International Credit Institutions and Real Sector Performance in Nigeria (1986-2018)

PAAGO, J. Kirikor and Chukuigwe E. C.
Department of Agricultural & Applied Economics
Faculty of Agriculture
Rivers State University, Port Harcourt,
Nkpolu Orowurukwo, Port Harcourt
Rivers State

ABSTRACT

This study empirically examined international credit institutions and real sector performance in Nigeria within1986-2018. The specific objectives of the study examined the impact of African Development Bank (ADB), International Finance Corporation (IFC) and International Fund for Agricultural Development (IFAD). Time series data on each of the variables were collected from secondary sources, such as World Bank Financial Development Data Base, CBN Statistical Bulletin (various issues),Debt Management Office (DMO) annual reports. Quasi experimental design was adopted for the study with Johansen and Julius (1990) econometric model and ARDL as techniques for data analysis. ADF unit root test was conducted in determining stationarity of the variables. Results obtained showed that the series are mixed integrated and ranging from level 1(0) to and at first difference 1(1). The cointegration regression results showed that all the financing variables have positive significant impacts on output growth rate and fully integrated at the first difference 1(1) except IFC which integrated at level 1(0) ARDL regression results indicates that explanatory variables determine 73.3% of charges in AGO and the F statistic of 6.49 and P. value of 0.0003 revealed the model at good fit at 5% level of significance. On the basis of the findings, it is recommended that international credit institutions particularly IFC, IDA should increase the funding of the real sector to sustain output growth rate increase export and enhance favorable external sector balance and economic sustainability of Nigeria economy.

KEYWORDS*: International Credit Institutions, Real Sector, Performance*

INTRODUCTION

1.1 Background to the Study

The increasing integration of domestic economy to the global economy provides the opportunity for both developed and developing economies to seek increase flow of credits and capital from international credit institutions to expand output growth rate, attract investment and increase employment, facilitates trade and enhance favourable external sector balance (WTO, 2017).

Developing countries including Nigeria usually obtained credit support from international credit institutions to accelerate the pace of production, provision of infrastructural facilities, improve per-capita income and contribution to international trade. According to CBN statistical bulletin (2017) indicated that international credit institutions such as International Finance Corporation (IFC),

International Development Association (IDA), International Fund for Agricultural Development (IFAD), Africa Development Bank (ADB), Organization of Economic Corporation and Development (OECD), International Monetary Fund (IMF) has significantly contributed to economic development of growing economies through credit and technical support including economic diversification programme. Also, Bacho and Taylor (1990) identified the third gap; stressed the importance of foreign aids in helping growing economies overcome their saving gap. These gap models are of the view that international capital flows alongside foreign aids provided opportunity for raising the level of long term investment, increase production and human capital development in less developed economies characterized by saving and investment gap.

Furthermore, ease of doing business policy is essential to attract international credit financing and Multilateral Development Banks (MDBs) capital inflow into the real sector of the economy and other economic sectors. The provision of infrastructures by the government and creating of enabling environment for business to thrive including tax reforms attract flows of capital into recipient economy. Strong financial sector provides adequate credit and support to businesses including considerable interest rate on money borrowed and liberalization of exchange rate control, enhances investment in the real sector economy and creates employment, income, increase savings and raise investment level. Also, liberalization/restructuring of economic institutions, effective planning and networking, good economic relations with developed and medium income countries would attract foreign investors, capitals and credit flow from international credit institutions and increase output growth rate, capital accumulation and new level of investment and enhance economic growth. Capital gape merges from imbalance between exports and imports, between debt payments and resource inflows. Also, domestic savings and investment gap affects production and mismanagement of basic economic resources further weakens foreign investments in the real sectors and output growth rate.

According to Soludo (2006) Nigeria economy could follow the path of China or Singapore economic success with an organize capital market that attract increase foreign portfolio investment and capital flows to stimulate domestic production and drive economic of scale in the real sector i.e. in the agricultural and manufacturing sub-sectors lift the economy from the present import dependency to export orient economy that competitively drive foreign exchange earnings economic growth and sustainability and reduce dependency on foreign borrowing.

The contribution of agricultural and manufacturing sectors are affected by problem inadequate funding and capital mobilization, cost of funds, foreign exchange shortages, high cost of imported inputs, unstable power supply and harsh economic environment in LDCs economies. This problem imposes a drag on the real sectors output performance, export and external sector balance. Considering the diminishing contribution of the real sector to the overall GDP and export over the years, this study examined the international credit institutions financing and output growth rate to fill the gap in previous studies.

Methodology

3.1 Research Design

. In this study, the descriptive and quasi-experimental designs were adopted based on panel data obtained from secondary sources. The choice of this approach depends on its suitability in assessing the impact of multivariate explanatory variables on dependent variables.

3.2 Data Collection Methods and Sources

The data required for this study were time series data and sourced from selected international credit institutions such as Africa Development Bank, International Financial Cooperation, and International Fund for Agricultural Development and International Development Association. Furthermore, data was also be obtained from World Bank Financial Data Base (WBFDB)CBN Statistical Bulletin (various issues), Debt Management office Publications (DMO) and National Bureau of Statistics annual report within the period 1986-2018.

3.3 Data Analysis and Estimation procedure

The study adopted the autoregressive distributed lag (ARDL) modeling in order to explain the functional relationships between the variables employed in this study. The ARDL technique is useful as a result of its reliability in correcting spurious regressions and determining short and long run relationships between identified variables. The ARDL technique is used when a mixture of variables integrated at levels, 1(0), variables integrated at first difference 1(1) or variables that are fractionally integrated.

3.3.1 Unit Root Test

This study shall adopt the Augmented Dickey Fuller (ADF) test for unit root determination. The model for unit is specified including a drift and deterministic trend as follows:

$$\Delta Y_t = \theta_0 + \theta_1 Y_{t-1} + \sum \frac{k}{i} = {}_1b_1 \Delta Y_{t-1} + \mu_t \ldots\ldots\ldots\ldots\ldots\ldots \quad (3.1)$$

Where Y_t = vector of all variables in the model, θ_0=Intercept ,θ_1 and b_1=parameters to be estimated , k = Lag length , Δ =First difference notation and μ_t= while noise

3.3.2 Johansen Co-Integration Test

This test was used to find-out if the variables included in the model have long-run relationship. The Johansen system of co-integration was applied in carrying out this test. The Max-Eigen statistic and Trace statistic form basis for rejecting the null hypothesis of no co-integration among the underlying variables. A lack of co-integration suggests that such variable have no long-run relationship: i.e they wander arbitrarily far away from each other (Dickey et al, 1991). We employ the maximum likelihood test procedure established by Johansen and Juselius (1990). Specifically, if Yt is a vector of n stochastic variables, then there exist a P-lag vector auto-regression with Gaussian errors. The general model for the co-integration is the form:

$$\lambda_{trace}(r) = -T \sum_{i=r+1}^{n} In(1-\lambda_i) \quad (3.2)$$

$$\lambda_{trace}(r,r+1) = -T\ In(1-\lambda r+1) \quad (3.3)$$

Where $\tilde{\lambda}$ denotes the estimated values of the characteristic roots and T denotes the number of observations. Basically, the trace statistic tests the null that the number of distinct co-integrating vectors is equal to or less than r. The further estimated characteristic roots are from zero, the greater the value of computed trace statistic. On the other hand, the Max-Eigen statistic tests the null hypothesis that the number of co-integrating vectors is r, against the alternative of r+1. In this case, the critical values for both trace and Max-Eigen statistic have been calculated by Johansen and Juselius (1990). Evidence of at least one co-integrating vector at 5 percent level of significance indicates that the underlying economic time series have long-run relationship.

3.3.3Auto Regressive Distributed Lags (ARDL) Regression Test

According to Giles (2013) regression models of this type provided a reliable technique for testing for the presence of long-run relationships between economic time-series. In its basic form, an ARDL regression model shown below:

$$y_t = \beta_0 + \beta_1 y_{t-1} + ... + \beta p y_{t-p} + \alpha_0 x_t + \alpha_1 x_{t-1} + \alpha_2 x_{t-2} + ... + \alpha_q x_{t-q} + \varepsilon_t \quad (3.4)$$

Where ε_t is a random "disturbance" term. The model is "autoregressive", in the sense that y_t is "explained (in part) by lagged values of itself. It also has a "distributed lag" component, in the form of successive lags of the "x" explanatory variable. Sometimes, the current value of x_t itself is excluded from the distributed lag part of the model's structure.

3.3.3.1 Statistical Criteria (First Order Test)

(i) **T-test:** This test was applied in testing for the statistical significance of each of the explanatory parameters included in the model. It is a continuation of the standard error test. The computed t-value is compared with the critical value at five percent (0.05) significance level. The computed t-statistics exceeds the critical value, the associated coefficient shall be described as statically significant and vice versa.

(ii) **Test for Goodness of Fit:** The coefficient of determination R^2 measures the goodness of fit which shows the proportion or percentage of the total variations in the dependent variable(s) that are systematically explained by the underlying regressors in the model. The value of the R^2 is expected to lie between 0 and I and the reference value is 50 percent as it measures the explanatory power of the model.

(iii) **F-Test**: This test was applied to test for analysis of variance. It determine whether or not the underlying explanatory variables are statistically significant in explaining changes in each of the response variables. The calculated F-value is to be compared with the critical F-value at 5 percent significance level and at k-1 and n-k degree of freedom. K and n are the number of parameters (including the constant term) and observations respectively. The probability value of the F-test can also be considered as an alternative procedure for testing the overall significance of the model.

3.3.4 Second Order Tests

i.) **Normality Test**: The skewness and Kurtosis are measures in the Jarque-Bera test procedure using the formula below:

$$JB = n\left[\frac{S^2}{6} + \frac{(k-3)^2}{24}\right] \quad (3.5)$$

Where n = number of observation , S = Skewness and K = Kurtosis

ii) Serial Correlation Test: The test for autocorrelation was useful in examining whether or not the error term was serially correlated. Specifically, the Durbin-Watson (D.W) test for serial correlation was utilized to conduct first order serial correlation test. furthermore, this test was used to check if the model was suitable for prediction. The computed Durbin Watson (D.W.) statistics was compared with the critical Durbin Watson statistic to examine the evidence of autocorrelation.

iii). Heteroscedasticity Test: This test was applied to determine whether the variance of the residual term was constant or not. This was necessary to avoid making erroneous conclusions as a result of misleading‘t’ and ‘F’ test.

3.4 Model Specification

This study adopted three multivariate dynamic regression model sanchored on the theory of financial intermediation which hinged on the efficacy of credit as an important aspect of financial intermediation that provided needy funds that stimulate output growth rate in the real sector. The specifications of the models in their functional forms were as follow:

AGO = f(ADB, IFC, IFAD, IDA,)……..... (3.6)

The models are expressed mathematically as follows:

$AGO_t = \propto_0 + \propto_1 ADBt + \propto_2 IFC_t + \propto_3 IFAD_t + \propto_4 IDA_t + U_t$…….(3.7)

$\propto_0$ = Constant terms. , $\propto_1 + \propto_4$ = Coefficients of the regression and U_t =Measure of unexplained variations. In accordance with the theoretical framework, the apriori expectations are: $\propto_1 > 0$, $\propto_2 > 0$, $\propto_3 > 0$, $x_1 > 0$, $x_2 > 0$, $x_3 > 0$, $x_4 > 0$

3.5. Variable Description and Measurement

(a) Dependent Variables

Agricultural Output (AGO): This implies agricultural sector output growth rate depended on credit funding i.e. raises output growth and real GDP performance with adequate funding from international credit institutions.

(b) Independent Variables

(i) International Finance Corporation (IFC). An affiliate of the World Bank that offers investment funds, advisory services and asset management services to mostly private sector in developing countries to enhance economic growth, trade and investment in LDCs of the world. It supplements the activities of the World Bank by promoting global economic and development

through financial support. Thus, $\Delta IFC/\Delta RGDP > 0$. This shows that increase in IFC loan positively impacts on agricultural sector contributions to GDP.

(ii) International Fund for Agricultural Development (IFAD): This is an affiliate of UNO development agency with functions to provide funding and technical support to agricultural sector output growth rate worldwide to achieve world food security, particularly in growing economies. Thus, $\Delta IFAD/\Delta RGDP > 0$. This shows that increase in IFAD funding to the agricultural sector positively impacts on agricultural sector contributions to RGDP.

(iii) African Development Bank (ADB): This is a regional African development bank aimed at promoting Africa economic growth through long term financial and technical support and trade transaction in the rest of the world. Thus, $\Delta ADB/\Delta RGDP > 0$. This shows that increase in ADB loan facilities to real sector of the economy positively impact on contributions to GDP.

(iv) International Development Association (ADA): This is an affiliate of World Bank established to provide long term and concessional loans to private sector and government to enhance production and provision of essential services that stimulate economic growth particularly in LDCs. Also IDA provides facilities to national government and cooperate institutions to support trade and investment in the world. Thus, $\Delta IDA/\Delta RGDP > 0$. This shows that increase in IDA credit facilities positively impact on real gross domestic product, employment and real sector output growth rate in LDCs.

RESULTS

This chapter examined the presentation and analysis of the data collected in this study, using selected econometric tools.

4.1.1 Time Plot of Data

The trend of the data presented in table 4.1 are presented graphically below

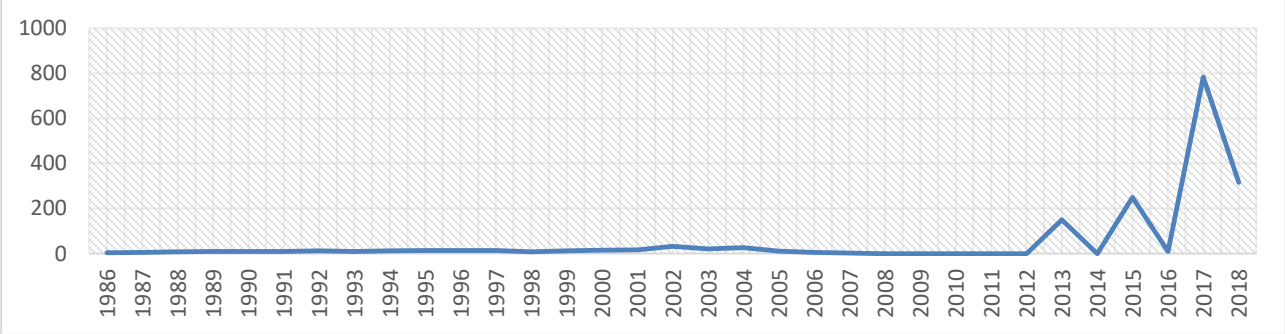

Figure 4.1 Time Plot of ADB Loans (1986-2018)
Source: Debt Management Office Annual Report, ADB Compendium of Statistics

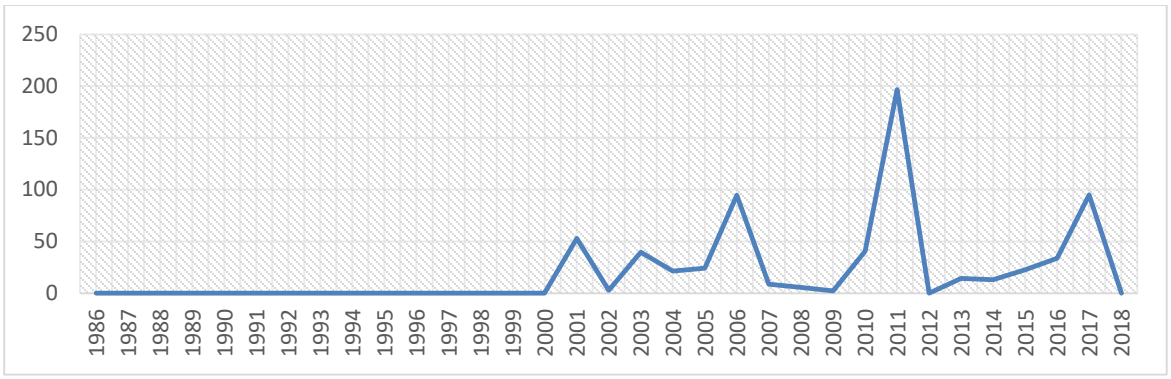

Figure 4.2 Time Plot of IFC Loans (1986-2018)
Source: World Bank Database

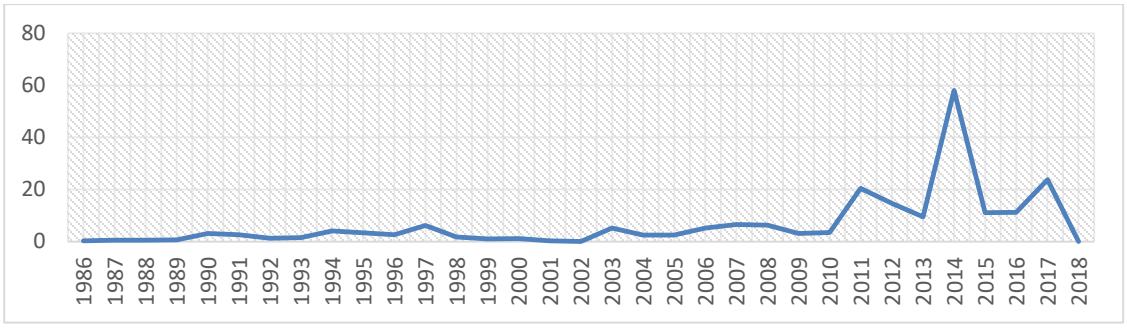

Figure 4.3 Time Plot of IFAD Loans (1986-2018)
Source: Debt Management Office Annual Report, World Bank Database

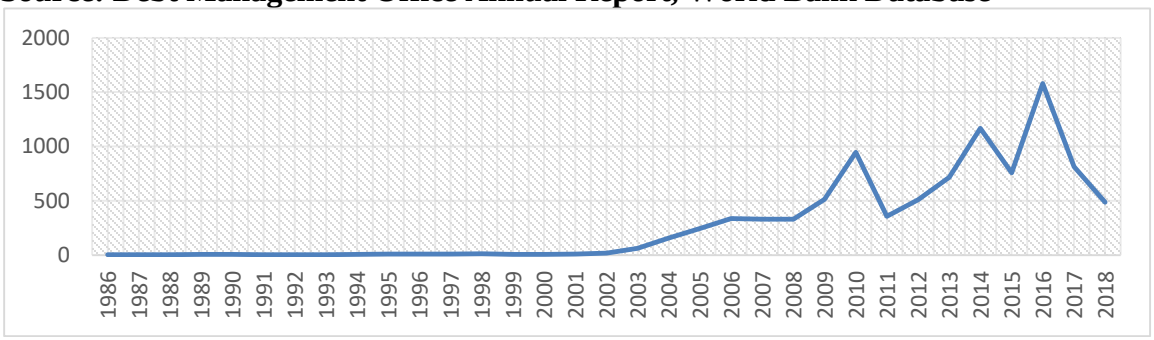

Figure 4.4 Time Plot of IDA Loans
Source: Debt Management Office Annual Report, World Bank Database

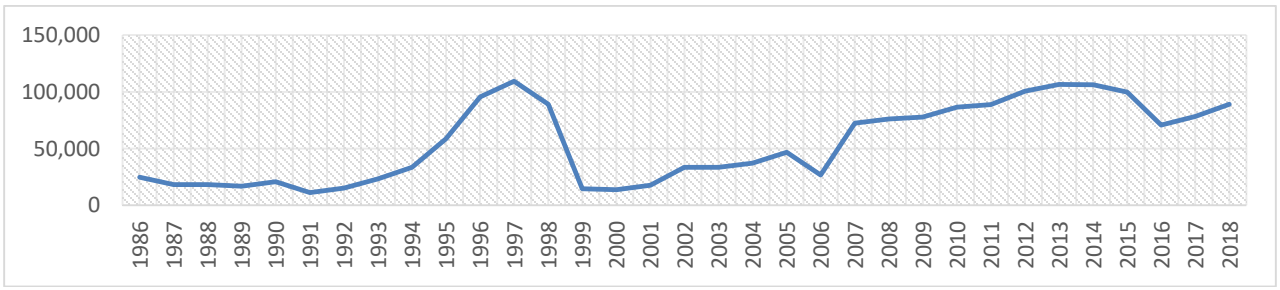

Figure 4.5 Time Plot of Agricultural Subsector Output
Source: Computed from CBN Statistical Bulletin (2018) using Official Exchange Rate

4.2 Descriptive Statistics

Table 4.2 Descriptive Statistics

	ADB	IFC	IFAD	IDA
Mean	45.94344	20.86406	6.685625	279.3589
Median	10.28000	1.167176	3.120000	16.10490
Maximum	783.2600	196.5224	58.09000	1578.500
Minimum	0.000000	0.000000	0.000000	2.159400
Std. Dev.	143.1869	40.88199	10.99099	404.6658
Skewness	4.565156	2.930946	3.487167	1.585982
Kurtosis	23.56303	12.11314	16.25177	4.895518
Jarque-Bera	674.9346	156.5482	299.0009	18.20580
Probability	0.000000	0.000000	0.000000	0.000111

Source: Computed by Researcher Using E-views 9.5

4.3 Correlation Statistics

This examined the degree of association among the variables employed in the study, which is shown in table 4.3.

Table 4.3Correlation Statistics

	ADB	IFC	IFAD	IDA	BCO
ADB	1.000000	0.302492	0.280081	0.307573	0.399798
IFC		1.000000	0.314105	0.282463	0.306523
IFAD			1.000000	0.633775	0.730124
IDA				1.000000	0.813124
AGO					0.851799
MSO					0.728380
BCO					1.000000

Source: Computed by Researcher Using E-views 9.5

4.4 Unit Root Testing

The unit root test was carried out to determine whether the variables in the time series have a unit root, and thus stationary; or otherwise. The Augmented Dickey Fuller (ADF) unit root test was employed in determining the stationarity of the variables.

Table 4.4 Augmented Dickey Fuller (ADF) Unit Root Test

Variables		t-statistic	Critical value (0.05)	Prob.	Order of Int.
ADB	Level	-1.125446	-3.065585	0.6783	*I*(1)
	1st Dif	-3.920350	-3.065585	0.0477	
IFC	Level	-4.580593	-2.960411	0.0010	*I*(0)
IFAD	Level	-1.064986	-2.967767	0.7157	*I*(1)
	1st Dif	-8.665305	-2.967767	0.0000	

IDA	Level	-1.236702	-2.960411	0.6456	*I*(1)
	1st Dif	-4.364015	-2.976263	0.0020	

Source: Computed by Researcher Using E-views 9.5

4.5 Co-integration Test

Table 4.5 Johansen Co-integration Test

Sample (adjusted): 1988 2017
Included observations: 21 after adjustments
Trend assumption: Linear deterministic trend
Series: AGO ADB IFC IFAD IDA
Lags interval (in first differences): 1 to 1

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigen value	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.948524	144.2035	69.81889	0.0000
At most 1 *	0.926575	81.90389	47.85613	0.0000
At most 2	0.696291	27.06250	29.79707	0.1001
At most 3	0.090025	2.037074	15.49471	0.9945
At most 4	0.002661	0.055962	3.841466	0.8130

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.948524	62.29962	33.87687	0.0000
At most 1 *	0.926575	54.84139	27.58434	0.0000
At most 2 *	0.696291	25.02542	21.13162	0.0134
At most 3	0.090025	1.981112	14.26460	0.9911
At most 4	0.002661	0.055962	3.841466	0.8130

Source: Computed by Researcher Using E-views 9.5

4.6 Regression Test

The regression test was carried out to determine the functional relationships existing between the variables in the model formulated in this study. This was performed using the ARDL method, so as to capture the long and short run dynamics of the model as well resolve the issue of serial auto correlation. It is relatively more efficient in the case of small and finite sample data sizes; and can

be used to obtain unbiased estimates of the long-run model (Belloumi, 2014; Harris &Sollis, 2003). The result obtained in indicated in tables 4.8

Table 4.8:ARDL Regression Test

Dependent Variable: AGO
Method: ARDL
Date: 09/09/19 Time: 11:22
Sample (adjusted): 1988 2017
Included observations: 21 after adjustments
Dynamic regressors (2 lags, automatic): ADB IFC IFAD IDA
Number of models evaluated: 81
Selected Model: ARDL(1, 2, 2, 1, 0)

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
AGO(-1)	0.646762	0.164202	3.938810	0.0028
ADB	1111.710	417.4610	2.663027	0.0238
ADB(-1)	5181.612	1610.667	3.217059	0.0092
ADB(-2)	-5104.786	1681.784	-3.035340	0.0126
IFC	-24.89934	260.7278	-0.095499	0.9258
IFC(-1)	-41.90660	275.7677	-0.151963	0.8822
IFC(-2)	-2284.390	844.8958	-2.703754	0.0222
IFAD	7825.879	2516.049	3.110385	0.0111
IFAD(-1)	3449.150	3227.898	1.068544	0.3104
IDA	305.2476	150.9555	2.022103	0.0707
C	-30727.77	13838.90	-2.220391	0.0507

R-squared	0.756433	Mean dependent var	41232.48
Adjusted R-squared	0.621866	S.D. dependent var	30377.15
S.E. of regression	15700.42	Akaike info criterion	22.46644
Sum squared resid	2.47E+09	Schwarz criterion	23.01358
Log likelihood	-224.8977	Hannan-Quinn criter.	22.58519
F-statistic	6.486886	Durbin-Watson stat	2.210223
Prob(F-statistic)	0.003350		

Source: Computed by Researcher Using E-views 9.5

4.7 Serial Correlation Test

The serial correlation test was carried out to determine if the variables in the model were serially correlated or not. The results for models 1-3 are presented in tables 4.11

Table 4.11: Serial Correlation Test

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.073449	Prob. F(2,8)	0.9298
Obs*R-squared	0.378655	Prob. Chi-Square(2)	0.8275

Source: Computed by Researcher Using E-views 9.5

4.7.2 Normality Test

The normality test was carried out to ascertain whether the variables in the model are normally distributed or not, which is one of the conditions for most econometric analysis. The normality test was carried out using the normality test, as shown in table 4.12

Table 4.12: Normality Test

Mean	Median	Max	Min	Std. Dev.	Skewness	Kurtosis	Jarque-Bera	P-value
4.31e-15	-492.77	31078	-20865	11101	0.666	4.610	3.817	0.1483

Source: Computed by Researcher Using E-views 9.5

4.7.3 Heteroskedasticity Test

Table 4.13: Heteroskedasticity Test

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	0.174123	Prob. F(10,10)	0.9946
Obs*R-squared	3.114308	Prob. Chi-Square(10)	0.9786
Scaled explained SS	1.274557	Prob. Chi-Square(10)	0.9995

Source: Computed by Researcher Using E-views 9.5

DISCUSSION

The result in figure 4.1 showed relative stability in the loans disbursed by the ADB from 1986 to 2001 before rising up a little from 2001 to 2005. However, ADB loans dropped from 2005 to 2012. But from 2013, ADB loans fluctuated sharply till 2008. In figure 4.2, there was no disbursement of funds between 1986 and 2000. However, from 2001, so much inconsistency in loan disbursement from IFC was observed, with significant increases in 2006, 2011 and 2017. The trend analysis in figure 4.3 revealed that loans from IFAD was relatively stable from 1986 to 1989 before showing a steady rise up to 1997. But IFAD loans fell from 1997 to 2002. However, from 2003 to 2011, there was a rise in the loans disbursed by IFAD before rising sharply in 2014. In figure 4.4, it is revealed that IDA provided consistent financing from1986 to 2001. Afterwards, a steady upward trend was observed from 2002 to 2006 while it became stable between 2006 and 2008. Steady rises in IDA loans were also seen from 2008 to 2010, 2011 to 2014. However, IDA loans fell drastically from 2016 to 2018. Also, the result of the descriptive statistics in table 4.2 indicates mean loan disbursements of $45.9m, $20.9m, $6.7m and $279.4m for ADB, IFC, IFAD and IDA, respectively. This implies that IDA has given the most funding support to the real sector in Nigeria followed by the ADB. On the other hand, the least funding was made by the IFAD. Thus, IDA has provided as much funding, more than three times of those of the other institutions put together. On the other hand, mean outputs were $53.8b, $25.5b and $6b for the agricultural, manufacturing and building and construction subsectors. Thus, the agricultural subsector has been the most

productive, with almost two times as much output as manufacturing and building and construction. The table also revealed that all the data were positively skewed. However, the Jarque-Bera statistics and associated probabilities suggested that only AGO and BCO were normally distributed. Similarly, the correlation test was to examine the degree of association among the variables employed in the study, which is shown in table 4.3. The result revealed that all the variables in the model have positive associations with each other. Strong correlations are observed between IDA and AGO as well as B/CO, which is followed by that of IFAD. However, the least correlation is seen between IFC and all three dependent variables. It must also be noted that the correlation between the independent variables are quite low except for a 63.4% between IFAD and IDA. This is an indication that multi-collinearity is nonexistent between the variables in the model. The result of the Augmented Dickey Fuller (ADF) used in determining the presence of unit root is summarized in table 4.4; This indicated that all the variables are stationary and fully integrated at their first differences, $I(1)$, except IFC, which is integrated at level, $I(0)$. Thus, IFC is trend stationary while all others are difference stationary. This implies absence of unit root in all the variables employed in the three models. Cointegration identifies a situation where two or more none stationary time series variables are bound together in such a way that they cannot deviate from equilibrium in the long term. In other words, there exists one or more linear combination of those integrated of order 1, $I(1)$,time series that is stationary or $I(0)$. These stationary combinations are called co-integrating equations. Although, those variables can deviate from each other on a short term basis, the economic forces at work should restore the original equilibrium between them on the long run. In such a case, it is said that the variables are co-integrated. This implies that financing from international credit institutions have a long-run relationship with agricultural sector output. This result is similar to that of Akinwale, Adekunle and Busayo (2018), who found co-integration between foreign credit financing and agricultural output growth rate in Nigeria. The result of the ARDL in table 4.8 indicates that the independent variables determined 73.3% of changes in AGO. More so, the F-statistic of 6.49 and p-value of 0.003 revealed that the model has a good fit at.5% level of significance. Furthermore, the t-statistics and their associated p-values revealed that only ADB, IFAD and IDA loans have positive effects on agricultural output at 5% level of significance in the long run, while IFC is negative; with ADB and IFAD significant. On the other hand, lagged values of ADB were also found to be significant, though negative at the second lag. The second lagged value of IFC was also significant but negative. The Durbin Watson statistic of 2.2 suggested that absence of serial correlation in the model. Based on this result, ADB, IFAD and IDA met their aproiori expectations. The positive sign of the coefficient of the variables implied that increased funding from the above mentioned agencies have the capacity to raise agricultural output growth rate. Also, given the p-values in table 4.8, it shows that ADB and IFAD have significant effects on agricultural sector output growth in Nigeria. This confirmed Akinwale, Adekunle and Busayo (2018), who found that foreign credit financing stimulated agricultural sector output growth rate in Nigeria. Also, the post estimation test for serial correlation test was carried out using the Breusch-Godfrey Serial Correlation Test, which revealed observed R-squared and p-values of 0.379 (0.828), 0.447 (0.8) and 4.056 (0.132), respectively for models 1 to 3. Since the p-values are greater than 0.05, we accept the null hypothesis that the variables in the model are not serially correlated. Since the p-values are greater than 0.05, the null hypothesis of normality is accepted. Thus, the variables in all three models are normally distributed. Finally, the heteroskedasticity test conducted using the Breusch-Pagan-Godfrey test also showed that the p-

values of the F-statistic, observed R-squares and explained SS for all the three models are greater than 0.05. Thus, the errors of the models are homoscedastic.

Conclusion

The real sector of the economy plays significant role in stimulating economic growth and external sector balance. A flourishing real sector creates demand for product and stimulates output growth rate leading to income earning, employment, savings, and foreign investment. However, developing economies including Nigeria experienced saving and investment gap which affects long term funding and output growth rate in the real sector. This therefore, creates the need to resort to external funding and support to expand production and achieve macroeconomic stability through international credit institutions funding. Specifically, the study examined the funding performance of the African Development Bank (ADB), International Finance Corporation (IFC), International Fund for Agriculture Development (IFAD) and the International Development Association (IDA) and impact on the output growth rate of the agricultural, manufacturing and building and construction subsectors. Using the Johansen co-integration technique and the Auto Regressive Distributed Lags (ARDL) model, the study established that international credit institutions' credit financing and support programme have long-run relationships with the output growth rate of all three subsectors of the real sector. More so, IFAD funding had the most significant long-run impact on the aggregate real sector – agriculture, manufacturing as well as building and construction. The ADB has also contributed positively to all subsectors but only significantly on the agricultural subsector, whereas the IFC and the IDA credit funding have fairly significant effect on output growth rate of the subsectors.

The findings above justified Agu, C. (2009) and Nyong (1997) empirical works which showed that international credit financing and capital inflows has a direct and positive effects on real sector output growth rate and economic growth in Nigeria. In conclusion and from the findings, it is obvious that international credit institutions' funding has significant impacts on real sector performance, employment, export, income earnings, contribution to economic growth and diversification within the period of study.

6.2 Recommendations

In consideration of the findings and conclusions made in this study, the following policy recommendations can aid in the stimulation of aggregate real sector development in Nigeria.

1) The Central Bank of Nigeria should collaborates with the international credit institutions, especially IFC and IDA to enhance steady flows of credit funding to real sector to achieve macro-economic objectives and external sector balance.
2) Government should initiates appropriate macroeconomic policy mix in order to attract foreign investors, international development agencies and Multilateral Development Banks (MDBs) into real sector funding, output growth and macroeconomic performance.
3) CBN should initiates effective monetary policy measures that would attract private foreign investment, venture capitalists and financial institutions funding of the real sector to sustain production and economic growth.
4) The government should improve existing infrastructures that would enhance output growth rate, capacity utilizations, employment and export in the real sector of the economy.

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