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Financial Development, Foreign Direct Investment and Trade Openness Impact in the Economic Growth of Nigeria

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Abstract

This study examines the impact of finance on economic growth in the Nigerian economy from 1970 to 2018. The autoregressive distributed lag (ARDL) model was employed to establish the relationship between the dependent and independent variables. The bounds test results indicated a long-run relationship among the variables analysed in the study. The key variables that enhance the economy's growth are financial development and trade openness, while foreign direct investment stymied growth. This study's findings have implications for policymakers, especially regarding the African Continental Free Trade Area (AfCFTA) agreement, which is about to commence. The results suggest that financial development and trade openness are critical inputs for sustainable economic growth. Even though the FDI is also vital, more emphasis should be on improving the political environment. Afterwards, the desired FDI will flow and stimulate growth.

Keywords: Financial development, FDI, trade openness, growth

1. INTRODUCTION

The finance-growth relationship has been at the centre of exogenous and endogenous economic growth models (Barro and Sala-i-Martin, 1992). Undoubtedly finance and growth are related in theoretical terms, as established by Levine (2005). A positive relationship between financial development and economic growth is possible because of finance's contribution towards capita allocation improvement, cost reduction, better lending to households and firms, and better return on investment. More significant financial development means that financial instruments and intermediaries will reduce information and transaction costs in a nutshell. The empirical literature has focused on the relationship between financial development and economic growth. The relationship between both exhibit a positive relationship as more developed financial markets would boost economic growth (Goldsmith, 1969; King and Levine, 1993a, 1993b; Beck et al., 2000; Levine et al., 2000; Bassanini et al., 2001; Leahy et al., 2001). The positive link seems to hold in developed, emerging, and developing economies. Although emerging and developing economies attract FDI, available data from the United Nations Conference on Trade and Development (UNCTAD) indicates that FDI is from developed countries. However, their proportion of FDI outflow is not declining over time (UNCTAD 2012).

The FDI outflow increases steadily on the part of the developing and emerging countries' ratio. The reason might be that firms like to invest in countries with a similar development level to their home country. Therefore, in a situation where political stability is not sustainable, coupled with inadequate development levels, the impact of FDI might not be felt on growth. Likewise, developed countries prefer to invest in other developed countries. The reason is that the developed country's firms can change their operation compared to the developing and emerging firms. However, the primary source of FDI in developing and emerging countries is from developing countries. Trade openness expedites the economy's growth when there is more financial development due to the effects emanating from the impact of international trade on the aggregate macroeconomic performance of an economy.

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Thus, it could have a positive or negative impact on economic growth. On the one hand, trade openness may lead to advancement in macroeconomic efficiency by giving access to new raw materials and products, low-cost, intermediate goods, large market size, and latest technologies (Herwartz and Walle, 2014). Efficiency improvement could either be at the firm or the aggregate economy level or both, which will enhance the use of funds channelled by domestic financial intermediaries. Therefore, trade openness could invigorate the positive impact of financial development on economic growth.

On the other hand, trade openness might lessen the impact of finance on growth and, consequently, aggregate economic performance if international trade hinders local industries (Young, 1991). By implication, this will negatively affect the relationship between economic growth and financial growth. At the outset, the likely effect of trade openness on economic growth is not because it depends on how an economy performs in international trade. The finance growth nexus is likely to be strengthened in economies that perform reasonably well in international trade.

This study examines the effects of financial development, FDI, and trade openness on Nigeria's economic growth while using government expenditure and political stability as control variables in the model. Available literature indicated that financial development affects economic growth (Uddin et al., 2013; Akinsola and Odhiambo, 2017; Mireku et al., 2017; Adeniyi et al., 2015; Ductor and Grechyna, 2015; Odhiambo, 2018; Abubakar et al., 2015; Samargandi and Kutan, 2016; Ben et al., 2014). Abubakar et al. (2015) observe that private credit increases economic growth in a study conducted on the Economic Community of West African States (ECOWAS). The Samargandi and Kutan (2016) survey reaffirmed Abubakar et al. (2015), indicating that credit flow positively affects growth in some BRICS countries, especially China and India. In Nigeria, Adeniyi et al. (2015) agree that financial development impacts economic growth.

Muhammad and Khan (2019) have confirmed that FDI inflows impact economic growth on the FDI impact on economic growth. The period of political uncertainty during the Arab Spring turmoil distorted FDI inflow in MENA countries, undermining its impact on growth (Abdel-Latif, 2019). The situation in MENA countries influences developed country firms to prefer to invest in states that have similar economic and political development. Akinlo (2004) notes that in Nigeria, FDI and financial development are not growth-enhancing because of capital flight, but export stimulates economic growth. The African Continental Free Trade Agreement (AfCFTA) is an opportunity for Nigeria to benefit and boost its economic growth. Keho (2017) suggests that trade openness is essential for economic development, mostly in developing countries, by making available goods and services that were not within reach. Also, it creates the opportunity for a market competition known as the trade-led growth hypothesis.

The other sections of this study are divided into three; the second is the data source and methodology. The third section covers the data analysis, and the fourth section presents the concluding remark.

2. DATA SOURCES AND METHODOLOGICAL FRAMEWORK

The data used in this study are GDP per capita at constant 2010. FDI equals domestic credit to the private sector by the bank as the percentage of GDP, FDI means foreign direct investment, net inflows % of GDP, TOP is implying the summation of export and import of goods and services % of GDP, GOV standing for general government consumption expenditure % of GDP and PST, which is durable meaning the consistency of government regime. All data are sourced from the World Bank (2019) World Development Indicators, except stable from the centre of systemic peace (2019). The model to be estimated is specified as follows:

$$GDP_t = \alpha_0 + \sum_{i=1}^{n} \beta_1 FD_{t-i} + \beta_2 FDI_{t-1} + \beta_3 TOP_{t-1} + \beta_4 GOV_{t-1} + \beta_5 PST_{t-1} + \varepsilon_t \quad (1)$$

where GDP is the proxy of economic growth, as the dependent variable, FD, FDI, TOP, GOV, and PST are the independent variables.

3. METHODOLOGICAL FRAMEWORK

To avoid spurious results, it is essential to decide the stationary on the set of observations at the beginning of the time series method. When the series is stationary, it implies that the mean and variance are constant. This study utilises the augmented Dickey-Fuller unit root test (ADF test) (Dickey and Fuller, 1981) and the Phillips and Perron unit root test (PP test) (Phillips and Perron, 1988). The ADF and PP test significant setback is that they do

not take cognisance of the influence of structural break in the series. Basically, because of policy changes and regime changes, structural change may be available in time series. Significantly, the frequent regime changes in Nigeria. Perron (1989, 1997) contributed that if the structural break is there in the set of observations, but the econometric model does not identify, the results may be inaccurate of not rejecting the nonstationary hypothesis. Thus, the Perron (1989) unit root test of an unknown break date is employed in this study.

After the static properties of the time series set of variables are investigated, the long-run cointegrating relationship between the variables will be examined. The study applies the autoregressive distributed lag (ARDL) model to explore the long-run cointegrating relationship. This method can be applied if the variables are either I (0) or I (1) but not I (2). According to the variables used in this study, equation (1) form of the ARDL can be written as follows:

$$\Delta GDP_t = \varphi_0 + \sum_{z=1}^{p} \varphi_{1z}\,\Delta GDP_{t-z} + \sum_{z=1}^{p} \varphi_{2z}\,\Delta FD_{t-z} + \sum_{z=1}^{p} \varphi_{3z}\,\Delta FDI_{t-z} + \sum_{z=1}^{p} \varphi_{4z}\,\Delta TOP_{t-z} + \sum_{z=1}^{p} \varphi_{5z}\,\Delta GOV_{t-z} + \sum_{z=1}^{p} \varphi_{6z}\,\Delta PST_{t-z} + \lambda_1 GDP_{t-1} + \lambda_2 FD_{t-1} + \lambda_3 FDI_{t-1} + \lambda_4 TOP_{t-1} + \lambda_5 GOV_{t-1} + \lambda_6 PST_{t-1}\mu_t$$

The first difference operator is the coefficient φ_iz denotes the short-run elasticities, i=1,…,6. The coefficient λ_i, i=1,…, 6 denotes the long-run elasticities. μ_t indicates the standard white noise. Equation (2) can alternatively be written in the matrix form, as in equation (3) below:

$$(1-A)\begin{bmatrix}\Delta GDP\\ \Delta FD\\ \Delta FDI\\ \Delta TOP\\ \Delta GOV\\ \Delta PST\end{bmatrix} = \begin{bmatrix}\varphi_1\\ \varphi_2\\ \varphi_3\\ \varphi_4\\ \varphi_5\\ \varphi_6\end{bmatrix} + \sum_{z=1}^{p}(1-A)\begin{bmatrix}\Delta GDP\\ \Delta FD\\ \Delta FDI\\ \Delta TOP\\ \Delta GOV\\ \Delta PST\end{bmatrix} \times \begin{bmatrix}\varphi_{11} & \varphi_{12} & \varphi_{13} & \varphi_{14} & \varphi_{15} & \varphi_{16}\\ \varphi_{21} & \varphi_{22} & \varphi_{23} & \varphi_{24} & \varphi_{25} & \varphi_{26}\\ \varphi_{31} & \varphi_{32} & \varphi_{33} & \varphi_{34} & \varphi_{35} & \varphi_{36}\\ \varphi_{41} & \varphi_{42} & \varphi_{43} & \varphi_{44} & \varphi_{45} & \varphi_{46}\\ \varphi_{51} & \varphi_{52} & \varphi_{44} & \varphi_{54} & \varphi_{55} & \varphi_{56}\\ \varphi_{61} & \varphi_{62} & \varphi_{54} & \varphi_{65} & \varphi_{65} & \varphi_{66}\end{bmatrix} + \begin{bmatrix}GDP\\ FD\\ FDI\\ TOP\\ GOV\\ PST\end{bmatrix}_{t-1} \times \begin{bmatrix}\lambda_{11} & \lambda_{12} & \lambda_{13} & \lambda_{14} & \lambda_{15} & \lambda_{16}\\ \lambda_{21} & \lambda_{22} & \lambda_{23} & \lambda_{24} & \lambda_{25} & \lambda_{26}\\ \lambda_{31} & \lambda_{32} & \lambda_{33} & \lambda_{34} & \lambda_{35} & \lambda_{36}\\ \lambda_{41} & \lambda_{42} & \lambda_{43} & \lambda_{44} & \lambda_{45} & \lambda_{46}\\ \lambda_{51} & \lambda_{52} & \lambda_{53} & \lambda_{54} & \lambda_{55} & \lambda_{56}\\ \lambda_{61} & \lambda_{62} & \lambda_{63} & \lambda_{64} & \lambda_{56} & \lambda_{66}\end{bmatrix} + \begin{bmatrix}\mu\\ \mu\\ \mu\\ \mu\\ \mu\\ \mu\end{bmatrix}_t \quad (3)$$

To explore the cointegration relationship, the null hypothesis for the long run can be expressed as H_0: λ_11 to λ_66 = 0. The alternative hypothesis is H_1: λ_11 to λ_66 ≠ 0. The null hypothesis for the short run can be expressed as H_0: φ_11 to φ_66= 0, while the alternative hypothesis is H_1: φ_11 to φ_66 ≠ 0. The error correction term is obtained in the ARDL through a linear transformation. The critical value formulated by Pesaran et al. (2001) is utilised to accept the null hypothesis. Suppose f statistics are higher than the upper bound of the critical value. In that case, it implies the long-run cointegration relationship among the variables. A diagnostic analysis was carried out to ensure the application of correct statistical methods to the model. The stability tests, like the cumulative sum (CUSUM) and the cumulative sum of squares (CUSUMSQ) developed by Brown et al. (1975), according to the recursive regression residuals, were employed.

Table 1. Descriptive Statistics

	GDP	FD	FDI	TOP	GOV	PST
Mean	7.477	2.118	0.917	3.408	2.262	1.646
Median	7.491	2.088	0.959	3.540	2.304	1.792
Maximum	7.849	3.103	1.916	3.976	2.887	2.773
Minimum	7.189	1.351	0.229	2.212	1.531	0.000
Std. Dev.	0.221	0.406	0.398	0.471	0.420	0.846
Skewness	0.141	0.492	0.267	-1.128	-0.190	-0.697
Kurtosis	1.593	2.597	2.694	3.441	1.535	2.385
Jarque-Bera	4.206	2.307	0.771	10.790	4.677	4.745
Probability	0.122	0.315	0.680	0.005	0.096	0.093

4. DATA ANALYSIS AND DISCUSSION

Table 1 gives the descriptive statistics of the variables used in the study. The Jarque-Bera (JB) test rejected the null hypothesis of no normality in TOP, GOV, and PST. However, the mean and median revealed that the variables are normally distributed. The volatility of the variables is less as the absolute standard deviation is below unity. The kurtosis coefficient of TOP is 3.441, indicating it is asymmetric. Interestingly, the mean and median indicated that all the variables are normally distributed.

Table 2 presents the model's correlation results, indicating that GDP with FD and TOP is significantly related. Similarly, FD with TOP is correlated. It implies that FD and TOP are important growth variables in Nigeria as their association is positive with GDP. FDI with PST is correlated, but their relationship is not significant to GDP, indicating it might not stimulate Nigeria's growth.

Table 2. Correlation results

Variables	GDP	FD	FDI	TOP	GOV	PST
GDP	**1.000**					
FD	0.618*	**1.000**				
	(0.000)					
FDI	-0.152	-0.022	**1.000**			
	(0.296)	(0.879)				
TOP	0.280**	0.300*	0.495*	**1.000**		
	(0.052)	(0.036)	(0.000)			
GOV	-0.102	-0.225	-0.051	-0.154	**1.000**	
	(0.487)	(0.120)	(0.730)	(0.290)		
PST	0.192	0.012	0.483*	0.321*	-0.028	**1.000**
	(0.186)	(0.933)	(0.000)	(0.024)	(0.847)	

Note: *, and ** indicate significance level at 1, 5 and 10% respectively. Values in ( ) represent the p-values

The results of the stationary of the variables are presented in Table 3. It revealed that none of the variables is integrated into the order I (2). This is the prerequisite for the ARDL approach. For both ADF and PP unit root tests, the order of integration is I (1) for all variables. As none of the variables is integrated at the order I (2), it is convenient for the bounds approach to be employed. The traditional unit root tests ignored the identification of break dates. The Perron unit root test considers this with a break. The break date of GDP is 1980, which witness the early collapse of necessary infrastructure and total reliance on oil with complete neglect of agriculture.

Table 3. Unit Root Test Results

	At level			First difference		
Variables	ADF	PP	P	ADF	PP	P
GDP	-0.334	0.589	-4.806 (T_B: 1980)	-3.195*	-5.358*	-6.000* (T_B: 1983)
FD	0.248	0.571	-4.420 (T_B: 1980)	-7.022*	-7.347*	-5.528** (T_B: 1980)
FDI	-1.200	-1.160	-4.176 (T_B: 1988)	-11.122*	11.440*	11.976* (T_B: 1989)
TOP	-0.223	-0.223	-3.533 (T_B: 1980)	-7.584*	-7.584*	-8.437* (T_B: 1986)
GOV	-0.948	-0.982	-4.012 (T_B: 1986)	-7.692*	-7.684*	-9.698 (T_B: 1994)
PST	-1.448	-1.207	-3.815 (T_B: 1977)	7.248*	-9.339*	-7.951* (T_B: 1998)

Note: *, ** and *** indicate significance level at 1, 5 and 10%, respectively T_B represent the break year of the Perron (1989) unit root test.

The optimal lag order selection criteria are lag four according to AIC criteria as in Table 4. The results of the bounds test are presented in Table 5. It revealed long-run cointegration between GDP, FD, FDI, TOP, GOV, and PST. The F-statistics is (3.587), higher than the upper critical bounds value of at the 10 % significance level of Pesaran et al. (2001).

Table 4. Optimal Lags Order Selection Criteria

Lag	LogL	LR	FPE	AIC	SC
1	53.489	272.371*	2.45e-08*	-0.511	1.176*
2	79.479	36.963	4.18e-08	-0.066	3.066
3	118.296	44.855	4.67e-08	-0.191	4.386
4	169.756	45.742	3.92e-08	-0.878*	5.144

Note: * indicates the optimal lag order selected by the criterion, LR Sequential modified LR test statistic at 5% level each, FPE final predictor error, AIC Aikaike information criterion, SC Schwarz information criterion, HQ Hannan-Quinn information criterion.

Table 5. Bounds test cointegration results

Model to estimate	Calculated F-statistic	
GDP = F (FD, FDI, TOP, GOV, PST)	3.587	
	K=5, N=45	
Significance level	I (0)	1 (1)
1%	3.41	4.68
5%	2.62	3.79
10%	2.26	3.35

The estimated ARDL model results are presented and reported in Table 5. As vividly seen in the long-run analysis, FD and TOP enhance GDP. This confirms the correlation results as these variables are associated positively and significantly with GDP. This means the domestic financial markets by the financial instruments and intermediaries promote good financial resources in Nigeria. Whereas in the short run, the main drivers of GDP are TOP and PST, while FDI stymied GDP. This agrees with Akinlo (2004) that there may be a capital flight in Nigeria, making FDI not impact economic growth. Notably, the error correction term is significant, which means that in the event of a short-run shock, Nigeria's economy will gradually return to equilibrium at the speed of 13%.

Finally, after interpreting the empirical investigation results, the test of validity and stability of the ARDL model used in the study is considered. It showed that there is no autoregressive heteroscedasticity and no serial correlation. Besides, the residuals of the estimated ARDL model are normally distributed. The diagnostic tests confirmed the validity and stability of the estimated ARDL model. In Figures 1 and 2, the stability of the ARDL is ascertained.

Table 5. Long run and short analysis ARDL (1,4,1,4,4,4)

	Coefficient	Std. Error	t-Statistic	Prob.
Long-run analysis				
FD	0.710*	0.348	2.037	0.055
FDI	-0.223	0.355	-0.628	0.537
TOP	0.488***	0.247	1.974	0.062
GOV	0.120	0.239	0.501	0.621
PST	0.108	0.162	0.665	0.513
C	4.021	1.761	2.283	0.033
Short-run analysis				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
ΔFD	0.019	0.040	0.484	0.634
ΔFDI	-0.085*	0.036	-2.371	0.027
ΔTOP	0.145*	0.035	4.105	0.001
ΔGOV	0.039	0.039	0.980	0.338
ΔPST	0.032*	0.013	2.420	0.025
ECT $_{(-1)}$	-0.129**	0.074	-1.731	0.098
Diagnostic tests				
Serial correlation	0.839		0.448	
Normality	1.717		0.424	
heteroscedastic	1.733		0.105	

Note: *, ** and *** indicate significance level at 1, 5 and 10% respectively

Figure 1 Cusum plot

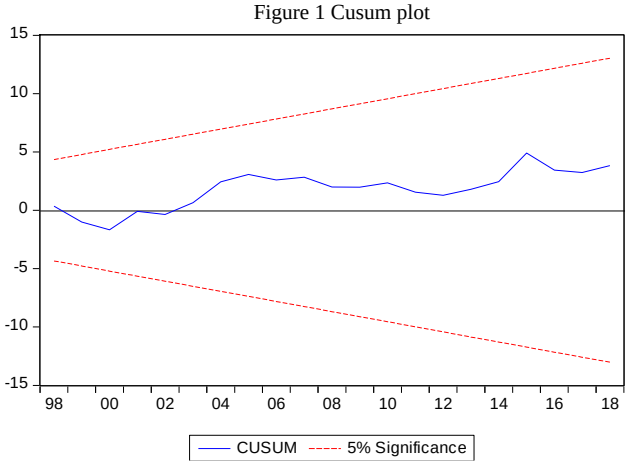
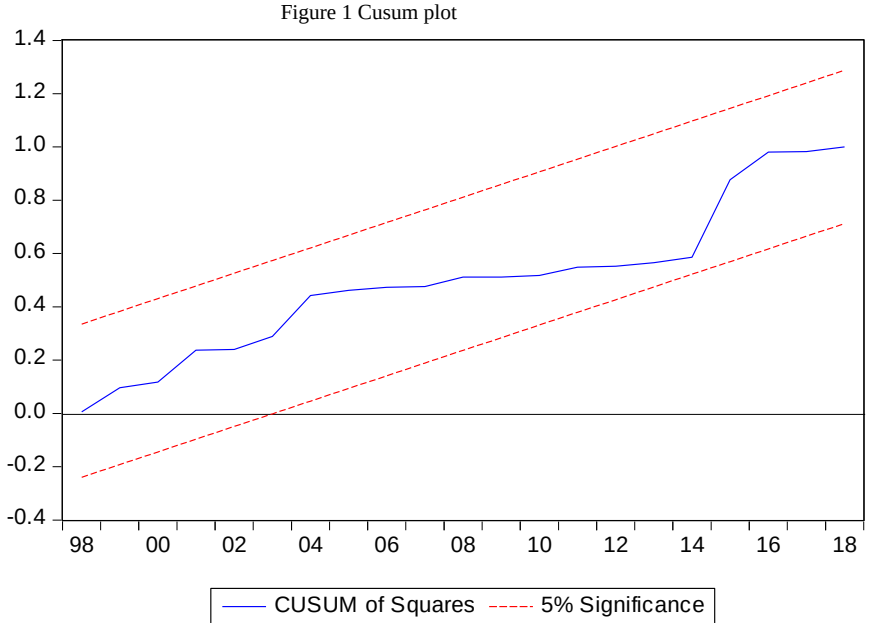


Figure 1 Cusum plot



5. CONCLUDING REMARK

This study investigated the impact of financial development, FDI, and trade openness on economic growth to integrate control variables government expenditure and political stability. The period 1970-2018 was considered in the study. The results indicated that financial development and trade openness stimulate economic growth. However, foreign direct investment and government expenditure impede economic growth. The policymakers should consider policies that promote economic growth through financial development and trade while de-emphasising their priority on FDI. The developed economies stand to benefit more from it. The emphasis on FDI in Nigeria should ensure a stable political environment as it is ongoing now. Later the needed FDI for growth will flow effortlessly. The new AfCFTA agreement is a strong chance for Nigeria's economy to thrive significantly as the trade openness enhances growth.

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