AGRICULTURAL DEVELOPMENT AND FINANCING NEXUS FOR ECONOMIC GROWTH IN NIGERIA

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ABSTRACT: The indepth nature of the Nigeria agricultural sector and its resultant effect on the economy which have been moribund for years without meaningful gains. Thus, this study examined the impact of Agricultural policies and developments on the Nigeria economy. The study relied deeply on data from the CBN Annual Report and statement of Account, CBN Financial review, National Bureau of Statistics. The study adopted the Vector Error Correction Model (VECM) estimation in explaining the impact levels. The study found that Agricultural sector development has a significant effect on the Nigeria Economy and impacted Positively on it. The study among others recommend that Agriculture must be given a continued call and attention through policies and funding so as to enable the sector contribute meaningfully to the economy.

KEYWORDS: Agricultural Polices, Agricultural Sector, Economy.
JEL: N57, O43, O47, Q01, Q14

INTRODUCTION

The importance of agricultural development and sustainability in Nigeria cannot be over emphasized. Ever before the exploitation of petroleum, product as oil and gas, agricultural has been a key contributor to Nigeria`s economy; contributing about sixty percent, in the 1960s to the nations GDP. (Koko & Abduallahi, 2012)

Nigeria is endowed with huge expanse of fertile lands, rivers, streams, lakes, forest and grass land as well as a large active population that can sustain a highly productive and profitable agricultural sector. Agriculture involves the cultivation of land and rearing of animals and raw materials for industries. It involves cropping, livestock, forestry and fishing, processing and marketing of these agricultural products. (Anyanwu, 1997) posit that agriculture has been the main source of gainful employment from which Nigeria nation can feed its feeding population, providing the nations industries with local raw materials and as a reliable source of government revenue. As confirmed by (Ugochukwum, 1999), agriculture is the

first and most important occupation of mankind. From its early form of wild fruits, leaf, root, snails and insect gathering, fishing and hunting, to its present mechanized most automated form; it has undergone a lot of development.

Currently the importance of agriculture in Nigeria`s economy is experiencing resurgence through various policy. It one of the rising economic sectors in Nigeria

It continued growth depends largely on access to land. Although about 80 percent of Nigeria`s 910,768³ square kilometers of land is suitable for land for agriculture, (USAID, 2010) Its sustainable use is being hampered by ambiguous land administration and regulation.

Nevertheless, the agricultural sector has a multiplier effect on a nation's socio- economic and industrial fabric as a strong and efficient agricultural sector. It would and industrial fabric as strong efficient agricultural sector. It would enable a country to fed its growing populations, generate employment, earn foreign exchange and provide raw materials for industries within the domestic economic.

(Reynolds, 1982), asserts that agricultural development can promote the economic development by increasing the supply of food available for domestic consumption and releasing the labour needed for industrial employment.

Agriculture is a very wide industry covering forestry, hunting, fishing, crop cultivation and livestock rearing. It is the most important industry in the world but yet it barely features in the mind of the verge citizen (Ashamu, 2000). Agriculture has been an important sector in the Nigeria economy in the past decades and is still a major sector despite the oil boom. Basically, it provides employment opportunities for the teeming population, eradicates poverty and contributes to the growth of the economy.

Prior to Nigeria `s independence and more importantly, the discovery of oil in southern Nigeria in 1956, the country was self-sufficient in agricultural productivity and was recognized as a global player in the agricultural industry, In 1961, the country accounted for 42 percent of the global trade in groundnut oil, 27 percent of the world`s palm oil industry and 18 percent of global trade in cocoa.

Despite the decline of agricultural activities following the commercial exploitation of oil in the 1970`s the agricultural sector remains the highest employer of labour and the second largest export commodities after the oil sector. (CBN, 2017). According to National Bureau of statistics (NBS), agriculture contributed 38.2 percent of the country`s GDP in 2015 This show that sector remains very important and highly relevant to the development of Nigeria`s economy as well as in reducing the high level of unemployment with consequence that include poverty (Nwaobi, 2005)    It`s evident that one vital nucleus for sustainable agricultural development is a positive frame-work of policies and laws that strengthen the sector add value to the activities of the farmers and ultimately improve their human security. Insight from around the world reveals such policies as sustainable intensification of rice production as in Malaysia, Indonesia and Thailand to mention just a few have shown that adequate follow-up policy framework, and unstrained agricultural laws as well as developed and organized private public sector partnership and support have led to success stories in sustainable farming and agricultural productivity in developing countries (Paul, 2013) Although in recent past several agricultural policies and laws have been enacted over the decades in Nigeria all in the quest to boost the productivity of agricultural products thereby improving the livelihood of peasant farmers, not much has been achieved in terms of successfully implementing these policies and laws.

However, one component in determining how to use agriculture to improve economics in Nigeria is to evaluate the historical efforts in terms of agriculture that Nigeria has engaged in since its independence.

This will ensure that the country does not repeat past mistakes. In addition, this evidence will demonstrate whether or not it is feasible for agriculture to be a primary factor in Nigerian economic development. Along with historical factors, there must be an evaluation of both internal and external factors that could impact the Nigerian agriculture market. In addition, it is important to identify the strategies needed to enhance economic growth through the use of agriculture. This study shall further determine the long run relationship between Agriculture development and Economic growth and development of Nigeria to ascertain whether they exist any impact relationship between agriculture development and economic growth of Nigeria and shall overall focus on various Agricultural laws and policies introduced by the Nigeria government in her quest of making Agriculture a viable means of economy growth and development.

Apart from this introductory section, the remaining part of this study is further divided into four other sections. section two sets the methodological framework for the study while section three focuses on the estimations of model specified and section four, being the last, concludes and proffer necessary policy suggestions.

METHODOLOGY

The adoption of Vector error correction model is founded on the main failing of the structural models. The specifications of structural models are based either (formally or informally) on economic theory (Pedroni, 2000) Unfortunately, the disagreements on what the right theory is, or the complexity of some theories often complicates model specification by researchers. More so, the paradigm of parameter constancy underlying the systems of structural equations approach to macroeconomic modelling is arguably fundamentally flawed (Greene, 2003)

This is because even appropriate parameters are bound to change with changes in macroeconomic policy or environment. Therefore, there are times when it becomes necessary to give room for flexibility in model specification to allow the data to speak. The Vector error correction (VEC) is often a means of doing this. It side-steps theoretically based structural constraints in econometric modelling.

The model tries to examine the relationship between Agricultural developments as it impacts on the economic growth of Nigeria between 1990 to 2018 GDP which is the dependent variable was measured as a function of independent variables which are AGO, GEA CAS and EXR. This statement is written in

$$RGDP = f (AGO, GEA, CAS, EXR) \qquad (1)$$

RGDP = Real Gross Domestic Product (dependent variable)

F   = Functional Notation

AGO   = Agricultural Production output

GEA= Government Expenditure on Agriculture

CAS= Credit to Agricultural Sector

EXR = Exchange Rate

The explicit form of equation (i) above is represented as:

$$RGDP = \beta_0 + \beta_1 AGO + \beta_2 CAS + \beta_3 GEA + \beta_3 EXR + U_t \qquad (2)$$

Where: β_0 = intercept of relationship in the model

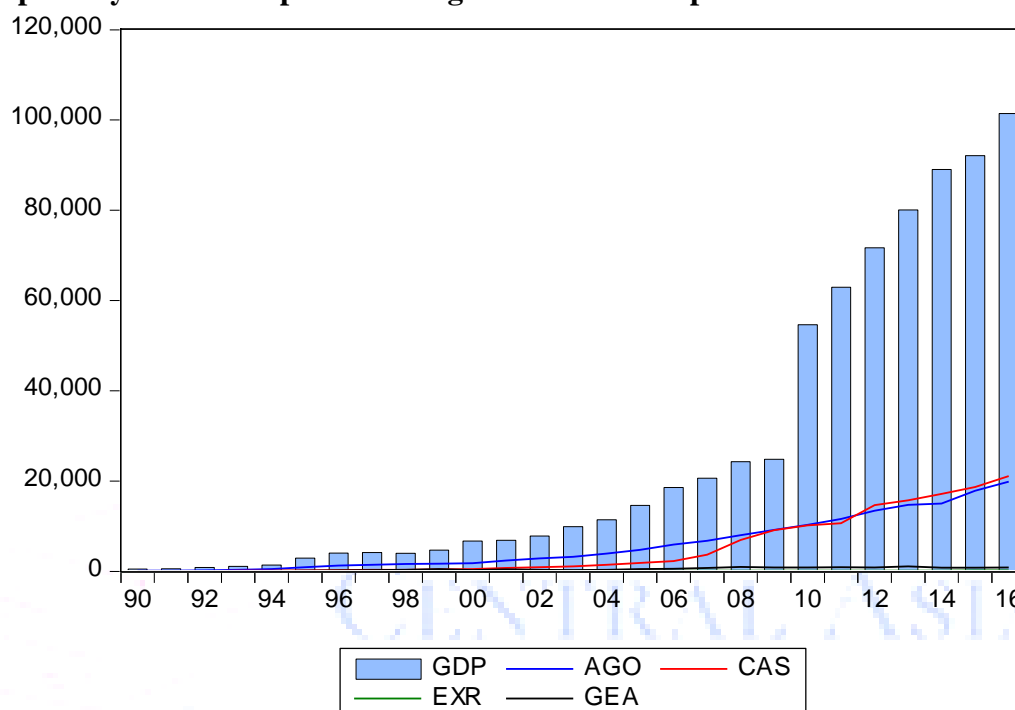$\beta_1 - \beta_4$ = Coefficients of each of the model.

U= the error term.

By log linearising, the model becomes;

$$Log(GDP) = \beta_0 + \beta_1 Log(AGO) + \beta_2 Log(CAS) + \beta_3 Log(GEA) + \beta_4 (EXR) + u \qquad (3)$$

Where; Log = Natural log from equation (2) model can be specified in a time series forms as in equation (3)

Figure 1 Graphically relationship between Agricultural development indicators and GDP in Nigeria

3 Empirical Results and Discussions

The attempt to study the Agricultural development and Economic growth in Nigeria led the researcher to collect data related to the study in question. Data collected were first subjected to series of advanced econometric tests including unit root test using unit root test, cointegration tests, and Vector Error Correction Model (VECM) etc. was employed to estimate the relationship existing among the variables specified. The results and their discussions are presented below:

Table 1: ADF Unit Root Result Test at Level, First and second Difference

Test	Variables	At Levels		First Differences		Order	Remark
		T- statistic	Critical	T- statistic	Critical		
ADF	GDP	-2.312438	-3.595026	-5.113709	-3.603202	1(1)	Stationary
	AGO	-2.02475	-3.595026	-3.707223	-3.603202	1(1)	Stationary
	GEA	-1.749796	-3.595026	-6.806627	-3.603202	1(1)	Stationary
	CAS	-1.350683	-3.595026	-4.273499	-3.603202	1(1)	Stationary
	EXR	-2.112462	-3.595026	-4.930308	-3.603202	1(1)	Stationary

Source: *Author computations*

Table 1 above shows the summary of unit root test results. The result shows that the variables; GDP, AGO, GEA, EXR and CAS was not stationary at levels using Augmented Dicey Fuller test. This is because their critical values were less than ADF test statistics in absolute value at 5 percent level of significance for variables GDP, AGO, GEA, EXR and CAS However, all of the variables GDP, AGO, GEA, EXR and CAS became stationary after first difference since their ADF test statistics were greater than their critical values

in absolute value. The results show that the series are integrated of the same order; I (1) with the application of both ADF test

Therefore, the variables are fit to be used for the analytical purpose for which they were gathered.

Co-integration Test

It has been argued that although the individual series may not be stationary, a linear combination of the series will produce a cointergrated series. The linear combination of series integrated of the same order are said to be co-integrated the result summary is shown in table below:

Table 2: Johansen Co-Integration Test

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigen value	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.891014	105.7974	69.81889	0.0000
At most 1 *	0.584808	50.38410	47.85613	0.0284
At most 2	0.456004	28.40874	29.79707	0.0716
At most 3	0.393472	13.18842	15.49471	0.1081
At most 4	0.027157	0.688310	3.841466	0.4067

Source: Author computations

Under the Johansen Co-integration test, for both Unrestricted Cointegration Rank Test trace value Co-integration is said to exist if the values of computed Eigen values are significantly different from zero or if the trace statistics is greater than the critical value at 5 percent level of significance. The result of the co-integration in table 2 above indicates five co-integrated equations. Condition to satisfy long run relationship states that the trace statistics must be greater than the critical value at 5 percent level of significance in atleast one of the hypothesized equations. Similarly, the computed Eigen value is significantly different from zero in one of the hypothesized equations. Hence, the researcher denotes that two of the hypothesized equations satisfy this condition and therefore the null hypothesis of no co-integration among the variables is rejected in at least two equations.

There is therefore a long run relationship between the variables used for the analysis in Nigeria within the period under study 1990-2018.

Vector Error Correction Model (VECM)

Considering the vastness of the VECM estimate table a system test table based on VECM estimation as shown in the above table, this however is to assist the researcher in making variable interpretation for the variables employed for the study.

Dependent Variable: GDP

Method: VECM

Variable	Coefficient	Std. Error	T-statistic	Prob.
ECM(-1)	-0.816022	0.101423	-8.045694	0.0000
GDP	0.043609	0.114349	0.381366	0.7074
AGO	0.718151	0.200049	3.589876	0.0021
GEA	-0.039606	0.072460	-0.546596	0.5914
CAS	-0.915640	0.148391	-6.170470	0.0000
EXR	0.001825	0.001253	1.456190	0.1626

C	0.280269	0.049535	5.657986	0.0000
Reliability Test				
R²= 0.8467	**Adj R²= 0.7956**	**F- Stat= 16.57**	**Prob= 0.000**	

Source: Author computations

DISCUSSION OF FINDINGS

Co-integrating coefficient for ECM (-1)) equals -0.81602 This shows that the speed of adjustment between the short-run and long-run equilibrium is approximately 82 percent annually. This means that the system corrects its previous period disequilibrium at a speed of 82% annually with a negative sign, fractional and a statistically significant ECM (-1) as shown by the probability value of 0.00, the statistical significance of the co-integrating equation satisfies all conditions and the negative sign satisfies the other condition.

From the estimated result above the coefficient of the constant term is 0.280269 implying that when other variables are kept constant Gross domestic product (GDP) increased by 0.280269 units.

The coefficient of Agricultural output (AGO) and Exchange Rate (EXR) (-1) is 0.718151 and 0.0018 implying that a unit change in Agricultural output (AGO) and Exchange Rate (EXR) brought about 7 and 2 percent units increase in Agric output at the year under review.

Similarly, the coefficient of Credit to Agricultural sector (CAS) and Government expenditure on agriculture (GEA) (-1) is -0.0915 and -0.0396 respectively implying that a unit change in Credit to Agricultural sector (CAS) and Government expenditure on agriculture (GEA) will bring about 9 and 3 percent decrease in GDP proxy for Economic growth in Nigeria.

It was revealed that the R^2 is 0.84. This is high and it indicates that the independent variable is well explained by the independent variables. This also means that the model is highly relevant for the explanation of the variable. The remaining 16% was due to disturbance or error term e.g economy meltdown, low-productivity, low profitability e.t.c.

The overall level of significant shows that the entire influence is statistical significant given the value of the F-statistic of (16.57) is greater than F-tab. which shows that all the independent variables employed for the study are all significant to Gross domestic product from the year under review.

The empirical result shows that there is significant impact between agriculture out and economic growth in Nigeria this is evident from the result that the agricultural sector contributes greatly to Nigeria economic growth over the period of review that a unit rise in Agricultural output will in the same measure increase the country`s Gross Domestic Product in Nigeria and vice versa this result agrees to (Muftaudeen & Hussainatu, 2014), (Iganiga & Unemhilin, 2011) stated that stagnation in agriculture is the principal explanation for poor economic performance, while rising agricultural productivity has been the most important concomitant of successful industrialization and total diversification of the economy.

Again, the values of Government expenditure on Agriculture a credit to the Agricultural sector indicate a negative relationship from the empirical results gathered so far this is tp say that the government of Nigeria have no done enough to adequately make budgetary provision for agriculture in Nigeria that a unit rise in Government expenditure on agriculture or credit to the sector will decline economic growth and vice-verse.

CONCLUSION AND POLICY RECOMMENDATION

In conclusion, From the findings of this study, it can be ascertained that agriculture is beneficial and plays a significant role in the development process of Nigerian economy. Therefore, enhancing the pace of the growth of the sector in Nigeria will go a long way in the development process of the Nation.We hold the view that there is a direct correlation between the level of economic growth in Nigeria and the development of agriculture. This goes without saying that any policy thrust that addresses poverty, would inevitably focus on agriculture, by increasing rural opportunities that could generate agricultural-induced development. Hence, the development of agriculture is a sine qua non for alleviation of poverty, hence the Nigerian Government should lay much emphasis on its encouragement. The study therefore recommends that the agricultural sector need to be made more lucrative in order to attract investments and labour in order to achieve food security and sustainable. There is need for the reintroduction of subsidies on agricultural imputes, so as to encourage the poor farmers of their affordability.

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