

## AN EMPIRICAL ANALYSIS OF GLOBALIZATION AND NIGERIA'S ECONOMIC GROWTH (1981-2011)

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### **ABSTRACT**

*The research investigated the impact of globalization proxied by the degree of openness on economic growth in Nigeria proxied by the growth rate of GDP between 1981 and 2011. Using Nigerian data and OLS simple regression analysis complemented by unit root stationarity test, Johansen cointegration and Vector Autoregression test, the coefficient of the openness indicator was negative hence violated the a priori expectation. This was because; the level of trade in Nigeria was below the minimum threshold needed for the coefficient to be positive. Based on this premise, the  $H_0$  was accepted that globalization has had no serious impact on Nigeria's economic growth. Recommendations made include improvement in the productive capacity of the country, tackling the security challenges to pave way for FDI inflows into the country and diversification of the mono-cultural nature of the Nigerian economy.*

**KEYWORDS:** Globalization, Cointegration, Economic Growth, Development, Nigeria

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## 1. Background to the Study

That the world has become a global village is a metaphor that is often used to depict global interdependence as well as increasing interaction and integration of economic activities among nations of the world (Adeniyi, 1999). In concrete terms, globalization is the intensification of cross-border trade and increased financial and foreign direct investment flows among nations, promoted by rapid advances and liberalization of communication and information technology (Islam, 1999). Thus, globalization conjures the picture of a borderless world with greater economic integration that enhances the living standards of people across the globe.

Nigeria's current policy thrust is, therefore, anchored on deregulation and reforms of the economy as being experienced in most parts of the world and, indeed, in globalized economies. The Nigerian government is disengaging from activities which are private-sector oriented, leaving the government to play the role of facilitator, concentrating on the provision of enabling laws, incentives for investment, and infrastructure that are necessary to enhance private sector's role as the engine of economic growth. The economic policy of the Nigerian government is intended to increase private sector participation, generate productive employment and raise productivity, increase export of locally manufactured goods, improve the technological skills and capability available in the country and attract foreign direct investment.

The real sectors of the Nigerian economy have had to function under conditions of unstable macroeconomic management, inadequate technology and credit facilities. These have proved to be an obstacle to strengthening the productive base, especially of agriculture and industry, in order to make them export-oriented. Thus, in spite of the openness of the economy, external trade performance has not been encouraging as crude petroleum export still dominates Nigeria's foreign trade.

### 1.2 Objectives of the study

To investigate the relationship between globalization and economic growth in Nigeria between 1981-2011

### 1.3 Hypothesis

H<sub>0</sub>: Globalization has had no significant impact on economic growth of Nigeria.

## 1.4 Scope of the Study

The period to be covered by the data for quantitative analysis is 30 years, from 1981-2010. The Geographical coverage is Nigeria.

## 2. The Concept of Globalization

The phenomenon of globalization is a multi-dimensional and multi-faceted process that encompasses political, economic, social and cultural dimensions that have been variously explained in different terms and contexts. It has tended to mean different things to different people and different things to the same people across time and space.

Although Kwanashie (1999), is of the view that, “*we still await a definition of the phenomenon globalization which meets the approval of the majority of scholars*”, his own definition provides a fairly comprehensive view of the phenomenon. To him, globalization is a set of processes which (a) increases the number and heightens the intensity of contacts, relations, exchanges, and dependence and interdependence relationships among various parts of the world; (b) transforms the importance of ‘space’ and ‘time’ with respect to those relations and relationships; and (c) increases and spreads awareness among the planet’s inhabitants of the existence of those relations and relationships, as well as of their importance for their personal lives (Kwanashie, 1999). Schneider (2002) observes that to economists, globalization means “the on-going trend towards greater economic integration among nations” while in terms of people’s daily lives, it “means that the residents of one country are more likely now to consume the products of another country, to talk on the telephone to people in other countries; to visit other countries; and quite likely to know more about other countries than they knew fifty years ago”.

The different perspectives on globalization notwithstanding, a common thread runs through most of them, to the effect that globalization relates to the growing interdependence of the world’s people. It is about increasing inter-connectedness and interdependencies among the world’s regions, nations, governments, businesses, institutions, communities, families and individuals. Globalization fosters the advancement of a “global mentality” and conjures the picture of a borderless world through the use of information technology to create partnerships to foster greater financial and economic integration.

However, globalization is not just an economic phenomenon which integrates world economies; it also integrates culture, technology and governance on a global level. In addition, it has religious, environmental and social dimensions. In other words, globalization is multi-faceted (IMF, 2002; UNDP, 2001). National policy-making has also been globalized as a result of the liberalization of financial markets, developments in technology and the activities of global institutions such as the World Bank, IMF and World Trade Organization (WTO), (Obadan, 2002). Of the other dimensions of globalization, cultural globalization has elicited emotional reactions and controversy. No doubt, the globalization of culture allows people to experiment with alternative models of development, while at the same time borrowing ideas and practices from other cultures and institutions.

But there is the fear that cultural globalization would drive out weak or less competitive cultures, sacrifice cultural diversity and creativity and impose a universal monoculture world. Tule (2004) has, however, argued that the available evidence suggests that the fears on culture were largely exaggerated and that globalization can be, and in most cases, has been good for cultural creativity, diversity and development. Nevertheless, the negative aspects of globalization, notably the cultural aspect appear to have, in recent years spurred the violent protests in some parts of the world, against the forces and institutions of globalization.

Even Osama Bin Laden, the Islamic crusader, has the negative cultural aspects of globalization as one of his grouses against the west (Obadan, 2002). Many demonstrations express concerns about the effect of trade on jobs and the environment.

What has become clear, however, is that the various dimensions of globalization affect people, institutions and countries in one way or another, positively or negatively. This is, perhaps, why some view globalization as a process that is beneficial – a key to future world economic development and also inevitable and irreversible. But others regard it with hostility, even fear, believing that it increases inequality within and between nations, threatens employment and living standards and thwarts social progress (IMF, 2002). The World Bank (2002) concedes that globalization produces winners and losers, both between countries and within countries.

### 3. Theoretical Framework

The theory guiding this study is the neoclassical of international trade theory. The promotion of trade as the foundation of the wealth of nations was propounded by the mercantilist. This was done before the emergence of Adam Smith's and David Ricardo's theses. The radical theorists later criticized the neo-classical model of economic growth but looking at the present developments in the world economies, it has been proved that it is practically impossible for countries to separate or isolate themselves in a rapidly integrating world.

The neo-classical theory of foreign trade popularly referred to as the classical theory of comparative cost advantage propounded by David Ricardo states that global economic output will assume its highest proportion if every country of the world specializes in the production of commodities in which it has the best comparative cost advantage.

From the foregoing, it will mean that Nigeria will specialize in the production and exportation of commodities that require low technology while the technologically advanced countries of the world should specialize in production and exportation of commodities with sophisticated technological contents. If this pattern is followed, then, there is the tendency for Nigeria to remain perpetually underdeveloped because at the moment, the level of technological know-how of Nigeria is abysmally low and the moment she has been relegated to producing only primary produce, her exchange rate would continue to deteriorate, balance of payments may remain constantly negative and the whole economy may become completely dependent.

In the early 1900s an international trade theory called factor proportions theory emerged by Swedish economists Eli Heckscher and Bertil Ohlin. They advanced a different explanation of comparative advantage, which is popularly referred to as Heckscher-Ohlin theory. The Heckscher-Ohlin theory stresses that countries should produce and export goods that require resources (factors) that are abundant and import goods that require resources in short supply. This theory differs from the theories of comparative advantage and absolute advantage since the theory focuses on the productivity of the production process for a particular good. On the contrary, the Heckscher-Ohlin theory states that a country should specialize in production and export using the factors that are most abundant, and thus the cheapest. Not produce as earlier theories stated, the goods it produces most efficiently. The theory suggests that a consistency of



this trend will ensure international convergences in international prices, and improvement in the returns to labour in less developed countries.

The fact emanating from the Heskcher–Ohlin trade theory is that less developed countries stand to gain in international trade in the following areas: a reduction in poverty among the population and standard of living of their human resources is bound to improve. Also, there are tendencies to achieve convergence in the absolute poverty incidence between the rich and poor countries (Ozaghalu and Ajayi 2003).

The Heckscher-Ohlin theory is preferred to the Ricardo theory by many economists, because it makes fewer simplifying assumptions. In 1953, Wassily Leontief published a study, where he tested the validity of the Heckscher-Ohlin theory. The study showed that the U.S was more abundant in capital compared to other countries; therefore the U.S would export capital-intensive goods and import labour-intensive goods. Leontief found out that the U.S's export was less capital intensive than import. This discovery is popularly referred to as the Leontief Paradox.

The trade theories as well as close and open economy macroeconomic theories have explained a great deal of the phenomenon that has overwhelmed the world. Over the past decades, globalization has been a pervasive trend in almost all economies. The world economy is becoming increasingly interdependent, deepening and intensifying international linkages, most notably in trade.

### 3.1 The Mundell- Fleming Model

The Mundell-Fleming model is an economic model set forth independently by Robert Mundell and Marcus Fleming (Mundell, 1963). The model is an extension of the *IS-LM* model. Whereas the traditional *IS-LM* model deals with economy under autarky (or a closed economy), the Mundell-Fleming model describes an open economy.

The starting point of the *IS-LM* model, which describes a closed economy, is the income identity, which requires the equality between the overall output of the economy and the sum of absorption channels: private consumption (*C*), private investment (*I*) and public spending (*G*):

$$Y = C + I + G \text{ -----(1)}$$

The first component (*C*) describes the behavior of the household, and can be cast in the form of the following linear relation:

$$C = C^o + c(C - T) \text{ -----(2)}$$

Private consumption is an increasing function of personal income  $Y$ , net taxes paid to the fiscal authority  $T$ : higher income levels make the budget constraint looser and support higher levels of spending. Parameter  $(c)$  defines elasticity of private consumption also known as the “marginal propensity to consume” while  $C^o$  is autonomous consumption that is not dependent on any level of income.

The second component ( $I$ ) describes the behaviour of firms, and can be cast in the form:

$$I = I^o - ai \text{ -----(3)}$$

$I^o$  is autonomous investment while  $ai$  is demand for investment decreasing in interest rate with elasticity  $a$ . The third component describes the behavior of the fiscal authority, controlling the amount of public spending ( $G = G^o$ ), and taxes, collected according to the linear rule:

$$T = T^o + tY \text{ ----- (4)}$$

Which implies that taxes consist of lump-sum component ( $T^o$ ) and a component proportional to income, with  $t$  being the marginal tax rate?

The Mundell-Fleming model therefore, extends such framework to an open economy. In particular, in an open economy both consumption and investment goods produced domestically may be demanded and purchased by foreign agents. In this case we talk about “exports” ( $X$ ). Similarly, domestic consumers and firms may demand and purchase consumption and investment goods produced abroad. In this case we talk about “Import” ( $M$ ). The difference of these components measures the “Net Exports” ( $NX = X - M$ ). The income identity for such an additional component:

$$Y = C + I = G + NX \text{ -----(5)}$$

To fully understand additional components and how they are related to the rest of the macro economy, it is necessary to introduce some additional variables, which the  $IS-LM$  model lacks, as it is peculiar of a system open to international relations. Such variables are the exchange rate and foreign direct investment (FDI). Fluctuations in the rate of exchange and inflow of FDI

into a country are key to understanding the behavior of the agents that interact in the international market.

Since economic globalization centers on international trade, the choice of Mundell-Fleming model is highly justifiable for this study as it would capture very succinctly the effects of domestic and international trade in goods and financial assets on Nigeria's economic growth and development process.

#### 4. Empirical Literature

Chete (2003) examined globalization and the position of nation states in globalization using descriptive analysis. He was pessimistic about the relevance of globalization to the economic development of Nigeria, and therefore suggested that the state should position itself fully to forestall any unsavory implications emanating from globalization.

Hameed and Nazir (2008) carried out an empirical examination of "globalization on the Pakistani economy". Results from Granger causality which they used pointed out that trade liberalization has played a positive role in employment generation but has had a negative influence on per capita GDP. They contended that if Pakistan wants to reap the maximum benefit of economic globalization, then the process needs to be accompanied with adoption of pro-poor growth policies which emphasize investment in human development and provide a structure for social safety nets for the poor.

Aremo and Aiyegbusi (2011) carried out a study on how globalization can induce economic growth in Nigeria using OLS time series data from 1972-2005, Augmented Dickey Fuller (ADF) test, and Error correction Mechanism (ECM). The findings revealed that globalization has negative impact on economic growth in the long run but positive in the short run. This suggest that, while Nigeria participates in globalization exercise caution should be exercised in opening up all its growing sectors to international competition, so as not to permanently stiffen the growth of these sector in the long run.

From the reviewed literature, the researchers have developed surrogates for measuring the degree and character of openness. The choice of data or specification of model to be fitted and non-inclusion of rigorous econometric techniques to analyze both the short run and long run adjustments in the models could lead to unrealistic findings – the gap that this research intends to fill.



**5. Sources of Data/ Method of Data Analysis**

This study relied only on secondary sources of data. The study employed a regression model using Ordinary Least Squares (OLS) method as the main econometric tool to ascertain and estimate the relationship between globalization proxied by the index of openness (total trade/GDP) and economic development in Nigeria proxied by the growth rate of output or GDP. The Augmented Dickey Fuller (ADF) test, the Johansen Cointegration and Vector Autoregression Model were used to capture both the short run and long run dynamic adjustments in the model.

**5.1 Specification of the Model**

The Mundel – Fleming model of openness model which captures the trade aspect of globalization and which provides some impetus for financial integration could be explicitly represented as follows:

$$Y = f(t/y + xr + mg + f/y + In + FDI + e) \text{-----}(6)$$

Where Y = Growth rate of output or GDP, t/y = Index of openness (Total Trade/GDP), xr = Measure of real exchange rate, mg = Measure of real growth rate of money supply, f/y = ratio of fiscal deficit over GDP, In = Inflation rate, FDI = FDI as a percentage of GDP, e = error term to capture the stochastic element in the model

On a priori expectation, a positive sign is expected from the index of openness variable and real exchange rate while negative signs are expected from money supply variable, ratio of fiscal deficit over GDP, and inflation. FDI can assume any sign and magnitude.

**6. Empirical Findings**

**Table 1:** ADF Unit Root Test

Variables	ADF Value at level	Mackinnon Critical value @ 5%	Order of Integration

DY	-4.432750	-2.967767	1(0)
Dt/y	-6.001949	-2.917853	1(0)
Dr	-5.150559	-3.580623	1(0)
Dmg	-5.160251	-2.971853	1(0)
Df/y	-7.279999	-2.971853	1(0)
DInf	-5.611767	-2.976263	1(1)
DFDI	-4.094575	-2.981038	1(1)

**Source:** Computed by the Authors.

Table 4.1 above has presented the result of stationarity test to examine the order of integration of the time series data using the Augmented Dickey Fuller unit root test. The result shows that the log of openness, exchange rate, money supply and fiscal deficit are stationary at levels. The log of inflation and foreign direct investment however shows evidence that they are integrated of order one (1).

Since the ADF test has shown that two the series are integrated, there is the need to check for long run convergence to a unique equilibrium by all the integrated series. The result of the Johansen Cointegration test for the Mundell-Fleming model of open macro-economics in this study is presented in table 4.2.

**Table 2:** Johansen Cointegration Test

Variable	Eigen Value	Trace statistics	5% critical value	Hypothesised no. of CE(s)	Prob**
f/y	0.849578	161.9873	125.6145	None*	0.0001
FDI	0.685601	108.9466	95.75366	At most 1*	0.0045
Inf	0.632076	76.54805	69.81889	At most 2*	0.0131
mg	0.585657	48.55145	47.85613	At most 3*	0.0429
r	0.452680	23.88173	29.79707	At most 4	0.2055
t/y	0.170636	7.005546	15.49471	At most 5	0.5570
Y	0.061153	1.766869	3.841466	At most 6	0.1838

*Trace test indicates 4 cointegrating equations at the 0.05 level, \* denotes rejection of the hypothesis at the 0.05 level, \*\* Mackinnon-Hang-Michelis (1999) P-values*

**Source:** Computed by the Authors.

Looking at the trace statistics as compared to the critical value at 5% level of significance, the hypothesis of no cointegrating or the existence of at most one cointegrating vector was rejected. The result shows that there are four (4) cointegrating equations (vectors) in the set of normalised cointegrating vectors.

A normalisation of the Mundell-Fleming model of openness to openness variable produced the results presented in table 4.3. This can be interpreted as the long run relationship between the openness and the vector of exogenous variables.

**Table 3:** Normalising the openness model to openness variable (*standard errors in parentheses*)

Y	FDI	INF	Mg	R	t/y	f/y
1.0000	-	0.768321	-0.62240	0.152707	-0.01352	0.119189
	8112869	(0.07659)	(0.20572)	(0.04109)	(0.04109)	(0.20044)
	8					
	(1.47056)					

**Source:** Computed by the Authors.

In the long run, there is a negative relationship between FDI and growth rate of output in Nigeria. A one percent increase in FDI will lead to 8.1 percent reduction in the growth rate of the Nigerian economy. There is need for internal restructuring of the economy to avert the consequences of a continued dependent economy. The coefficient of inflation is positive. A one percent increase in inflation will lead to 0.7 percent increase in growth rate of the GDP. This does not contradict the apriori expectation considering the casual relationship between inflation and economic growth. Money supply coefficient is negatively related to growth rate of GDP. One percent increase in money supply will lead to 0.6% reduction in the growth rate of GDP. Excessive money supply would no doubt cause hyperinflation and distort the pattern of production and investment in an economy hence affects the GDP very negatively. The exchange rate variable is positively related to the growth rate of GDP. This also does not contradict the a priori expectation. A stable exchange rate should positively correlate with growth of the economy and vice versa.

The openness variable which is the focal point of this, study does not bear the expected positive sign. The magnitude of openness variable is 0.01 suggesting that a 1 percent increase in openness will lead to 0.01 percent decrease in growth rate of the GDP. This supports the finding of Chete (2003) who found evidence of inverse relationship between globalization proxied as openness and development indicator variable proxied as GDP.

The fiscal deficit variable relate positively with growth rate of GDP. This clearly violates our a priori expectation of negative relationship. Fiscal deficit has resulted to excessive borrowing in the country and has also worsened the country's external debt burden over the years. There is therefore, no economic justification for the positive relationship exhibited by the variable in this model.

**Table 4:** Vector Autoregression Estimates

Variable	Coefficient	Std. Error	t-statistics
f/y (-1)	-0.106226	0.17925	-0.59261
f/y (-2)	0.136186	0.20308	0.67059
FDI (-1)	-0.415603	0.64632	-0.64303
FDI (-2)	0.773253	0.63103	1.22538
Inf (-1)	0.062140	0.04508	1.37850
Inf (-2)	0.042030	0.05674	1.14397
mg (-1)	-0.098019	0.13423	-0.73023
mg (-2)	0.013186	0.13742	0.09596
r (-1)	-0.058836	0.02950	-1.99427
r (-2)	0.122880	0.03231	3.80368
t/y (-1)	-0.112177	0.05945	-1.88707
t/y (-2)	0.040021	0.04896	0.81749
ECM	-6.201939	5.11181	-1.21326
R-squared	0.860373	Adj R-Squared	0.710006
F-statistic	5.721817		

Table 4.4 above presents the result of the Vector Autoregression Estimates. The coefficient of the one-year lagged value of fiscal deficit is negatively related to GDP and it does not contradict the a priori expectation. A two year lagged value of fiscal deficit is however positively related to the GDP but insignificant at 5% level. A one year and two year lagged values of FDI are negatively and positively related to the GDP respectively. This means that in

the short run, a 1 percent increase in FDI flows will lead to 0.4 decreased in GDP. This would be overcome in the long run where 1 percent increases in FDI flows will lead to 0.7 percent increase in the GDP. A one year and two year lagged values of 0.06 and 0.04 percent for the coefficient of inflation are both positively related to

the GDP. This position was earlier pronounced by the casual relationship between inflation and economic growth in both the short run and long run. A one year lagged value of money supply is negatively related to GDP. A two year lagged variables is however positively related to the GDP. This implies that the monetary authorities have to monitor the supply of money in the short run if economic activities are not to be completely distorted. One year lagged value of exchange rate is negative while two year lagged value is positive. This also implies that the current fluctuations in the naira value vis-a-vis the dollar has to be closely monitored and the right policy option adopted to avoid further deterioration in the rate of exchange.

The contemporaneous openness variable is negatively related to the GDP in the short run. The coefficient of 0.11 suggests that a one percent increase in openness will lead to reduction in the GDP by 0.11 percent and the coefficient is also significant as 5 percent level. This finding is consistent with those of Chete (2003) in Nigeria. The coefficient of the second lagged variable of openness is however positive related a complete and compact policy mix in the short run to benefit from Globalization in the long run.

The extent to which any previous disequilibrium in the openness variable is adjusted for in the current year is captured by the coefficient of the error correction. The value of 6.2 implies that 62 percent of any previous disequilibrium in the openness variable is adjusted for the following year. This implies that the openness variable has high adjustment potentials to endogenous policy variables.

The adjusted R-squared of 0.71 is an indication that 71 percent of variation in the Mundell-Fleming model is explained by the variations in independent variables. The Vector Autoregression estimates does not indicate the Durbin Watson statistic but from the table of significance using n-k



and  $k-1$  (28-2) and  $(2-1) = 26$  and 1, the Durbin-Watson is 1.46 which shows positive autocorrelation and is a tolerable value.

## 6.2 Decision of Hypothesis

Following the negative relationship between the openness variables proxied for globalization and GDP proxied for economic growth in Nigeria in the short run, the  $H_0$  is therefore accepted.

## 7. Recommendations

- (a) The productive sector of the Nigerian economy needs to be made competitive, efficient and strong to pave way for improved exports.
- (b) Government must tackle once and for all the enormous security challenges facing the country if FDI flow is to be sustained.
- (c) Economic diversification would enable the country to get out of the mono-product economy that is highly volatile to external shocks.
- (d) There is also the need to develop the Nigeria capital market before opening it to international competition.

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