study seeks to determine the impact of bank credit on economic growth in Nigeria for a period of 1986-2012. And to achieve this, a log form of OLS regression model will be adopted for this work. The choice of introducing log in the model is to enable us improve on the linierity of the model and also to avoid heteroskedasticity.

$GDP = f(TBCPS, M2)$……(1)

Explicitly the above equation can be stated thus:

$GDP = ß_0 + ß_1TBCPS + ß_2M2 + Ut$……(2)

The log form of the model is stated as follows.

$Log(GDP) = ß_0 + ß_1log(TBCPS) + ß_2log(M2) + Ut$ ……(3)

Where

GDP = Gross Domestic Product

TBCPS = Total Bank Credit to Private Sector

M2 = Aggregate Money Supply

Theoretically the coefficient will take the following outcome:

$ß_1>0, ß_2>0$

3.1 Tests for Best Regression

To determine if the above model is the best model to explain this relationship, the following condition must be met:

1. R^2 must be high at least above 60%
2. There will be no serial autocorrelation in the model.
3. The residual must be normally distributed.
4. There will be no heteroskedasticity in the model, in other words the model must be homoskedastic.

When all this condition is met, the model will be regarded as the best regression model to explain the relationship between GDP and TBCPS in Nigeria.

3.2 Estimation Technique

3.2.1 UNIT ROOT TEST

The first step involves testing the order of integration of the individual series under consideration. Researchers have developed several procedures for the test of order of integration. The most popular ones are Augmented Dickey-Fuller (ADF) test due to Dickey and Fuller (1979, 1981), and the Phillip-Perron (PP) due to Phillips (1987) and Phillips and Perron (1988). Augmented Dickey-Fuller test relies on rejecting a null hypothesis of unit root (the series are non-stationary) in favor of the alternative hypotheses of stationarity. The tests are conducted with and without a deterministic trend (t) for each of the series. The general form of ADF test is estimated by the following equation:

$$\Delta y_t = \alpha^0 + \alpha^1 y^{t-1} + \sum_{i=1}^{n} \alpha \Delta y_i + \varepsilon^t \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (4)$$

$$\Delta y_t = \alpha_0 + \alpha_1 y_{t-1} + \sum_{i=1}^{n} \alpha_1 \Delta y_i + \delta_t + \varepsilon_t \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (5)$$

Where:

Y is a time series, t is a linear time trend, Δ is the first difference operator, α_0 is a constant, n is the optimum number of lags in the dependent variable and ε is the random error term; the difference between equation (4) and (5) is that the first equation included just a drift. However, the second equation includes both drift and linear time trend.

3.2.2 CO-INTEGRATION TEST

The second step in this time series analysis is to test for the presence or otherwise of co-integration between the series of same order of integration through forming a co-integration equation. The basic idea behind co-integration is that if in the long-run, two or more series move closely together, even though the series themselves are trended, the difference between them is constant. It is possible to regard these series as defining a long-run equilibrium relationship, as the difference between them is stationary (Hall and Henry, 1989). A lack of co-integration suggests that such variables have no long-run relationship: in principal they can wander arbitrarily far away from each other (Dickey et. al., 1991). We employ the maximum-likelihood test procedure established by Johansen and Juselius (1990) and Johansen (1991). Specifically, if Yt is a vector of n stochastic variables, then there exists a p-lag vector auto regression with Gaussian errors of the following form: Johansen's methodology takes its starting point in the Vector Autoregression (VAR) of order P given by

$$y_t = \mu + \Delta_1 y_{t-1} + - - - - + \Delta \rho y_{t-1} + \varepsilon_t \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (6)$$

Where

Yt is an nx1 vector of variables that are integrated of order commonly denoted (1) and εt is an nx1 vector of innovations.

This VAR can be rewritten as

$$\Delta y_t = \mu + \eta_{yt-1} + \sum_{i-1}^{p-1} \tau_i \Delta y_{t-1} + \varepsilon_t \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (7)$$

Where

$$\Pi = \sum_{i-1}^{p} A_{i-1} \quad and \ \tau_i = - \sum_{j=i+1}^{p} Aj$$

To determine the number of co-integration vectors, Johansen (1988, 1989) and Johansen and Juselius (1990) suggested two statistic test, the first one is the trace test (λ trace). It tests the null hypothesis that the number of distinct co integrating vector is less than or equal to q against a general unrestricted alternatives q = r. the test calculated as follows:

$$\lambda trace(r) = -T \sum_{i=r+1} \text{In}\,(1 - \lambda_i)$$

where

T is the number of usable observations, and the λ1,s are the estimated eigenvalue from the matrix.

3.2.3 Error Correction Mechanism

After testing for the Co integration relationship and co-integration is proven to exist between the variables, then the third step will require the construction of an ECM to model the dynamics of the relationship. The reason

behind ECM is to determine the speed of adjustment from the short-run disequilibrium to the long-run equilibrium state. The greater the co-efficient of ECM, the higher the speed of adjustment from the short-run disequilibrium to long-run equilibrium.

$$GDP_t = \alpha_0 + \sum_{i=1}^{n} \alpha_{1t} GDP_{t-1} + \sum_{i=1}^{p} \alpha_{2t}\, \text{TBCPS}_{t-1} + \sum_{i=1}^{m} \alpha_{3t}\, M2_{t-1} + \delta_1 ECM_{t-1} + \varepsilon_t \ldots\ldots\ldots (8)$$

Where:

GDP_t = Gross Domestic Product at time t

The term ECT_{t-1} is the error correction term derived from the long-run co-integrating relationship in the equation. We note that the estimate δ1 can be interpreted as the speed of adjustment from short-run disequilibrium to long-run equilibrium. According to Johansen and Juselius (1987), the existence of co-integration implies the existence of the causality relation between the variables (GDP and TBCPS, M2).

3.2.4 Granger Causality Test

The granger causality test is conducted with a view to determine the direction of causality between the variables under study. The existence of co-integration among the variables implies the existence of causal relationship between the variables, but this does not tell us the direction of this causality hence the need for granger causality test to be conducted to enable us determine the direction of causality that exist among the variables. The following are the model for granger causality test.

$$GDP_t = \alpha_0 + \sum_{i=1}^{n} \alpha_{1t} GDP_{t-1} + \sum_{i=1}^{p} \alpha_{2t}\, \text{TBCPS}_{t-1} + \sum_{i=1}^{m} \alpha_{3t}\, M2_{t-1} + \varepsilon_{1t} \ldots\ldots\ldots\ldots\ldots\ldots\ldots (9)$$

$$\text{TBCPS}_t = \beta_0 + \sum_{i=1}^{n} \beta_{1t} \text{TBCPS}_{t-1} + \sum_{i=1}^{p} \beta_{2t}\, GDP_{t-1} + \sum_{i=1}^{m} \beta_{3t}\, M2_{t-1} + \varepsilon_{2t} \ldots\ldots\ldots\ldots\ldots\ldots (10)$$

$$M2_t = \delta_0 + \sum_{i=1}^{n} \delta_{1t} M2_{t-1} + \sum_{i=1}^{p} \delta_{2t}\, \text{TBCPS}_{t-1} + \sum_{i=1}^{m} \delta_{3t}\, GDP_{t-1} + \varepsilon_{3t} \ldots\ldots\ldots\ldots\ldots\ldots (11)$$

These are the parameters

$$(\alpha_{1t}, \alpha_{2t}, \alpha_{3t}\, \beta_{1t}, \beta_{2t}, \beta_{3t}, \delta_{1t}, \delta_{2t}, \delta_{3t})$$

These tests enable us to determine the direction of causality existing between the variables under review. It reveals the relationship of no causality, unidirectional causality and bidirectional or feedback causality between the variables under consideration. If the parameters of the lagged variables in equations 9, 10 and 11; is statistically significant, it implies that there is a causality relationship between the variables under study. But if the parameters of the lagged variables in equations 9, 10 and 11; is not statistically significant, it means that there is no causal relationship between the variables under study.

4. Data Analysis and Interpretation

In this section we presented the analysis and interpretation of the result of econometrics analysis adopted in this work. The first step in this analysis was a test for stationarity conducted using ADF test. The result of the ADF is shown bellow.

Table 4.1 ADF result at Level

Variables	ADF Test Statistic	1%	5%	10%	Lag	Order of Integration
GDP	-2.147175	-3.7204	-2.9850	-2.6318	1	Non-statinary
TBCPS	0.016253	-3.7204	-2.9850	-2.6318	1	Non-statinary
M2	-0.904397	-3.7204	-2.9850	-2.6318	2	Non-statinary

Source: Researchers' E-view result

The result in table 4.1 above reviles that all the variables in the model are non-stationary at level. Based on this we difference the variables to see their outcome.

Table 4.2 ADF result at first difference

Variables	ADF Test Statistic	1%	5%	10%	Lag	Order of Integration
GDP	-3.176048	-3.7343	-2.9907	-2.6348	1	I(1)
TBCPS	-4.003735	-3.7343	-2.9907	-2.6348	1	I(1)
M2	-3.468973	-3.7343	-2.9907	-2.6348	2	I(1)

Source: researchers E-view result

From the result of ADF test shown in table 4.2 above, it indicates that all the variables are integrated of same

order one i.e I(1). In other words the result shows that GDP, TBCPS and M2 are stationary at 5% level of significance. And so, having established stationarity among the variable, we proceed to co-integration with a view to determining the number of co-integrating equation in the model.

Table 4.3 Result of Johanson Co-integration Test

Eigenvalue	Likelihood ratio	5% critical value	1% critical value	Hypothesized No. of CE(s)
0.971925	102.3270	29.68	35.65	None **
0.392655	13.00484	15.41	20.04	At most 1
0.021306	0.538399	3.76	6.65	At most 2

Source: Researchers Eviwe result.

The result of the co-integration analysis from table 4.3 above indicates that at most one co-integrating equation exist in the model at 5% level of significance. This however implies that there is a long-run relationship between GDP, TBCPS and M2 in the model. Having established co-integration in the model we move on to estimate the Error Correction Model (ECM) which will enable us to see the short run dynamics of the model. The ECM will identify the speed of adjustment from short-run disequilibrium to long run equilibrium.

Table 4.4 THE RESULT OF SHORT RUN DYNAMICS OF THE MODEL

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.478019	0.733673	3.377552	0.0034
LOG(TBCPS)	-0.385550	0.378029	-1.019895	0.3213
LOG(M2)	1.305343	0.409763	3.185604	0.0051
ECM(-1)	-0.240361	0.606990	-0.395989	0.6968

Source: researchers E-views result.

The result of ECM shown in table 4.4 above reviles that in the short-run total bank credit to private sector of the economy has a negative and insignificant relationship with economic growth in Nigeria. Money supply which was used as a control variable was seen to have a positive and significant impact with economic growth in Nigeria. The coefficient of the ECM(-1) indicates that 24.03% of the disequilibrium in the model will be corrected annually. In other words, 24.03% of the disequilibrium in the short run will be corrected in the long run. The insignificant result in the ECM indicates that the speed of adjustment will be slow.

Table 4.5 THE RESULT OF THE LONG RUN REGRESSION MODEL

Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
C	1.223061	0.457006	2.676250	0.0132
LOG(TBCPS)	-0.784358	0.330416	-2.373848	0.0260
LOG(M2)	1.781338	0.345961	5.148950	0.0000
R-squared	0.984878	Durbin-Watson stat	1.006871	
F-statistic	781.5365	Prob(F-statistic)	0.000000	

Source: researchers E-views result

The result of the long-run model shown in table 4.5 above reviles that the coefficient of TBCPS is (-0.784358) with a probability value of 0.0260, which is less than 0.05 meaning that bank credit in the long run has a negative and significant impact on the growth of Nigerian economy. This result however is in line with the findings of Aniekan and Babalola (2009), who also found a negative relationship between private sector credit and economic growth in Nigeria for the period of 1970-2008. The Central Bank of Nigeria (2009) also recently noted that the flow of credit to the priority sectors did not meet the prescribed targets and failed to impact positively on investment, output and domestic price level. On the other hand the coefficient of M2 which was used as a control variable in the model is 1.781338 with a probability value of 0.000 which is less than 0.005 indicating that M2 has a positive and significant impact on the growth of Nigerian economy for the period under review.

The result in table 4.5 also shows R^2 value is 0.984878, which means that 98.49% of the variation in GDP is explained in the model leaving only less than 2% to the error term. This also means that the line of best fit was highly fitted. This shows that this model is the best model to explain the relationship between the variable under consideration. Durbin-Watson statistics value of 1.006817 shows the likely presence of autocorrelation in the model. The result of F-stat is (781.5365) and the probability of F-stat is 0.0000 which implies that the overall regression is statistically significant. This also means that all the independent variable taking together will impact significantly on the growth of Nigerian economy.

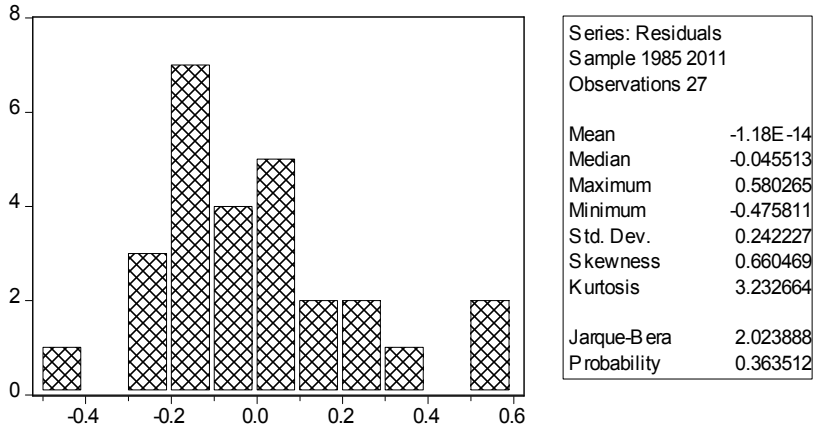
4.1 NORMALITY TEST

At this point we conducted some test to determine if the regression model is the best regression to explain the relationship between these variables. We start with test for normality by stating the null and the alterative hypothesis as follows:

Ho= the residual is normally distributed

H1= the residual is not normally distributed
Decision rule
If the probability value is less than 0.05 reject Ho otherwise accept Ho.

TABLE 4.6 RESULT OF THE NORMALITY TEST



Source: Researchers E-views result

The result of the normality test shows that the probability value is 0.383512 which is greater than 0.05. Based on this however we accept Ho and reject H1 and conclude that the residual is normally distributed and this result is desirable.

4.2 SERIAL CORRELATION

Ho= there is no serial correlation in the model
H1= there is serial correlation in the model
Decision rule
If the probability value is less than 0.05 reject Ho otherwise accept Ho

Table 4.7 RESULT OF TEST FOR SERIAL CORRELATION

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	2.202406	Probability	0.096739
Obs*R-squared	9.906855	Probability	0.077918

Source: Researchers E-view result

The result of the serial correlation shows that the probability value is 0.077918 which is greater than 0.05 implying that we accept Ho and reject H1 and conclude that there is no serial correlation in the model.

4.3 HETEROSKEDASTICITY TEST

Ho= there is no heteroskedasticity in the model
H1 = there is heteroskedasticity in the model.

TABLE 4.8 White Heteroskedasticity Test:

F-statistic	1.087272	Probability	0.387081
Obs*R-squared	4.456527	Probability	0.347733

Source: researcher E-view result

The result of the heteroskedasticity test indicates the acceptance of Ho at 5% level of significance meaning that there is no heteroskedasticity in the model instead the model is homoskedastic. And based on this we conclude that this is the best model to explain the relationship between these variables included in the model.

TABLE 4.9 THE RESULT OF GRANGER CAUSALITY TEST

Null Hypothesis:	Obs	F-Statistic	Probability
GDP does not Granger Cause TBCPS	25	19.8735	1.8E-05
TBCPS does not Granger Cause GDP		0.00437	0.99564
M2 does not Granger Cause TBCPS	25	11.1368	0.00056
TBCPS does not Granger Cause M2		13.6783	0.00018
M2 does not Granger Cause GDP	25	0.60031	0.55823
GDP does not Granger Cause M2		15.6272	8.2E-05

Source: Researchers E-view result

The result of the granger causality test as shown in table 4.9 indicates that GDP granger causes TBCPS this corroborates the findings of Aniekan and Babalola (2009) who also found causation running from GDP to private sector credit. The result also shows a case of unidirectional causality with causation from GDP to TBCPS

and not the other way round as found by Aurangzeb (2012) in the case of Pakistan economy. The result also reviles that M2 granger causes TBCPS and at the same time TBCPS granger causes M2, which indicates a case of bidirectional causality between M2 and TBCPS. On the same note, the result reviles that GDP granger causes M2.

5. Conclusions and Recommendations

In this work, effort was made to determine the impact of bank credit on the growth of Nigerian economy with a particular reference to long run effect which was determined using co-integration approach. The result of the findings indicates that bank credit has a negative and significant effect on the growth of Nigerian economy. This finding corroborated the findings of Aniekan and Babalola (2009) were they found private sector credit to negatively and significantly impacting on the growth of Nigerian economy. This is so because, the condition precedence for accessing credit in Nigeria banking industry most of the time are not in favor of the most active sector of the economy due to their informal nature. The informal sector of the economy which arguably is the most effective sector of the Nigerian economy most times don't have attractive collateral that will enable them access bank credit thereby retarding their contribution to the overall growth of the economy. The high rate of interest charged on credit by banks erodes the net returns on the investment leaving the enterprise with noting and in most cases worse than they were before they accessed the credit. This however reduces their contribution to the growth of Nigerian economy. On the other hand, hash economic environment exacerbated by poor infrastructural facilities (lack of good roads, poor electricity supply, and insecurity) has resulted to poor performance of credit which invariably impact negatively on the growth of Nigerian economy. Against this background, we recommend that Central Bank of Nigeria (CBN) should step in with measures to regulate lending rate by maintaining the monetary policy rate at a level low enough to bring down the rate at which deposit money banks lend to their customers. The CBN should also adopt direct credit control policy with a view to favor the informal sector of the Nigerian economy. Government on the other hand should improve the infrastructural facilities in the country as well as promote peace in all the geo-political zone of the country in other to improve the security state of the nation.

REFERENCE

Adekanye, F. (1986). *Elements of Banking in Nigeria*, Lagos: F and A Publishers.

Ademu, W. A. (2006). "The Informal Sector and Employment Generation in Nigeria: The Role of Credit." *Employment Generation in Nigeria.* Selected Papers for the 2006 Annual Conference of the Nigerian Economic Society, in Calabar, august 22nd to 24th.

Adeniyi, O.M. (2006). *Bank Credit and Economic Development in Nigeria*: A Case Study of Deposit Money Banks. Jos: University of Jos

Akpansung & Babalola (2009). "Banking Sector Credit and Economic Growth in Nigeria: An Empirical Investigation"; *CBN Journal of Applied Statistics* Vol. 2 No.2

Cappiello, L., A. Kadareja, C.K. Sørensen and M. Protopapa, (2010).**"**Do Bank Loans and Credit Standards have an effect on Output? A Panel Approach for the Euro Area", *European Central Bank Working Paper Series*, No 1150 / January

Chang, Philip C.; Jia, Chunxin; Wang, Zhicheng (2010), "Bank fund reallocation and economic growth: Evidence from China", *Science direct*, 34(11):2753-2766.

Central Bank of Nigeria (2009), *CBN Briefs,* 2008-2009 Edition, Research Department, CBN, Abuja

Dey, Malay K. & Flaherty, Susan (2005), "Stock Exchange Liquidity, Bank Credit, and Economic Growth". Paper presented at the Max Fry Conference on Finance and Development, University of Birmingham, The Business School University House, Birmingham B15 2TT.

Fadare, S. O. (2010). Recent Banking Sector Reforms and Economic Growth in Nigeria. *Middle Eastern Finance and Economics* .

Koivu, Tuuli (2002), "Do efficient banking sectors accelerate economic growth in transition countries?" Bank of Finland, Institute for Economies in Transition, *BOFIT*

Liang, Zhicheng (2007). "Banking Sector Development and Economic Growth in China: Why Does the Quality of Legal Institutions Matter?" Paper Prepared for the International Conference on *Opening and Innovation on Financial Emerging Markets*, held in Beijing 27-28 (March)

Mishra, P. K.; Das, K. B. & Pradhan, B. B. (2009). "Credit Market Development and Economic Growth in India", *Middle Eastern Finance and Economics*, ISSN: 1450-2889, Issue 5

Muhsin, K. & Eric, J. P. (2000). "Financial Development and Economic Growth in Turkey: Further Evidence on the Causality Issue" Centre for International, Financial and Economics Research Department of Economics Loughborough University

Mukhopadhyay, B., and Pradhan, R.P. (2010). "An Investigation of the Finance-Growth Nexus:Study of Asian Develo ping Countries Using Multivariate VAR Model". International Research Journal of Finance and

Economics 58 : 134-140

Nwanyanwu Onyinyechi Josephine (2010). "An Analysis of Banks' Credit on the Nigerian Economic Growth"; *Jos Journal of Economics*, Vol.4, No.1

Shan, Jordan & Jianhong, Qi (2006). "Does financial development „lead" economic growth? The case of China", *Annals of Economics and Finance, 1:* 231–250

Vazakidis, A. & Adamopouslos, A. (2009). "Credit Market Development and Economic Growth", *American Journal of Economics and Business Administration*, 1(1): 34-40

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