Globalization and Sectoral Growth in Nigeria: A Vector Autoregressive Analysis

¹James Kelechi O. (PhD), ²Longtei Henry M. (PhD)

¹National Health Insurance Authority, Abuja, Nigeria ²Central Bank of Nigeria, Abuja, Nigeria

ORCID 000-0002-1979-9946

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Abstract

The main focus of this study is to analyze the relationship between globalization and sectoral outputs in the Nigerian economy. The study used time series data from 1981-2019 which were sourced from central bank of Nigeria statistical bulletins and the KOF global index. Data was analyzed using the vector autoregressive model. The results of the study indicate that a long run relationship exists between agric sector GDP and globalization. Also a unidirectional causality exists from globalization to industry. The study thus recommends that in making agric sector policies considerations must be given to relative effects such policies will have in the industrial and services sector. Furthermore, Nigeria should constantly monitor trends of globalization and adopt its positives since it has a long run effect on the industry and services sector of the Nigerian economy.

Keywords: Globalization, sectoral growth, vector autoregressive analysis

INTRODUCTION

The human race from time immemorial has progressively established closer ties and contact among themselves. This close affinity has always aimed at achieving cross-pollination of ideas which result in growth in different spheres of human life. Recently, the pace of global integration and interdependence has increased such that it has become impossible for any country to live in isolation. This interdependence is felt greatly in areas of communication, transportation and computer technology which has driven global trade to new heights.

The concept of globalization which refers to the increasing integration of world trade and financial systems hasgatheredmomentum in recent decades. From 1960 till date, the world trade growth rate has been higher than that of world output. A key element of this process has been the increase in capital flows across borers over the last two decades. Since 1980's, gross capital flows have jumped from less than 5 percent to approximately 20 percent of GDP for advanced

countries and roughly 5 percent of GDP for emerging markets (Prasad, Rogoff, Wei and Kose, 2003)

Scholars have defined globalization based on different perceptions and understanding. Oman (1996) defines globalization as the growth, or more precisely the accelerated growth, of economic activity across national and regional political boundaries. It is evidenced in the rise of movement of visible and invisible goods and services, including ownership rights. These movements occur via trade and investment and often of people, via migration. It can be often facilitated by a lowering of government impediments to that movement, and /or by technological progress, notably in transportation and communications. According to IMF (1997), globalization is the increased economic interdependence of countries worldwide through increase in the volume and variety of goods and services traded across international borders. It includes international capital flows, and also rapid and widespread diffusion of technology. It is also further defined as the increasing interaction among and integration of diverse human societies in all important dimensions of their activities-economic, social, political, cultural and religious (Aninat, 2001) and as the phenomenon by which markets and production in different countries are becoming increasingly interdependent due to dynamics of trade in goods and services and flows of capital and technology (OECD 1993).

All the definitions above support the fact that globalization is driven by international trade and investment and has information technology as its backbone. It greatly influences the political, social, cultural, environmental and economic terrains of countries of the world.

Arguments have for long existed and will continue to exist as to the benefits of globalization. While the protagonists argue that globalization which rides on the back of capitalism results in general prosperity and creates more prosperity for people in more countries to benefit (Heywood, 2007), the antagonists relate globalization with inequality and exploitation and suggest thatit results in new forms of deprivation and injustice. They argue that thou it may favour richer countries; the poorer countries are also getting better through globalization.

Globalization is categorized into different types viz political, social and economic. Political globalization refers to the amount of political co-operation that exists between countries. Social globalization refers to the sharing of ideas and information between and through different countries while economic globalization refers to the integration of the domestic economies with the world economy and the enviable consequential increase in the economic interdependence of countries through trade, financial and investment flows, freer factor movement and exchange of technology and information (Uwatt 2004)

In measuring the impact of globalization on economic growth of economies, scholars have tended to study how it relates with economic output usually proxied by gross domestic product. This study will focus on economic globalization with a view to analyzing how it relates with growth of different sectors of the Nigerian economy.

Review of theoretical and empirical literature Theoretical literature

Several economic theories have been propounded to back up the need for globalization and its outcomes. Two of these theories viz the economic dependency theory and the world system theory will be reviewed here.

The economic dependency theory:

This emphasis of this theory is that the economic development of a state is affected by external influences majorly political, economic, and cultural. This theory was developed in the late 1950s by Raul Prebisch and his colleagues at United Nations Economic Commission for Latin America.

The world-system theory:

This theory was put forward by Immanuel Wallerstein in the 1960s. The crux of this theory is that worldwide conditions operate as determinant forces for the internal development of small and under developed countries. These factors include global systems of communication, world trade mechanisms, the international financial system, military links and knowledge transfer.

Empirical literature

Scholars have long expressed and continue to express different views about the impact of globalization on nations especially the less developed countries. These views are based on the results of empirical studies on issues of globalization.

Ogunyomi, Jenrola and Daisi (2003) investigated globalization and economic security in Nigeria's manufacturing sector between 1981 and 2010 using cointegration and error correction mechanism (ECM) to estimate the model. The results of the study indicate that globalization has a positive short-run effect on the manufacturing sector and a negative long-run effect. Examining the impacts of individual dimensions of globalization as well as its aggregate impacts on economic growth in Nigeria from 1970-2010, Ogwumike and Olukayode(2012) used multiple regression analysis to show that economic and political globalization exerts positive impacts on globalization while social globalization has a negative impact on globalization. In general, they concluded that globalization has a positive impact on economic growth in the country. The outcome of their study supports the results of Shuaib, Ekeria and Ogedengbe (2015) which studied the impact of globalization on economic growth in Nigeria from 1960-2010 using ordinary least square method of analysis to establish that globalization has positive impact on economic development in Nigeria. George-Anokwuru (2018) studied economic globalization and growth of the Nigerian economy. Her study employed the autoregressive distributed lag model to measure the impact of economic globalization on economic growth in the short and long run periods between 1981-2016. Her results indicate that Nigeria is not yet enjoying benefits of globalization. Deepening the globalization study, Onye and Iriabije (2016) in a study titled

"Globalization and Nigeria's economic performance" investigated the part that globalization has played in the performance of selected key sectors of the Nigerian economy. They utilized a tripartite error correction model to measure the effects of globalization on manufacturing and agricultural sector as well as international trade. Their findings reveal that except for agricultural sector, economic globalization did not contribute to improvement in manufacturing output and external balance position. They further found out that trade openness and net capital inflow has short term positive and insignificant effect on agricultural output but positive and significant effect on the long run. Studying globalization and economic growth in Nigeria, Imandojemu, Akinlosotu and Aina (2021)adopted the ordinary least square technique in their analysis to establish that exchange rate and balance of trade have direct relationship with gross domestic product per capita (GDPPC) while external debt had inverse relationship with gross domestic product per capita. In other studies, Killic (2015) investigated effects of economic, social and political globalization on growth levels of developing countries and causality relationship between the variables by using fixed effects least square method and granger causality test. The study was for 74 developing nations from 1981-2011. The results of their study imply that economic growth levels of selected developing countries were positively affected by the economic and political globalization whereas social globalization affected economic growth negatively.

Examining the impact of economic globalization on output growth of the Nigeria economy, Adesoye, Ajie, and Maku (2015) adopted econometric techniques using data from 1970-2013 to establish the existence of a long- run relationship among exchange rate, interest rate, inflation rate, foreign direct investment (FDI) trade openness and financial openness and real gross domestic product. In other studies, Feridun, Oluisi and Folurunso (2006) employed error correction model (ECM) to examine the effect of globalization on economic growth in Nigeria between 1986 and 2003. The results indicated that trade openness has a positive and significant effect on economic growth in Nigeria while financial integration has a negative but insignificant relationship with globalization. Alimi and Atanda (2011) examined the effect of globalization on economic growth in Nigeria between 1970 and 2010. They employed autoregressive model that regress variables of globalization on real gross domestic product. Their analysis revealed that globalization has a positive and significant effect on economic growth in Nigeria between 1970 and 2010. They employed autoregressive model that regress variables of globalization on real gross domestic product. Their analysis revealed that globalization has a positive and significant effect on economic growth in Nigeria.

From the literature reviewed it is evident that no previous study has analyzed the relationship between globalization and sectoral outputs in Nigeria using the vector autoregressive model. This study will explore this gap in its empirical analysis

Materials and Methods Data sources and transformation

Data for this study was collected from secondary sources. Data used represents real gross domestic products of the agricultural sector (crop, livestock, forestry and fishery), industry (mining, manufacturing, electricity, water and construction) and services (trade, transportation, ICT, finance and insurance, real estate, health and social services, etc). Data for agric sector GDP, industrial sector GDP and services sector GDP was sourced from Central Bank of Nigeria annual abstract of statistics while the data for globalization was sourced from KOF global index 2020. Data spanned period 1981-2018(38 yrs).

Model specification

This study aims to analyze how globalization affects the output of different sectors of the Nigerian economy vice versa. To achieve this aim, a Vector Error Correction Model (VECM) was adopted. The model was adopted because it restricts the long run behavior of the endogenous variables to converge to their cointegrating relationships while allowing for a short run adjustment (Guajarati, 2003). The model is stated as follows

 $Z_{t} = \alpha_{z} + \sum_{j=1}^{p} \Phi_{j} Z_{t-j} + \varepsilon_{t},$ (1) Where α is Nx1 vector of intercepts; Φ_{j} is $N \times N$ coefficient matrix; p is the lag order; and the residuals ε_{it}

For this study, the vector includes GLOB (globalization), AGDP (agricultural sector real GDP), IGDP (industrial sector real GDP) and SGDP (services sector real GDP).

Technique of estimation

The raw data was logged prior to estimation. An Augmented Dickey-Fuller (ADF) unit root test was conducted to establish the order of stationarity of the variables. The result of the ADF test indicates that all the variables where stationary at first difference thus satisfying the conditions for adoption of VAR analysis. A Johansen cointegration test was conducted and the result indicated the presence of cointegrating vectors hence the Vector Error Correction (VECM) form of the model was adopted using lag length (1) based on Akaike information criterion. Following the result of the estimation, variance decomposition was carried out to ascertain the impact of the variables in the model on the others. Also, a pairwise granger causality test was conducted to establish causal relationship among the variables. Finally, diagnostic tests were carried out to test properties of the model.

RESULTS AND DISCUSSION

Unit root test and order of integration Table 1: ADF Unit Root Test Results

At Levels			At 1 st difference		
Variable	ADF Test	5% C.V	ADF Test	5% C.V	Order Of
					Integration
LNGLOB	-2.648124	-2.943427	-5.953423	-2.945842	1(1)
LNAGDP	0.024073	-2.943427	-5.850641	-2.945842	1(1)
LNIGDP	0.262925	-2.943427	-5.354558	-2.945842	1(1)
LNSGDP	-0.775520	-2.948404	-2.965884	-2.945842	1(1)

Source: Author's Computation via E-views software

The ADF test was conducted on variables in order to determine the order of stationarity. The result as shown in table 1 indicates that all the variables are stationary at first difference thus satisfying the necessary condition for a vector autoregressive analysis.

Lag	LogL	LR	FPE	AIC	SC	HQ
0	191.0822	NA	2.68e-10	-10.69041	-10.51266	-10.62905
1	342.0544	258.8095	1.21e-13	-18.40311	-17.51434*	-18.09631
2	363.1627	31.36088*	9.36e-14*	-18.69501*	-17.09523	-18.14277*
3	369.9054	8.476536	1.76e-13	-18.16602	-15.85522	-17.36834

VAR lag length selection criteria Table 2: VAR Lag Order Selection Criteria

Source: Author's Computation via E-views software

*indicates lag order selected by criterion

LR: sequential modified LR test statistic (each test at 5% level), FPE: Final prediction error

AIC: Akaike information criterion. SC: Schwarz information criterion

HQ: Hannan-Quinn information criterion.

The result of the lag length selection test is shown above. While the Schwarz information criterion indicated one lag, other criteria indicate two lags. Going by the majority criteria two lags is thus chosen for the model analysis.

Cointegration test

The variables were all stationary at first difference hence the Johansen cointegration test is adopted. The result is presented in table 3 below

Hypothesized		Trace	0.05		
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**	
None *	0.668725	67.81492	47.85613	0.0002	
At most 1	0.431043	28.04186	29.79707	0.0786	
At most 2	0.182462	7.739628	15.49471	0.4937	
At most 3	0.013440	0.487127	3.841466	0.4852	
	Trace test indicates 1 cointegratingeqn(s) at the 0.05 level Unrestricted Cointegration Rank Test (Maximum Eigenvalue)				
Hypothesized		Max-Eigen	0.05		
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**	
None *	0.668725	39.77307	27.58434	0.0009	
At most 1	0.431043	20.30223	21.13162	0.0650	
At most 2	0.182462	7.252501	14.26460	0.4597	
At most 3	0.013440	0.487127	3.841466	0.4852	

	a			• · · •	
Table 3: Johansen	Cointegration	Test and No	ormalized	cointegrating	coefficients
I ubic 51 0 onumber	connegration	I cot and I to	or manzeu	connegi anng	coefficients

Max-eigenvalue test indicates 1 cointegratingeqn(s) at the 0.05 level					
Normalized co	ointegrating coe	efficients (stand	dard error in pa	arentheses)	
LNGLOB	LNAGDP	LNIGDP	LNSGDP		
1.000000	3.401143	-3.263872	-1.875848		
	(0.49452)	(0.63954)	(0.40601)		

Source: Author's Computation via E-views software

The results of both the trace and max-eigen statistics test indicate the presence of 1 cointegrating equation. The results of the normalized cointegration indicates that agricultural sector gross domestic product has a negative relationship with globalization while industrial and services sector gross domestic products respectively have a positive relationship with globalization. All the relationships are statistically significant. In conclusion the variables exhibit a long run relationship and hence the vector error correction model (VECM) will be applied.

Vector error correction estimates

The VECM results comprise the estimate of the speed of adjustment coefficients and short run properties of the series. The results are indicated below

Vector Error Correction	0	ing Domate	, 	
Standard errors in () &		۱[]		
		- L J	-	
CointegratingEq:	CointEq1			
	1.000000			
LNGLOB(-1)	1.000000			
LNAGDP(-1)	3.401143			
	(0.49452)			
	[6.87767]			
LNIGDP(-1)	-3.263872			
	(0.63954)			
	[-5.10346]			
LNSGDP(-1)	-1.875848			
	(0.40601)			
	[-4.62020]			
С	6.224207			
	D(LNGLOB	D(LNAGDP		
Error Correction:))		D(LNSGDP)
CointEq1	-0.061313	-0.005976	0.115987	0.074817
	(0.04400)	(0.04564)	(0.03285)	(0.01497)
	[-1.39349]	[-0.13095]	[3.53097]	[4.99615]

Table 4: Long Run and Cointegrating Estimates

0.009596	0.055918	-0.133884	-0.035260
(0.18948)	(0.19654)	(0.14146)	(0.06449)
[0.05064]	[0.28451]	[-0.94643]	[-0.54675]
0.153883	-0.023856	-0.011966	-0.275695
(0.21237)	(0.22027)	(0.15855)	(0.07228)
[0.72461]	[-0.10830]	[-0.07547]	[-3.81439]
-0.077337	0.339272	0.116281	0.299612
(0.19374)	(0.20096)	(0.14464)	(0.06594)
[-0.39917]	[1.68830]	[0.80393]	[4.54376]
0.014679	0.171133	-0.402369	0.369396
(0.32145)	(0.33341)	(0.23998)	(0.10940)
[0.04567]	[0.51327]	[-1.67667]	[3.37648]
0.002056	0.017370	0.018721	0.018438
(0.01049)	(0.01088)	(0.00783)	(0.00357)
[0.19594]	[1.59629]	[2.39023]	[5.16371]
0.075839	0.103344	0.374760	0.743301
0.492373	0.691530	3.596308	17.37370
	(0.18948) [0.05064] 0.153883 (0.21237) [0.72461] -0.077337 (0.19374) [-0.39917] 0.014679 (0.32145) [0.04567] 0.002056 (0.01049) [0.19594] 0.075839	$\begin{array}{c ccccc} (0.18948) & (0.19654) \\ \hline [0.05064] & [0.28451] \\ \hline \\ 0.153883 & -0.023856 \\ (0.21237) & (0.22027) \\ \hline [0.72461] & [-0.10830] \\ \hline \\ -0.077337 & 0.339272 \\ (0.19374) & (0.20096) \\ \hline \\ -0.39917] & [1.68830] \\ \hline \\ 0.014679 & 0.171133 \\ (0.32145) & (0.33341) \\ \hline \\ 0.002056 & 0.017370 \\ (0.01049) & (0.01088) \\ \hline \\ 0.075839 & 0.103344 \\ \hline \end{array}$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$

Source: Author's Computation via E-views software

Table 4 shows the error correction coefficients which gives the speed of adjustments within which the model will restore its equilibrium following any disturbances. The results show that the coefficient of the error correction term with globalization (GLOB) and agric GDP (AGDP) as dependent variables are negative with adjustment coefficients of 0.06 and 0.01 respectively. However, these coefficients are not statistically significant. In the case of variables IGDP and SGDP (industry GDP and services GDP), the coefficients of adjustment are positive and statistically significant. This indicates a divergence towards long run equilibrium. The long run results indicate that a percentage change in AGDP will result in 3.40% decrease in globalization. However, a percentage change in IGDP and SGDP will result in 3.26% and 1.88% increases in globalization respectively.

The short run equations indicate that a percentage change in AGDP results in 0.27% decrease in SGDP as shown in the AGDP equation. Also, a percentage change in IGDP will lead to 0.29% increase in SGDP based on the IGDP equation. Finally, a percentage change in SGDP will lead to a 0.37% increase in itself in the short run ceteris paribus.

Variance decomposition

To analyze the contributions of each variable in determining other variables, a variance decomposition was carried out and the result shown below

Table :	Cable 5: Results of Cholesky Variance Decomposition							
	Var	iance Decon	position of I	LNGLOB:				
Perio								
d	S.E.	LNGLOB	LNAGDP	LNIGDP	LNSGDP			
1	0.032199	100.0000	0.000000	0.000000	0.000000			
2	0.044413	99.51317	0.093287	0.312939	0.080600			
3	0.053856	96.95520	1.483329	1.399162	0.162312			
4	0.061688	94.82418	2.905083	2.106319	0.164414			
5	0.068630	93.27165	4.022154	2.548751	0.157445			
	Var	ion oo Dooon	manitian of I					
Daria	v ar		nposition of I	LNAGDP:				
Perio	SЕ	LNGLOB		LNIGDP	LNCOD			
d	S.E.	LINGLUD	LNAGDP	LNIGDP	LNSGDP			
1	0.033398	3.970546	96.02945	0.000000	0.000000			
2	0.0333390	3.563474	93.47145	2.824173	0.140902			
3	0.059493	3.489602	93.35281	3.068454	0.089134			
4	0.071474	3.038000	94.37090	2.524743	0.066357			
5	0.082332	2.656030	95.12341	2.170121	0.050438			
5			nposition of		0.030430			
Perio	v d							
d	S.E.	LNGLOB	LNAGDP	LNIGDP	LNSGDP			
<u>u</u> 1	0.024039	1.381953	0.013126	98.60492	0.000000			
2	0.033576	2.621068	9.035646	85.12087	3.222420			
3	0.042253	1.909957	26.39326	66.68791	5.008863			
4	0.050043	1.410332	35.80433	57.60722	5.178122			
5	0.056875	1.139039	40.68519	52.98545	5.190318			
					21170210			
D ·	v ai	fance Decon	nposition of l	LNSGDP:				
Perio	S.E.	LNGLOB	LNAGDP	LNIGDP	LNSGDP			
d								
1	0.010959	0.687079	10.74700	9.860886	78.70503			
2	0.016884	0.296520	9.343574	7.117833	83.24207			
3	0.024962	0.615863	28.01361	14.65975	56.71078			
4	0.035714	1.604474	43.05704	18.44123	36.89726			
5	0.046146	2.322632	50.48383	19.08100	28.11254			
Ch	nolesky Orde	ring: LNGL	OB LNAGD	P LNIGDP I	LNSGDP			
			• • •					

Table 5: Results of Cholesky Variance Decomposition

Source: Author's Computation via E-views software

From the results of the variance decomposition over five periods, it can be inferred that globalization exhibited strong endogenuity over the periods of measurement being that it

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contributed between 93-100 percent to determining itself while other variables made no significant contribution. Same can also be said of AGDP which exhibited strong endogenuity over the five periods. However, same cannot be said of IGDP and SGDP which strongly determined themselves in the first two periods but experienced significant influence from other variables in later periods. For IGDP it moved from strong endogenuity over the first two periods to weak endogenuity over the last three periods where its determination was influenced majorly by AGDP. In the case of SGDP it exhibited weak and declining endogenuity as it experienced strong influence from AGDP and IGDP.

Causality tests

Null Hypothesis:	Obs	F-Statistic	Prob.
LNAGDP does not Granger Cause		0.10000	0.4470
LNGLOB	37	0.18820	0.6672
LNGLOB does not Granger Cause LNAG	DP	2.30930	0.1378
LNIGDP does not Granger Cause			
LNGLOB	37	0.16026	0.6914
LNGLOB does not Granger Cause LNIGD	P	5.97119	0.0199
LNSGDP does not Granger Cause			
LNGLOB	37	0.07619	0.7842
LNGLOB does not Granger Cause LNSGI	OP	6.59680	0.0148
LNIGDP does not Granger Cause			
LNAGDP	37	0.75840	0.3899
LNAGDP does not Granger Cause LNIGE	PP	13.8242	0.0007
LNSGDP does not Granger Cause			
LNAGDP	37	0.25033	0.6201
LNAGDP does not Granger Cause LNSGDP		28.6444	6.E-06
LNSGDP does not Granger Cause			
LNIGDP	37	1.89380	0.1778
LNIGDP does not Granger Cause LNSGD	Р	11.6640	0.0017

Table 6: Pairwise Granger Causality Tests

Source: Author's Computation via E-views software

The pairwise granger causality test was conducted to ascertain the existence and direction of causality between the variables. The results shown in table 7 indicate that a unidirectional causality exists from globalization to IGDP, from globalization to SGDP and from AGDP to IGDP. Also a unidirectional causality exists from AGDP to SGDP and from IGDP to SGDP

Diagnostic tests

To ascertain the properties of the model, the following diagnostic tests were performed; Autocorrelation LM test, VEC residual normality test and VEC residual heterosedasticity tests. The results are given in tables 8-9 below

Lags	LM-Stat	Prob
1	7.660500	0.9583

Source: Author's Computation via E-views software

 Table 8: VEC Residual Heteroskedasticity Tests: No Cross Terms (only levels and squares)

Joint test:		
Chi-sq	df	Prob.
89.77848	100	0.7585

Source: Author's Computation via E-views software

 Table 9: VEC Residual Normality Tests

Component	Jarque-Bera	df	Prob.
1	15.87952	2	0.0004
2	475.9633	2	0.0000
3	1.315767	2	0.5179
4	1.194512	2	0.5503
Joint	494.3531	8	0.0000

Source: Author's Computation via E-views software

The results of the diagnostic tests indicate that the model does not suffer from problems of autocorrelation as indicated in the probability value of 0.9583 in table 8. Also the model is free from heteroskedasticity as indicated by the chi-square probability value of 0.7585 in table 9. The result of the normality test shows that the residuals of globalization and AGDP are not normally distributed with probability values 0.0004 and 0.0000 respectively. However, IGDP and SGDP have normally distributed residuals (p-value 0.5179 and 0.5503) respectively. Jointly the residuals of the model are not normally distributed with p-value of 0.0000. This is not a problem as deviation from normality in case of parametric test is not very sensitive (Macdonald, 2014). Also as pointed out by Wooldridge (2012) non-normality of errors is not a serious problem with large sample size.

CONCLUSION

This study analyzed the relationship between globalization and sectoral outputs in the Nigerian economy. The estimation technique involved the use Augmented Dickey-Fuller test to establish the order of stationarity of the variables, the Johansen cointegration and the Vector Error Correction Model estimate. The analysis also made use of forecasting technique of variance decomposition and the pairwise granger causality test. The study further conducted diagnostic test for normality, heteroskedasticity and autocorrelation.

The estimated results suggested that all variables were stationary at first difference and had at least one cointegrating vector. The normalized equation shows that in the long run, agric sector gross domestic product (GDP) negatively and significantly affects globalization while industry sector GDP and service sector GDP positively and significantly affects globalization. The results

further show that the coefficient of the error correction term (ECT) with globalization and AGDP as dependent variables is negative and statistically insignificant. In the case of variable IGDP and SGDP, the coefficients of the error correction term are positive and statistically significant indicating divergence from log-run equilibrium.

Results of the short run coefficients indicate that a percentage change in AGDP will result in 0.27% decrease in SGDP while a percentage change in IGDP will lead to a 0.29% increase in SGDP. The result further show that a percentage change in SGDP will lead to a 0.37% increase in SGDP itself ceteris paribus.

The decomposition of the variances indicated that globalization and AGDP exhibited strong endogenuity over the five periods of forecasting i.e. they strongly predict themselves. For IGDP and SGDP they exhibited strong endogenuity over the first two periods of forecast and weak endogenuity subsequently. For IGDP, AGDP was strongly exogenous over the last three periods. In the case of SGDP, AGDP exhibited strong exogenuity while IGDP also contributed significant percentage to it. From the pairwise granger causality tests we see that a unidirectional causality exists from globalization to IGDP and SGDP. From AGDP to IGDP and SGDP and from IGDP to SGDP.

RECOMMENDATIONS

The results of the study clearly indicate that agricultural production strongly affects the industrial and services sector of the Nigerian economy. Put differently, the output of the agric sector is greatly utilized in the industrial sector which ultimately is linked to the services sector. We further see that globalization can determine the direction of the industrial and services sector of the Nigerian economy. The results have a lot of policy implications. First, policies relating to the agric sector in Nigeria must take into consideration the effects it will have on the industrial and services sector vice versa. Furthermore, since the growth of the industrial and services sector is greatly affected by the agric sector, increased funding and provision of incentives to the sector is recommended so as to trigger a multiplier effect in the industrial and services sector. Also, government should focus on growing the industrial sector since it automatically triggers growth in the services sector. Policies should be enacted to improve the ease of doing business which will encourage business start-ups. Finally, it is recommended that, Nigeria should monitor the trends of globalization and seek to adopt its positives since it has a long run effect on the industrial and services sector of the Nigerian economy.

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