



DBN
Development
Bank of Nigeria

...Financing Sustainable Growth

DBN JOURNAL OF ECONOMICS & SUSTAINABLE GROWTH

VOLUME 4, ISSUE 2, 2021



**CROSS-BORDER
TRADE AND
ECONOMIC GROWTH
OF WEST AFRICAN
COUNTRIES:
A COMPARATIVE
ANALYSIS OF NIGERIA
AND COTE D'IVOIRE**

Okwu, Andy Titus*

Department of Economics
Babcock University, Ogun State, Nigeria
okwua@babcock.edu.ng

Obiakor, Rowland Tochukwu

Department of Economics
Babcock University, Ogun State, Nigeria
obiakort@babcock.edu.ng

Tella, A. Sheriffdeen

Department of Economics
Olabisi Onabanjo University, Ogun State,
Nigeria
sateleng@gmail.com; sateleng@yahoo.com

*Corresponding/Lead Author

Abstract

Economists and policy makers have divergent views on growth effects of cross-border trade thereby necessitating substantial academic and policy discourse, especially with the introduction of trade liberalisation policies in the developing nations across the world. Growth effect of cross-border trade in Nigeria and Cote D'Ivoire was investigated in this paper, using WDI data for 1981 – 2017. Results showed positive trade balances during the period, and empirical evidence that international trade had greater positive than negative effects ($\beta_1 = 0.047875$, $\lambda_1 = 0.219971$; $\beta_2 = 0.047875$, $\lambda_2 = -0.111329$) on economic growth of the countries. The F-stat values of 53.22320 and 41.73925, with 0.0000 p-values for Nigeria and Cote D'Ivoire respectively, provided the empirical evidence of overall effects of trade balances with the other macroeconomic variables on economic growth of the countries. Therefore, the paper concluded that international trade was significantly beneficial to the countries and, by extension, West African countries in general, especially under appropriate macroeconomic conditions. Consequently, the paper emphasized the need for Nigeria to re-engineer its cross-border policy mechanisms in favour of greater capital goods importation to boost export production, engender greater export production and, ultimately, engender export-led growth. On the other hand, the Cote D'Ivoire should implement more export-oriented policy thrusts.

Keywords: Exports values, Imports values, Official exchange rate, Moderating variables, Time series data sets, Regression model.

JEL Codes: C35, F13, F18, F41, F43

1. Introduction

The platform for countries to be in alliance with one another is fostered by the involvement of the world into a global village, and cross-border economic transactions is one of the mechanisms through which countries align with one another in the globalised world (Frankel & Romer, 1999). Globalisation increases Cross-border exchange of goods and services as well as movements of capital resources, managerial skills and technology. Consequently, cross-border trade plays crucial role in the international economic relationships between countries. Thus, cross-border trade is a veritable tool in economic growth and development processes of countries in the world (Frankel & Romer, 1999).

Cross-border economic activities provide the channel for domestic firms to explore foreign markets by either exporting or importing or both. The developed nations (e.g., the OECD countries: the US, the UK, Germany, France, Japan, Canada and Italy), developing countries in Africa, Asia and Latin America (e.g., Nigeria, Cote d'Ivoire, Ghana, Argentina, Malaysia, Bangladesh and Brazil) and the emerging market economies (e.g., China, Korea, Singapore, South Africa) all engage in various forms of cross-border trade. This underscores the catalytic role of cross-border trade in growth and development processes and explains the why countries with advantageous trade positions are prosperous and tend to wield the power to control the world economy (Gagan Cargo Packers and Movers, 2012).

At the level of the firm or enterprise, traders or entrepreneurs engage in economic activities across international borders mainly for-profit motives engendered by differences among international economic environment of countries (Helpman & Krugman, 1985; Tan, 2012; Egoro & Obah, 2017). From macroeconomic perspective, countries engage in international trade and other economic activities for the purposes of having essential skills, technical know-hows, healthy competition, efficient utilisation of resources, capital formation and access to global markets by the domestic economies with the ultimate goals of reducing poverty, engendering sustainable economic growth and development, positive trade balance, favourable balance of payments and external reserves positions (Vohra, 2001; Balaguer, 2002; Shiraz, 2004; Tan, 2012; Adeleye, Adeteye, & Adewuyi, 2015; Cong, Yaozhong, Xiaojuan & Thanh, 2017). International trade is also a major source of foreign exchange earnings; and considerable proportion of gross domestic product derives from cross-border trade (Gagan Cargo Packers and Movers, 2012); Nigeria and Cote D'Ivoire partake in the benefits of cross-border trade and other economic activities.

Two main aspects of international trade are identified in the literature, namely: (1) Exports and imports of primary commodities, which comprise mainly agricultural produce and mineral. (2) Exports and imports of manufactured products, which consist of industrial finished products and semi-finished or intermediate products. Whatever the category, international trade takes place across international borders and, thus, strengthens interdependence among countries. In modern times, the implementation of

liberalisation policies and trade-oriented commercial policies enhances cross-border trade. The aim is to benefit from the advantages and benefits that accrue to an economy from international trade relationships with other countries, either on bilateral or multilateral basis. Todaro and Smith (2004) emphasise that, from export perspective, most African countries are domiciled in the first aspect of international trade and are mainly in the second aspect of international trade when viewed from the side of imports.

Therefore, this paper investigates the growth effects of cross-border trade in the contexts of Nigeria and Cote D'Ivoire. The objective is to determine the effects of international trade on economic growth of the two countries.

The paper is structured into five sections. Following this introduction is section two in which the review of literature is discussed. The methodology deployed in the paper is discussed in section three. Section four presents the data analysis and discussion, while conclusion and policy implications are articulated in section five.

2. Literature Review and Overview Summary of the Countries' Trade

2.1.1 Conceptual and Theoretical Issues

No country produces all the goods and services needed by its citizens. This underscores the necessity to exchange goods and services between and among countries in addition to other resources. Thus, international trade makes provides the channel through which goods and services, as well as managerial skills, technical know-how and capital resources are exchanged among different people and countries the world over, using money as the main medium of the international exchange (ECONOMYWATCH, 2010). Trade among people in different nations of the world has been a historical phenomenon. Adesuyi and Odeloye (2013) observe that foreign trade has been in existence for quite a while, and that its economic, social and political importance has increased in recent centuries mainly because of industrialisation, advanced transportation, globalisation and international corporations.

The classical economist, Smith (1776) used the principle of absolute advantage to demonstrate that a country could benefit from international trade, if it has the least absolute cost of production of goods whereby per unit input yields a higher volume of output. Similarly, Ricardo (1817) explored the principle of comparative cost advantage to explain how cross-border trade can be beneficial to all parties that engage in it, provided that goods are produced with different relative costs. Ricardo explained net trade benefits in terms of gains from trade, which till date has remained one of the most important concepts in cross-border trade. In the context of comparative cost advantage, trade benefits are dependent on opportunity cost of production; the quantity by which the production of one good is reduced so as to increase the production of another good by one unit. Therefore, international trade can be beneficial to a country that has no absolute advantage in any product line if it reallocates its resources and

focuses on producing and exporting goods for which it has the least opportunity cost of production. This shows that a country does not necessarily have to enjoy absolute cost advantage in production before it can enjoy the gains from international trade. Related somehow to the Ricardo's comparative cost advantage theory is the Hecksher-Ohlin's (1933) factor endowment theory. The theory posits that countries in which labour is abundant relative to capital need to export labour-intensive products and import capital-intensive products, and vice versa.










This principle espoused in the Ricardo's (1817) theory is relevant to West African and other developing countries since they stand to benefit from cross-border exchange of goods and services, especially when barriers to agricultural and allied products trade are reduced to the barest minimum.

2.1.2 Stylised Facts

Nigeria has the potential to attain the highest average GDP growth in the world between 2010 and 2050 (Citigroup, 2011, Willem & Ebrahim, 2011). Therefore, based on a weighted average of six growth drivers – domestic savings/investment, demographic prospects, health, education, quality of institutions and policies, and trade openness – Nigeria is one of two African countries among the 11 Global Growth Generators (3G) countries (see Table 1). These attest to the growth potential and profitable trade opportunities in Nigeria.

Foreign direct investment (FDI) plays a key role in the economy of Cote D'Ivoire, accounting for between 40% and 45% of total capital of firms in the country. Cote D'Ivoire aims to produce four times as much coffee as its current annual output of around 100,000 tonnes by 2020 under a new development plan. The country also aims to stimulate and empower farmers to produce 400,000 tonnes of cocoa for domestic consumption and exports in year 2020 (Mamadou, 2017).

Table 1: Global Growth Generators (3G) Countries (2010 – 2050)

Country	2018 GDP/capita	% of US\$ GDP/capita	% av. growth	3G Index
 Bangladesh	\$4,561	4	6.3	0.39
 China	\$17,943	16	5.0	0.81
 Egypt	\$13,526	5.0	0.37	
 India	\$7,750	7	7.1	0.71
 Indonesia	\$13,121	10	5.6	0.70
 Iraq	\$17,394	8	6.1	0.58
 Mongolia	\$12,925	8	6.3	0.63
 Nigeria	\$5,992	5	6.9	0.25
 Philippines	\$8,776	8	5.5	0.60

 Sri Lanka	\$13,785	11	5.9	0.33
 Vietnam	\$7,378	7	6.4	0.86

Note: China and India, highlighted in gold with **bold** text, are also BRIC countries.

Source: [https://en.wikipedia.org/wiki/3G_\(countries\)](https://en.wikipedia.org/wiki/3G_(countries)). Accessed on 15 August 2019.

2.2 Empirical Studies

Considerable research efforts have been expanded in the areas of international trade-economic nexus. Previous studies examine production specialisation in relation to cross-border trade (Jafiya, 2004; Adesuyi and Odeloye, 2013; Azeez, Dada and Aluko, 2014; Adeleye, Adeteye and Adewuyi, 2015). Against the backdrop that cross-border trade is one of the frequently cited, though hotly debated, determinants of economic growth, Tan (2012) leveraged on hindsight from cross-country dataset, and subsequently used time series data for Singapore, as a country with high per capita GDP growth rates and high trade exposure, to explore the trade-economic growth nexus during 1965-2009. The results provided support that trade exposure leads to increased economic growth for Singapore, alongside educational expenditure, threshold inflation and technological progress. Considering post-food safety regulation and change in export flow from Turkey to the European (EU) countries, Atici (2013) investigated how export responded to regulations in Turkey. Results showed that harmonisation of EU food safety regulation in 2002 increased hazelnuts exports, while the EU food safety regulation in 2007 reduced the volume of exports. The rise in export unit values indicates that Turkish primary food products responded to the EU food safety regulation with quality improvements accompanied by higher unit prices.

Haq, Luqman and Cook (2014) tested the hypothesis that cross-border trade contributes to economic growth through its effect on human capital accumulation. In line with the study objective, and for the empirical analysis, the authors substituted some variables of the endogenous growth model into the extended neo-classical growth model. The study considered the sensitivity of human capital to change in trade policies such that, unlike the conventional norms, suitability of the model to assess and examine the impact of cross-border trade on human capital accumulation. Using 1972-2012 dataset for nine Asian countries, the authors obtained estimates for dynamic panel growth equations. The findings provided supporting evidence that validates the hypothesis that international trade enhances human capital accumulation and contributes to economic growth in the Asian countries.

Based on 1960-2007 data, Rakotoarisoa, lafrate and Paschali (2012) showed that status of Africa in the cross-border settings is that of net importer of food and of agricultural products and, thus, the Continent is engulfed in food-trade deficit since the mid-1970s. In specifics, the survey found population

growth, low and stagnating agricultural productivity (vast agricultural potential), policy distortions, weak institutions, and poor infrastructure to be the main reasons. Analysis of the data on African countries showed that between 2000 and 2005, food import dependency differed across the Continent and varied according to income levels of the countries.

Using dynamic growth model on panel data, Zahonogo (2016) investigated trade-effect on economic growth in 42 developing countries, with specific focus on Sub-Saharan Africa. Findings established trade threshold below which greater trade openness has beneficial effects on economic growth, and above which the effect declines. The findings also established evidence that supports Laffer Curve of Trade response and, thus, suggests that there is the possibility of non-fragility linkage between economic growth and trade openness for the Sub-Saharan African countries. The findings favour the school of thought of non-linear relationship between trade openness and economic growth in the Sub-Saharan African countries.

Adesuyi and Odeloye (2013) analysed the linkage path between foreign trade and economic growth in Nigeria during the 1980-2010 period and found that foreign trade had a significant positive effect on growth of the Nigerian economy during the period. Azeez, Dada and Aluko (2014) used the Ordinary Least Squares (OLS) estimation techniques to examine the effect of international trade on economic growth of Nigeria during the years 2000 to 2012. Considering imports, exports and trade openness, the results showed evidence of significant and positive impacts of international trade on growth of the economy. Similarly, Adeleye, Adeteye and Adewuyi (2015) found significant positive relationship between economic performance and total export of Nigeria during 1988-2012 period. As a basis to substantiate or refute cross-border trade-economic growth nexus for the Nigerian economy, Abiodun (2017) considered the contribution of international trade. Post-diagnostic estimates of coefficients of variables in the analysis provided empirical evidence which showed that international trade contributed to economic growth of Nigeria. Based on the Nigeria, and Ordinary Least Squares (OLS) estimates of model parameters, a related study by Afolabi, Danladi and Azeez (2017) found the effects of government expenditures, interest rate, import and export on economic growth to be positive and significant, but the effects of exchange rate and foreign direct investment to be negative and not significant. Other recent studies that found significant effects of cross-border trade Nigeria economic growth include Arodoye and Iyoha (2014), Yakubu and Akanegbu (2015) and Egoro and Obah (2017).

It is obvious from this review that, except for studies on Sub-Saharan Africa in general, the empirical works have conspicuously not undertaken comparative analysis of the effects of cross-border trade on economic growth of the West African countries, at least in the recent time. This paper contributes to bridging this observed knowledge gap in literature by focussing on Nigeria and Cote D'Ivoire.

3. Methodology

We use times series data sets and employs multiple regression models, which we anchor on classical trade theory, to analyse the effects of international trade on economic growth of Nigeria and Cote D'Ivoire for the period of 1980 to 2017. The models express functional relationships between economic growth and international trade. Economic growth of the two countries is the dependent variable, which we consider in terms of gross domestic product (GDP) at constant US dollars. For the independent variables, identified trade and other macroeconomic variables, which we categorised as trade and export production-enhancing variables. We contextualise the trade variables (TV) in terms of export value (EV) and import value (IV) as well as the official currency exchange units (OCEU) of the countries' domestic currencies vis-à-vis the US dollars. These variables relate directly to cross-border trade.

We identify the other variables on the truism that some domestic macroeconomic factors stimulate and enhance the capacity of the domestic economies to produce goods for export. Therefore, we designate such variables as export production-enhancing variables (EPEV) and include them in our analytical model. The macroeconomic variables, which enhance export production activities are broad money supply (BMS) (% of GDP), domestic credit to private sector (DCPS) (% of GDP) and gross fixed capital formation (GFCF) (% of GDP).

We considered BMS and DCPS as the indicators of the extent of financial deepening, and GFCF as the indicator of the extent of physical capital investment in the countries. Therefore, these are indirect independent variables. GDP, EV and IV, respectively, are very large, while OCER, BMS, DCPS and GFCF are derived ratios. Therefore, the data sets that are not ratios entered the functional relationship and underlying regression models in their logarithmic transformations. For analytical convenience, we assume that the dependent and independent variables are linearly related. We extract data on the variables from the World Bank's (2017) World Development Indicators. We carry out Augmented Dickey-Fuller (ADF) test to determine the order of integration of times series values of the variables. This is in line with the view that it is appropriate to ascertain stationary properties of time series data sets in order to ensure stability and time invariance in the estimated relationships and, thus mitigate against spurious results inherent in non-stationary the data sets (Engle and Granger, 1987).

We categorise the independent variables into two broad components – those that are linked directly to cross-border activities and the set that engender domestic production for export. Subsequently, we specify semi-aggregate format of the underlying multiple regression models of the relationship as shown below.

Nigeria:

$$\ln GDP_t = \beta_0 + \beta_j \sum_{j=1}^3 TV_t + \beta_k \sum_{k=4}^6 EPEV_t + \mu_t \dots \dots \dots (1)$$

where GDP is gross domestic product, TV (trade variables) is the composite index for comprising the variables that are related directly to cross border trade activities (import value, export value and official currency exchange rate). EPEV (export production enhancer variables) is the composite index for the domestic variables that facilitate the production activities for export goods. β_j ($j = 1, 2, 3$) is vector of the coefficients of the trade variables and β_k ($k = 4, 5, 6$) is vector of the coefficients of the export production enhancer variables. β_0 is the intercept of the model while μ_t is the white noise error term and t depicts the regular point in time at which the data values are considered. The μ_t in the models accommodates the influence of other factors that affect economic growth of the countries (e.g., institutional quality, indices of state politics and trade policy effectiveness), which are we have not explicitly included in the model.

We disaggregate equation (1) so as to obtain the respective effects of the component variables in each of the composite indices in the model. Thus,

$$\ln GDP_t = \beta_0 + \beta_1 \ln EV_t + \beta_2 \ln IV_t + \beta_3 \ln OCEU + \beta_4 BMS_t + \beta_5 DCPS_t + \beta_6 GFCF_t + \mu_t \dots \dots \dots (2)$$

where EV is export value and IV is import and OCEU is official currency exchange units, which are the components of the composite index of the trade variables. BMS is broad money supply while DCPS is domestic credit to the private sector and GFCF is gross fixed capital formation, which consist the components of the composite index of the variables that enhance export production capacity of the economy. β_j ($j = 1, 2, 3, \dots, 10$) and β_k ($k = 4, 5, 6,$) are the coefficients of trade and export production enhancer variables. Each coefficient approximates the effect of the associated trade or production enhancer variable. μ_t is the white noise error term while t depicts the regular time interval for the data value.

Cote D'Ivoire:

$$\ln GDP_t = \lambda_0 + \lambda_j \sum_{j=1}^3 TV_t + \lambda_k \sum_{k=4}^6 EPEV_t + \mu_t \dots \dots \dots (3)$$

where GDP, TV and EPEV are as defined earlier. λ_j ($j = 1, 2, 3$) is vector of the coefficients of the trade variables and λ_k ($k = 4, 5, , 6$) is vector of the coefficients of the export production enhancer variables. λ is the intercept of the model while μ_t is the white noise error term and t is the regular interval point in time at which data values of the variables were taken.

We also disaggregate equation (3) for the specific effects of the components of the variables in each composite index in model 3. Therefore,

$$\ln GDP_t = \lambda_0 + \lambda_1 \ln EV_t + \lambda_2 \ln IV_t + \lambda_3 \ln OCEU + \lambda_4 BMS_t + \lambda_5 DCPS_t + \lambda_6 GFCF_t + \mu_t \dots \dots \dots (4)$$

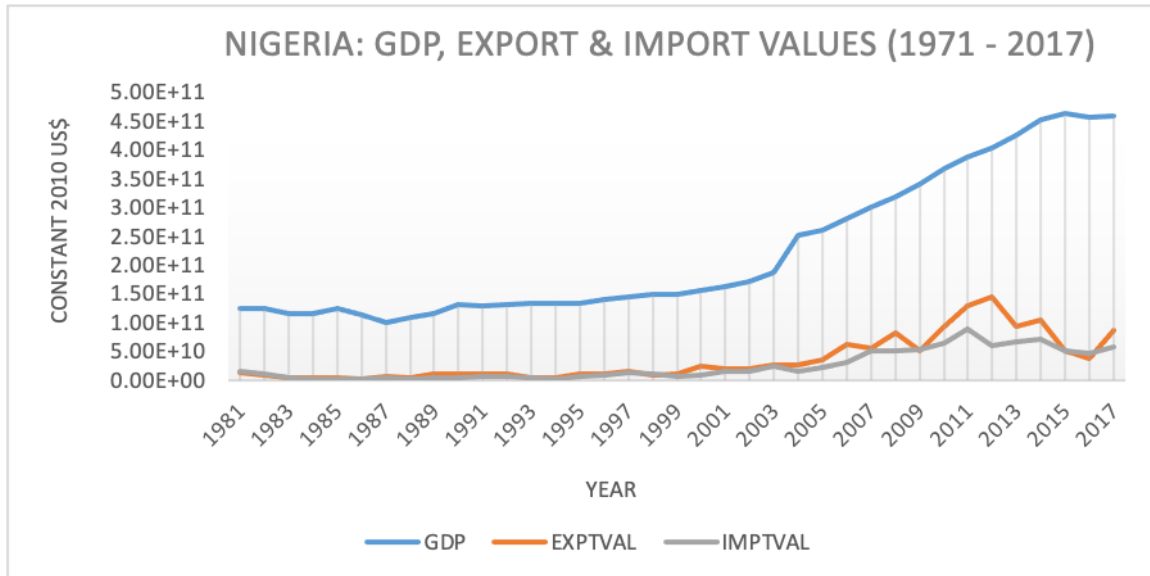
where GDP, EV, IV, OCEU, BMS, DCPS and GFCF, μ , and t are as previously defined. λ_j ($j = 1, 2, 3$, is the vector of the coefficients of trade variables, while λ_k ($k = 4, 5, 6$) is the vector of the coefficients of the variables that enhance the production of export goods in the domestic economy. Each of the coefficients each depict the effect of the associated trade or production enhancer variable to which it is attached.

4. Analysis, Results and Discussion

4.1 Graphical Analysis of the Variables

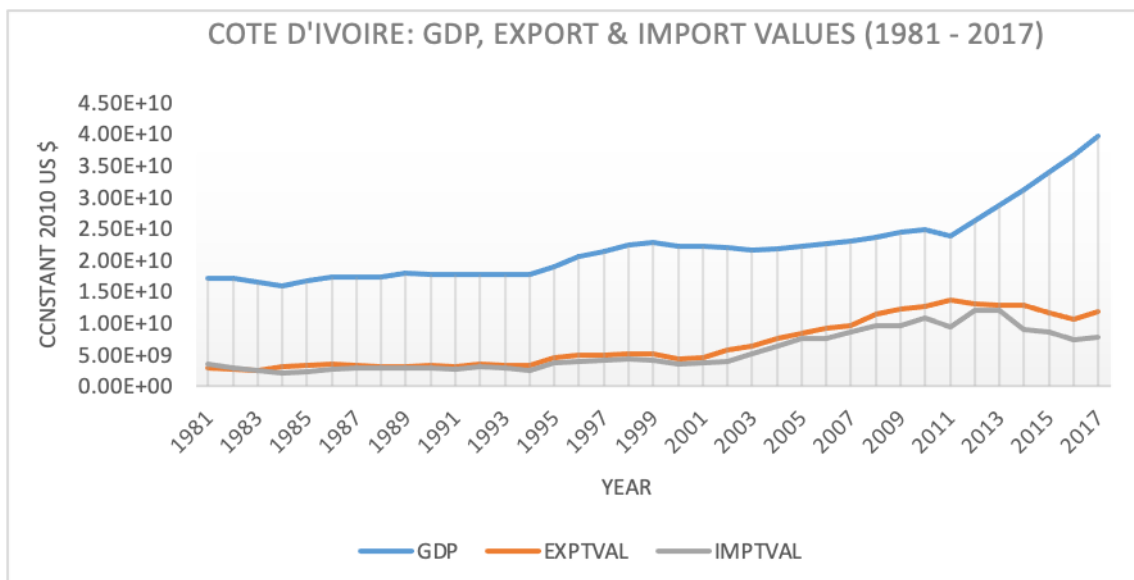
Trend analysis of values of real gross domestic product, export and import values during the 1981-2017 periods is shown in Figure 1a for Nigeria and Figure 1b for Cote D'Ivoire, respectively.

Figure 1a: Graphical Analysis of the Trade Variables during 1981-2017



Source: Authors' analysis (2019) based on WDI data.

Figure 1b: Graphical Analysis of the Trade Variables during 1981-2017



Source: Authors' analysis (2019) based on WDI data.

Available data and literature reveal that compositions of exports and imports products of the countries differ. Bulk of Nigeria's exports was crude petroleum

followed by petroleum gas, while that of Cote D'Ivoire was a composite of refined petroleum and agricultural produce – cocoa and rubber. Conversely, bulk of Nigeria's imports was refined petroleum followed by wheat, while that of Cote D'Ivoire was crude petroleum and agricultural produce. However, it is evident from figures 1a and 1b that export revenue of both Nigeria and Cote D'Ivoire were in excess of their import payments during the 1981-2017 period. Therefore, the graphs show that the countries experienced positive trade balance during the period. The graphs also show that, in GDP terms, Nigeria experienced relatively sustainable economic growth increases while economic growth of Cote D'Ivoire fluctuated relatively during the period.

4.2 Stationarity of the Time Series Data Sets

The ADF unit root test results for series of data sets of the variables are presented the in Table 1.

Table 1: Unit Root Test Results for the Variables Time Series Data Sets

Order of Series/Variable	NIGERIA		Order of Integration	COTE D'IVOIRE	
	ADF t-Statistic	Prob.		t-Statistic	Prob.
D(lnGDP) <i>I</i> (0)	-4.640131*	0.0037	<i>I</i> (0)	-3.697368*	0.0358
D(lnEV) <i>I</i> (0)	-6.580869*	0.0000	<i>I</i> (0)	-5.094085*	0.0011
D(lnIV) <i>I</i> (0)	-4.835610*	0.0022	<i>I</i> (0)	-5.030931*	0.0013
D(lnOCEU) <i>I</i> (0)	-5.612116*	0.0003	<i>I</i> (0)	-5.215944*	0.0008
D(BMS) <i>I</i> (0)	-5.340596*	0.0006	<i>I</i> (0)	-7.168144*	0.0000
D(DCPS) <i>I</i> (0)	-5.353597*	0.0006	<i>I</i> (0)	-5.170257*	0.0009
D(GFCE) <i>I</i> (0)	-5.719389*	0.0002	<i>I</i> (0)	-4.447305*	0.0060

Source: Authors' computations (2019), using E-Views version 9.

H₀: Series has a unit root. Test critical values: 5%, 10%

The unit tests results in Table 1 show that the data sets are integrated of order zero, *I*(0). Therefore, Ordinary Least Squares (OLS) estimation technique is used to obtain numerical values of the model intercept (β_0) as well as coefficients ($\beta_1, \beta_2, \beta_3, \dots, \beta_6$) and ($\lambda_1, \lambda_2, \lambda_3, \dots, \lambda_6$) of the independent variables.

4.3 Results of the Regression Analysis Models

Estimates of intercept and coefficients, with relevant evaluation statistics and associated p-values are presented in Table 2. Subsequently, the estimated

multiple regression models are shown underneath the results presented in Table 2.

Table 2: Results of the Regression Analysis Models

Dependent Variable: D(lnGDP). Method: Ordinary Least Squares (OLS). Sample Period: 1981 – 2017. Included Observations: 37 for each of the countries				
NIGERIA				
Prob.*	Constant (β_0)	Std. Error	t-Statistic	
	24.20883	1.823680	13.27471	0.0000
Variable Prob.*	Coefficient (β_f)	Std. Error	t-Statistic	
D(lnEV)	0.047875	0.081650	0.586340	0.5622
D(lnIV)	1.24E-11	3.13E-12	3.971065	0.0004
D(lnOCEU)	0.083939	0.036407	2.185517	0.0371
D(BMS)	-0.003205	0.005416	-0.591695	0.5586
D(DCPS)	0.004300	0.005426	0.792410	0.4346
D(GFCF)	0.005538	0.007462	0.742160	0.4640
R-squared 0.916748		F-Statistic 53.22320		S.D. dependent variable 0.507559
Adjusted R-squared 0.899523		Prob(F-statistic) 0.0000		Durbin-Watson statistic 0.958674
COTE D'IVOIRE				
	Constant (λ_0)	Std. Error	t-Statistic	Prob.*
	19.71763	1.346890	14.63938	0.0000
Series/Variable Prob.*	Coefficient (λ_g)	Std. Error	t-Statistic	
D(lnEV)	0.219971	0.174776	1.258585	0.2182
D(lnIV)	-0.111329	0.134764	-0.826100	0.4155
D(lnOCEU)	0.195691	0.062619	3.125079	0.0040
D(BMS)	0.011712	0.005757	2.034533	0.0511
D(DCPS)	-0.006598	0.003602	-1.831877	0.0773
D(GFCF)	0.019555	0.003631	5.385016	0.0000
R-squared 0.896219		F-Statistic 41.73925		S.D. dependent variable 0.208292
Adjusted R-squared 0.874747		Prob(F-statistic) 0.0000		Durbin-Watson statistic 0.821228

*Statistical significance of a coefficient or effect is considered at the level of p-value < 0.05.

Source: Authors' computations (2019), using E-Views version 9.

The estimated multiple regression models are:

$$\ln\text{GDP}_t = 24.20883 + 0.047875\ln\text{EV}_t + 1.24\text{E-}11\ln\text{IV}_t + 0.083939\ln\text{OCEU}_t - 0.003205\text{BMS}_t + 0.004300\text{DCPS}_t + 0.005538\text{GFCF}_t + \varepsilon_t$$

$$\ln\text{GDP}_t = 19.71763 + 0.219971\ln\text{EV}_t - 0.111329\ln\text{IV}_t + 0.195691\ln\text{OCEU}_t + 0.011712\text{BMS}_t - 0.006598\text{DCPS}_t + 0.019555\text{GFCF}_t + \varepsilon_t$$

The results shown in Table 2, with the estimates of the coefficients substituted in the models, reveal some interesting findings about the effects of exports, imports, and official currency exchange amount, as well as broad money supply and gross fixed capital formation on economic growth of Nigeria and Cote D'Ivoire during the 1981-2017 period.

At the 0.05 level, the WDI data indicate that values of exports and imports as well as official currency exchange value of naira vis-à-vis the US dollars had positive effects ($\beta_1 = 0.047875$, $\beta_2 = 1.24E-11$ and $\beta_3 = 0.083939$) on economic growth of Nigeria during the period. P-values (0.0004 and 0.0371) associated with the t-statistics (3.971065 and 2.185517) of the coefficients ($\beta_2 = 1.24E-11$ and $\beta_3 = 0.083939$) provide empirical evidence that import values and official currency exchange amount had significant positive effects on economic growth of Nigeria. The results also showed evidence of positive though not significant effects of export values, domestic credit to private sector and gross fixed capital formation. The effect of broad money supply was negative but not significant. However, the F-statistic (53.22320) with the associated p-value (0.000000) provides empirical evidence that the independent variables jointly exerted statistically significant effect on economic growth of Nigeria during the period. Further, the adjusted R-squared (0.899523) shows that the independent variables explained about 89.95% of the total variations in growth of the country's economy during the period. Though the Durbin-Watson statistic (0.958674) suggests the possibility of serial correlation among the independent variables, large R-squared value provides statistical evidence that the independent variables exhibited high powers (0.8995 or 89.95%) in explaining the total variations in growth of the Nigerian economy during the period. It is of specific interest that the positive value of the intercept (24.20883) indicates that Nigeria has the potentials for positive economic growth, even in autarky or absence of international trade.

For Cote D'Ivoire, the WDI data showed that at the 0.05 level, effects of export values, official currency exchange amount, as well as broad money supply and gross fixed capital formation, were positive on economic growth of the country during the 1981-2017 period. In contrast to the experience in the Nigerian economy, imports and domestic to private sector exerted negative effects on growth of the economy. The positive effects of official exchange rate (0.195691) and gross fixed capital formation (0.019555) were statistically significant at the 0.05 level, as the p-values (0.0040 and 0.0000) associated with the t-statistics (3.125079 and 5.385016) of the coefficients (0.195691 and 0.019555) indicated. On individual merits, the effects of the other independent variables (exports, imports, broad money supply and domestic credit to private sector) were not statistically significant, as indicated by the p-values (0.2182, 0.4155, 0.0511 and 0.0773) associated with the t-statistics (1.258585, -0.826100, 2.034533 and -1.831877) of the coefficients ($\lambda_1 = 0.219971$, $\lambda_2 = -0.111329$, $\lambda_4 = 0.011712$ and $\lambda_5 = -1.831877$), respectively. Contrary to the result for Nigeria, broad money supply in Cote D'Ivoire exerted positive though not significant effect on economic growth of Cote D'Ivoire during the period.

Just like the result for Nigerian economy, the F-statistic (41.73925) with the associated p-value (0.000000) provides empirical evidence that the trade variables and the moderating factors jointly exerted statistically significant effect on economic growth of Cote D'Ivoire during the period. The adjusted R-squared (0.874747 or 87.47%) shows that the independent variables explained about 87.47% of the total variations in economic growth of Cote D'Ivoire during the period. Also, though the Durbin-Watson statistic (0.821228) suggests the possibility of serial correlation among the independent variables, the model is considered to be appropriate fit for the variables on the basis of their high explanatory power.

Moreover, the positive value of the intercept (19.71763) indicates that the economy of Cote D'Ivoire has the potentials for positive economic growth, even in autarky or absence of international trade. On comparative basis, however, the intercepts ($\beta_0 = 24.20883 > \lambda_0 = 19.71763$) indicate that Nigerian economy had greater potential for positive economic growth in autarky or absence of international trade than the economy of Cote D'Ivoire.

5. Summary, Conclusion and Policy Implications

This paper has analyzed economic growth of two West African countries, Nigeria and Cote D'Ivoire, in relation to international trade (values of exports and imports and official exchange rates) during the years 1981 to 2017. The paper also considered some other moderating domestic macroeconomic factors, namely: broad money supply and credit to private sector (indicators for financial deepening) and gross fixed capital formation (indicator for domestic physical capital investment). Data on international trade and moderating domestic macroeconomic variables were extracted from the World Bank's World Development Indicators (2017). Graphical analysis of the international trade data sets showed that the countries experienced positive trade balances during the period. Results of empirical analysis showed that, on individual merits, the WDI international trade data (exports and imports values as well as official exchange rate of the countries' domestic currencies vis-à-vis the US dollars) and moderating macroeconomic variables (financial deepening and investment in physical capital) had heterogeneous effects on growth of the countries' economies during the period. However, aggregate effect of the variables was statistically significant on economic growth of the two countries. The international trade variables and moderators also exhibited very high power in explaining total variations in economic growth of the countries during the period. Therefore, this paper concludes that international trade was significantly beneficial to Nigeria and Cote D'Ivoire and, by extension, it can be inferred that international trade is of immense benefits to West Africa countries in general. Therefore, based on the significant positive effect of import trade on the economy growth of Nigeria, there is the need to re-engineer policy mechanisms in favour of the

importation of more capital goods to boost export production and, engender greater export-led growth. For the Cote D'Ivoire economy, the emphasis is on an increased export base and reduced importation. The implication of these is that, while foreign trade policy thrust of Nigeria should be capital goods-oriented, that of Cote D'Ivoire should be export production-oriented. Though this paper comes with a caveat that Nigeria and Cote D'Ivoire may not sufficiently represent the entire sixteen countries in the West African sub-region, the policy implications of the findings are that economies of Nigeria and Cote D'Ivoire portend the potentials for sustainable economic growth cum development if values of the positive net trade balances are leveraged upon through the above policy thrusts to harness the linkage effects inherent in key sectors of the economies; such as the power and manufacturing sectors.

Statement of Public Interest

The views of many economists and policy makers in developed and developing economies differ about the growth effects of international trade. Some agree that, through globalisation, international trade has positive impact on economic growth of the developing nations, regarding China and India as good examples. In contrast, others explain that it has fostered unfavourable changes in the economic and financial conditions of the developing countries, in that gains from trade accrue mostly to the developed nations of the world. The analysis in this paper shows that international trade is beneficial to Nigeria and Cote D'Ivoire and, by extension, the countries of the West African sub-region in general.

References

- Abiodun, K. (2017). Contribution of International Trade to Economic Growth in Nigeria. 2017 Awards for Excellence in Student Research and Creative Activity – Documents. 1. http://thekeep.eiu.edu/lib_awards_2017_docs/1. Accessed on 18 September 2019.
- Adedeji, S. (2006). Writing and Research Proposal in G.O. edu.ul.ng/so Adedeji.
- Adeleye, J. O., Adeteye, O. S. and Adewuyi, M. O. (2015). Impact of International Trade on Economic Growth in Nigeria (1988-2012). *International Journal of Financial Research*, Vol. 6 No. 3, pp. 163-172.
- Adesuyi, O. O. and Odeloye, O. D. (2013). Foreign Trade and Economic Growth in Nigeria (1980 – 2010). *Journal of Economics and Sustainable Development*. Vol. 4 No. 13, pp. 73-88.
- Afolabi, B., Danladi, J. D. and Azeez, M. I. (2017). International Trade and Economic Growth in Nigeria. *Global Journal of Human-Social Science: Economics*, Vol. 17 Issue 5 Version 1.0, pp. 28-39.
- Arodoye, N. L. and Iyoha, M. A. (2014). Foreign Trade-Economic Growth Nexus: Evidence from Nigeria. *CBN Journal of Applied Statistics*, Vol. 5 No. 1, pp. 121-141.

- Atici, C. (2013). Food Safety Regulations and Export Responses of Developing Countries: The Case of Turkey's Fig and Hazelnut Exports. Food and Agricultural Organisation Commodity and Trade Policy Research Working Paper Number 39. www.fao.org/3/a-aq459e.pdf. Accessed on 12 August 2019.
- Azeez, B. A., Dada, S. O. and Aluko, A. O. (2014). Effect of International trade on Nigerian Economic Growth: The 21st Century Experience. *International Journal of Economics, Commerce and Management*, Vol. II Issue 10, pp. 1-8.
- Balaguer, M. (2002, October). Exports and Economic Growth in Bangladesh. *Journal of Development Studies*, 35(1), 89-114.
- Citigroup (2011). Global Economics View – Global Growth Generators: Moving beyond 'Emerging Markets' and 'BRIC'. [https://www.eri.mn/download/smkncohc.en.wikipedia.org/wiki/3G_\(countries\)?](https://www.eri.mn/download/smkncohc.en.wikipedia.org/wiki/3G_(countries)?) Accessed on 15 August 2019.
- Cong, T. H., Yaozhong, W., Xiaojuan, H. and Thanh, S. T. (2017). The Impact of International Trade on Economic Growth in Vietnam 1990 – 2015. *Research Journal of Finance and Accounting*. Vol 8 No. 12, pp. 65-72.
- ECONOMYWATCH (2010). Benefits of International Trade. <http://www.economywatch.com/international-trade/benefit.html>. Accessed on 21 September 2019.
- Egoro, S. A. and Obah, O. D. (2017). The impact of International Trade on Economic in Nigeria: An Econometric Analysis. *Asian Finance and Banking Review*, Vol. No. 1, pp. 28-47.
- Frankel, J. A. and Romer, D. (1999). Does Trade Cause Growth? *American Economic Review*, Vol. 89, No. 3, pp. 379-399.
- Gagan Cargo Packers and Movers (2012). Many kind of benefits Available with international Trade. In ECONOMYWATCH (2010): Benefits of International Trade. <http://www.economywatch.com/international-trade/benefit.html>. Accessed on 21 September 2019.
- Haq, M., Luqman, M. and Cook, S. (2014). The Contribution of International Trade to Economic Growth through Human Capital Accumulation: Evidence from Nine Asian Countries. *Cogent Economics & Finance*, Vol. 2 No. 1. DOI:10.1080/23322039.2014.947000.
- Helpman, E. and Krugman, P. (1985). *Market Structure and Foreign Trade: Increasing returns, Imperfect Competition and International Economy*. Cambridge, Mass: MIT Press.

- Jafiya, A. (2004). Financing Export of Goods and Services for Ensuring Prompt Payment. Paper delivered at National Seminar on Export, Organised by Africa Project Consult, Kano.
- Mamadou, S. C. (2017). Ivory Coast Aims to Produce Four Times as Much Coffee as its Current Annual Output. Reuters, Abidjan Nov. 18: https://en.wikipedia.org/wiki/Economy_of_Ivory_Coast. Accessed on 07 August 2019.
- Rakotoarisoa, M. A., Iafrate, M. and Paschali, M. (2012). *Why has Africa become a Net Food Importer? Explaining Africa Agricultural and Food Trade Deficits*. Rome: Trade and Markets Division, Food and Agriculture Organisation of the United Nations.
- Ricardo, D. (1817). Principles of Political Economy. In Saffra, P. (ed.) (1951). *The Works and Correspondence of David Ricardo*, Vol. 1. London: Cambridge University Press.
- Shiraz. (2004). Exports and Economic Growth in Asian NICS" an Econometric Analysis for Korea. *Applied Economics*, 26(1994), 41-51.
- Smith, A. (1776). An Inquiry into the Nature and Causes of the Wealth of Nations. In Cannan E. (ed.) (1961), and reprinted by Methuen, London.
- Tan, C. J. K. (2012). International Trade and Economic Growth: Evidence from Singapore. Research project submitted in partial fulfilment of the requirements for the degree of Master of Arts (MA), Graduate School of Arts and Science, Columbia. <https://pdfs.semanticscholar.org/247f/26e81d0d14b7731fb7c044f3294f740bb5e.pdf>. Accessed on 16 August 2019.
- Todaro, M. P. and Smith, S. C. (2004). *Economic Development*, Eight Edition. Delhi, India: Pearson Education (Singapore) Pte. Ltd., Indian Branch, Patparganj.
- Vohra, H. (2001). Exports and Economic Growth in Developing Countries. Evidence from Time Series and Cross-Section Data. *Journal of Economic Development and Cultural Change*, 36, 51-72.
- Willem, B. and Ebrahim, R. (2011). Global Growth Generators: Moving beyond Emerging Markets and BRICs. Centre for Economic Policy Research: Policy Insight, Number 55, April 2011. willembuiter.com/3Glite.pdf. Accessed on 15 August 2019.
- Yakubu, M. M. and Akanegbu, B. N. (2015). The Impact of International Trade on Economic Growth in Nigeria: 1981 – 2012. *European Journal of Business, Economics and Accounting*, Vol. 3 No. 6, pp. 26-36.

Zahonogo, P. (2016). Trade and Economic Growth in Developing Countries: Evidence from Sub-Saharan Africa. *Journal of African Trade*, Vol. 3, pp. 41-56.

Internet Sources Accessed between July and September 2019:

<http://www.economicdiscussion.net/international-trade-beneficial-effects-of-international-trade-economic-development/13171>

<http://www.economywatch.com/international-trade/economic-growth.html>

<https://www.eri.mn/download/smkncohc>.

[en.wikipedia.org/wiki/3G_\(countries\)?](en.wikipedia.org/wiki/3G_(countries)?)

<http://www.economywatch.com/international-trade/benefit.html>.

<http://www.economywatch.com/international-trade/benefit.html>.

https://en.wikipedia.org/wiki/Economy_of_Ivory_Coast.

https://en.wikipedia.org/wiki/Economy_of_Nigeria

http://thekeep.eiu.edu/lib_awards_2017_docs/1.

[https://en.wikipedia.org/wiki/3G_\(countries\)](https://en.wikipedia.org/wiki/3G_(countries))

<willembuiter.com/3Glite.pdf>.

<www.fao.org/3/a-aq459e.pdf>.