

## TRADE POLICY AND ECONOMIC GROWTH IN NIGERIA

This study examines the effect of trade policy on Nigeria's economic growth and uses annual data spanning from 1983 to 2018. The Augmented Dickey-Fuller test revealed that the variables employed have a mixed order of integration ( $i(0)$ ,  $i(1)$ ). Thereafter, an Autoregressive Distributed Lag (ARDL) technique was employed because it suits the outcome of the pre-estimation test. A cointegration test among the variables was conducted using the ARDL bound test technique. The ARDL estimates showed that the adjusted trade ratio and the price-based variables have a positive impact on the GDP in both the short and the long run. The impulse response function for the estimated ARDL model was computed in order to confirm the accuracy of the Bound testing result. Interestingly, the findings remained robust when the potential effect of the trade policy was accounted for using the impulse response function (IRF) (see the Appendix). The IRF showed dynamically that the GDP responded positively to the trade policy at a higher horizon contrary to the short run estimate, thereby giving more credibility to the result of the ARDL which was being transformed by the IRF. The dynamic responses made it possible to find out that the GDP responded positively and negatively to trade policy, but that the accumulated (long run) effect was positive. The conclusion was reached that in Nigeria the adjusted trade ratio was procyclical while the price-based mechanism was countercyclical throughout the scope of study. The suggestion was made that the policy makers should adopt policies that can promote international trade and innovations, and can shut out any form of black market premium that may cause distortions.

*Keywords: trade policy; economic growth; ARDL; IRF; Nigerian economy*

JEL: A01; M27; A82

Trade policy is often considered as an essential step for promoting economic growth in the global economy. Despite the fact that the impact of trade policy on economic growth has not been satisfactorily determined, it has been claimed that trade is an important engine of growth for countries at different circles of development, because it contributes to a more efficient allocation of resources and transmission of growth from one part of the country, continent, or world to another (Thirlwall, 2002). Githanga (2015) is of the view that trade liberalization permits the inflow of goods, labour, technology, ideas, investment and human capital from one country to another.

Theoretically, the impact of trade on economic growth is that the country becomes more efficient and comparatively more productive by focusing on the production of goods that have a comparative advantage. Trade gives room for countries to export goods that are produced from the resources of which there is a

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\* Federal Polytechnic Offa, School of Management and Social Sciences, Department of Banking and Finance, Kwara State, Nigeria, ayzne01@gmail.com (corresponding author).

\*\* Federal Polytechnic Offa, School of Management and Social Sciences, Department of Banking and Finance, Kwara State, Nigeria.

\*\*\* Federal Polytechnic Offa School of Management and Social Sciences, Department of Banking and Finance, Kwara State, Nigeria.

surplus domestically, and to import goods that cannot be efficiently produced from domestic resources because of their scarcity. International trade also permits countries to concentrate and specialize in producing selected ranges of goods and services that give them greater efficiencies of large-scale production. Krugman (2011) opines that the world is efficient and richer because international trade permits countries to specialize in the production of goods or services that give those countries comparative advantages and thus help them reap the gains from external economies. International trade encourages market integration, which in turn makes it possible to offer consumers a variety of goods or services at cheaper prices. Trade can occur as a result of increasing returns or economies of scale.

Trade liberalization as an economic policy refers to every attempt that aims at reducing or removing restrictions on international trade. This may include but is not limited to the reduction or removal of tariffs, the abolition or enlargement of import quotas, the abolition of multiple exchange rates and the removal of requirements for administrative permits for imports or allocations of foreign exchange. Trade liberalization (openness) promotes foreign direct investment, technology transfer, the transfer of goods and services, and the transfer of capital among the countries of the world. No doubt that participation in global markets provides a wide range of opportunities for financing investments. Krugman (2011) states that countries engage in international trade for two cogent reasons, and each of the reasons contributes to their gains from trade. Firstly, countries trade because they are different in so many ways. Therefore, countries, like individuals, can gain from their differences by reaching a consensus in which each country engages in such activity that the said country can do comparatively well. Secondly, countries engage in trade in order to achieve economies of scale in production.

Anderson and Babula (2008) postulate that economic theory distinguishes between two sources of gross domestic product (GDP)-per-capita growth: capital accumulation (physical and human) and productivity growth. However, openness may affect both of them. Firstly, openness to international flows of capital may speed up the rate at which physical capital and human capital are accumulated domestically (at least temporarily). Secondly, openness may increase productivity growth through faster technological breakthrough. In Nigeria, the industrial sector growth of the 1970s was the result of a policy of import substitution (Ayorinde and Olayinka, 2012). The policy impacted export partly, because the domestic currency was overvalued and the return on investments was low due to the preferential credit policies. The essence of trade policy in any country is to stimulate production, improve efficiency and help to minimize the cost of production, which would in turn increase international confidence in the market mechanism of the economy.

Without any exception, the Nigerian economy considers trade as an engine for growth because trade creates jobs, expands markets, facilitates competition, disseminates knowledge and raises the income of individuals and the government (WTO, 2005; Briggs, 2007). The immense benefits from trade have been a principal factor that has motivated the Nigerian government to engage in trade over the past

decades. The effect of trade liberalization on growth has become a much debated and controversial issue. Grossman and Helpman (1991) argue that countries stand to benefit from the spillover effect generated by investments in knowledge and technology from their trade partners, but they may also suffer a setback due to their lack of ability to appropriate all of the benefits from their own investments. It is the view of the experts that participation in international markets provides opportunities for financing investments in all forms of capital, including knowledge capital.

Edmond, Midrigan and Yi Xu (2015) observe that trade improves the extent of competition among producers in the market. In their view, they argue that if domestic and foreign producers produce similar goods or render similar services within a given sector, then trade liberalization exposes them to stiff head-to-head competition that reduces market power vis a vis reducing mark-ups and mark-up dispersion. Thus, the unclear nature of the exact relationship between trade policy and economic growth propels the present study.

The expected impact of trade policy on economic growth in Nigeria is constrained by some diminishing factors which constitute the major problems of international trade. One of the constraints that have an impact on trade internationally are the fiscal and monetary policies put in place by the regulatory authorities. Most of the time, the policies are ineffective, counter-productive and the investments made are not viable or amount to a waste of resources. Participants in international trade are expected to benefit from lower prices, variety of products and so on. Firms and businesses that participate in international trade are faced with the challenge of competing with the world's best practices. This in turn helps them to achieve higher productivity because by learning from the best in their industry they are able to create new products and processes, however, the case in Nigeria is the exact opposite. Global trade has left the industries in Nigeria in a comatose state, as most domestic infant industries are negatively affected due to the consumers' preference for the foreign product rather than of the one produced locally (Echekoba, Okonkwo & Adigwe, 2015).

More so, hoarding and secrecy present another major challenge. The essence of trade liberalization is to open up economies in order for the participating countries to learn from one another and improve product quality and output, yet most developed countries are not ready to expose their methods of production and their technologies simply for the fear of being dominated by other countries. Another major challenge to international trade in Nigeria is that most of the countries that are trade partners to Nigeria hoard important commodities and resources which are needed in Nigeria, while simultaneously they get everything they need from Nigeria (Echekoba et al., 2015). This therefore is an indication that trade is not liberalized in action but only in words. Nigeria, as one of the developing countries in the world, has learned close to nothing when it comes to improving the ways of doing things, and developing countries like Nigeria appeared to simply be dumping grounds for foreign goods.

Aside from the aforementioned, the multiple exchange rates present a big challenge in Nigeria, where the official exchange rate by the Central Bank of

Nigeria (CBN) and the black market (parallel market) rate by the Bureau De Change exist side by side, which discourages foreign trade and investment into the country. This existence of multiple exchange rates obviously has an adverse effect on Nigeria economic growth. Unless all the above mentioned challenges are addressed, trade liberalization may not strengthen economic growth in Nigeria.

There are numerous studies on trade policy and economic growth nexus in Nigeria: Nwafor, Ogujiuba and Adeola (2006), Yahya, Dantama and Abdullahi (2013), Olaifa, Subair and Biala (2013), Ehinomen and Dasilva (2014), Sunday and Ganiyu (2015), Ezeuchenne (2017), Ajayi and Araoye (2017), and Elijah and Musa (2019). Many of these studies, if not all of them, report on the presence of a positive correlation between import, export and economic growth. These researchers claim that the major concern is that the adoption of an import-export ratio as a measure of openness is atheoretical because these variables have no link with the theory. Other scholars argue that the choice of trade ratio as a measure of openness is due to the availability of data. However, the result of their studies cannot be relied upon without qualification because their works suffer from methodological lapses. Few of the researchers argue that the import and export ratio do not consider trade policy lag and that the trade ratio can be easily affected by the business cycle or fluctuations in it.

The studies by Nwafor, Ogujiuba and Adeola (2006), Yahya, Dantama and Abdullahi (2013), Olaifa, Subair and Biala (2013), Ehinomen and Dasilva (2014), and Sunday and Ganiyu (2015) are deficient in the area of modelling. For instance, all the authors mentioned above used OLS, ARDL and VECM without any justification from a pre estimation test and also failed to report on the dynamics of the relationship between trade policy and economic growth.

The present study makes progress in several areas. Firstly, the study takes into account the effect of the structural break on the study of trade policy and economic growth in Nigeria and adopts an ARDL because of its suitability for 1(0) and 1(1) order of integration after all the necessary pre-estimation tests, and its capability to test for hidden long run relationships. Furthermore, it performs better when the sample is small, which is appealing to the researchers.

Lastly, the present study is of the view that it would be unfair to continue to argue that including a theoretical measure such as an import – export ratio is difficult to justify in the presence of a large body of trade theory without empirically justifying such claims.

Based on this, the present study examines the effect of free trade on economic growth using time series data that spans from 1983 to 2018. This period was chosen because it makes it possible to capture the effect trade policy has had on the economy both before and after (1986) the trade policy reform in Nigeria.

### **Literature review**

Ogunrinola (2013) defines trade as the exchange or buying and selling of goods and services, while foreign trade can be defined as commercial transactions (in goods and/or services) across international frontiers or boundaries. Trade liberalization, according to Githanga (2015), is the removal or reduction of restrictions

or barriers on the exchange of goods and services between nations. This includes the removal or reduction of both tariff and non-tariff obstacles. International trade allows the international flow of goods and services, labour and human capital from one part of the country to another through immigration. There are also flows of technology, ideas and investment. The effect of trade on productivity is that a country becomes more productive when it is able to produce the things it is good at producing and sells them to other countries in return for other things. Trade policy implies export promotion and import policy reform.

Growth, on the other hand, is defined as an increase in the output that a country produces over a period of time. This is usually denoted by the gross domestic product (GDP). The GDP is the total monetary value of all the finished goods and services produced within a country over a given period of time (Echekoba et al, 2015). It is noteworthy that GDP is usually calculated on an annual basis, but it can be calculated on a quarterly basis as well. The GDP includes all private and public consumption, government outlays, investments and exports minus the imports that occur within a defined territory. Economic growth is the increase in the inflation-adjusted market value of the goods and services produced by an economy over time. A growth in GDP entails growth in the economy.

Many theoretical models and theories have been developed and support the fact that international trade and openness in any economy enhances its growth. Trade policy can be traced back to mercantilism, the classical economists (the theory of absolute advantage by Adam Smith (1776) and the comparative cost advantage theory by David Ricardo) and the Heckscher-Ohlin trade theories. The theories on economic growth include the Harrod-Domar model, the Solow model, and the New Endogenous Growth Model (NEGM).

The theoretical framework in this study is based on the Harrod-Domar theory and the New Endogenous Growth Model. The theories explain that trade policy leads to economic growth through various channels. Trade liberalization increases capital inflow, which in turn takes several forms such as foreign direct investment (FDI). Capital inflow increases the investment level in the economy which leads to more production, more output and increases the market size. Further increase in the production process will cause an increase in the employment level, which will in turn reduce poverty.

Empirically, the impact of trade liberalization has been researched into globally with mixed results. In the work of Rodriguez and Rodrik (1999) on trade policy and economic growth, which uses cross-national evidence from different authors, it is observed that both a positive and a negative relationship exist between trade policy and economic growth. In a study conducted by Chaudhry, Malik and Faridi in 2010, which uses co-integration and Granger causality techniques and time series data for the period of 1972-2007, it was found out that trade openness and human capital are crucial for Pakistan's long-term economic growth and development.

Another study by Brafu-Insaidoo and Obeng (2012), which focused on import liberalization and import tariff yield in Ghana for the pre-reform (1965 to 1982) and

post-reform (1983 to 2007) periods using regression analysis, found that import liberalization has improved tariff revenue yield and efficiency in Ghana's import tax system. In a study conducted by Edwards (1998) on the relationship between openness and total factor productivity growth using comparative data for 93 countries (developed and developing) it was found that countries that are more open have indeed experienced faster productivity growth in their economy.

Sakyi (2011) conducted a study on trade openness, inflow of foreign aid and economic growth in the post-liberalization period in Ghana which uses Autoregressive Distributed Lag (ARDL). The study reports that the effect is positive and statistically significant in both the short-run and the long run, although it is reduced by their interaction. Dantama and Abdullahi (2013) investigated the link between trade liberalization and economic growth in Sub-Saharan Africa using panel data from the period 1970-2010. A pooled ordinary least squares (OLS) method was used for their analysis. The study discovered that trade liberalization and FDI have a significant positive effect on economic growth and that financial development and inflation have a significant negative effect on economic growth, while population growth has no significant impact on the economic growth of Sub-Saharan Africa.

Similarly, Olaifa, Subair and Biala (2013) estimated the effects of trade liberalization on economic growth by adopting the OLS technique for a time series data for the 1970-2012 period, and the results from the study revealed that liberalization supports economic growth in Nigeria with evidence of a long-term relationship. Ehinomen and Dasilva (2014) investigated the impact of trade openness on economic growth in Nigeria using the OLS method and the results revealed that trade openness has a significant effect on the Nigerian economy. Sunday and Ganiyu (2015) assessed the impact of trade liberalization on Nigeria's economic growth between 1970 and 2012 using the OLS method, and the results revealed that trade liberalization does not affect the growth of the Nigerian economy significantly.

A study by Ezeuchenne (2017) on the impact of international trade on Nigeria's economic growth for the period from 1985 to 2015 revealed that there is an insignificant relationship between imports and openness of the economy in the long run and that there is an unidirectional relationship between economic growth and openness. Ajayi and Araoye (2017), in their research on the effect of openness on the economic growth of Nigeria from 1970 to 2016, found out that there is a positive relationship between trade openness and economic growth and a negative relationship between economic growth and the exchange rate.

Elijah and Musa (2019) investigated the dynamic impact of trade openness on economic growth in Nigeria between 1980 and 2016 using the ECM, and the results show that trade openness has a negative impact on economic growth in both the short and long run.

## **Methodology**

Given the nature of the present study, the authors have sourced for data on the Nigerian economy in order to test the impact of trade policy on the real GDP.

The data series cover the period 1983-2018. These historical data were obtained from the central bank of Nigeria's annual statistical bulletin. The study makes use of experimental design which helps to provide both greater certainty and greater efficiency by making possible the simultaneous gathering of various lines of evidence. Thus, the experimental research design is used to establish and describe the relationship between the study variables while the ARDL is used to investigate the relationship between trade policy and economic growth.

#### *Model specification*

An empirical model suitable for the derivation of output or production function in which economic policy is included is formulated using a Cobb Douglass production function. The model specification for the Cobb Douglass production function is:

$$(1) \quad Q = AK^{\alpha}L^{\beta} [A(0)E^{it}],$$

where  $Q$  is the output,  $K$  is the capital,  $L$  is labour, and  $A$  is the efficiency and productivity growth which is linearly related to trade policy and economic policy in general.

However, for the purposes of the present study, some slight adjustments were incorporated into this model to better suit the scope which this study covers, as well as the availability of data. The  $Q$  in equation (1) is substituted with economic growth (GDP) in equation (2) because economic performance is synonymous with output, while the capital and the other factor in the Cobb Douglass model in equation (1) is substituted with foreign direct investment, openness, exchange rate and per-capita income in equation (2) because of the significant role of FDI, exchange rate and per-capita income in labour productivity, capital formation and efficiency.

Thus, the modified or expanded model for this study is specified, as follows:

$$(2) \quad GDP_T = \beta_0 + \text{Break} + \beta_1 FDI_t + \beta_2 OPEN_t + \beta_3 EXCH_t + \beta_4 PCI_t + e_t,$$

where:  $\beta_0$  is an intercept,  $\beta_1 FDI_t + \beta_2 OPEN_t + \beta_3 EXCH_t + \beta_4 PCI_t$  are parameters, while  $e_t$  is an error term;

$\beta_0$  = estimate of the true  $y$  intercept or autonomous variable;

$\beta_1 \dots \dots \beta_n$  = estimate of the true parameters of the independent variable i.e. FDI, EXCH, OPEN and PCI.

The GDP variable is included in order to capture the growth and activity of the economy. This also helps to determine how well an economy is performing, how rich an economy is, as well as the condition of general well-being in an economy.

FDI in the country is included in the model since the contribution of foreign direct investments to an economy may affect its long term growth.

Openness (OPEN) is measured as the ratio of the sum of the total export and the total imports to the GDP. This is used to measure the degree of globalization within the economy and the extent of a country's growth.

Import is removed from the equation, because it is believed to have been incorporated into the openness parameter.

The exchange rate (EXCH) is measured by the official NGN to USD exchange rate available in the Central Bank of Nigeria's Statistical Bulletin. When this number

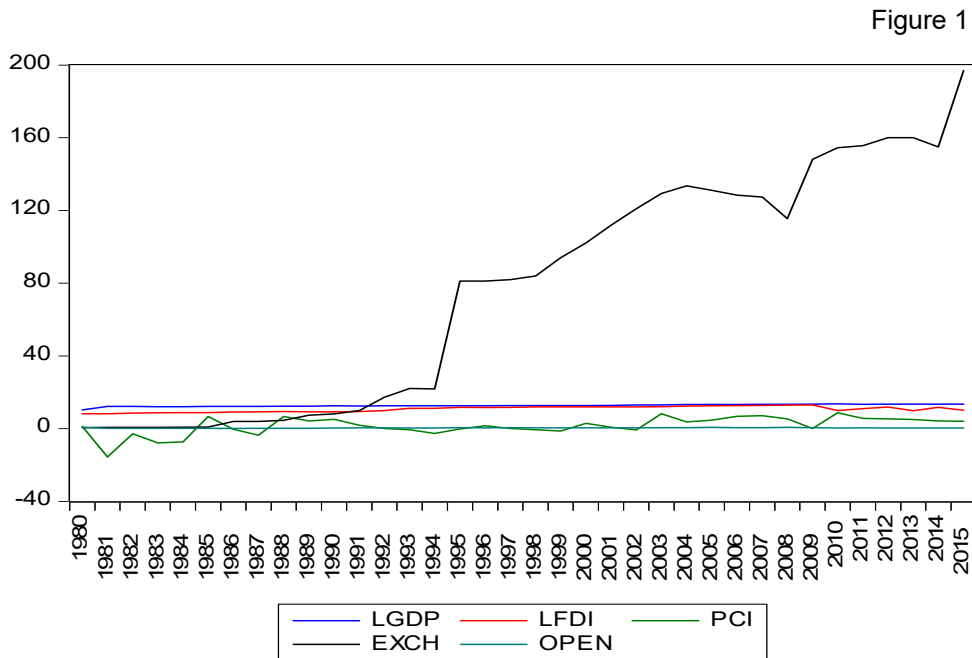
increases, a depreciation in the local currency occurs, while when it decreases, a rise in the local currency can be observed. This also helps in determining the growth rate of an economy.

The per-capita income is used to measure the income earned per person in a given country in a specific year. This is calculated by dividing the country's total income by its total population. It is also used to measure the growth rate in an economy. The data used for this study are secondary data obtained from the CBN's Statistical Bulletin and the National Bureau of Statistics (NBS)' annual reports.

*Estimation technique.* The ARDL technique is used in order to test the hypothesis presented in this study. The advantages of this model are that it will make it possible to investigate both the short and long run (gains) impact of the four variables on the economy. It will also help to investigate the mean-median lag of response to effect and it will give room for the computation of the dynamic response (step response function) of the economy of the four variables including the structural break.

### Empirical Analysis

The structural break does not occur at just a single point in time (see Figure 1). Particularly, structural breaks could be observed in 1986, 1988, 2004, 2010 and 2015.



Source. Authors' computation using Eview.



The researchers therefore constructed a dummy variable (Break) that takes the value of one for these observations and is represented by a zero everywhere else. It was observed that there was a change in the level and trend of the data, which evolved over the course of several years, and which the study referred to as the “innovational outlier”.

#### *Unit root test*

Table 1 shows that the probability value for the unit root test accepts the null hypothesis for GDP and PCI at level and the alternative hypothesis for FDI, exchange rate and openness at first difference. Hence, the study concludes that the variables in question have mixed order of integration and this suits the assumption of the ARDL.

*Table 1*

#### Unit Root Test (Augmented Dickey Fuller)

At 5% significance level

Variable	Levels	First Difference	Order of Integration
GDP	-2.9484	-	1(0)
FDI	-3.5481	-3.5628	1(1)
OPEN	-1.9506	-3.5484	1(1)
PCI	-1.9510	-	1(0)
EXCH	-3.5442	-1.9510	1(1)

*Source.* Authors' computation using Eview.

Since it is necessary to select a lag for the ARDL based on the information criteria, the study uses Akaike information criteria (AIC) (see the Appendix) to select the optimal lag instead of using Schwarz information criteria because it is better to have an over-fitted model than an under-fitted one. A lag of 1 is selected, because it is a yearly data, the observation is small and the selection of too much lag will reduce the available data for estimation, and this will in turn severely hamper the degree of freedom which can make the regression result spurious or shaky.

The ARDL (1,1,1,0,1) model (1 lag for log GDP, 1 lag for log FDI, 1 lag for PCI, 1 lag for openness and 0 lag for exchange rate) is selected based on the AIC. From the model, the researchers computed the long-run and short-run tests, as well as the dynamic response of the GDP to the trade policy. Table 2 shows that in the estimated ARDL (1,1,1,0,1) model the researchers accounted for the structural breaks in the years 1986, 1988, 2004, 2010, and 2015. It can be seen that GDP (-1), PCI (-1), EXCH, OPEN (-1) and constant (market forces) are positively significant at a 1% level while log FDI (-1), LFDI (-1), PCI, openness and government control represented by Break are not significant. Foreign direct investment and openness have a negative effect and will be subjected to further tests in order to see whether the effect occurs in the short or the long term.

Table 2

ARDL (1,1,1,0,1) estimated parameter Dependent Variable: GDP

Adjusted Sample: 1983 - 2018 (36) observations

R<sup>2</sup>- adjusted: 0.959000

F-stat: 89.36421(0.0000)

S.E= 0.01

RSS: 0.250554

Variable	Coefficient	Standard error	T-stat	P-value
LGDP (-1)	0.359541	0.071324	5.040921	0.0000
LFDI	-0.051683	0.027364	-1888736	0.0706
LFDI (-1)	-0.046319	0.029653	-1.562013	0.1309
PCI	0.005134	0.005398	0.951032	0.3507
PCI (-1)	0.011880	0.004433	2.679844	0.0128
EXCH	0.004281	0.000645	6.636640	0.0000
OPEN	-0.054358	0.245541	-0.221382	0.8266
OPEN (-1)	0.954320	0.185342	5.148969	0.0000
Break	0.018979	0.072611	0.261379	0.7959
Constant	8.570792	0.853750	10.03906	0.0000

*Source.* Authors' computation using Eview.

The study then proceeds to test for the presence of a long-run relationship between the variables in order to actually confirm that 1 (1) are cointegrated. Table 3 shows the bound test result. The calculated F-stat is far greater than the critical values. It is therefore concluded that the long relationship between the variables is valid.

Table 3

ARDL F-bound test result Null Hypothesis: No level relationship  
F-bound test

Test stat	Value	Significance	1 (0)	1 (1)
F-stat	18.78308		Asymptotic	
1 < (D.O.F)	4		n=1000	
		10%	2.45	3.52
		5%	2.86	4.01
		2.5%	3.25	4.49
		1%	3.74	5.06
Actual sample size	32			
				Finite sample: 36

*Source.* Authors' computation using Eview.

Table 4 shows the estimated long-run parameter. The result shows that the accumulated effect of FDI is negative, which points to the fact that Nigeria has failed to internalize innovation and technology and that the Nigerian economy's absorptive capacity is poor. The effect of PCI, openness, structural changes and exchange rate are positive. All the variables are statistically significant except for the Break. A 1% change in FDI reduces the GDP by 15% and is statistically significant; a 1% change in PCI increases the GDP by 0.026% and a 1% change in openness increases the GDP by about 100% and is also statistically significant in the long run.

Table 4

## Long-run parameter estimation ARDL (1,1,1,0,1)

Dependent variable: GDP Adjusted sample: 1983 – 2018(36)

Variable	Coefficient	Standard error	T-stat	P-value
LFDI	-0.153018	0.058232	-2.627747	0.0145
PCI	0.026566	0.009788	2.714216	0.0119
EXCH	0.006684	0.000783	8.540513	0.0000
OPEN	1.405183	0.474715	0.2960058	0.0066
Break	0.029634	0.113527	0.261026	0.7962
Constant	13.382267	0.473764	128.246680	0.0000

Source. Authors' computation using Eview.

Table 5 shows the estimated short run model. The result shows that the instantaneous effect of FDI on the GDP is negative and significant. The instantaneous effect of the exchange rate is positive and significant at a 1% P-value.

Interestingly, one will be convinced that FDI impacted the GDP negatively in both the short and the long run, while the PCI and the exchange rate have a positive effect in the short run. However, openness has a negative effect in the short run but its effect is positive in the long run. The error correction mechanism (-0.64) is statistically significant at 1%. This implies that the economy will gradually revert back to its equilibrium at a speed of 64% whenever there is disequilibrium.

Table 5

Variable	Coefficient	Standard error	T-statistics	P-value
D(LFDI)	-0.051683	0.027364	-1.888736	0.0706
D(PCI)	0.005134	0.005398	0.951032	0.3507
D(EXCH)	0.004281	0.000645	6.636640	0.0000
D(OPEN)	-0.054358	0.245541	-0.221382	0.8266
D(BREAK)	0.018979	0.072611	0.261379	0.7959
ECT(-1)	-0.640459	0.071324	-8.979908	0.0000

Source. Authors' computation using Eview.

In graph A in the Appendix, it can be seen that the negative effect of the exchange rate on the GDP never outweighs the positive effect of other variables, hence the cumulative (long-run) effect will be positive. Also, figure A shows that the GDP responds positively to the trade policy starting from the initial horizon up until the fourth horizon and the response is positive throughout the period although the GDP growth is characterized by fluctuation after the fourth horizon and the effect dies off in the eighth horizon.

### Conclusion

This study reveals that a conclusive decision cannot be made using the short-run estimates. Policy recommendations should therefore be based on the long-run results. The study found that the GDP responded negatively to the FDI both in the short run and the long run, while openness, PCI and exchange rate have a positive effect on growth. The effect of the exchange rate was negative in the short run which may be due to exchange rate volatility, however, in the long run it appears to have disappeared due to the market forces at play (see Table 4). The negative correlation between FDI and GDP is not surprising because the country has poor absorptive capacities. Therefore, the policy maker should adopt a sound foreign exchange policy and improve on innovation and technology in order to maximize on the positive effect of trade liberalization in Nigeria.

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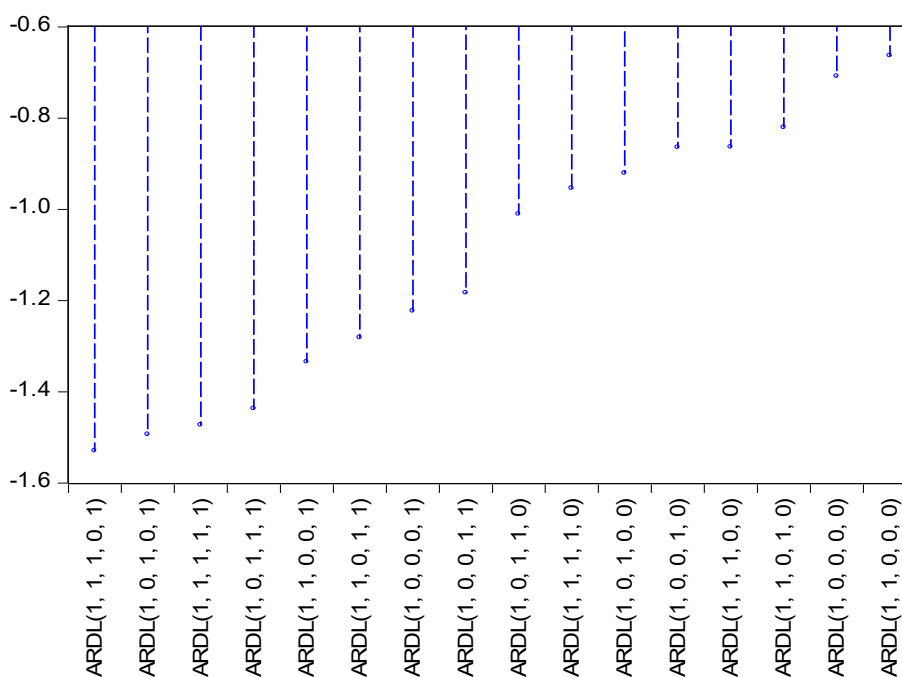
Q-statistic probabilities adjusted for 1 dynamic regressor

Included observations: 35

Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob*
.  **	.  **	1	0.233	0.233	2.0683	0.150
. *  .	. **  .	2	-0.173	-0.240	3.2383	0.198
. *  .	.  .	3	-0.154	-0.055	4.2031	0.240
.  .	.  .	4	0.013	0.033	4.2100	0.378
.  **	.  *	5	0.219	0.184	6.2855	0.279
.  .	. *  .	6	0.006	-0.117	6.2871	0.392
. *  .	.  .	7	-0.153	-0.060	7.3705	0.391
. *  .	.  .	8	-0.106	-0.031	7.9133	0.442

\*Probabilities may not be valid for this equation specification.

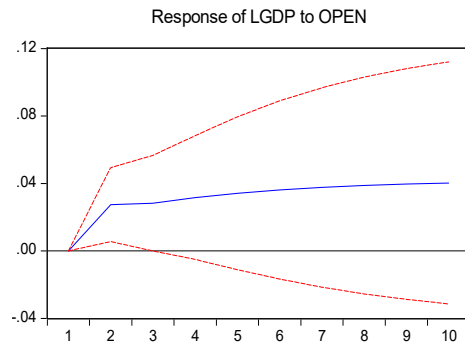
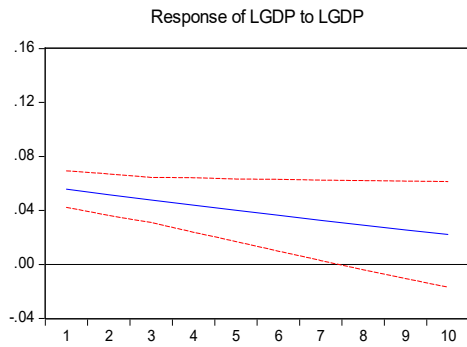
Akaike Information Criteria



### Impulse response function (IRF)

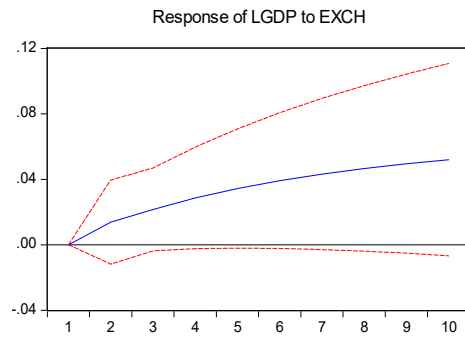
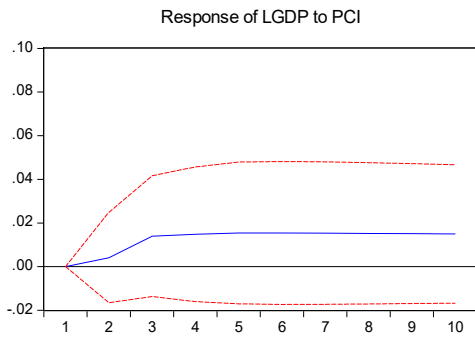
Response to Cholesky One S.D. Innovations  $\pm 2$  S.E.

Response to Cholesky One S.D. Innovations  $\pm 2$  S.E.

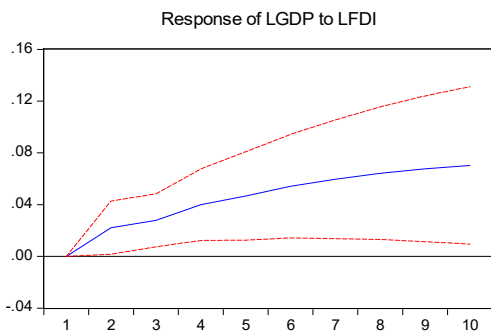


Response to Cholesky One S.D. Innovations  $\pm 2$  S.E.

Response to Cholesky One S.D. Innovations  $\pm 2$  S.E.



Response to Cholesky One S.D. Innovations  $\pm 2$  S.E.



15.05.2020