International Journal of Advanced Research in Statistics, Management and Finance
ISSN Hard Print: 2315-8409, ISSN Online: 2354-1644 Vol. 3. No. 1 September, 2015

INTERNATIONAL TRADE AND ECONOMIC GROWTH PERFORMANCE: EVIDENCE FROM NIGERIA: 1980-2012

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Abstract
This study investigated impact of international trade on Nigeria's economic growth performance for the sample period 1980 to 2012. In order to capture the dynamic structure of the model, including the inevitable feedback effects, the vector autoregressive technique was adopted. This technique was followed up with both impulse response functions and forecast error decomposition. The variables employed for the analysis are gross domestic product (GDP), a proxy for economic growth, openness, foreign direct investment (FDI), and exchange rate (EXR). The results of the impulse response function and the forecast error decomposition revealed that future changes in the variables are to a large extent explained by shocks or innovations in the selected variables, confirming the equilibrium. Openness and FDI were shown to be very significant determinants of economic growth in Nigeria. The ECM value which was in consonance with the a priori expectations of being negative, fractional and significant indicated that about 2% of any disequilibrium is corrected annually. The recommendations therefore are that Nigeria should embark on more liberalization policies in order to increase her openness and foreign direct investment inflows, and secondly, the exchange rate to be market-determined to enable it reaps the full benefits of liberalization.

Keywords: *Openness, Liberalization, Foreign Direct Investment, Economic Growth, Vector Auto Regression.*

http://internationalpolicybrief.org/journals/international-scientific-research-consortium-journals/stats-mgt-and-fin-vol3-no1

Background to the Study

Internal trade, otherwise referred to as either foreign trade or external trade is trade across national boundaries. It involves exchange of goods and services by nationals of different countries. The benefits arising from international trade have been emphasized by different scholars. In Ricardian theory of comparative advantage, international trade should still take place even when a country is able to produce all commodities cheaper than its trading partners (Bhatia, 1981). Smith (1776) in his wealth of nations argued that the principal benefit of foreign trade "is not the importation of gold and silver but the carrying out of surplus produce for which there is no demand and bring back something for which there is ". By engaging in international trade, countries can specialize in the production of goods and services. Countries can maximize their incomes by exchanging their specialized commodities.

Trade among countries can exert some significant influences on economic growth and development, more especially in this current era of globalization. Trade opens up markets, increases employment of factors of production, raises profits and provides the basis for both larger savings and their investment in expanded output. As production and output increases, economies of scale are realized, innovations are stimulated, and productive efficiency is increased. Without international trade, the importation of some capital goods, so essential to a nation's growth would be impossible. Trade makes people familiar with new and attractive goods which in turn act as motivation for increased output. Trade may even induce capital, enterprise, and labour to migrate to the site of natural resources where a thriving export industry can be developed. It is in this regards that Robertson (1938) described trade as an engine of growth, and Minford et al (1995) lauded it as an elixir of growth.

Nigeria has been traditionally known to be an open economy, with foreign trade transactions representing a significant source of her national income. Following the views of the proponents of a positive trade-growth relationship, Nigeria's economic growth performance expected to depend to a large extent on economic growth performance between 1960 and 1999 has not been impressive. Within this period, the growth rate of her real gross domestic product (RGDP) as measure of economic growth has, on the average, revolved around 4 percent per annum. This poor performance over the period may be attributed to the political crisis which led to the civil war between 1966 and 1970, and the subsequent military regimes that lasted up till 1999. However, Nigeria's gross domestic product has improved with an average growth rate of 7 percent between 2000 and 2010. This increase in economic growth has been attributed by many as a result of transition from military dictatorship to civilian governance in 1999. In his economic review, Oyovwi and

Eshenake (2013), observed that the economy of Nigeria expanded by 7.22 percent in 2011, and was growing at a pace faster than the global and regional average of 3 percent and 5.2 percent respectively.

While a good number of economists are of the view that a positive relationship exists between international trade and economic growth performance, others such as Eravwoke and Oyovwi (2013), Rodrik and Rodriguez (2000), and Edwards (1993) have strongly refuted that review. They contend that the strong empirical results in favour of trade and openness might have arisen from model mis-specification and /or using measures of openness as a proxy to macroeconomic policies or other factors such as institutions and geography. In view of the above controversy with regards to whether the relationship between international trade and economic growth is inverse or direct one, this study aims at using some standard econometric techniques to empirically determine the extent of contribution of international trade to the economic growth of Nigeria.

Review of Empirical Literature

Right from the classical school of thought represented by Adam smith, David Ricardo, Alfred Marshal, etc, there have been overwhelming theories in favour of international trade as an important requirement for economic growth. What shall be explored in this study are the literature on empirical studies on the relationship between international trade and economic growth.

Eravwoke and Imide (2013) empirically examined international trade as an engine of growth in developing countries with Nigeria as a case study. Using data from secondary sources, the study applied co-integration examination and error correction modeling for the analysis. The result showed that export was a highly significant component of international trade and recommended that government should increase export promotion in order to enhance Nigeria's economic growth. Arodoye and Iyoha (2014) examined the nexus between foreign trade and economic growth in Nigeria. Using quarterly trade for 30 years (1981-2010), the study applied a vector autoregressive model and variance decomposition techniques in order to account for feedbacks in the relationship. The result not only indicated a stable long run relationship between foreign trade and economic growth but also showed that the major sources of changes in economic growth in Nigeria are from "own shocks" and innovations arising from foreign trade.

They therefore recommended the adoption of trade expansion policies as means of accelerating economic growth in Nigeria. Nageri, Ajayi, Olodo, and Abina (2013) did an empirical study of growth, through trade, with evidence from Nigeria. Employing ordinary least squares on a sample covering the period 1975 to 2012, the

results indicated that total trade, and degree of openness exerted significant influences on Nigeria's economic growth. While total trade, FDI and exchange rate are positively related to economic growth, degree of openness had a negative influence on Nigeria's exchange rate and is positively related to economic growth. The dummy variable representing political stability in the model showed that political stability did not significantly affect Nigeria's economic growth performance. The recommendations were a review of Nigeria's trade policies.

Ezike, Ikpezu and Amah (2012) evaluated the role of trade on Nigeria's economy, using different specifications of the traditional export-led growth model for the period 1970-2008. The results showed that exports and foreign direct investment inflows have positive and significant impact on the growth of Nigerian economy. The study recommended that in order to attain the desired growth levels, Nigeria should not only apply fiscal policies to stimulate exports but also engage in efforts to increase diversification of her non-oil export commodities. Omoke and Ugwuanyi (2010) made use of Granger causality and co-integration tests to determine the nature of the relationship between exports, domestic demand and economic growth in Nigeria. The co-integration results showed that the variables did not have any long run relationship with each other, while the Granger causality were from economic growth to exports and domestic demand, and a bilateral or two-way causality between exports and domestic demand.

Adelowokan and Maku (2013) studied the role of trade openness and foreign direct investment as components of globalization in explaining growth. In effects, it was a study of the effect of trade and financial investment on growth in Nigeria between 1960 and 2011. They applied the method of dynamic regression modeling. The result of their study were that trade openness, foreign investment exerted negative effects on economic growth in Nigeria between 1960 and 2011. The study's recommendations were that structural trade oriented policy should be adopted to enhance economic growth in Nigeria through increase in exports in order to accumulate more foreign proceeds to boost output growth in Nigeria.

Oyovwi and Eshenake (2013), tested the hypothesis that financial openness promotes economic growth, using vector error correction approach to capture the impact of financial openness and financial development on economic growth for the period 1970 to 2010. The co integration result revealed long run equilibrium among the variables. The study recommended that legal and accounting reforms were required to strengthened operations in the financial sector, coupled with efficient Central Bank of Nigeria (CBN) supervision.

Danmal and Ozyurt (2011) explored the impact of trade openness on the economic growth of 26 states in Brazil over the period 1989-2002. The empirical analysis relied heavily on distributed lag models and system GMM estimator. The results revealed that openness is more beneficial to states with a high level of initial per-capita income and therefore contributes to increased regional disparities in economic growth. The results revealed in addition that trade openness favours more industrialized states, with high levels of human capital endowments than those states whose economic activity is mainly based on agriculture.

Zahoor, Imran, Anam, Saif and Ashraf (2012) did an empirical study on the effects of international trade on economic growth with Pakistan as a case study, for the period 1973-2010. The methods adopted were ordinary least squares and a chow test to detect the existence of any structural break. The results showed that an increase in import of raw materials increases production, employment, and output of the country, and that trade openness exerted a positive and significant influence on the growth rate of Pakistan. But Lent (2012) embarked in a study entitled "Openness to international trade and economic growth: a cross country empirical investigation" over the sample period 1960-2000. The results indicate that many openness variables are positively and significantly correlated with long run economic growth.

Peng and Almas (2010) did a study on international trade and its effects on economic growth in China. Both econometric and non-parametric approaches were applied in the analysis based on a 6-year panel data from 2002 to 2007. The study revealed that increasingly participation in international trade helps China to reap the static and dynamic benefits arising from rapid economic growth.

Safdari, Mehrizi and Dehquan-Niri (2012) conducted an empirical investigation on the existence of a long run relationship between foreign trade and economic growth in Iran between 1975 and 2008. The method applied in the analysis was vector autoregressive model. The results showed that total population, trade volume, gross capital formation and tariffs have positive influence on economic growth.

Mustafa (2011) investigated the relationship between foreign trade and economic growth in Turkey for the period 1987-2007. The methods employed were vector autoregressive (VAR) models. The result showed that in the short run, economic growth did not significantly depend on export growth.

Sarbapriya (2011) studied the relationship between foreign trade and economic growth, in India for the period 1972 to 2011. The co-integration and granger causality tests revealed a long run equilibrium relationship between foreign trade

and economic growth, and the existence of bilateral causal relationship between the two. Rahmaddi and Ichihashi (2011) investigated the relationship between exports and economic growth in Indonesia for the period 1971-2008. The methods adopted were the vector autoregressive (VAR) and vector error correction (VECM) frameworks. The results showed that a bilateral causality exists between exports and economic growth, and that exports are significant determinants of economic growth.

Hassan (2007) did a study to determine the relationship between exports and the domestic economic growth in Saudi Arabia for the period 1970 to 2005. The methods used in the analysis are vector autoregressive, impact response functions and Granger causality tests. The results revealed that the export sector significantly affected economic growth both in the short run and long run.

Methodology

This research employed standard econometric techniques. It, first of all subjected the chosen variables to unit root and co-integration tests in order to determine the long run characteristics of the variables. Secondly, in recognition of a possible feedback effects through the variables in the model, vector autoregressive techniques was applied. A VAR approach enables a researcher to determine the dynamic structure of a model clearly. Thirdly was the application of impulse response functions and forecast error variance decomposition to analyze the short run dynamic properties of the variables. The impulse response function reveals the dynamic structure by showing how shocks to any one variable filters through the model to affect every other variable and eventually feedback to the original variable itself. Finally, Granger causality test was conducted to determine the existence, if any, of any causal relationship among any pair of the included variables in the model.

Model Specification

In line with recent investigations on the relationship between international trade and economic growth performance, the relationship was specified as a vector autoregressive model (VAR). This can be specified in its compact form as:

$$GDP_{it} = \sum_{k=1}^{k} \sum_{s=1}^{m} \beta iksGDP(t-s) + it$$

where,

GDP_t = Gross domestic product, a proxy for economic growth performance

Openness Imports + Exports as a ratio of GDP
EXR = Exchange rate
FDI = Foreign direct investment
K = N0. of variables in the model
M = No. of lags of each variable
B_i = Coefficient of the explanatory variables
U_t = stochastic error terms

VAR technique is of interest because it makes it possible and relatively easy to study the interrelationship among non-stationary variables, treating all variables as endogenous. It is also of immense help in forecasting future values of time series variables.

Data Discussion and Sources

Data required for this research are data on exports (EXP), imports (IMP), exchange rate (EXR), foreign direct investment (FDI), and gross domestic product (GDP). The sum of exports and imports as a ratio of GDP is a measure of volume of trade with respect to the volume of economic activities. This is an indicator of the openness of the economy to international trade. As a developing country vulnerable to external shocks, changes in exchange rates exerts a significant influence on macroeconomic activities. Also, as a developing country characterized by financial constraint, foreign direct investment plays an important role in Nigeria's economic growth. Finally, gross domestic product is a measure of output of goods and services. Increase in output of goods and services (increase in GDP) over time imply economic growth. Therefore, GDP is included as a proxy for economic growth performance.

Empirical Results

Presented below are the unit root tests, Co-integration tests, Variance decomposition results, and impulse response functions

Table 1: ADF Unit root Test Results (1st Difference)

Variables	ADF Test Statistics	5% critical value	Order of Integration	Remark
RGDP	- 12.01618	-3.568373	1(1)	Stationary
OPENESS	-5.644538	-3.557759	1(1)	Stationary
EXR	-9.083209	-3.568379	1(1)	Stationary
FDI	-5.933356	-3.587527	1(1)	Stationary

Source: Author's Computation using E-views 7.0 Computer Software

The above results indicated that while the variables were not stationary at levels, they became stationary after first differencing. The result of the unit root tests became a motivation to subject the variables to co-integration test in order to find out the existence or not of any long run , steady state or equilibrium relationship among the variables.

Table 2 and 3 below show the Johansen Co-integration test results. While Table 2 shows the co-integration test using the trace statistics, table 3 shows the test using maximum eigen values. All the tests were conducted at 5% level of significance.

Table 2: Unrestricted Co-integration Rank Test (Trace Statistic)

Unrestricted Co integration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.612614	75.11094	63.87610	0.0043
At most 1 *	0.504106	46.66094	42.91525	0.0202
At most 2 [8]	0.386334	25.61913	25.87211	0.0537
At most 3 [8]	0.306266	10.97000	12.51798	0.0895

Trace test indicates 3 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Table 3: Unrestricted Co-integration Rank Test (Maximum Eigen Values)

Unrestricted Co integration Rank Test (Maximum Eigen value)

Hypothesized No. of CE(s)	Eigen value	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None	0.612614	28.45000	32.11832	0.1315
At most 1 [8]	0.504106	21.04181	25.82321	0.1889
At most 2 [8]	0.386334	14.64912	19.38704	0.2134
At most 3 [8]	0.306266	10.97000	12.51798	0.0895

Max-eigenvalue test indicates 3 co integration at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Source: Author's Computation using E-views 7.0 Computer Software

The Johansen co-integration test results indicate that both the trace statistic and maximum eigen values confirm the existence of long run equilibrium relationship among the variables. The implication is that there exists a long run equilibrium relationship among the variables.

The equation below is the normalized co integration coefficients. This equation shows the long run equilibrium relationship between RGDP and the regressors:

D(RGDP)	= -1672.899 +	406239.0(OPENNESS) +	2163.495(EXR) -	1.15066FDI
(SE)	= (1656.02)	(69754.3)	(1468.84)	(0.34562)
t	= (1.1010)	(5.8239)	(1.4729)	(3.3293)

In the above equation, both OPENNESS and FDI appear to be highly determinants of economic growth in Nigeria. On the other hand, not only that the empirical result indicate that exchange rate is not a significant determinants of economic growth in Nigeria, it did not appear with the expected a priori sign. Exchange rate under the economic a priori criterion is expected to be inversely related with economic growth. This wrong sign may be attributed to the fact that exchange rate in Nigeria has never been allowed to fluctuate freely in response to market forces.

Table 4 below presents the error correction model (ECM) results. The error correction model (ECM) ties the short run discrepancy with their long run values. The ECM is the same as the speed of adjustment in distributed lag models.

Table 4: Error Correction Model Results (RGDP as dependent variable)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(OPENNES)	11873.28	19863.66	0.597739	0.5548
D(EXE)	514.4713	566.9068	0.907506	0.3719
D(FDI)	0.072557	0.128456	0.564835	0.5767
ECM (-1)	-0.193087	0.094101	-2.051923	0.0496

R-squared	-0.336684	Mean dependent var	26792.07
Adjusted R-squared	-0.479900	S.D. dependent var	35016.51
S.E. of regression	42597.98	Akaike info criterion	24.27347
Sum squared resid	5.08E+10	Schwarz criterion	24.45669
		Hannan-Quinn	
Log likelihood	-384.3755	criter.	24.33420
Durbin-Watson stat	0.589345		

Source: Author's computation using E-views 7.0

The coefficient of the error correction term of -0.193087 implies that only about 2% of any short run disequilibrium between the dependent variables RGDP and the explanatory variables, is corrected annually. The error correction coefficient satisfies all the a priori expectations being negative, fractional and significant at about 5% level of significance.

Table 5 Below Presents the Vector Co-integration Estimates:
Table 5: Vector Error Correction (VECM) Model Results

Vector Error Correction Estimates
Date: 03/30/15 Time: 09:16
Sample (adjusted): 1983 2012
Included observations: 30 after adjustments
Standard errors in ( ) & t-statistics in [ ]

Co integrating Eq:	CointEq1
RGDP(-1)	1.000000
OPENNES(-1)	2195091. (565138.) [3.88417]
EXE(-1)	-32724.79 (4554.39) [-7.18534]
FDI(-1)	10.04924 (2.81106) [3.57489]
C	-496156.6

Error Correction:	D(RGDP)	D(OPENNES)	D(EXE)	D(FDI)
CointEq1	-0.011544 (0.00410) [-2.81418]	-3.16E-07 (9.7E-08) [-3.26371]	7.52E-06 (4.3E-06) [1.72950]	-0.021793 (0.01869) [-1.16585]

D(RGDP(-1))	0.464921	-9.11E-06	0.000217	-0.667730
	(0.17014)	(4.0E-06)	(0.00018)	(0.77528)
	[2.73259]	[-2.27155]	[1.20221]	[-0.86127]
D(RGDP(-2))	-0.076703	-1.75E-06	-3.10E-06	-0.116441
	(0.07933)	(1.9E-06)	(8.4E-05)	(0.36151)
	[-0.96684]	[-0.93440]	[-0.03689]	[-0.32210]
D(OPENNES(-1))	14289.47	-0.325081	2.178898	82968.06
	(8922.35)	(0.21038)	(9.45354)	(40657.0)
	[1.60154]	[-1.54522]	[0.23048]	[2.04069]
D(OPENNES(-2))	9039.947	-0.210788	-0.923196	12959.55
	(8452.38)	(0.19930)	(8.95559)	(38515.4)
	[1.06952]	[-1.05766]	[-0.10309]	[0.33648]
D(EXE(-1))	-9.917447	-0.009257	0.253490	-335.8054
	(216.263)	(0.00510)	(0.22914)	(985.460)
	[-0.04586]	[-1.81539]	[1.10628]	[-0.34076]
D(EXE(-2))	-63.16701	-0.009938	0.142042	-282.6333
	(218.427)	(0.00515)	(0.23143)	(995.318)
	[-0.28919]	[-1.92970]	[0.61375]	[-0.28396]
D(FDI(-1))	0.082191	3.29E-06	-6.85E-05	0.134712
	(0.05812)	(1.4E-06)	(6.2E-05)	(0.26485)
	[1.41412]	[2.40343]	[-1.11171]	[0.50864]
D(FDI(-2))	0.104278	2.78E-06	-5.01E-05	-0.139540
	(0.05892)	(1.4E-06)	(6.2E-05)	(0.26849)
	[1.76981]	[2.00312]	[-0.80316]	[-0.51973]
C	14554.04	0.316623	-0.734036	27619.46
	(5117.29)	(0.12066)	(5.42195)	(23318.3)
	[2.84409]	[2.62410]	[-0.13538]	[1.18446]

R-squared	0.735962	0.574540	0.217705	0.277904
Adj. R-squared	0.617146	0.383082	-0.134328	-0.047039
Sum sq. resids	3.95E+09	2.195102	4432.419	8.20E+10
S.E. equation	14050.45	0.331293	14.88694	64024.48
F-statistic	6.194089	3.000878	0.618423	0.855240
Log likelihood	-322.9985	-3.343625	-117.5007	-368.4968
Akaike AIC	22.19990	0.889575	8.500047	25.23312
Schwarz SC	22.66696	1.356641	8.967113	25.70019
Mean dependent	22973.59	0.008867	5.227550	8023.483
S.D. dependent	22707.71	0.421792	13.97771	62569.79

Determinant resid covariance (dof adj.)	1.23E+19
Determinant resid covariance	2.43E+18
Log likelihood	-805.3083
Akaike information criterion	56.62055
Schwarz criterion	58.67564

Source: Author's Calculations using E-views 7.0 Computer Software

As shown in the vector autoregressive estimate, the most important determinant of economic growth is RGDP lagged one period, with a coefficient of 0.96 and highly significant with a t-value of 11.8889, followed by, though not significant, EXR lagged two periods, FDI lagged one period, and finally Openness lagged two periods. It can also be seen that the most determinant of RGDP, Openness, EXR, and FDI are their own value lagged one period.

Forecast Error Variance Decomposition Results

In the analysis of the short run dynamic properties of the selected variables namely, RGDP, OPENNESS, EXR, and FDI, examine tables 6A to 6D below:

Table 6A: Variance Decomposition Results

Variance Decomposition of RGDP:

Period	S.E.	RGDP	OPENNES	EXR	FDI
1	14050.45	100.0000	0.000000	0.000000	0.000000
2	27464.77	95.14116	1.036417	3.264108	0.558316
3	41881.56	89.10763	1.176592	8.799104	0.916675
4	58247.53	80.69129	1.414617	14.68552	3.208567
5	76198.95	74.74745	1.438226	18.37098	5.443349
6	94726.18	71.13213	1.249963	21.04381	6.574094
7	112763.6	69.14315	1.060073	23.04354	6.753245
8	129927.3	67.80965	0.937725	24.58805	6.664574
9	146325.9	66.65791	0.871667	25.78272	6.687707
10	162214.8	65.61554	0.833768	26.69602	6.854663

6B

Variance Decomposition of OPENNES:

Period	S.E.	RGDP	OPENNES	EXR	FDI
1	0.331293	27.36403	72.63597	0.000000	0.000000
2	0.354368	36.22927	63.49486	0.232668	0.043208
3	0.387912	42.58918	55.80634	1.554496	0.049977
4	0.456886	41.05422	42.52905	2.020731	14.39600
5	0.476768	40.41787	40.47391	1.944463	17.16375
6	0.497545	39.68569	41.07886	2.258667	16.97678
7	0.516539	40.00878	41.00979	2.559577	16.42185
8	0.533295	40.83264	40.03812	2.700791	16.42846
9	0.554506	40.88619	38.53003	2.902302	17.68148
10	0.575219	40.24905	37.27378	3.215099	19.26207

6C
Variance Decomposition of EXR:

Period	S.E.	RGDP	OPENNES	EXR	FDI
1	14.88694	3.533996	0.547855	95.91815	0.000000
2	22.11675	3.261039	8.625425	88.07580	0.037730
3	27.40481	3.406522	8.800018	87.42144	0.372016
4	31.42845	3.197075	9.947921	83.54770	3.307300
5	34.77283	2.642864	10.59328	82.54375	4.220107
6	37.31202	2.298552	10.70021	82.40353	4.597700
7	39.61559	2.039716	10.96694	82.35260	4.640741
8	41.83204	1.830403	11.39295	81.98325	4.793399
9	43.95366	1.658051	11.78686	81.27633	5.278753
10	45.94656	1.523741	12.12206	80.51062	5.843577

6D
Variance Decomposition of FDI:

Period	S.E.	RGDP	OPENNES	EXE	FDI
1	64024.48	6.602545	0.139985	3.437896	89.81957
2	87244.31	3.557292	2.137555	5.373147	88.93201
3	95802.18	3.060985	2.010991	6.995261	87.93276
4	100756.7	2.796421	2.072090	8.204880	86.92661
5	105472.2	2.817493	1.920722	10.78922	84.47256
6	113110.9	3.122481	1.753053	12.18766	82.93680
7	122176.2	3.057730	1.598091	12.66207	82.68211
8	129443.7	2.841999	1.437414	13.21855	82.50204
9	134897.9	2.718228	1.325955	13.93436	82.02146
10	139721.6	2.707728	1.236123	14.77449	81.28166

Cholesky Ordering:
RGDP OPENNES EXR

Source: Author's Calculations using E-views 7.0 Computer Software

On inspection of the variance of RGDP in Table 6A, the result shows that the largest influence on RGDP is from its own innovation or shock. Variance decomposition is a breakdown of the variance of the forecast error for each variable into components that can be attributed to each of the endogenous variables. The contribution of "own innovation or shock" on RGDP in the first period is 100% and declined to 65.62% in the 10th period. The contribution of EXR can be considered significant, gradually rising from 0 in the first period to 26.70 in the 10th period. The contribution of OPENNESS and FDI can be considered marginal with openness displaying the least contribution to variations in RGDP. In table 6B, the estimate of the future changes in the variables reveal that RGDP, OPENNESS, EXR and FDI explain about 40.25%, 37.27%, 3.22% and 19.26% respectively of future changes in openness.

In table c, the estimates reveal that RGDP, OPENNESS, EXR and FDI explain about 1.52%, 12.12%, 80.51% and 5.84% of future changes in EXR. It can be seen that future changes in EXR arrives from shocks to itself. In table 6D, it is shown that shocks to FDI make the highest contribution to future changes in itself, followed by shocks to EXR.

It can be deduced that the main sources of variations in the growth rate of the economy can be attributed to its own shocks and innovations, followed by shocks and innovations from EXR, FDI, and OPENNESS, in that order. These results are very much in agreement with the results of the forecast error decomposition.

Conclusion

This study has analyzed the impact of international trade on Nigeria's economic growth performance over the period 1980 to 2012. The study has adopted the method of vector Auto regression analysis because it provides the opportunity of observing the feedback effects among the variables under consideration. The unit root tests conducted on the variables showed that they are stationary and integrated of order 1(1). The Johansen co-integration test indicated an equilibrium long run relationship among the variables. The result of the error correction model (ECM) indicated that the coefficients appeared with the correct a priori sign and size. The ECM indicates the speed of adjustment of the short run discrepancy with the long run value. The ECM value is fractional, significant and showed that about 2% of the discrepancy is corrected annually. The results of the forecast error decomposition indicated that future changes in the variables are explained mostly by the shocks or innovations in those variables, in consonance with the results of the vector auto regressions. In the normalized co-integrating equation, OPENNESS and FDI appear to be very significant determinants of Nigeria's economic growth.

Recommendations

Based on this analysis, the policy thrust of this paper recommendation that Nigerian government should formulate liberalization policies that will increase both imports and exports, since OPENNESS has been shown to be a significant determinant of economic growth. Nigeria should also allow the exchange rate to be fully determined by the market forces of demand and supply to enable it reaps the full benefits of liberalization.

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