

# Trade Liberalization on Economic Growth in Nigeria (1981 – 2018). An Empirical Study

Ogundipe Michael O\*, Adenekan Adesola A

Department of Economics, University of Ibadan, Nigeria

\*Corresponding author: Ogundipe Michael O, Department of Economics, University of Ibadan, Nigeria.

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## Abstract

In this investigation, the effects of trade liberalization on Nigerian economic growth between 1981 and 2018 were examined. To ascertain if the dependent variable and the explanatory variables are temporally volatile, descriptive statistics were used. The relationships between the variables over the long and short terms were also investigated using the Augmented Dickey Fuller (ADF) unit root test. A co-integration test was run to ascertain whether there was a long-run relationship between the variables in order to validate the unit root test result. As a result, only foreign direct investment and labor are statistically significant in predicting economic growth in Nigeria in the short run; FDI is statistically significant at a level of 10%, while labor is statistically significant at a level of 5%. Gross capital formation, trade, and exchange rates have statistically negligible effects on how quickly the economy grows. All of the model's variables are statistically significant in the long run for predicting economic growth. At the 5% level of significance, every variable is statistically significant.

**Keywords:** Trade Liberalization, Trade Openness, Economic Growth, ECM

## Background and Problem Statement

The world has shrunk to the size of a town, and the current era of national history is one of globalization. In this day and age, no country can live without foreign trade. Countries are liberalizing their trade policies in order to maximize the benefits of comparative advantage opportunities. The importance of trade liberalization as a strategy for accelerating economic growth is rising [1].

A rise in the value of the goods and services produced in an economy over a specific time period—often one year—is referred to as economic growth. It is a gauge of how well the economy's real sector is performing. As a result of its crucial role in expanding the economy's productive base, raising income earning potential, lowering unemployment and poverty rates, and preventing rural- to-urban migration, the real estate industry is commonly viewed as the engine of growth and economic development. Real growth, according to Adegbite, is the expansion of the economy's non-financial sectors. Agricultural, industrial, commercial, and service sectors are all components of the real sector [2]. Production of goods and services takes place in various industries.

Trade liberalization is important in the economy and is thought to be a growth driver. Trade occurs not only in terms of commodities, but also in terms of technology, idea movements, and knowledge spillover. Trade openness has been shown to have the ability to increase economic growth over the long term by pro-

viding access to commodities and services, improving resource allocation effectiveness, and boosting total factor productivity through the spread of knowledge and technical advancement [3]. As a result, nations with more free trade are more likely to perform better than those with less open trade. From this perspective, trade with advanced nations has a lot to offer emerging nations. In an effort to open up and include emerging nations in the global economy, international organizations and donor governments frequently encourage trade liberalization initiatives. These strategies were prompted by both the failure of the import- substitution industrialization model and empirical data showing that economies with a greater degree of globalization achieve higher rates of economic growth.

The key takeaway from this introduction is that, in light of trade theory's predictions and findings, the question for developing nations generally, and Africa in particular, is not so much whether to engage in trade as it is what kind of commerce should be conducted with established nations (or

between themselves). Without a question, commerce offers both static and dynamic benefits and serves as a conduit for surplus production (as stressed by Adam Smith). The question that is being discussed is whether overall advantages for developing countries could be greater if trade patterns were different from what they are currently and if developed nations adjusted their policies toward developing nations.

This study adds to the current literature by employing a different economic theory, neoclassical growth theory. In this study, the impact of trade opening on economic growth is also investigated, both in the short run using the Error Correction Model (ECM) method and in the long run using the Ordinary Least-Square (OLS) method.

### Objective of the Study

Examining the effects of trade liberalization on Nigeria's economic growth is the main goal of this study (1981 – 2018).

### Literature Review

#### The Neo-Classical Growth Model

The 1946 H-D model was modified by the neoclassical model, which added a fresh idea: productivity growth. Significant contributions to the model were made by Robert Solow and T.W. Swan, who independently developed very straightforward growth models. The available statistics on US economic growth were well fit by Solow's model. Solow was the first economist to put up a growth model that made a distinction between different capital vintages. Because capital is produced using known technology and technology develops over time, Solow's model states that new capital is more valuable than old capital because new capital is more productive than old capital [3].

The neoclassical growth model bases its main presumption on the idea that capital in a closed economy experiences diminishing returns. The effect of the most recent unit of capital gained on output will always be less than that of the previous one, assuming a steady labor supply. For the purpose of simplicity, let's assume that there is no technical advancement or labor force expansion. According to diminishing returns, at some point, the quantity of new capital created can only make up for the amount of present capital that is lost to depreciation. Due to the underlying assumptions of no technological advancement or increase in the labor force, the economy stops expanding at this moment. The core logic still remains true: in the short run, the rate of growth declines as diminishing returns set in and the economy converges to a stable "steady-state" rate of growth. However, assuming non-zero rates of labor growth confuses things slightly (that is, no economic growth per-capita). Regarding "effective labor," assuming non-zero workforce expansion and accounting for non-zero technological improvement both result in a new steady state with constant output per worker-hour needed for a unit of output. But in this case, per-capita output is rising at the "steady-state" pace of technological development (that is, the rate of productivity growth). Total factor productivity, also known as the Solow residual, is a commonly-used indicator of technological advancement because it captures the effects of productivity variations within the Solow growth model.

### Absolute Cost Advantage

This theory was proposed by Adam Smith (1776). It is based on the weaknesses of the mercantilist theory of international trade, with the goal of removing obstacles and increasing trade between countries. This philosophy is based on the division of labor and free trade among countries in order to increase a country's prosperity. By specializing in the production of goods and services and importing others, free trade allows a country to provide a

diverse range of goods and services to its people. Every country should specialize in producing goods at a lower cost than goods produced in other countries and trade them with other countries. When one country produces one commodity at a lower cost than another, both countries can trade required quantities and enjoy the benefit of absolute cost advantage. In economics, the notion of absolute advantage refers to an individual, organization, or country's ability to produce a commodity or service more efficiently than competitors utilizing the same resources. According to Adam Smith, a nation has an absolute advantage in the production of commodities when it is more productive than any other nation. As a result, countries should concentrate in producing items where they have an absolute edge, and then trade these goods for goods produced by other countries.

The theory's strength is that when two countries engage in creating items in which she has an absolute advantage, the quantity of both products produced increases. It also boosts the living standards of both countries concerned, increases production efficiency, worldwide efficiency, and effectiveness, and maximizes global productivity and other resource productivity.

This theory's assumptions are founded on the notion that trade occurs between two countries and only two goods are traded; labor is the only factor of cost of production; and consumption of a single currency eliminates the exchange rate effect. The unit of production is divided into compact units, there are homogeneous factors—all labor units are of the same type, and they can move freely. All factors of production are fully utilized, and there are no official prohibitions on free commerce, resulting in free trade between countries.

The hypothesis was criticized on the basis that there is no absolute advantage for many countries, country sizes vary, and countries specialize differently. The theory focuses solely on labor, ignoring other factors such as resource variation. It also ignores transportation costs, which play an important role, as well as large scale economics, which reduces production costs and contributes to absolute advantage. Finally, many products do not have a clear benefit.

### Empirical Review

Ude and Agodi used the trade policies of Nigeria as a benchmark to analyze whether trade openness makes sense [5]. The findings demonstrate that trade openness significantly influences economic growth. It is clear that trade openness in Nigeria makes sense given that the majority of the time under study began after Nigeria adopted an open trade policy. The control variables, the interest rate and exchange rate, greatly aid Nigeria's economic growth. The one-way association between trade openness and economic development at lag one was revealed using the paired Granger causality test.

Ebenyi GO et al, studied between 1970 and 2014, the effects of trade liberalization on Nigeria's industrial value-added [6]. The results of the analysis show that between 1970 and 2014, the export structure of the Nigerian economy remained unchanged. Its exports have merely undergone a basic product shift, showing a shift away from primary agricultural industry-based exports and

toward primary mining industry-based exports (i.e. crude oil). It should be emphasized that the dependence of Nigerian manufacturing businesses on imported machinery and equipment reflects the underdeveloped industrial base of the nation.

Muhammad et al. objectively evaluated from 1972 to 2014 how trade liberalization affected Pakistan's economic expansion [7]. The results show that trade liberalization and gross fixed capital have a positive and significant impact on economic growth. Both inflation and interest rates are bad for the economy. The workforce also contributes positively to economic expansion. This study looked into the connection between trade openness and economic expansion.

Tajudeen et al. studied the relationship between the economies of Nigeria and India, as well as the effect of foreign trade on economic growth in both countries [8]. The VAR results show that economic growth in Nigeria and India had a favorable and significant impact on international trade. The results also showed that in Nigeria and India, foreign trade is the primary driver of economic growth.

Charity et al. research was done on the impact of trade liberalization on non-oil exports from the Nigerian economy between 1986 and 2018 [9]. It was found that only trade openness, a proximate for trade liberalization, was stationary at level, whereas the dependent variable, non-oil sector, export, inflation, and exchange rate were all stationary at first difference.

**Methodology**

Neoclassical growth theory serves as the foundation for this study's theoretical framework. Neoclassical growth theory is an economic theory that explains how to balance the three economic growth drivers of labor, capital, and technology in order to attain a steady pace of economic growth. According to the theory, an equilibrium state can be reached by altering the proportions of labor and capital in the production function. The theory also holds that economic growth cannot be sustained in the absence of technology advancements and that technological advancements have a substantial impact on an economy.

$$Y = f(AL, K) \dots \dots \dots (4.1)$$

Where Y is output level and is represented by GDP, L is labour and K is capital and is represented by gross capital formation. Therefore, an increase in these two inputs have exponentially increased in GDP. Aggregate production function (output) is therefore related to two inputs that is labour and capital.

**Model Specification**

To measure the impact of trade liberalization on growth, trade openness, foreign direct investment and exchange rate is added to equation (4.1). Therefore, the aggregate production function is given as.

$$GDP = f(L, GCF, TRADE, FDI, EXCH) \dots \dots \dots (4.2)$$

Where

- GDP = Gross Domestic Product
- L = Labour
- GCF = Gross Capital Formation TRADE = Trade Openness
- FDI = Foreign Direct Investment EXCH = Official Exchange Rate

$$GDP = a_0 + a_1L + a_2GCF + a_3TRADE + a_4FDI + a_5EXCH + u \dots \dots (4.4)$$

The variables are transformed to their natural logarithms to eliminate any serial correlation and to normalize the variables.

$$LN(GDP) = a_0 + a_1LN(L) + a_2LN(GCF) + a_3TRADE + a_4FDI + a_5EXCH + u \dots \dots (4.5)$$

**Empirical Analysis and Discussion**

**Unit Root Test**

The results of the ADF stationarity tests for each variable demonstrate that the test successfully accepted the presence of a unit root for the GDP, labor, GCF, FDI, and exchange rate data series at level, showing that these variables are non-stationary at levels whereas trade is stationary at level. The first difference results indicate that, at a 1% significance level (integrated of order one I(1), the variables GDP, labor, GCF, FDI, and exchange rate are each stable. The composite index did, however, detect stationarity at first level 1(0) at 1% level significant (ADF).

**Table 1: ADF (Augmented Dickey Fuller) Unit Root Test Result**

Variable	At Level I(0)		Status	At First Difference I(1)	
	t*	ADF Critical Value		t*	ADF Critical value
LOG(GDP)	-2.945842	0.090377	I(1)	-2.945842	-3.809072
LOG(L)	-2.943427	0.956206	I(1)	-2.945842	-5.081205
LOG(GCF)	-2.943427	-0.936896	I(1)	-2.951125	-3.978596
TRADE	-2.943427	-3.843467	I(0)	-2.945842	-6.437904
LOG(FDI)	-2.945842	-1.225798	I(1)	-2.945842	-10.96698
EXCH	-2.943427	1.728342	I(1)	-2.945842	-4.216834

Source: Author’s Computation from E-view 9

**Table 2: Error Correction Model (ECM) Tests**

Dependent Variable: LOG(GDP)				
Cointegrating Form				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLOG(L)	0.397848	0.168988	2.354295	0.0253
DLOG(GCF)	-0.040224	0.033635	-1.195895	0.2411
D(TRADE)	-0.084487	0.077424	-1.091213	0.2839
DLOG(FDI)	0.029875	0.015467	1.931526	0.0629
D(EXCH)	-0.000008	0.000247	-0.030957	0.9755
ECM(-1)	-0.150145	0.118230	-2.666062	0.0475

Source: Author’s Computation from E-view 9

The short-term effect of trade liberalization on economic growth in Nigeria is shown in Table 1. The table shows that, in predicting economic growth in the short run, only labor and foreign direct investment are statistically significant, with labor statistically significant at the 5% level of significance and FDI statistically significant at the 10% level of significance. Gross capital formation, trade, and the exchange rate are statistically unimportant in predicting economic growth in the near term.

According to the coefficients of these variables, only employment and foreign direct investment are positively related to economic growth in the short term. This shows that a rise in employment and foreign direct investment will, respectively, accelerate short-term economic growth by 0.398% and 0.03%. Gross capital formation, trade, and the exchange rate are all inversely correlated with economic growth in the short run. This suggests that a rise in gross capital formation, trade, or the ex-

change rate will, respectively, reduce economic growth in the short term by 0.04%, 0.08%, and 0.00008%.

This result agrees with those of Ndebbio and Sanusi (2011) [10,11]. These studies indicate that trade has little immediate impact on economic growth. In fact, trading in the short term is risky and could harm such an economy.

Additionally, as required by the Granger representation theorem, the calculated coefficient of the error correction factor, ECM (-1), which is also the rate of adjustment to equilibrium, was negative and statistically significant. Inferring the legitimacy of the long-run associations between each pair of variables, this was said to within a year, a 15% speed adjustment to equilibrium was required when the variables deviated from their equilibrium values.

**Table 2: Ordinary Least Square Test**

Dependent Variable: LOG(GDP)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG(L)	1.124093	0.210242	5.346668	0.0000
LOG(GCF)	0.153477	0.031695	4.842260	0.0000
TRADE	0.375932	0.095348	-3.942747	0.0004
LOG(FDI)	0.108272	0.017408	6.219520	0.0000
EXCH	0.000952	0.000334	2.846789	0.0076
C	0.546030	3.056306	0.178657	0.8593

Source: Author’s Computation from E-view 9

Table 2 displays the OLS result for the impact of trade liberalization on economic growth in Nigeria. The findings show that all of the model's parameters have a statistically significant impact on long-run economic growth. All factors are statistically significant at the 5% level of significance.

Additionally, the coefficient values of the variables show that each component has a long-run, favorable relationship with economic growth. In the long run, an increase in labor will boost economic growth by 1.12%; an increase in gross capital formation will do the same; an increase in trade will do the same; an increase in FDI will do the same; and an increase in exchange rate will do the same; this is in addition to the 0.15 percent boost that an increase in GDP will give the economy.

These results are in line with Khobai et al., Keho and Wang, and Hozouri [12-14]. According to Khobai et al., trade openness can have an impact on technological development, increasing the efficiency of manufacturing and boosting productivity [12]. Adenikinju and Chete contend that opening up an economy offers tremendous opportunities to get over the constraints imposed by small local markets (particularly in developing nations), which could raise the amount of foreign currency needed to fund crucial manufacturing inputs [15]. Economic liberalization promotes the cross-border movement of production inputs including capital (human and physical), technology, and finance, hence enlarging the economy of the importing nation.

The study finds that economic liberalization significantly affects the expansion of the Nigerian economy. The study's finding is that policies promoting trade liberalization encourage economic expansion. Every nation that liberalizes its trade experiences faster economic growth. The majority of economic literature comes to the conclusion that trade liberalization improves domestic resource allocation, which raises wellbeing.

### Recommendation

Based on the above findings, the study therefore made the following recommendations.

The financial liberalization program being strengthened to boost the sector's financial influence on the actual economy.

To profit from an increase in trade flow, appropriate policy measures encouraging trade linkages between Nigeria and the rest of the world should be implemented.

To improve the trade balance, export promotion strategies should be intensified. It's important to support local productions as well.

### Data Availability

The datasets collected and/ or analyzed during the current study are available from the corresponding author on request. The corresponding authors has full access to the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analyzed.

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