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CHINA-NIGERIA TRADE RELATIONS AND ITS EFFECT ON THE ECONOMIC GROWTH OF NIGERIA

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Abstract

Trade relations have become an important for economic growth, yet, it is uncertain whether Nigeria import of Chinese goods influenced economic growth or China export of Nigeria product influence economic growth in Nigeria. The study used ex-post facto research design and the data collected from Central Bank of Nigeria. The study employed various procedures in analysing the data such as measurement of variables, descriptive statistics, correlation matrix, unit root test, co-integration and Vector Error Correction Model. The study revealed that here is a long-run relationship between real gross domestic product and export from Nigeria to China in Nigeria and also there is a long-run relationship between real gross domestic product and import from China to Nigeria in Nigeria. The study found that that causality runs from export of goods from Nigeria to China to real gross domestic product which implies that export from Nigeria to

China affect gross domestic product in Nigeria. Also, found that causality runs from real gross domestic product to import from China to Nigeria which implies that real gross domestic product affect import from China to Nigeria in Nigeria. The study recommended that Nigerian Government should discontinue from export to China since it affect economic growth due to the fact that they only have limited goods to export with China while they import virtually everything from China. They should minimize corruption and control exchange rate with China so that in future if they want to enter into trade relations, they will also gain from trade with any nation.

Keywords: Economic growth, Real Gross domestic product, Export trade, Import trade, China-Nigeria relations

INTRODUCTION

Nigeria entered into a bilateral trade agreement with China in 1971 and during this period, there were no unique economic activities between Nigeria and China. It was in 1995 that economic activities between the two nations started which was during the time of Late General Sani Abacha who initiated a contract with the Chinese government during his rule. However, the Nigerian-Chinese Chamber of commerce was founded in 1994 during the late Sani Abacha regime which he initiated steps that drew China closure to Nigeria (Ogunsanwo, 2008). In 1994, the import and export started (Nigeria-China) and the inflow of Chinese goods were found in Nigeria ranging from tablets, earpiece, memory cards, solar back-bag laptop charger, phone wristwatches, wristwatch camera, shoes, make-up kits, clothing materials, sport wears, children wear, computers (desktop and laptop), CCTV cameras, fireproof office safe book, projectors, printers, scanners, decoders, wireless server, printing material, auto parts, batteries, agricultural machinery, musical equipment and solar generators and other capital or industrial equipments. China as an industrializing country needs oil (petroleum) from Nigeria and Nigeria also needs Chinese goods and services to satisfy the demands of its growing population. However, trade is an engine for economic growth and the contribution of trade is unique since it enhances the well-being of the citizens by reducing poverty. Nigeria entered into trade relations with China to raise the living standards of its citizens, provide employment opportunities and enabling consumers to enjoy a greater variety of goods in the market as well as an increase in the gross domestic product (GDP).

Since 1971 that Nigeria entered into trade relations with the Chinese government and started economic activities in 1995 to exchange goods and services to ensure that Nigerian economic growth is improved by increasing gross domestic product. However, Nigeria –China

trade relations have not increased the gross domestic product. It is also uncertain whether Nigeria import of Chinese product influence economic growth or China export of Nigeria product influence economic growth in Nigeria.

From past reviewed, studies such as Enrico and Marcello (2011); Lawal and Kamtochukwu (2017); Babatunde, Jonathan and Muhyideen (2017); Mhaka and Jeke (2018); Sylvia, James and Stephen (2018) used various countries to study the variables but none of the studied reviewed use Nigeria-China and extended to the period of study to 2018.

Research Objectives

The objective of this study is to examine the causal effect of Nigeria –China trade relations on economic growth in Nigeria. The specific objectives are to: determine the causal effect of import from China to Nigeria goods on economic growth in Nigeria. Also, evaluate the causal effect of export from Nigeria to China goods on economic growth in Nigeria.

Scope of the Study

The scope of this study is restricted to the causal effect of Nigeria-China trade relations on economic growth in Nigeria covering a period of 23 years from 1995 – 2018. This period is chosen because it was in 1995 that economic activities between Nigeria and China were initiated by Late General Sani Abacha. The variables studied are trade (import and export) as well as economic growth (gross domestic product). The study also used corruption and exchange rate as control variables.

Hypotheses

The hypotheses are stated below:

H_{01}: There is no causal effect of import of good from China to Nigeria on economic growth in Nigeria

H_{02}: There is no causal effect of export of good from Nigeria to China on economic growth in Nigeria

CONCEPTUAL REVIEW

Concept of International Trade

International trade is the exchange of goods and services across international borders. International trade can be interchangeably referred to as ‘foreign trade’ or ‘global trade

(Rufus, 2015). It encompasses the inflow (import) and outflow (export) of goods and services in a particular country. Exports refer to goods and services produced domestically and purchased by a foreign sector. They are goods and services purchased by other countries (Rufus, 2015). A function of international trade whereby goods produced in one country is shipped to another country for future sale or trade (Jayakumar, Kannan & Anbalagan, 2014).

Imports refer to goods and services produced by the foreign sector and purchased by the domestic economy. Essentially, they are goods and services purchased from other countries (Rufus, 2015). Goods or services brought into one country from another country (Jayakumar, Kannan & Anbalagan, 2014). Along with exports, imports form the backbone of international trade. The higher the value of imports entering a country, compared to the value of exports, the more negative that country's balance of trade becomes.

Concept of Economic Growth

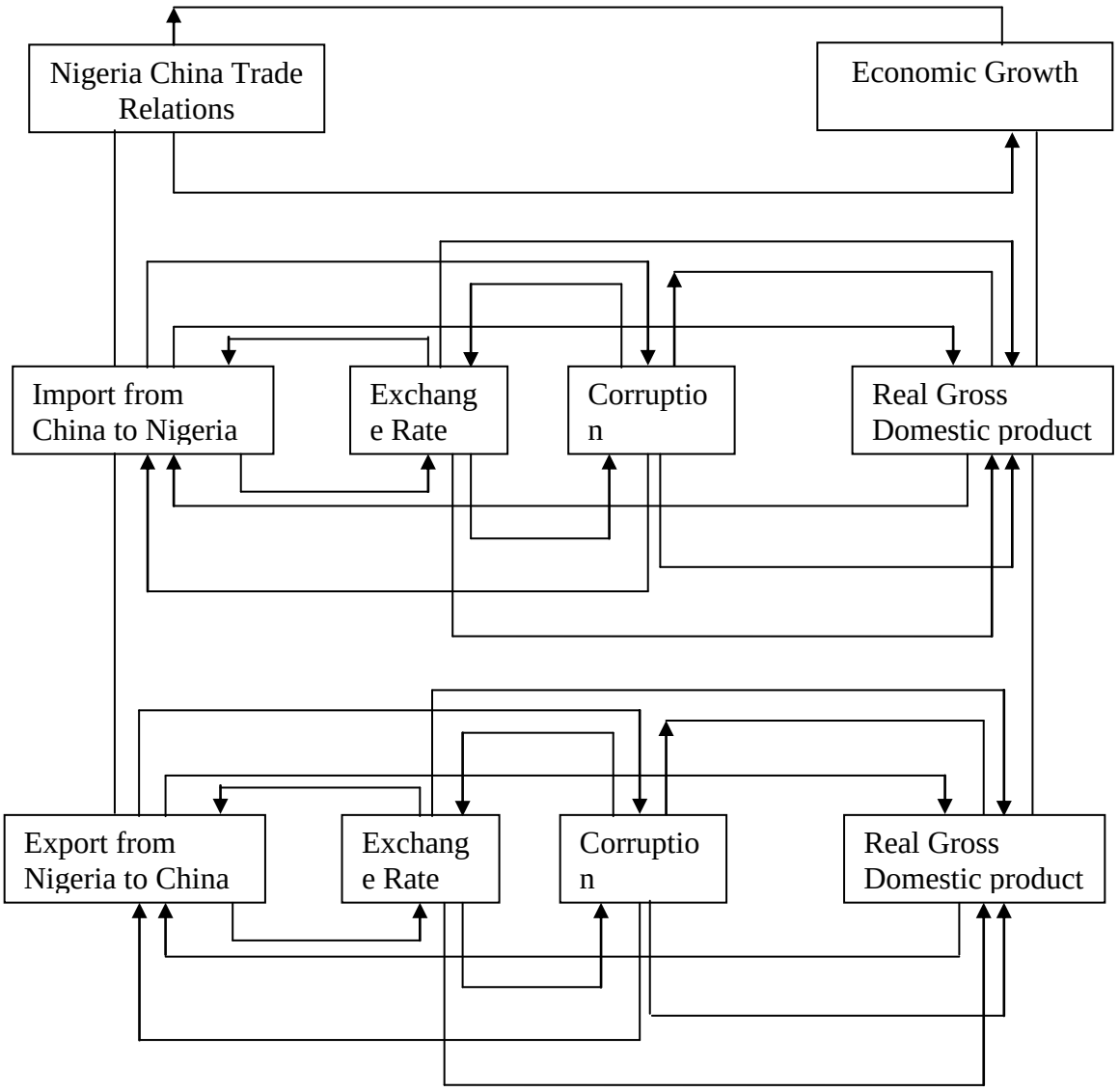
Economic growth is where the real per capita income of a country increases over a long time (Awe, 2013). AccQaiser, Salman, Ali, Hafiz and Muhammad (2011) assert that Gross Domestic Product is the market value of all final goods and services produced within a country in a given period. Penny, Pritzker, Ken and Brian (2015) noted that Gross Domestic Product is the total value of goods and services produced within the borders of a country, regardless of who owns the assets or the nationality of the labour used in producing that output.

Control Variables

Corruption is a cankerworm that has reduced development in all sectors of the economy (Economic and Financial Crime Commission, 2005). The World Bank (1996) defined corruption as the abuse of public power for private benefit. Transparency International (2005) defined it as the abuse of entrusted power for private gain.

The exchange rate is the domestic currency price of foreign currency, matter both in terms of their levels and their volatility. The exchange rate is the rate at which the naira is converted to another currency (Becks, 2011).

Conceptual Model



Causal Effect Model of Trade Relations, 2019

The model is conceptualized to address China –Nigeria's trade relations and economic growth. The model believes that import and export has a bidirectional effect on economic growth in Nigeria. The model believes that the import of goods from China to Nigeria affects or influences economic growth in terms of the real gross domestic product due to the fact that developing countries are depending on imported goods from developed countries to grow. The import of goods may further influence corruption and exchange in any developing country in the world. The model states that economic growth in terms of real gross domestic product can be

influenced by the exchange rate and corruption. The exchange rate is influenced by corruption while corruption brings a high exchange rate.

The Model also ascertained that export trade from Nigeria to China may influence economic growth while economic growth also influences import trade from Nigeria to China. The model believes that economic growth in terms of real gross domestic product can be influence by exchange rate and corruption. The exchange rate may influence corruption while corruption brings a high exchange rate. The model can be applied to any country of the world that engage in international business and the model can be modify and re-structure by other scholars.

EMPIRICAL STUDIES

Lawal and Kamtochukwu (2017) studied the impact of international trade on economic growth. Variables used in the measurement of international trade include Imports, exports, the balance of trade and trade openness while the real gross domestic product was used as a measure for economic growth using periodic data from the years 1985-2015. The econometric tests employed were Unit Root Test, Johansen Co-integration Test and Vector Error Correction Model (VECM). The result showed that there is a long-run relationship between international trade and economic growth, import and trade openness are both insignificant in the short run but significant in the long run while export and balance of trade are significant in both the short and long run. The granger causality test showed that economic growth is independent of imports, exports, and balance of trade but economic growth is unidirectional with trade openness.

The above study is unique since it is current and similar studies can be studied to include 2016, 2017 and 2018. The study used impact but failed to indicate pre and post-analysis of trade and economic growth.

Babatunde, Jonathan and Muhyideen (2017) examined the impact of international trade on economic growth in Nigeria. They used time series secondary data obtained from the Central Bank of Nigeria, the National Bureau of Statistics and International Financial Statistics for a period between 1981 and 2014. Augmented Dickey-Fuller (ADF) test together with Phillip-Perron (PP) test of Unit Root Tests was employed to ascertain the stationarity properties of the variables. The Ordinary Least Square (OLS) technique was used to test for the significant relationship between the level of economic growth proxied by GDP as a dependent variable and exchange rate, government expenditure, interest rate, foreign direct investment, import and export as independent variables. The result revealed that government expenditures, interest rates, imports, and export are all positively significant while the exchange rate and foreign direct investment are negatively insignificant to the economic growth in Nigeria.

The above study is very current and similar studies can also use it but make reference to China –Nigeria trade relations. The study can also include 2015, 2016, 2017 and 2018 since the previous study did not address the period.

Enrico and Marcello (2011) estimated some econometric relations between economic growth and trade/openness, with the addition of control variables (such as the gross fixed capital formation). They used a panel data model for the two countries, to be estimated with fixed effects; to test for reverse causality, they re-estimated the fixed effects model by 2SLS (with the inclusion of specific instrumental variables). The effect on economic growth (in terms of GDP per capita) of our variables of interest - Openness and FDI – remains positive and statistically significant in all specifications. The results prove the positive growth effects, for the two countries, of opening up and integrating into the world economy.

The above study failed to indicate the two countries that the study addressed this study. The period of study was not stated in the study. The use of panel regression is inappropriate for the study. The study could have used regression and other advanced regression to study the variables.

Mhaka and Jeke (2018) studied the impact of the real exchange rate, market size and economic size on the trade flows between SA and China, applying the gravity model of trade. Time series data for the period of 1995–2014 have been used and a multiple linear regression model was employed to study the variables and the ordinary least squares method was used. The explanatory variables consist of the product of SA's gross domestic product (GDP) and China's GDP, which act as the proxy for economic size, the product of South Africa's population and China's population, which act as the proxy for market size, and the real exchange rate between SA and China. Results revealed that the economic size and the market size have a strong positive impact on trade flows between SA and China. On the other hand, the real exchange rate have negative impact on trade flows between SA and China.

The above study the variables used South Africa and China but similar studies can use Nigeria and China to study trade relations and economic growth in Nigeria. The above study failed to include 2015, 2016, 2017 and 2018 in their study but this study included these periods in the study.

Dependency theory as developed by Theotonio Dos Santos is adopted for this study. Dependency is a situation in which the economy of a certain country is conditioned by the development and expansion of another economy to which the former is subjected. The relations of interdependence between two or more economies, and between these and world trade, assumes the form of dependence when some countries (the dominant ones) can expand and can be self-starting, while other countries (the dependent ones) can do this only as a reflection

of that expansion, which can have either a positive or a negative effect on their immediate development.

METHODOLOGY

The study employed the ex-post facto research design. The study used time series data and data are presented on appendix A and appendix B. The study used reports from the Central Bank of Nigeria for secondary data. The reason for obtaining data from the Central Bank of Nigeria bulletin is that it is very authentic and unique. The study employed various procedures in analysing the data ranging from measurement of variables, descriptive statistics, spurious regression, correlation matrix, unit root test, co-integration, and Vector Error Correction Model.

Table 1: Measurement of Variables

S/N	Variables	Measurement
1	Export	The total inflow of Good and Services from Nigeria to China
2.	Import	The total inflow of Good and Services from China to Nigeria
4	Control variables	Corruption and Exchange rate
5	Exchange Rate	Exchange rate
6	Corruption	Corruption Perception Index

Source: Author Computation, 2019

The study used mean, median, skewness, kurtosis, standard deviation, maximum in value, minimum in value and Jarque-Bera. The Jarque–Bera test is a goodness-of-fit test of if sample data have the skewness and kurtosis matching a normal distribution.

The mathematical model of this study is stated below

Y = a+bx ----------1

y = dependent variable, a= intercept or constant, b = the coefficient and x =independent variable

However, this mathematical model is expressed as a functional model based on the objectives of this study. The study incorporated export and gross domestic product as shown below:

Model 1: Export and Gross Domestic Product

RGDP= f(EP,CPI,EX) ---------- (2)

The model is also expressed as:

EP=F(RGDP,CPI,EX) ---------- (3)

All the series in model 1 are articulated in a log- linear equation from 2 & 3 into equation 4 and 5. The statistical Models are stated below:

$lnRGDP = α + β_1 lnEP + β_2 lnCPI + β_3 lnEX + μ$ ---(4)

$lnEP = α + β_1 lnRGDP + β_2 lnCPI + β_3 lnEXR + μ$ ---(5)

Where, RGDP= Real gross domestic product, EP= export, CIP= Corruption Perception Index, EXR= Exchange Rate, α = Intercept, β = Coefficient, μ = error term

Model 2: Export and Gross Domestic Product

RGDP= f(IMP,CPI,EX) --- (6)

The model is also expressed as:

IMP=F(RGDP,CPI,EX) --- (7)

All the series in model 2 are articulated in a log- linear equation from 6 & 7 into equation 8 and 9. The statistical Models are stated below:

$lnRGDP = α + β_1 lnIMP + β_2 lnCPI + β_3 lnEX + μ$ ---(8)

$lnIMP = α + β_1 lnRGDP + β_2 lnCPI + β_3 lnEX + μ$ ---(9)

Where, RGDP= Real gross domestic product, IMP= import, CIP= Corruption Perception Index, EX= Exchange Rate, α = Intercept, β = Coefficient, μ = error term

The correlation coefficient is denoted by r which indicates either -1 or +1, indicating the direction of the linear relationship between variables. The formula for correlation is stated below:

$$r = \frac{n\sum xy - \sum x \sum y}{\sqrt{\{(n\sum x^2) - (\sum x)^2 \ (n\sum y^2) - (\sum y)^2)\}}} \quad \text{………………………………………………}\text{equation 10}$$

Where: r = Correlation Coefficient, x = proxy for RGDP, y = proxies trade (import and export and n = number of observations

The stationary properties of the time series are checked by unit root test using Dickey Fuller test. The study also used Johansen and Josulius co-integration technique to ascertain the long-run equilibrium relationship between the variables in the model. Granger causality test is employed to explore the existence of bi-directional causality between Nigeria – China trade relations and economic growth. To ascertain the short-run dynamics among the concerned time series variables, Vector Error Correction Model (VECM) is formulated in this study and Vector Error Correction Model (VECM) is employed to correct the short-run disequilibrium among the variables in the models and also to reconfirm the direction of causality of the variables in the models.

The Vector Error Correction Model specification for the hypotheses is presented below:

Model 3: Export of Good from Nigeria to China and economic Growth (RGDP) (Represented by EP and RGDP)

$$\Delta lnRGDP = \alpha_0 + \alpha_1 \Delta lnRGDP_{t-1} + \alpha_2 lnEP_{t-i} \alpha_3 lnCPI_{t-i} + \alpha_4 lnEX_{t-i} + Ect - 1 + \varepsilon_{t1} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (12)$$

$$\Delta lnEP = \beta_0 + \beta_1 \Delta lnEP_{t-1} + \beta_2 lnRGDP_{t-i} + \beta_3 lnCPI_{t-i} + \beta_4 lnEX_{t-i} + Ect - 1 + \varepsilon_{t2} \quad (13)$$

$$\Delta lnCPI = \beta_0 + \beta_1 \Delta lnCPI_{t-1} + \beta_2 lnRGDP_{t-i} + \beta_3 lnEP_{t-i} + \beta_4 lnEX_{t-i} + Ect - 1 + \varepsilon_{t2} \quad (14)$$

$$\Delta lnEX = \beta_0 + \beta_1 \Delta lnEX_{t-1} + \beta_2 lnCPI_{t-i} + \beta_3 lnRGDP_{t-i} + \beta_4 lnEP_{t-i} + Ect - 1 + \varepsilon_{t2} \quad (15)$$

Model 3: Import of Good from China to Nigeria and economic Growth (RGDP) (Represented by EP and RGDP)

$$lnRGDP = \alpha_0 + \alpha_1 \Delta lnRGDP_{t-1} + \alpha_2 lnIMP_{t-i} \alpha_3 lnCPI_{t-i} + \alpha_4 lnEX_{t-i} + Ect - 1 + \varepsilon_{t1} \quad (16)$$

$$\Delta lnIMP = \beta_0 + \beta_1 \Delta lnIMP_{t-1} + \beta_2 lnRGDP_{t-i} + \beta_3 lnCPI_{t-i} + \beta_4 lnEX_{t-i} + Ect - 1 + \varepsilon_{t2} \quad (17)$$

$$\Delta lnCPI = \beta_0 + \beta_1 \Delta lnCPI_{t-1} + \beta_2 lnRGDP_{t-i} + \beta_3 lnIMP + \beta_4 lnEX_{t-i} + Ect - 1 + \varepsilon_{t2} \quad (18)$$

$$\Delta lnEX = \beta_0 + \beta_1 \Delta lnEX_{t-1} + \beta_2 lnCPI_{t-i} + \beta_3 lnRGDP_{t-i} + \beta_4 lnIMP_{t-i} + Ect - 1 + \varepsilon_{t2} \quad (19)$$

Where; Δ is changes, Ln is Natural Logarithms, RGDPt is the aggregate gross domestic product for the sample period, EPt is the aggregate export of good for the sample period, CIPt is the aggregate corruption perception index for the sample period, EXt is the aggregate exchange rate for the sample period and IMPt is the aggregate import for the sample period. $RGDP_{t-1}$ is real gross domestic product, EX_{t-1} is the exchange rate while CIP_{t-1} is the corruption perception index and IMP_{t-1} is the import whil α_0 and β_0 are the constants, α_1 and β_1 are the coefficient of regressions, Ect is the error correction term, ε_{t1} and ε_{t2} are error term, and t is time in all the model presented above. The error term, ε_t is incorporated in the equations to cater to other factors that may influence the variables.

ANALYSIS AND FINDINGS

Table 2: Descriptive Statistics (Observations 29)

	RGDP	EP	IMP	EX	CPI
Mean	431580.7	3.50E+11	4.43E+11	112.4260	16.99655
Median	357864.1	1.08E+10	1.37E+11	125.8331	19.00000
Maximum	690239.2	9.12E+12	2.49E+12	306.9000	28.00000
Minimum	69810.00	1537958.	1.03E+09	8.037800	0.770000
Std. Dev.	173882.5	1.69E+12	6.59E+11	79.34740	10.13636
Skewness	0.099929	5.087238	1.737515	0.586009	-0.659931
Kurtosis	1.850596	26.93408	5.055943	3.345710	1.921796
Jarque-Bera	1.644629	817.2688	19.69914	1.804215	3.509680
Probability	0.439414	0.000000	0.000053	0.405714	0.172935
Sum	12515840	1.02E+13	1.29E+13	3260.355	492.9000
Sum Sq. Dev.	8.47E+11	7.98E+25	1.22E+25	176288.3	2876.885

The table showed that real gross domestic product (RGDP) has a mean value of 431580.7 over the time of the study. It also indicates the median value of 357864.1 proved the absence of outliers in the values. It has a maximum value of 690239.2 which was obtained in the year 2015 due to fact that President Buhari was elected 2015 and established a cabinet of economic ministers that includes several technocrats, and he has announced plans to increase transparency, diversify the economy away from oil, and improve fiscal management. He ran on an anti-corruption platform and has made some headway in alleviating corruption, such as an implementation of a Treasury Single Account that allows the government to better manage its resources. It also has a minimum value of 69810.00; it was obtained in the year 2018 because the stock of public debt stood at $73.2 billion, up from $71.0 billion in 2017, representing 17.5% of GDP. The variable has a standard deviation of 173882.5 which suggested that the value of the observation was spread across its mean value of 431580.7. The skewness statistics of the variable was 0.099929, suggesting that was positive, while the kurtosis statistics of 1.850596 suggested that the observation was leptokurtic in distribution. The Jaque-Bera statistics of 1.644629 with a probability value of 0.439414 suggested that the RGDP was normally distributed at 5% level of significance and it was log to correct it to normal.

The table showed that import from China to Nigeria (IM) has a mean value of 4.43 over the time of the study. It also indicates the median value of 1.37 proved the absence of outliers in the values. It has a maximum value of 2.49 which was obtained in the year 2015. It also has a minimum value of 1.03; it was obtained in the year 2013. The variable has a standard deviation

of 6.59 which suggested that the value of the observation was spread across its mean value of 4.43. The skewness statistics of the variable was 1.73, suggesting that was positive, while the kurtosis statistics of 5.93 suggested that the observation was leptokurtic in distribution. The Jaque-Bera statistics of 19.69914 with a probability value of 0.00 suggested that the IMP is not was normally distributed at 5% level of significance and it was log to correct it to normal.

The table showed that the exchange rate in Nigeria (EX) has a mean value of 112.4260 over the time of the study. It also indicates the median value of 125.833 proved the absence of outliers in the values. It has a maximum value of 306.90. It also has a minimum value of 8.037800. The variable has a standard deviation of 79.34740 which suggested that the value of the observation was spread across its mean value of 112.4260. The skewness statistics of the variable was 0.56009, suggesting that was positive, while the kurtosis statistics of 3.345710 suggested that the observation was leptokurtic in distribution. The Jaque-Bera statistics of 1.804215 with a probability value of 0.406714 suggested that the EX was normally distributed at 5% level of significance and it was log to correct it to normal.

The table showed that corruption in Nigeria (CPI) has a mean value of 16.99655 over the time of the study. It also indicates the median value of 19.00 proved the absence of outliers in the values. It has a maximum value of 28.00. It also has a minimum value of 0.77. The variable has a standard deviation of 10.13 which suggested that the value of the observation was spread across its mean value of 16.99655. The skewness statistics of the variable was -0.65, suggesting that was negative, while the kurtosis statistics of 1.92 suggested that the observation was leptokurtic in distribution. The Jaque-Bera statistics of 3.50 with a probability value of 0.17 suggested that the CPI was normally distributed at 5% level of significance and it was log to correct it to normal.

Table 3: Correlation Matrix

	Rgdp	Ep	CPI	Ex
Rgdp	1.000000			
Ep	0.273713	1.000000		
CPI	0.663967	0.206068	1.000000	
Ex	0.456937	0.196273	0.739893	1.000000

Source: Researcher's computation using, E-views 9.0, 2019

Table 3 reveals that real gross domestic product in Nigeria (RGDP), has a weak positive correlation (0.27) with export from Nigeria to China (EP). Real gross domestic product in Nigeria (RGDP)has a strong positive correlation (0.66) with corruption (CPI) in Nigeria. Also,

real gross domestic product in Nigeria (RGDP) has a weak positive correlation (0.45) with the exchange rate (EX) in Nigeria. Export from Nigeria to China (EP) has a weak positive correlation (0.20) with a corruption perception index (CPI). Export from Nigeria to China (EP) has a weak positive correlation (0.19) with the exchange rate (Ex) in Nigeria. Corruption perception index (CPI) has a strong positive correlation (0.71) with the exchange rate (Ex) in Nigeria. This correlation shows that the indicants are appropriately selected. Thus, there is an absence of multicollinearity or there is no problem of multicollinearity.

Table 4: Correlation Matrix

	Rgdp	IMP	CPI	Ex
Rgdp	1.000000			
IMP	0.345367	1.000000		
CPI	0.663967	0.589951	1.000000	
Ex	0.456937	0.731859	0.739893	1.000000

Source: Researcher's computation using, E-views 9.0, 2019

Table 3 reveals that real gross domestic product in Nigeria (RGDP), has a weak positive correlation (0.34) with import from China to Nigeria (IMP). Real gross domestic product in Nigeria (RGDP) has a strong positive correlation (0.66) with corruption (CPI) in Nigeria. Also, real gross domestic product in Nigeria (RGDP) has a weak positive correlation (0.45) with the exchange rate (EX) in Nigeria. Import from China to Nigeria (IMP) has a strong positive correlation (0.58) with a corruption perception index (CPI). Import from China to Nigeria (IMP) has a strong positive correlation (0.73) with the exchange rate (Ex) in Nigeria. Corruption perception index (CPI) has a strong positive correlation (0.73) with the exchange rate (Ex) in Nigeria. This correlation shows that the indicants are appropriately selected. Thus, there is an absence of multicollinearity or there is no problem of multicollinearity.

Table 5: Summary of Unit Root test Results

Variable	Level of stationarity	ADF-statistic	Significant values 1%, 5%, 10%	Order of Integration	Prob(5%)
LRGDP	constant (exogenous)	4.37	-3.73, -2.99, -2.64	1(1)	0.0023*
LEP	constant (exogenous)	5.08	-3.71, -2.98,-2.623	1(1)	0.0004*
LIMP	constant (exogenous)	7.22	-3.69, -2.97, -2.63	1(1)	0.0000*
LCPI	constant (exogenous)	4.38	-3.73, -2.99, -2.64	1(1)	0.0023*
LEX	constant (exogenous)	5.05	-3.69, -2.97, -2.63	1(1)	0.0004*

Source: Author's Computation using E-view 9.00

Probability values are indicated by *

Table 5 shows that LRGDP, LEP, LIMP, LEX and CPI are not stationary at the level and second difference but stationary at first different because the values of its ADF test statistics at first differences are greater than their corresponding critical values at 5% level of significance. Thus, LRGDP, LEP, LIMP, LEX and CPI are stationary at first difference. Also, the variables are integrated of order one 1(1) which signifies that cointegration test, granger test and Vector Error Correction (VEC) Model test are appropriately needed in this empirical study.

Table 6: Cointegration results

Variables	Trace Stat	Critical Value	Max-Eigen Stat	Critical Value	Probabilities
LRGDP & LEP	43.40545	15.49471	31.63034	14.26460	0.0000/0.0000
LRGDP & LEX	23.97935	15.49471	18.32895	14.26460	0.0021/0.0108
LRGDP & LCPI	30.86966	15.49471	26.19754	14.26460	0.0001/0.0004
LEP & LEX	23.11140	15.49471	13.92706	14.26460	0.0029/0.05
LEP & LCPI	26.03847	15.49471	23.64327	14.26460	0.0009/0.0013
LRGDP & LIMP	49.67958	15.49471	42.55340	14.26460	0.0000/0.0000
LIMP & LEX	24.61047	15.49471	17.39326	14.26460	0.0016/0.0000
LIMP & LCPI	22.12795	15.49471	17.74543	14.26460	0.0043/0.0135

Source: Researchers computation using E-views 9.0, 2019

Table 6 reveals Johansen and Josulius co-integration test and the test also reveals that there is a long-run relationship between the variables at 5% level of significance. The outcome of the Trace test statistic reveals that there are two co-integrating equation at 5% level of significance for LRGDP & LEP, LRGDP & LEX, LRGDP & LCPI, LEP & LEX, LEP & LCPI, LRGDP & LIMP, LIMP &LEX as well as LIMP & LCPI. Similarly, the result of the Max-Eigen test also reveals that there two co-integrating equations at 5% level of significance for LRGDP & LEP, LRGDP & LEX, LRGDP & LCPI, LEP & LEX, LEP & LCPI, LRGDP & LIMP, LIMP &LEX as well as LIMP & LCPI. Therefore, there is a long-run relationship between real gross domestic product and export from Nigeria to China in Nigeria. Also, there is a long-run relationship between LRGDP & LEX, LRGDP & LCPI, LEP & LEX, LEP & LCPI, LRGDP & LIMP, LIMP & LEX as well as LIMP & LCPI.

Table 7: Vector Error Correction Model

Error Correction:	D(LRGDP)	D(LEP)	D(CPI)	D(LEX)
CointEq1	-0.084044	- 0.644915	- 0.659040	-0.237021
Standard Error	(0.59382)	(4.29212)	(0.85966)	(0.38030)
t-statistics	[-0.14153]	[-0.38324]	[0.76663]	[0.62324]
CAUSALITY				
Causality runs from LEP to LRGDP		Causality runs from LCPI to LEP		
Causality runs from LCPI to LEX		Causality runs from LEX to LEP		
Causality runs from LEX to LRGDP		Causality runs from LCPI to LRGDP		

Source: Researcher's computation using E-views 9.0, 2019.

Table 7 indicates that about 8% of short-run disequilibrium is corrected by economic growth in terms of real gross domestic product (RGDP) in each period. It also reveals that 64% of short-run disequilibrium is corrected by export from Nigeria to China in each period, 69% of short-run disequilibrium is corrected by corruption in terms of corruption perception index (LCPI) in each period. Similarly, about 23% of short-run disequilibrium is corrected by the exchange rate (LEX) in each period.

From the table, the study found that causality runs from export from Nigeria to China to the real gross domestic product which implies that export from Nigeria to China affect the gross domestic product in Nigeria. Other findings are that corruption affects export from Nigeria to China in Nigeria, corruption affects the exchange rate in Nigeria, the exchange rate also affect export from Nigeria to China in Nigeria. The study also found that the exchange rate affects the real gross domestic product in Nigeria while corruption affects the real gross domestic product in Nigeria.

Table 8: Vector Error Correction Model

Error Correction:	D(LRGDP)	D(LIMP)	D(LCPI)	D(LEX)
CointEq1	-0.304520	-0.311731	-0.806884	- 0.077774
Standard Error	(0.65365)	(0.92887)	(0.858021)	(0.38017)
t-statistics	[0.46588]	[-0.33560]	[-0.94040]	[0.20457]
CAUSALITY				
Causality runs from LRGDP to LIMP			Causality runs from LRGDP to LEX	
Causality runs from LCPI to LIMP			Causality runs from LCPI to LRGDP	
Causality runs from LIMP to LEX				

Source: Researcher's computation using E-views 9.0, 2019.

Table 8 indicates that about 30% of short-run disequilibrium is corrected by economic growth in terms of real gross domestic product (RGDP) in each period. It also reveals that 31% of short-run disequilibrium is corrected by import from China to Nigeria in each period, 80% of short-run disequilibrium is corrected by corruption in terms of corruption perception index (LCPI) in each period. Similarly, about 7% of short-run disequilibrium is corrected by the exchange rate (LEX) in each period.

From the table, the study found that causality runs from real gross domestic product to import from China to Nigeria which implies that real gross domestic product affects import from China to Nigeria in Nigeria. Other findings are that real gross domestic product affects the exchange rate in Nigeria, corruption affects import from China to Nigeria, corruption affects the real domestic product in Nigeria while import from China to Nigeria affects the exchange rate in Nigeria.

DISCUSSION

From the analysis in table 6 above, the study found out that there is a long-run relationship between real gross domestic product and export from Nigeria to China in Nigeria. Also, there is a long-run relationship between LRGDP & LEX, LRGDP & LCPI, LEP & LEX, LEP & LCPI, LRGDP & LIMP, LIMP &LEX as well as LIMP & LCPI. From 1990, Nigeria has engaged in trade relations with China by importing and exporting goods and services from each other and this proved that there are about 29 years of trade relations with China and Nigeria. However, a long-run relationship of about 29 years had existed in the trade relationship between Nigeria and China.

From table 7, the study found that causality runs from the export of goods from Nigeria to China to a real gross domestic product which implies that export from Nigeria to China affect the gross domestic product in Nigeria. The export of goods and services affected the real gross domestic products in Nigeria. The reason is that it increases economies of scale, increased revenue and profit, increased productivity, spreading risk base of business, new product ideas, and tax advantages which eventually added to the gross domestic product in Nigeria.

The study found that corruption affects export from Nigeria to China in Nigeria. The nature of corruption in Nigeria affected the export of goods from Nigeria to China in Nigeria. The reason is that corruption does not allow Nigerian to engage fully in export and discovered what they can export best to China. Corruption made Nigeria over other areas of absolute and comparative advantages such as agriculture and mining and concentrated in oil and gas.

The study also found corruption affects the exchange rate in Nigeria. The reason is that when Nigeria was recorded as one of the corrupt nations in the world in the 1970s, the exchange rate was low compared to the situation now when the exchange rate is now 306 officially. The study found that the exchange rate affects export from Nigeria to China in Nigeria. The rate of export from Nigeria to China is affected due to the high exchange rate of 1 Chinese Yuan Renminbi is exchange with 1 Nigeria Naria with 51.0531. The reason is that Nigeria does not gain from engaging in export from China due to the exchange rate difference.

The study also found that the exchange rate affects the real gross domestic product in Nigeria. The exchange rate also affected the gross domestic product in the sense that the rate exchange of goods in Nigeria and China is high when 1 Chinese Yuan Renminbi is exchanged with 1 Nigeria Naria with 51.0531 which affected trade and economic growth in Nigeria. The study also found corruption affects the real gross domestic product in Nigeria. The reason is that corrupt practices in Nigeria hider the growth of Nigeria's economy by reducing the rate of RGDP. The way Nigerian politicians invested in Nigeria's money outside does not add to the economic value of Nigeria.

From table 8, the study found that causality runs from real gross domestic product to import from China to Nigeria which implies that real gross domestic product affects import from China to Nigeria in Nigeria. This is because of the low manufacturing product and over-dependence on imported product, the Nigeria real gross domestic product in Nigeria is affected by the importation of goods from China to Nigeria. Nigeria does not manufacture any industrial goods such as iron and we even imported everything and the least of it is paper from China which affected the growth of the economy in Nigeria.

The study also found that real gross domestic product affects the exchange rate in Nigeria. The real gross domestic product is affected by a high exchange rate in Nigeria (51.0). The rising rate of the exchange rate in Nigeria to China proved that China benefited much from Nigeria China trade relations while it affected the real gross domestic product in Nigeria.

The study found that corruption affects imports from China to Nigeria. The corrupt practices in Nigeria make the Nigerian government import virtually everything from China without initiating a plan to establish any manufacturing outfit that will produce goods for consumption in Nigeria. The study found that corruption affects the real gross domestic product in Nigeria. The study found that corruption in Nigeria affected the real gross domestic product in Nigeria which implies that the corruption in Nigeria make Nigerian not to invest in Nigeria but prefer to invest in other countries of the world because the invested money is stolen money.

The study found that imports from China to Nigeria affect the exchange rate in Nigeria. The high demand for China products in Nigeria influences the exchange rate of China to Nigeria. The demand of China product made Nigeria Naria higher than China Yuan Renminbi.

The finding agrees with the findings of Lawal and Kamtochukwu (2017) who found that there is a long-run relationship between variables. Also, Lawal and Kamtochukwu (2017) causality run unidirectional from economic growth to trade and trade to economic growth/ However, the study disagrees with the findings of Enrico and Marcello (2011) and Babatunde, Jonathan and Muhyideen (2017) there is a significant relationship between the variables. The study is also in tandem with dependence theory.

CONCLUSION AND RECOMMENDATIONS

The study concluded that Nigeria –China has abundant raw materials and they can benefit from the natural endowments of raw materials. Even if one country can produce two goods at a lower absolute cost – it doesn't mean they should produce everything. Therefore, Nigeria also needs to produce and compete with China, so that importation and exportation of goodwill balance. The study concluded that causality runs from the export of goods from Nigeria to China to the real gross domestic product which implies that export from Nigeria to China affect the gross domestic product in Nigeria. The effect of export of Nigeria product to China influence Nigerian economic growth in that Nigeria has only a few absolute and comparative advantage over China. They only exported a limited number of goods especially oil and gas to China which they tend to lose in trade relations with China.

The study concluded that causality runs from real gross domestic product to import from China to Nigeria which implies that real gross domestic product affects import from China to Nigeria in Nigeria. The import of goods from China influences Nigerian real gross domestic product since Nigeria has not produced any industrial goods and any electronic goods. They all import these goods from China and it does not add to the gross domestic product of Nigeria. However, the effect of this that in due cause Nigeria economy will be dominated with Chinese product since Nigeria have not entered into producing industrial goods and automobile parts as well as automobile cars.

The study suggested that the Nigerian Government should discontinue export to China since it affects economic growth because they only have limited goods to export with China while they import virtually everything from China. They should minimize corruption and control the exchange rate with China so that in future if they want to enter into trade relations, they will also gain from trade with any nation.

The study also recommended that the Nigerian Government should depend much on the import of goods from China since it affects economic growth in terms of real domestic product. They should start to produce their goods and consume them. They should re-strategise our export promotion policies to encourage indigenous goods. They should ban China's product if need be because of the high exchange rate (51.03) and try to minimize corrupt practices in Nigeria.

SCOPE FOR FURTHER STUDIES

The study suggested that further study should improve the article by looking the period of study to increase it to 2020 or beyond. The study looked at other countries such as Nigeria and USA trade relations and its effect on economic growth in Nigeria. Also, Nigeria and G-5 countries trade relations. The study can also be improve by indicating the trade relations between Nigeria and G=7 countries and its effect on Nigerian economic.

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APPENDICES

Appendix A: Data on the variables

Years	EP	IMP	CPI	EX	RGDP
1990	44870000	1030633000	2	8.0378	236729.6
1991	21073000	6593020000	0.9	9.9095	265379.1
1992	24619341	5448585779	0.78	17.2984	271365.5
1993	34526774	6765767864	0.77	22.0511	274833.3
1994	31676758	6388589751	0.89	21.8861	275450.6
1995	325329674	10989708928	0.96	21.8861	281407.4
1996	39360000	5388289053	17.6	21.8861	293745.4
1997	12671356489	40667431116	19	21.8861	302022.5
1998	14125595743	25693468606	16	21.8861	310890.1
1999	10671356489	39890423259	12	92.6934	312183.6
2000	11413354432	46367894115	1	102.1852	329178.7
2001	14127160262	58595546570	16	111.9433	356994.3
2002	8812297309	89138079432	14	120.9702	433203.5
2003	15954209434	1.37917E+11	16	129.3565	477533
2004	70531578270	1.47914E+11	19	133.5004	527576
2005	46742407524	2.44654E+11	22	132.147	561931.4
2006	527401740	4.0332E+11	22	128.6516	595821.6
2007	11136551552	6.26688E+11	27	125.8331	634251.1
2008	31353471339	5.02302E+11	25	118.5669	674889
2009	83472435000	7.71236E+11	24	148.9017	332341.1
2010	10804260000	7.33231E+11	24	150.298	357864.1
2011	1706576000	9.35884E+11	27	154.18	421619.1
2012	1674434000	1.09897E+11	25	155.75	599298.9
2013	1537958	1.37416E+11	27	160.65	632187.2
2014	2345535	1.83612E+11	26	162.75	632872.1
2015	1.57485E+11	2.49442E+12	28	172.75	690239.2
2016	9.12214E+12	1.56769E+12	27	180.3	679312.3
2017	2.20569E+11	1.73444E+12	28	305.3	684909.9
2018	3.15034E+11	1.78655E+12	24	306.9	69810

Source: NBS, 1990-2018

Appendix B: Logged Data

	LCPI	LEP	LEX	LIMP	LRGDP
1990	0.693147	17.61928	2.08415541391	20.75344	12.37467
1991	-0.105361	16.86350	2.29349389298	22.60928	12.48891
1992	-0.248461	17.01904	2.85061401168	22.41862	12.51122
1993	-0.261365	17.35725	3.09336248727	22.63514	12.52392
1994	-0.116534	17.27109	3.08585173212	22.57778	12.52616
1995	-0.040822	19.60035	3.08585173212	23.12023	12.54756
1996	2.867899	17.48826	3.08585173212	22.40749	12.59047
1997	2.944439	23.26261	3.08585173212	24.42869	12.61826
1998	2.772589	23.37125	3.08585173212	23.96950	12.64719
1999	2.484907	23.09083	4.52929727263	24.40940	12.65135
2000	0.000000	23.15805	4.62678685319	24.55987	12.70436
2001	2.772589	23.37137	4.71799249311	24.79392	12.78548
2002	2.639057	22.89941	4.79554423427	25.21345	12.97896
2003	2.772589	23.49299	4.86257215863	25.64992	13.07639
2004	2.944439	24.97933	4.89410447409	25.71989	13.17605
2005	3.091042	24.56792	4.88391493932	26.22311	13.23914
2006	3.091042	20.08347	4.85710797549	26.72300	13.29770
2007	3.295837	23.13350	4.83495642571	27.16371	13.36020
2008	3.218876	24.16859	4.77547735823	26.94247	13.42230
2009	3.178054	25.14778	5.00328635668	27.37126	12.71392
2010	3.178054	23.10321	5.01261998995	27.32073	12.78791
2011	3.295837	21.25775	5.03812075103	27.56476	12.95186
2012	3.218876	21.23874	5.04825215767	25.42281	13.30352
2013	3.295837	14.24597	5.07922808556	25.64628	13.35694
2014	3.258097	14.66802	5.09221528109	25.93609	13.35802
2015	3.332205	25.78260	5.15184546265	28.54508	13.44479
2016	3.295837	29.84173	5.19462213021	28.08062	13.42884
2017	3.332205	26.11948	5.72129489974	28.18170	13.43704
2018	3.178054	26.47594	5.72652196163	28.21131	11.15353