IOSR Journal of Economics and Finance (IOSR-JEF)
e-ISSN: 2321-5933, p-ISSN: 2321-5925.Volume 6, Issue 6. Ver. I (Nov. - Dec. 2015), PP 73-81
www.iosrjournals.org

The Impact of Agricultural and Industrial Sectors on Economic Development in Nigeria

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Abstract: *This study aimed at investigating the impact of the agricultural and industrial sector on the overall economic development of the Nigeria using secondary data from 1981 – 2012. A multiple regression approach was used for the estimation. To determine the stability of the time series data used in the study, Augmented Dickey–Fuller (ADF) and Philips–Perron (pp) unit root tests were adopted. The empirical results show cointegration relations among Real GDP per capita (RGDPP), Agricultural contribution to RGDPP (ARG), Industrial contribution to RGDPP (IND), Interest rate (INT) and Inflation rate (IFL) in the period under investigation. Agricultural and industrial contributions to RGDPP are significant variables explaining economic development in Nigeria. The overall result of the analysis indicates that these sectors have significant positive effect on economic development of Nigeria both in the short-run and in the long-run. This research therefore suggest that there is need for government and the private investors to focus their attention on these sectors to boost the economy of the nation and efforts must be made to diversified the economy and focus should be shifted away from export of crude oil only and more effort should be concentrated on agricultural and industrial development. This would translate to meaningful development in these sectors which will trickle down to create employment opportunities, enhance productivity and increase agricultural production for exports.*

Keywords: *Agricultural sector, industrial sectors, multiple regression, cointegration, economic development, Nigeria.*

I. Introduction

Economic development is one of the major concerns of every nation of the world particularly for developing economies and the agricultural and industrial sector has been viewed to play an imperative and supportive role in the process of economic development. According to Ijieh (2014), the capacity of the agricultural and industrial sector in generating additional revenue and reducing unemployment is the reason why these sectors are highly imperative. Most countries that have attained some heights of development still put policies in place, in an effort to harness the potentials of these sectors, so as to realize their development prospect.

Nigeria is the largest economy in Africa, with Gross Domestic Product (GDP) of about $510Billion (NBS, 2014). The country is endowed with abundant natural and human resources and has highly diversified agro-ecological conditions. Nigeria's economic aspirations have remained that of altering the structure of production and consumption patterns, diversifying the economic base and reducing dependence on crude oil, with the aim of putting the economy on a path of sustainable, all-inclusive and non-inflationary growth to bring about national economic development (Sanusi, 2010).

However over the years, both the agricultural and industrial sectors have suffered from negligence, inconsistent and poor government policy design and implementation and likewise lack of basic infrastructure. To buttress this point, Sekumade (2009) observe that Nigeria is no longer a major exporter of cocoa, groundnut, rubber and palm products and that the share of agricultural products in total exports has steadily declined from over 70% in 1960 to less than 2% in recent times. Sequel to this backdrop, agriculture has not kept up with the rapid population growth in the nation and Nigeria, a once large net exporter of food now imports most of its food requirements.

Similarly in the industrial sector, despite the various policies that were put in place to pursue industrialisation with the hope of transforming the economy from a mono-cultural, inefficient and import-dependent one to a more dynamic and export-oriented economy, has yielded no tangible result (Adeoye, 2005). As shown by (Banjoko, 2002), the productive sector is in crisis as its average contribution to the nation's Gross Domestic Product over the past few years has not gone beyond 5%. Many years of neglect and maladministration on the part of successive military and civilian governments, coupled with corruption and indiscriminate policy reversals have all conspired to render the manufacturing sector comatose.

Worthy of note is the fact that in spite of the huge resource flowing from the oil sector of the economy, the economy is yet to achieve meaningful development. This is a pointer to the need for diversification of the production base of the Nigerian economy, particularly the agricultural and industrial sector (Onakoya, 2013). Following the monetary theory framework, low interest rate alongside macroeconomic stability in the economy, plays a key role in channeling funds towards the target sector(s) of any economy, by attracting potential investors to borrow funds and make investment in the desired sector. According to (Ismail *et al*., 2013), the monetary policy in Nigeria has focused on two major goals in the economy; they are price stability and external balance. Achieving external balance through trade means that exports should exceed import, thus to promote export there is need to diversify the economy away from oil.

There are indeed an extensive number of researches on the impact/role of the agricultural or industrial sector's growth on the development of any economy. Amongst them includes Hye (2009), who using the Auto-Regressive Distributed Lag Model (ARDL), found that there is a bi-directional long run relationship between agriculture and the industrial output in Pakistan. Using the input-output framework, Saikia (2011) investigates the inter-sectoral linkages among three of the major sectors of the Indian economy (agriculture, industry and service). The findings reveal strong inter connectivity. A similar study in India by Bordoloi *et al*. (2009) using both input-output approach and econometric cointegration and state-space models shows that primary, secondary and tertiary sectors exhibit strong long-run equilibrium relationship amongst each other. Hence, their studies suggest that agriculture and industry should be the target sectors for a country's development.

This study therefore aims at investigating the impact of the agricultural and industrial sector on the overall economic development of the Nigeria using secondary data for a period of thirty-two years (1981 – 2012). The theoretical framework for this study will be anchored on the Doctrine of Balanced Growth, which was developed by Lewis (1954). The doctrine of balanced growth emphasized that there should be proper balance between investment(s) in the agricultural sector and industrial sector as agriculture and industry are complementary. Increase of output in the industrial sector requires expansion of agricultural output. If employment increases in the industrial sector, it will lead to increase in demand for agricultural output. Supplies of raw material for example should rise with the expansion of the industrial sector. Since the Doctrine of balance Growth has several authors such as Rosenstein-Rodan, Ragner Nurkse, and Arthur Lewis, some balanced growth theory simply means "investing in the lagged sector(s) of the economy or selected sectors of the economy, while to others it is investing simultaneously in all sectors of the economy".

Balanced growth requires that there should be a balance between the demand and supply sides. The supply side lays emphasis on the simultaneous development of all inter-related sectors which help in increasing the supply of goods. This includes areas such as agriculture, power, transport, raw material and so on. The demand side relates to the provision for larger employment opportunities and increasing incomes so that demand for goods and services may rise on the part of the people. The demand side relates to the supplementary industries, consumer goods industries, especially agriculture and manufacturing industries. With the simultaneous setting up of all types of industries, large numbers of people are employed and they create demand for each other's goods (Onakoya, 2013).

II. Materials And Methods

Data Sources and Description

The data used for this study were secondary data (time series) that covers a period of thirty-two (32) years, that is, from 1981 to 2012. On the basis of the literature reviewed and theoretical framework, economic development is a function of so many factors amongst them are agricultural and industrial growth, macroeconomic stability, exchange rate stability, capital accumulation, rate of interest, high literacy rate and so on. In the light of this, the dependent variable is captured by Real Gross Domestic Product Per Capita (RGDPP). Although the issue of development has been debated over time especially on the way it is measured, since RGDP per capita captures the standard of living in a country and the standard of living in turn is determined by the level of the country's development, it is on this basis that RGDPP is taken as a proxy for development, as employed by (Nwankwo and Njogo, 2013), while the independent variables includes agricultural growth and industrial growth (proxy by agricultural contribution to real GDP and industrial contribution to real GDP), macroeconomic instability is proxied by inflation rate, computed as annual percentage change in the consumer price index following Mazhar and Natalia (2011) and Oni (2012), interest rate is proxied by prime lending rate to examine the effect of institutional framework and government expenditure in providing infrastructural facilities (such as low interest rate) that will attract investors (Obasan and Adediran, 2010) and inflation rate.

Model Specification and Estimation Procedure

On the basis of the literature reviewed and the theoretical framework as earlier noted, the economic development model is specified and presented as follows.

$$RGDPP = \beta 0 + \beta 1ARG + \beta 2IND + \beta 3INT + \beta 4IFL + \mu \ldots\ldots\ldots\ldots\ldots (1)$$

Where
RGDPP= Real GDP per capita
ARG = Agricultural contribution to RGDPP
IND = Industrial contribution to RGDPP
INT = Interest rate
IFL =Inflation rate
μ = Stochastic error term.

To estimate the above equation, the unit root properties of the variables were tested for using the Augmented Dickey Fuller (ADF) and Phillips-Perron (PP) tests. The choice of the two test types is to ensure accuracy and consistency. According to Hamilton (1994) as cited by Martins (2014), the PP unit root test is generally considered more reliable than the ADF in the mist of serial correlation and heteroscedasticity. Hence the ADF and PP test for unit root of the variable such as RGDPP is implemented using the following specification:

$$\Delta RGDPP_t = \alpha_0 + \beta T + (\rho - 1)\mathrm{Y}_{t-1} + \sum_{i=0}^{p} \alpha_1 \Delta \mathrm{Y}_{t-1} + \varepsilon_t \ldots\ldots\ldots\ldots\ldots\ldots (2)$$

$$\Delta RGDPP_t = \alpha_0 + \beta T + (\rho - 1)Y_{t-1} + \varepsilon_t \ldots\ldots\ldots\ldots\ldots\ldots (3)$$

Where $RGDPP_t$ is the variable of interest, α_0 is the intercept, T is a linear time trend, Δ is the first difference operator and ε_t is the error term with zero mean and constant variance. Following the unit root tests is the test for cointegration by means of Johansen and Julius (1990) framework, after which if a long-run relationship is found among the variables, the cointegrating equation is examined. If cointegration is being detected between series, it implies there existed a long-term equilibrium relationship between them, and thus the Error Correction Model (ECM) is applied in order to evaluate the short run properties of the cointegrated series. The regression equation form for the ECM is as follows:

$$\Delta Y_t = \alpha_0 + \sum_{i=1}^{n} \beta_{1i} \Delta Y_{t-i} + \sum_{i=1}^{n} \lambda_{1i} \Delta X_{t-i} + \phi ECM_{t-1} + U_{t-1} \ldots\ldots\ldots (4)$$

From the ECM equation above, Y_t represent the dependent variable, X_t are the independent variables and Δ is the difference operator.

The ECM approach is valuable in that the ECM has cointegration relations built into the specification so that it restricts the long-run behaviour of the endogenous variables to converge to their cointegrating relationships while allowing for short-run adjustment dynamics.

Diagnostic test were consequently conducted on all the estimated models, that is, goodness-of-fit, the joint significance of estimated coefficients, the serial correlation, heteroscedasticity, normality of residuals and specification error test. To determine the stability of the estimated coefficients, the cumulative sum of recursive (CUSUM) and cumulative sum of squares of recursive residuals (CUSUMSQ) tests were also implemented.

III. Results And Discussion

Table 1: Unit Root Test Results

VARIABLES	AT LEVELS				AT FIRST DIFFRENCE				ORDER OF INTEGRA-TION
	ADF'	ADF"	PP'	PP"	ADF'	ADF"	PP'	PP"	
LRGDPP	1.7597	-1.7317	1.5033	-1.8481	-3.8334*	-4.4030*	-3.7819*	-4.3080*	I(1)
LAGR	1.5739	-0.9235	0.8227	-2.2027	-3.0449	-2.9627	-5.8921*	-5.8922*	I(1)
LIND	-0.3681	-3.3772	-0.2518	-3.3771	-5.0532*	-4.9398*	-5.2934*	-5.1176*	I(1)
LINT	-2.7083***	-1.6904	-2.2278	-1.6963	-6.0944*	-6.2299*	-5.2888*	-5.5403*	I(1)
LIFL	-3.0938**	-3.9163**	-2.9937	-2.9263	-6.1283*	-5.9952*	-8.5320*	-9.2568*	I(1)

Source: Authors' computation
' = unit root with constant; " = unit root with constant and trend
*, ** and *** denotes Order of integration at 1%, 5% and 10% respectively.

Table 1 shows that the results of the unit root tests with intercept and trend tend to be consistent for both test types. Table 1 also indicated that RGDPP, AGR, IND, INT and IFL are stationary at first difference. Consequently, the hypothesis of non-stationarity cannot be rejected for the variables at levels.
However, sequel to the result of the stability properties of variables carried out, a test of cointegration is warranted in that the rejection of the null hypothesis of no cointegration implies that using the variables in their level form is appropriate for estimation.

TABLE 2: Lag Length Criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
0	43.58248	NA	5.26e-08	-2.572165	-2.338632	-2.497456
1	192.4226	238.1442*	1.40e-11*	-10.82817	-9.426975*	-10.37992*
2	219.0845	33.77174	1.46e-11	-10.93897*	-8.370104	-10.11717

Source: Authors' Computation
Note: * lag order selected by the criterion

The lag length criteria are as shown in Table 2. From table 2, almost all the lag length selection criteria suggest 1 lag length, except the Akaike information criteria (AIC). From the above result a maximum of 1 lag was used in the appropriate test such as test of cointegration in the study.

However, sequel to the result of the stability properties of variables carried out, a test of cointegration is warranted in that the rejection of the null hypothesis of no cointegration implies that using the variables in their level form is appropriate for estimation.

Table 3: Johansen Cointegration Test Results

PANEL A MAX EIGENVALUE STATISTIC					
NULL HYPOTHESIS	**ALTERNATIVE HYPOTHESIS**	**EIGENVALUE**	**MAXIMUM EIGEN VALUE (λmax)**	**CRITICAL VALUES**	
				5%	**1%**
Ho : r = 0**	Ho = 1	0.8389	54.7756	37.52	42.36
Ho : r = 1*	Ho = 2	0.6551	31.9321	31.46	36.65
Ho : r = 2	Ho = 3	0.4723	19.1787	25.54	30.34
Ho : r = 3	Ho = 4	0.3928	14.9662	18.96	23.65
PANEL B: TRACE STATISTICS					
NULL HYPOTHESIS	**ALTERNATIVE HYPOTHESIS**	**EIGENVALUE**	**TRACE STATISTICS (λtrace)**	**CRITICAL VALUES**	
				5%	**1%**
Ho : r = 0**	Ho : r> 1	0.838920	128.0613	87.31	96.58
Ho : r ≤ 1**	Ho : r > 2	0.655067	73.28569	62.99	70.05
Ho : r ≤ 2	Ho : r > 3	0.472333	41.35355	42.44	48.45
Ho : r ≤ 3	Ho : r > 4	0.392785	22.17487	25.32	30.45

Source: Authors computations

*(**) denotes rejection of the hypothesis at the 5% (1%) level. The trace eigenvalue test and max eigenvalue test indicate 2 cointegrating equations at 5%. But at 1% the trace eigenvalues test indicates 2 cointegrating equations while maximum eigenvalue test indicate 1 cointegrating equation.

The results in Table 3 suggest that there is a longrun equilibrium relationship among the variables employed in the study, since the trace eigenvalue test and max eigenvalue test indicate 2 cointegrating equations at 5% while at 1% level of significance, the trace eigenvalues test indicates 2 cointegrating equations and maximum eigenvalue test indicate 1 cointegrating equation. Following Koutsoyianis (1997), in cases where the result of the trace statistic and max Eigen value differs, the maximum Eigen-value result is usually preferred. It is on the basis of this we therefore choose λ_{max} statistic result over λ_{trace} statistics result.

Following the existence of long-term equilibrium relationship among non-stationary variables and which disqualifies spurious regression when the variables are used at levels for estimation purposes, the choice of the Error Correction Model framework is appropriate. The estimated ECM results are presented in Table 4.

Table 4: Long-Run Estimation Result

Dependent Variable: RGDPP				
Regressors	**Coefficient**	**Standard Error**	**t-Statistic**	**t-Probability**
Constant	-0.635704	0.474094	-1.340882	0.1925
AGR	0.103131**	0.046795	2.203884	0.0374
IND	0.329733*	0.083958	3.927343	0.0006
INT	-0.009290	0.021149	-0.439263	0.6644
IFL	-0.003524	0.006722	-0.524294	0.6049

R-squared	0.986178	Mean dependent var	1.267737
Adjusted R-squared	0.982722	S.D. dependent var	0.172597
S.E. of regression	0.022687	Akaike info criterion	-4.538364
Sum squared resid	0.012353	Schwarz criterion	-4.214560
F-statistic	285.3858	Durbin-Watson stat	2.156284
Prob(F-statistic)	0.000000		

Sources: Author's computation; Extracted from regression output using Eviews 7.

Notes: Diagnostics statistics: $R^2 = 0.99$; Adjusted $R^2 = 0.98$; F- statistics 285.3858 [0.0000]; BG =0.2658 (0.6597); JB = 1.1305 (0.5681); ARCH = (X^2, 1) = 1.286005 (0.2723); Ramsey Reset = 0.4018 (0.2485)

***** and ****** indicates statistical significance at 1% and 5% respectively. Probability values are in brackets.

Results from Table 4 and Table 5 indicates that the estimated coefficient of agricultural sectoral contribution to RGDPP in the short-run and long-run are all positively related to Nigeria's economic development and statistically significant at 1% and 5% level of significance respectively. The positive sign shows that both in the short run and long run, the agricultural sector plays a very crucial role in the developmental process of the nation's economy. Holding other variables constant, 1% increase in agricultural growth will increase RGDPP by 0.42% in the short-run and 0.10% in the long-run. This result is not surprising, as agriculture have and is still the main stay of the Nigerian economy. The result also follows the theoretical underpinning that agricultural development should be the basis of economic development in a developing country like Nigeria, though its development has been since neglected since the oil boom. This result shows the need for government and the private investors to focus their attention on this sector to boost the economy of the nation and efforts must be made to ensure that government expenditure in the agricultural sector is improved as well as efficiently managed, so that it could translate to meaningful development in the sector which will trickle down to create employment opportunities, enhance productivity and increase agricultural production for exports. This result is in line with the findings of Aminu and Anono (2012), who found out that agriculture poses a positive impact on the economic development of Nigeria.

Table 5: Shortrun Estimation Result

Dependent Variable: RGDPP				
Regressors	**Coefficient**	**Standard Error**	**t-Statistic**	**t-Probability**
Constant	-0.008931	0.006796	-1.314080	0.2030
D(LAGR)	0.415676*****	0.082372	5.046333	0.0001
D(LIND)	0.272948*****	0.047372	5.761850	0.0000
D(LINT)	0.047313******	0.020314	2.329033	0.0299
D(LIFL)	-0.009327******	0.004038	-2.309558	0.0312
ECM(-1)	-0.789427*****	0.203094	-3.887006	0.0009

R-squared	0.886452	Mean dependent var	0.016867
Adjusted R-squared	0.843196	S.D. dependent var	0.037554
S.E. of regression	0.014871	Akaike info criterion	-5.335483
Sum squared resid	0.004644	Schwarz criterion	-4.915124
Log likelihood	89.03225	Hannan-Quinn criter.	-5.201007
F-statistic	20.49301	Durbin-Watson stat	1.897929
Prob(F-statistic)	0.000000		

Sources: Author's computation; Extracted from regression output using Eviews 7.

Notes: Diagnostics statistics: $R^2 = 0.88$; Adjusted $R^2 = 0.84$; F- statistics 20.49301 [0.0000]; BG =0.1632 (0.6905); JB = 0.2841 (0.8675); ARCH = (X^2, 1) = 0.8764 (0.3492); Ramsey Reset = 0.2643 (0.6128)

***** and ****** indicates statistical significance at 1% and 5% respectively. Probability values are in brackets.

Table 4 and Table 5 also show that the relationship between industrial growth and economic development is positive and statistically significant at 1% level of significance both in the long run and in the short-run. It is therefore expected that increase in industrial activities particularly manufacturing is expected to improve the general economic condition of the country. The industrial sector is made up of the oil and non-oil sector and the oil sector is the dominant sector and major income earner in the economy, but the oil sector in Nigeria as is well known is an enclave economy whose contribution to the national economy largely depends on the external sector demands. A drastic fall in the international demand (and price) of oil brings about a huge shock in the national economy. It is therefore not surprising that despite the huge resources flowing from this sector, the macroeconomic problems of unemployment, poverty and inflation have been persistent in the Nigerian economy (Akeem, 2013).

This is the more reason why increase in industrial activities should be channeled towards manufacturing. Over the years, the manufacturing sector in Nigeria has suffered a variety of constraint ranging from policy summersaults, relatively high inflationary trends, inadequate energy, all of which culminate in the increase in production costs, making domestic products less competitive in the international market (Anyanwu, 2000). In quantitative terms however, 1% increase in industrial activities will translate to 0.33% and 0.27% increase in RGDPP of the economy both in the long-run and short-run respectively. This result agrees with the result of the findings of Obasan and Adediran (2010), who ascertain that there is a strong and positive impact of the industrial sector on economic development.

As interest rate increases by 1% it will lead to 0.047% increase in RGDPP in the short run, but in the long-run, an increment of 1% will lead to a fall in RGDPP by 0.01%. Although, an increase in interest rate is expected to reduce RGDPP, but this appears not to be the case in the short-run, because in the short-run the interest rate coefficient is not only statistically significant, but positive. This is not surprising given the nature and structure of production in Nigeria which is dominated by one commodity (oil) and largely dictated by external forces (Martins and Muftau, 2014). The interest rate coefficient in the long-run follows theoretical expectation of inverse relationship to RGDPP, but not statistically significant in the long-run. This result tends to support the empirical findings of Ismail *et al*. (2013) in which the interest rate was insignificant in explaining the influence of monetary policy in Nigeria's economy growth. One possible reason for this is the inactive and ineffectiveness of the monetary policy as a policy option in influencing the workings of the economy. The Nigeria monetary authority uses the selective credit control instrument of monetary policy to channel commercial bank's lending's to specific sectors of the economy particularly to the productive sectors. But even at that, the farmers and small scale business operators do not have access to these funds due to some reasons, among which is the required collateral to obtain the loans and the bureaucratic process involved in accessing the loans (Ubah, 2008).

The estimated coefficient of inflation shows a statistically significant negative relationship in the short-run. This result is consistent with literature and theory. Holding other variables constant 1% increase in inflation will lead to -0.01% decrease in RGDPP in the short-run, which can be adduce to the fact that the structure of the Nigerian economy is generally monoculture. In the long-run however, the coefficient of inflation follows theoretical apriori expectation but not statistically significant. A 1% increase in inflation rate will lead to -0.003% decrease in RGDPP. It is expected that the diversification of the economy away from oil and the development of the agricultural and industrial bases of the economy in the long-run will generate employment, increase aggregate income and aggregate demand. This result is consistent with the result obtained from the findings of Ismail *et al*. (2013).

Table 5 presents the results of the Error Correction Model. An examination of all the variables shows that they are correctly signed except interest rate. All the variables are highly statistically significant at either 1, 5 and 10 percent level. The implication of this is that economic development in Nigeria is highly responsive to changes in agricultural and industrial output, inflation and interest rate.

As expected, the coefficient of the error correction model (ECM) mechanism is negative and is statistically significant, judging by its value of -0.79. It indicates that a deviation in development from equilibrium is corrected by as much as 79 percent the following year. In other words, the system corrects its previous period disequilibrium at a speed of approximately 79 percent annually.

Diagnostic Statistics: The diagnostic tests for the long-run estimates are satisfactory. The adjusted R^2 is 0.98, implying that 98 percent of variation in economic development is explained by the explanatory variables. Thus, the goodness-of-fit captured in the adjusted coefficients of determination shows that the estimated model has a high predictive capacity. The F-statistic is statistically significant, as indicated by the p-value of 0.0000, showing joint significance of estimated coefficients. The p-value of the Jaque-Bera (JB) statistics is reasonably high, which case we do not reject the normality assumption. The Breush-Godfrey (BG) serial correlation LM test for autocorrelation is satisfactory, as the statistics shows acceptance of the null hypothesis of no serial autocorrelation. The ARCH heteroscedasticity results suggest that the null hypothesis of homoscedasticity is accepted. The regression specification error test as captured by the Ramsey RESET is quite satisfactory as F-statistic is not statistically significant, indicated that the model is correctly specified.

The diagnostic statistics for the short term are satisfactory. The overall fit of the estimated ECM is adequate. The adjusted R^2 value of 0.84 shows that the independent variables employed in the model jointly accounted for 84 percent of the total variation in development. All the variables are jointly statistically significant, as indicated by the F-statistic. The model satisfies the diagnostic BG serial correlation LM test. The JB statistic is 0.2841 (0.8675) while the probability of obtaining the value, on the basis of the normality assumption, is 30 percent, implying that we cannot reject the null hypothesis of normality distributed error term.

The BG statistics indicates absence of serial autocorrelation. The null hypothesis of heteroscedasticity is rejected at the 1 percent level of significance, as the computed chi-square value is lower than the related tabulated value at the appropriate degree of freedom. In addition, the Ramsey RESET statistics indicates that the model is correctly specified.

Test for Stability of Coefficients: In order to determine the stability of the estimated coefficients of the models for Nigeria, the cumulative sum of recursive residuals (CUSUM) and cumulative sum of recursive residuals square (CUSUMSQ) tests were applied to the residual generated. The CUSUM and CUSUMSQ tests are shown in Figure 1 and 2 below. The result shows that the CUSUMSQ plot lies within the 5% error band, implying that the stability of estimated coefficients of the economic development for Nigeria exists over the entire sample period.

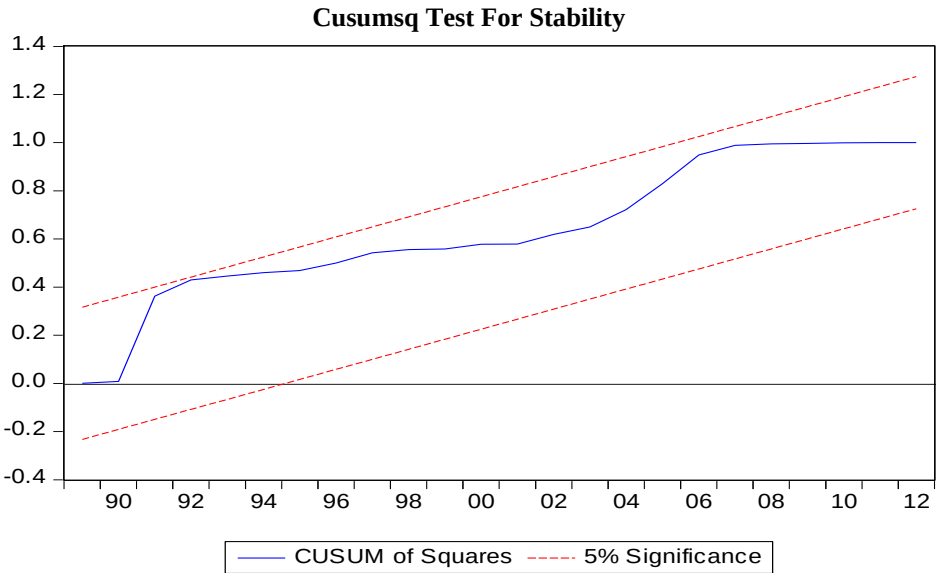

Figure 1: Plot of CUSUMSQ Test of Stability of Coefficient for the Long-run Estimation Result

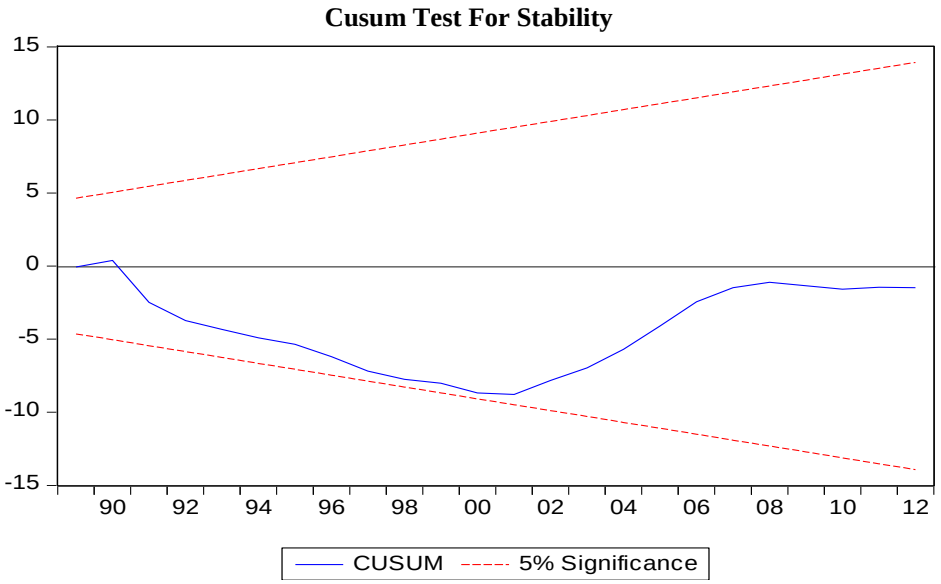

Figure 1: Plot of CUSUM Test of Stability of Coefficient for the Long-run Estimation Result
Source: Authors' computation; Extracted from regression output using Eviews 7
Notes: The straight dotted lines represent critical bounds at 5% significant level.

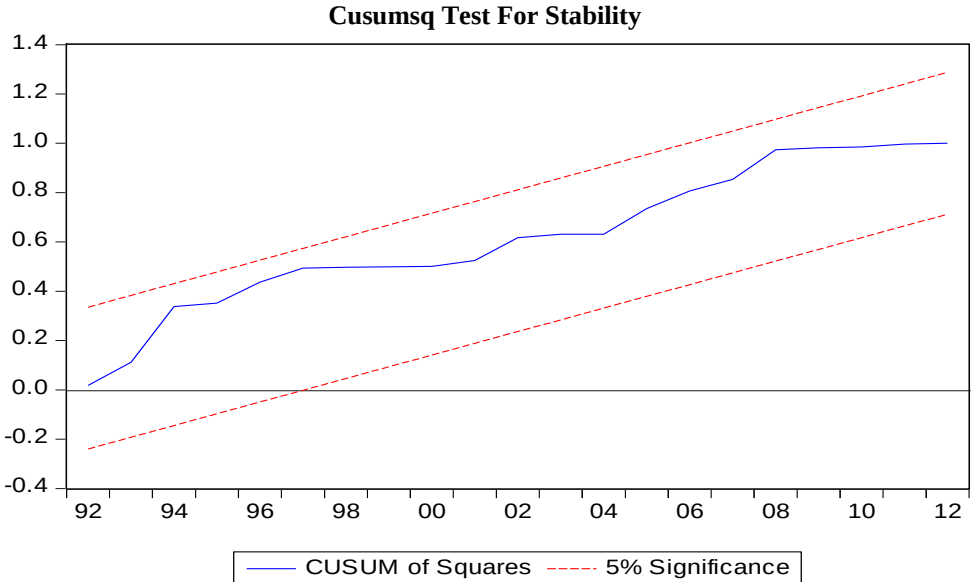

Figure 2: Plot of CUSUMSQ Test of Stability of Coefficient for the Short-run Estimation Result

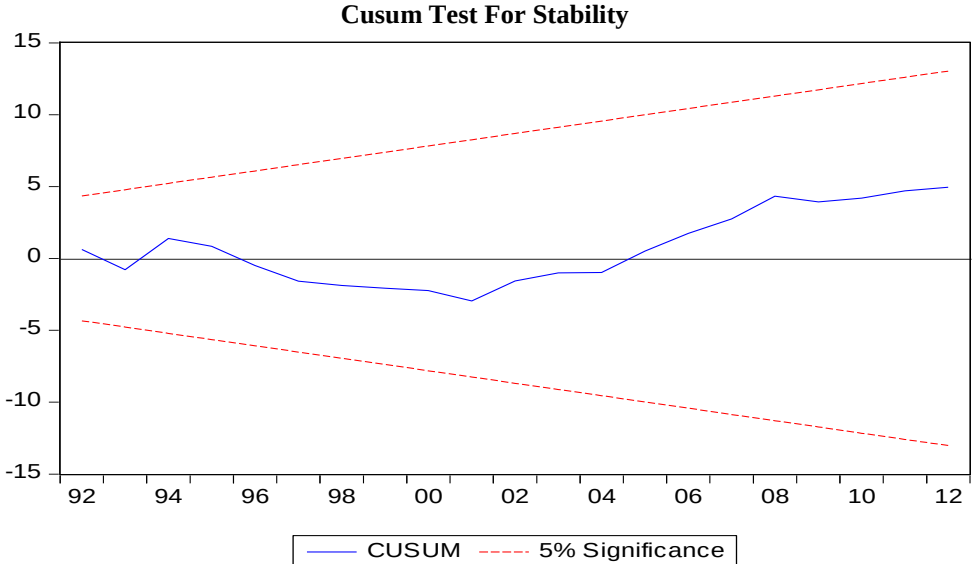

Figure 2: Plot of CUSUM Test of Stability of Coefficient for the Short-run Estimation Result

Source: Authors' computation; Extracted from regression output using Eviews 7
Notes: The straight dotted lines represent critical bounds at 5% significant level.

IV. Conclusion

From the findings of this research, agricultural and industrial growth (which is in line with theory) provides opportunities for economic development. It is therefore expected that with the development in the agriculture and industrial sector, job opportunities will be created, leading to the generation of income and hence alleviation of poverty. On the aggregate level, it is a source of foreign exchange when the products are exported. Conclusively, the overall result of the analysis indicates that these sectors have significant positive effect on economic development of Nigeria both in the short-run and in the long-run. The economy should therefore be diversified and focus should be shifted away from export of crude oil only and more effort should be concentrated on agricultural and industrial development. The growth of these sectors can be encouraged if the Government addresses the critical constraint and challenges facing agricultural and industrial production with particular emphasis on the use of improved technology (capital machineries) for production. Also, consistent agriculture and industrial policy and macroeconomic stability are necessary for prediction of changes in agricultural and industrial activities.

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