The Nexus between Trade Openness and Economic Growth in Nigeria

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Abstract— The effects of trade openness on Nigerian economic growth were investigated in this study. From 1987 to 2018, data was gathered. The magnitude of the relationship between the variables was investigated using a Vector Error Correction Model (VECM). The study found that trade openness has a significant positive effect on Nigerian economic growth, and that there is a significant positive long-run relationship between trade openness and economic growth in Nigeria at a significant rate of 5%.The study Recommends, among other things, that the government achieve an optimum degree of economic transparency. The government should improve market performance, reduce price distortions in the market, and boost the economy's competitiveness. This would improve access to global markets, promoting capital inflow and trade expansion.

Keywords— Trade Openness, Economic Growth, VECM and Nigeria.

I. INTRODUCTION

Economic growth is recognized and categorized as having three major components: economic, environmental, and social development (Harris 2000). A system that is economically sustainable must be able to produce goods and services on a continuous basis, keep government and external debt under control, and avoid severe sectoral imbalances that damage agricultural or industrial production. An environmentally sustainable system must have a secure resource base, prevent over-exploitation of renewable resource systems or environmental sink functions, and deplete non-renewable resources only to the degree that appropriate replacements are invested in.

This involves biodiversity conservation, atmospheric stability, and other ecosystem roles that aren't usually considered economic tools. While a socially sustainable system must achieve distributional equity, sufficient provision of social services such as health and education, gender equity, political transparency and participation, a socially sustainable system must also achieve distributional equity.

Nigeria's recent economic reforms have resulted in a number of country-specific experiences. For example, Nigeria has been experiencing its lost decades, which are marked by crippling deflation and sluggish development, since the early 1990s. Furthermore, Nigeria has lost its place as Africa's largest economy and faces numerous challenges, including a 1.5 percent contraction in real GDP, reflecting a two-and-a-half-year decline in export earnings, and a drop in government revenues, which has impacted consumer spending and investment. The currency market was perhaps the most visible effect of the dramatic drop in oil prices, with the NGN/USD depreciating 35.4 percent in the official market and 47.3 percent in the parallel market during the year. Aside from the currency depreciation, the foreign exchange market's illiquidity affected the business and investment climate, with Foreign Direct Investment (FDI) falling to an 11-year low and investment as a percentage of GDP falling to 12.6 percent, the lowest level in two decades (NBS, 2017).

These shifts in Nigeria's macroeconomic variables suggest that the country's economic growth rate is still a long way off. For example, the Federal Government's revenue from the petroleum sector has fallen sharply, with earnings from crude oil exports falling to N5.271 trillion in the nine months from January to September 2015. In its Foreign Trade Statistics for the Third Quarter of 2015, the NBS (2016) stated that the volume of Nigeria's crude oil exports for the nine-month period fell 45.39 percent to N4.381 trillion, compared to N9.652 trillion in the same period in 2014. It also declined to of 55.67 per cent or N6.62 trillion when compared to total crude oil earnings of N11.891 trillion recorded in 2014 (Eboh, 2016), these declines are attributed to the decline in the Oil GDP contribution.

In 2015, Nigeria's economy grew at its slowest rate in years, (Capital Bancorp, 2016). As reported by the National Bureau of Statistics (NBS, 2017) the Real Gross Domestic Product (GDP) in Nigeria grew by 2.84 % in Q3 2015, lower by 3.38 % from rates recorded in the Q3 2014 and higher by 0.49 %from the Q2 2015. The nominal GDP at basic prices for the Q3 2015 was

estimated at N24.31 trillion, up by 6.02% from N22.93 trillion estimated for the corresponding Q3 2014 and also higher by 0.85% against Q2 2015 Period. Oil sector contributed 10.27 % to real GDP in Q3 2015. The contribution of 10.27 % of oil sector to real GDP in Q3 2015 was 0.46% higher than 9.80 % recorded in Q2 2015 and 0.18% down from 10.45 % contribution recorded during the Q3 2014.According to the report from NBS (2016), the average daily production of crude oil in the Q3 2015 was 2.17mbpd, an increase from 2.15mbpd recorded in the corresponding quarter of 2014 and 2.00mbpd recorded in Q2 2015 (Capital Bancorp, 2016).

According to PricewaterhouseCoopers (PWC, 2017), Nigeria is expected to be the world's third most populous nation by 2050, with 399 million inhabitants, and the world's 14th largest economy by 2050, with GDP in Market Exchange Rate (MER) terms of US$ 3.3 trillion. Nigeria will need to aggressively increase domestic and foreign investments over the next decade to deliver growth with per capita gains. As a result, Nigeria's economy must be both competitive and stable in foreign trade activities. There is no such thing as self-sufficient country in terms of raw materials, semi-finished products, or finished goods, which is why trading or foreign trade exists.

International trade and competitive tendencies among nations help to improve the productivity of natural and human resources, especially land and labor, as well as the efficiency of local production, resulting in jobs and income, which in turn leads to economic growth and development in the long run. This is why, to a greater or lesser degree, every economy in the world is involved in foreign trade (ICTSD, 2014). United Nations Conference on Trade and Development (UNCTAD, 2019) noted that trade remains the most secure and sustainable way of integrating into the global economy and of promoting the efforts of developing countries to become less aid dependent. Trade has therefore become a normal (norm) in the world system. The trade climate the world all over has been in constant change.

These shifts bring with them both opportunities and challenges. Any nation's ability to recognize and exploit these opportunities, while formulating programs and policies to curb and/or transform threats into opportunities, is critical to its success in trade. For example, in purchasing power parity, the five largest Emerging economies (Brazil, China, India, Mexico, and Russia) now account for roughly 20% of global production and 27% of global investment flows (PPP).

As a result, these countries have increased their trade (and financial) links with developed countries as well as the least developed (LDCs).

Continuous trade between developed and developing countries creates opportunities for increased wages, investment, and technological advancement in the region. These increases in spending, as well as advancements in innovation and technological development, contribute to higher productivity and competitiveness, which in turn leads to increased trade and profits. This positive feedback cycle continues, resulting in increased trade, increased income, and economic growth and development. 2011 (Adhikary).

Any nation's ability to recognize and exploit these opportunities, while formulating programs and policies to curb and/or transform threats into opportunities, is critical to its success in trade. Nigeria has used various trade policies to improve its trade ties since its independence in 1960. Her trade policy has swung dramatically from high protectionism in the first decade of independence to a more liberal position now (Adhikary 2011). Nigeria's trade policy is oriented toward encouraging manufactured exports and strengthening economic ties. The aim is to raise export revenue and reduce the country's dependence on the oil sector, as well as to deter dumping, promote import substitution, stabilize the balance of payments, preserve foreign exchange, and generate government revenue (Dar and Amirkhalkhali, 2003).

Countries that embrace ongoing globalisation and rising openness to the foreign exchange of goods and services, as well as ideas and innovations, are often correlated with significant growth rates. Many researchers believe that in many East Asian countries that have experienced rapid economic development over the last 50 years, involvement in the international economy was the primary source of growth (World Bank 1993). And there's no denying that foreign trade promotes technological advancement. Trade openness can have an effect on foreign capital flows, potentially speeding up the accumulation of physical and human capital on a local level. Trade openness will boost productivity growth by accelerating technological advancement. The aim of this research is to look into the effect of trade and trade transparency on Nigeria's economic development.

LITERATURE REVIEW

International trade is a critical driver of economic growth. Increased participation in foreign trade will stimulate economic growth, which is a required

condition for wider development results to be realized, according to the empirical literature. Trade, both through exports and imports, provides a vital channel for the flow of capital, technology, and services required to further increase productive capacity in agriculture, industry, and services by linking global markets to developing-country producers and consumers. These, in turn, are needed for an economy's structural transformation. It refers to a country's inflow (import) and outflow (export) of goods and services. Imports and exports account for a significant portion of a country's gross domestic product (GDP), so international trade is linked to economic growth. Foreign trade production has a significant effect on GDP growth in an open economy (Li, Chen and San, 2010).

Without foreign trade, countries will be restricted to products and services manufactured on their own soil. International trade is inextricably linked to globalization and the expansion of cross-border trade is critical to the globalization process. An economy's globalization increases its direct involvement in the global market, resulting in market growth. The expansion of a country's economy, according to Adam Smith, stimulates productivity, which in turn contributes to economic growth. The study of the causes and consequences of the international exchange of goods and services is known as international trade. Economists have discovered that international trade is always beneficial to growth and is often a required condition for both large and small countries to achieve rapid growth (Gräbner et al; 2020). Importers must sell their domestic currency and buy a foreign currency in order to purchase these international products. The value of the domestic currency falls as a result of this. Clearly, a change in a country's balance of payments has an immediate impact on currency levels. Therefore, it is important for countries to keep abreast of economic data relating to this balance and understand the implications of changes in the balance of payments (Hassan, 2005). Government earn revenue through international trade activities.

International trade has become a more important factor in economic development as a result of openness (Sun and Heshmati, 2010). The level of economic activity and the ease with which resources can be transferred across borders are both factors that affect a country's growth rate. Nigeria is essentially an open economy, with foreign trade accounting for a large portion of the country's production (Emeka, Frederick & Peter, 2012). Nigeria's trade openness has increased international involvement in the economy by enabling the inflow of foreign capital and skills, which has had a positive effect

on the country's economic development. All countries profit from international trade, regardless of their starting conditions, level of growth, technical capabilities, or natural resource endowments (Karras, 2003).

Malefane (2018) provided compelling evidence for absolute convergence by demonstrating the openness of trade between similar regions within countries. It was discovered that if poor countries or regions are sufficiently accessible, they grow faster than rich countries or regions. Poorer ones grew faster than average among those that are sufficiently transparent and have comparable overall policy environments. The share of trade (import plus export) in total production, as calculated by the Gross Domestic Product, is one indicator of openness (GDP). This is a general definition of openness; in a more specific sense, the ratio of imports or exports to GDP may reflect an economy's degree of openness. The quest for new ways to measure trade openness and development continues. For instance, one difference between an older study and a new one is that the former did not provide data for institutional variables, which have recently been shown to have a significant impact on trade flows. Unobserved trade barriers, according to Osabuohien (2007), are often due to incomplete or asymmetric knowledge and ambiguity in exchange. According to Frankel and Romer (1999) and Irwin and Tervio (2001), the most widely used metric for openness is exports and imports as a percentage of GDP (2001). The main benefit is that data is available for a long time and for several nations, but the disadvantage is that it is an outcome-based test, which means that it is the product of many variables, making it unclear what those measurements exactly capture. This would introduce the problem of endogeneity, which necessitates the use of complex estimation techniques such as Frankel and Romer's instrumental variables techniques (1999). According to Klasra (2011), all measures of openness are typically closely related to the growth rate, and in this case, all measures of openness are likely to be jointly endogenous with economic growth, causing bias in the estimation results due to simultaneous or reverse causation. The openness measure of the share of trade (import plus export) in total production, as determined by the Gross Domestic Product, was used in this analysis (GDP).

Will trade with other countries still be profitable if a nation has an absolute advantage in the production of two or more goods? David Ricardo attempts to address this question. External trade, according to Ricardo, is

caused by variations in comparative advantage rather than differences in absolute advantage. He maintains that in a model of two countries, two goods, and one factor of production, a country should export the commodity for which it has a comparative advantage in relation to the comparative cost of production. To put it another way, a country can export the commodity with the lowest comparative cost of production and import the commodity with the highest comparative cost in pre-trade comparisons with other countries. Despite the drawbacks of the principle of comparative advantage, it is considered valid in the study of economics. It is based on the labour theory of values, which claims that the price or value of a commodity is equivalent to or can be derived from the quality of labor time going into its manufacturing method.

For the period 1970 to 2008, Emeka, Frederick, and Peter (2012) assessed the impact of trade on Nigeria's economy. The relationships between the selected macroeconomic variables were calculated using a combination of bi-variate and multivariate models. Exports and foreign direct investment inflows have a strong and important effect on economic development, according to the findings.

Omoju and Adesanya (2012) used data from 1980 to 2010 to analyze the effect of trade on Nigerian economic development. The study found that trade, foreign direct investment, government spending, and the exchange rate all have a substantial positive effect on the economy by using the Ordinary Least Square (OLS) technique.

Between 1960 and 2011, Adelowokan and Maku (2013) investigated the impact of trade and financial investment transparency on Nigerian economic development. According to the results of the recorded dynamic regression model, trade openness and foreign investment have a positive and negative impact on economic development. In addition, the partial adjustment term, fiscal deficit, inflation, and lending rate all showed signs of growth. In Nigeria, there is a long-term relationship between trade openness, international investment, and economic growth.

II. Methodology

This study used secondary data from journals, text book, unpublished papers like student research project, National Bureau of Statistics, Central Bank of Nigeria and the Internets. Time series data were collected from Central Bank of Nigeria, Statistical Bulletin 2018, (1987-2018).

Model Specification

The model is given as:

$$HDI = f(TO, TF, EXP)$$
$$HDI = \beta_0 + \beta_1 TO + \beta_2 TF + \beta_3 EXP + U_t$$

where:

- HDI = Human Development Index
- TO = Trade Openness at time,
- TF = Trade flow
- EXP = Export
- β_0 = Parameters,
- U_t = Error Term.

Discussion of Findings

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

Variable	ADF	5% critical value	1st Diff	Level of integration
HDI	1.916	-1.95	-2.001	I(1)
TO	-2.113	-1.95	-3.333	I(1)
TF	-1.6433	-1.95	-1.950	I(1)

Source: Eviews 20 Outcome

The unit root result for the variables used in this analysis is shown in Table 1. The ADF t-test for the Human Development Index (HDI) at the stage is 1.916, which is lower than the critical value of 1.955. The ADF t-test for Trade Openness (TO) is 2.113, which is less than the crucial value of 1.95. The t-test result for ADF's vector Trade Flows is -0.6433, which is less than the critical value of 1.95. As a result, the critical values of the ADF

for the variables HDI, TO, TF, and EXP are all greater than the estimated values. The first difference outcome for all variables, however, is stationary at first difference. This is because each variable's t-test (-3.001, -7.333, -4.950, and -3.655) is greater than the critical value of -1.95. As a result, it is defined that all variables are integrated in the correct order.

Johansson Co-integration Test Results.

Table 2: Max-Eigen and Trace Statistics Co-integration

H0	H1	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
r = 0	r=1	0.714654	59.15025	47.85613	0.0031
r ≤ 1	r=2	0.460800	27.79895	29.79707	0.0836
r ≤ 2	r=3	0.368558	12.35721	15.49471	0.1406

r ≤ 3	r=4	0.033950	0.863492	3.841466	0.3528
H0	**H1**	**Eigenvalue**	**Max-Eigen Statistic**	**0.05 Critical Value**	**Prob.****
r = 0	r=1	0.714654	31.35130	27.58434	0.0156
r ≤ 1	r=2	0.460800	15.44174	21.13162	0.2591
r ≤ 2	r=3	0.368558	11.49372	14.26460	0.1311
r ≤ 3	r=4	0.033950	0.863492	3.841466	0.3528

Source: Eviews 20 Outcome

According to the Trace result, 59.15 is greater than the critical value of 47.86. Similarly, the Max-Eigen statistics agree with the Trace statistics result. This means that the variables are co-integrating and that there is a long-term relationship between them. As a result, the estimation of the Vector Error Correction Model (VECM) is needed, which aids in explaining the rate at which equilibrium is reached between long-run and short-run disequilibriums caused by non-stationarity of the variables. The VAR for cointegrated variables is a special case of the VECM. When variables do not co-integrate, VAR is used (Obasaju, & Bowale, 2015).

Table 3: Error Correction Model (VECM)

Cointegrating Eq:	CointEq1			
HDI(-1)	1.000000			
TF(-1)	2.80E-05			
	(5.5E-06)			
	[5.05324]			
TO(-1)	0.179193			
	(0.05875)			
	[3.04995]			
EXP01(-1)	-1.11E-05			
	(2.3E-06)			
	[-4.82754]			
C	-0.513351			
Error Correction:	D(HDI)	D(TF)	D(TO)	D(EXP01)
CointEq1	-0.318827	-17868.04	0.094935	-4804.258
	(0.10655)	(9310.93)	(1.19335)	(10709.0)
	[-2.99218]	[-1.91904]	[0.07955]	[-0.44862]
D(HDI(-1))	-0.256871	-26349.19	1.290660	-16828.43
	(0.17023)	(14875.6)	(1.90655)	(17109.2)
	[-1.50892]	[-1.77131]	[0.67696]	[-0.98359]
D(TF(-1))	1.15E-05	0.640886	1.50E-08	0.368756
	(5.0E-06)	(0.43339)	(5.6E-05)	(0.49847)
	[2.31983]	[1.47876]	[0.00027]	[0.73978]
D(TO(-1))	-0.003448	2323.017	-0.369735	2994.851
	(0.01964)	(1716.42)	(0.21999)	(1974.14)
	[-0.17556]	[1.35341]	[-1.68071]	[1.51704]
D(EXP01(-1))	-5.84E-06	-0.155940	-7.87E-06	0.024255
	(3.9E-06)	(0.33753)	(4.3E-05)	(0.38822)
	[-1.51089]	[-0.46200]	[-0.18196]	[0.06248]
C	0.013911	403.5797	-0.032994	590.3780
	(0.00433)	(378.134)	(0.04846)	(434.911)
	[3.21475]	[1.06729]	[-0.68079]	[1.35747]
	R-square	Adj. R-Square	F-Stat	P-Value

Source: Eviews 20 Outcome

The Error Correction Model's result is shown in Table 3. (ECM). The ECM should be negative, less than unity, and meaningful at the 5% stage, according to the error correction equation. The ECM result complied with all

of the ECM's requirements to a tee. In this analysis, the ECM value was -0.3188, which is negative, less than one, and meaningful at the 5% stage. The ECM is an error correction term in the result that restores equilibrium and confirms that the variables have a long-term equilibrium relationship. It ensures that the mechanism corrects (or returns to) equilibrium at a rate of 31.88 percent the following year. This suggested that the rate at which the variables reach equilibrium is slow.

The coefficient of the long-run trade flow (TF) is 2.80E-05, with a t-test of 5.05. As compared to the crucial t-test, the result shows that trade flows have a positive and important effect on economic growth as calculated by the human development index (HDI) (1.72). The determined t-test is important since it is greater than the critical value. The coefficient value of (TF) was within the a priori assumption of being positive. In Nigeria, a 1% rise in trade flows would result in a 0.028 percent increase in economic growth.

The coefficient of trade openness (TO) is 0.179, and the t-test is 3.05, indicating that trade openness is positive and important. In comparison to a critical t-test (1.72). The determined t-test is important since it is greater than the critical value. The a priori assumption of a positive outcome was realized. This showed that Nigeria's economy is effectively open to achieve economic development. This is due to the fact that a single unit rise in trade openness boosts economic growth by 17.9%. The control variable export has a negative and important impact on economic growth in Nigeria. The a priori assumption which is supposed to be positive was not met. The consequence of this finding is that Nigeria's export volume is insufficient to spur economic development.

The contributions of Trade flows, competitive trade flows, trade openness, and export as a control variable result in a 37.17 percent shift in economic growth in Nigeria, according to the coefficient of determination. The F-statistic, with a value of 2.248, indicates that the dependent and independent variables are not linearly related. Since the critical value of 2.99 is higher than the estimated value of 2.248, this is the case.

III. CONCLUSION / RECOMMENDATIONS
This study shows that trade flows have a positive and important effect on economic growth. This ensures that Nigeria's trade flows contribute enough to the country's economic development. Similarly, Nigeria's trade, including trade flows, is critical in propelling and driving the economy forward. Nigeria's trade openness

has contributed to the country's economic growth, as a result, it is concluded that Nigerian trade has the potential to expand the economy.

This study recommends that government should close all open borders, thus limiting smuggling activities. Furthermore, rather than formulating policies by various means, the government's economic policies should be based on execution, especially through foreign trade policies such as trade liberalization.

The objectives of these policies is to maintain favourable balance of payment, increased trade flows, dynamic growths in all sectors of the economy, which are translated to decrease in poverty, increased rate of employment and economic growth.

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