FINANCIAL DEVELOPMENT, TRADE OPENNESS AND ECONOMIC GROWTH: EVIDENCE FROM NIGERIA

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ABSTRACT
This study investigates the effects of financial development and trade on economic growth in Nigeria. The analysis is based on Auto-Regressive Distributed Lags (ARDL) Bound test approach. The empirical results confirm the existence of a long-run cointegration between financial development (FD), trade openness and economic growth. This implies that there is long run relationship between the variables. The study further reveals that both FD and trade openness have positive and significant effects on economic growth, but the effects of FD is in the short run, while the effects of the trade openness is in the long run. It is evident that both the extent of financial activity and the degree of free trade are important for growth of the economy. Therefore, the study recommends that there is need to formulate sound policies that would promote FD and trade openness for sustainable economic growth. The paper improves on previous research on finance-growth nexus in Nigeria by explicitly recognizing the effects of trade.
Keywords; Economic growth, financial development, ARDL
JEL: Classification:C33, E22, B23

1. INTRODUCTION
Over the last decades, financial development (FD) and its impact on economic growth in the developing countries has continue to receive considerable attention in both economics and finance literature. Special focus has been placed on the Sub-Saharan African (SSA) countries. In recent years, there has been some noticeable increase in the performance of financial sector in many SSA countries, but this has not accompanied by sustained increase in economic growth. In the case of Nigeria, a sharp deceleration in GDP started in 2015 and 2016 and accompanied by slowdown in the volume of international trade in the country. The purpose of this study is to investigate the effects of FD and trade on economic growth in Nigeria.

As stated earlier, there is noticeable increase in financial sector performance in SSA, but the ratio of domestic private credit to GDP is comparatively low to other developing economies. In Nigeria, available statistics from World Development Indicators (WDI) of the World Bank indicates that the country's level of FD measured by ratio of private sector credit to GDP has been comparatively lower than many SSA countries. Nevertheless, the statistics suggest that domestic credit to private (% of GDP) consistently increased over the period, recording an average 6.27% (1985-1989) to 6.70 (1990-1994). The highest value (13.72%) was recorded in 2005-2009. It also declined to 12.00% (2010-2014) and slightly increased to 12.388% (2015-2019).

On the other hand, GDP growth rate decreased from 3.68% in 1985-1989 to 2.58% in 1990-1994. The highest average value (8.57%) was recorded during the period 2000-2004. This

slightly dropped to 12. 39% in the period 2015-2019. Similarly, trade openness increased from 18.03% in 1985-1989 to 32.59% in 1990-1994. It also increased to 43.99% in the period 2000-2004 and the highest value (68.30%) was recorded in 2010-2014. This also coincided with increased GDP growth over the period. Interestingly, economic growth decreased to its all-time lowest of 1.194% in 2015-2019, the trade openness also recorded the lowest value of 27.08%. Arguably, both the FD and economic growth appear related to trade openness as for example, a decrease in the trade openness coincided with a lower economic growth. However, an increased in the FD indicator in the last period (2015-2019) not coincided with the growth rate.

Reforms were carried out to restore financial stability for healthy and strong financial sector to properly discharge its responsibility and spur growth in the economy. The more recent reforms include: the bank consolidation policy in 2014, in which the commercial banks were directed to raise their share capital from two (2) billion naira to twenty (25) billion naira. The enhanced market capitalization was aimed at repositioning the banks to carry out their roles effectively and also to overcome the incessant distress and failure in the banking sector. Unfortunately, few years after the reform, the sector started to experience serious financial fragility, and were subjected to special audit by the Central Bank of Nigeria and it was discovered that most of the banks were heading towards distress and failure. This was attributed to corruption, unethical practices such as granting of unsecured loans to friends and families of the chief executives (Alley, 2022). To rescue the sector from imminent collapse the Central bank of Nigeria bailout the affected banks by injecting over 600 billion Naira and the indicted chief executives were sack.

Also, in order to intensify commercial banks supervision and regulation the Banking and Other Financial Institutions Act (BOFIA) 2004 has been repealed by the Parliament and enacted the Banking and Other Financial Institutions Act (BOFIA) 2020. This Act expands the Central Bank of Nigeria (CBN)'s regulatory and supervisory powers over the financial service industry in Nigeria. Some of the changes in the BOFIA 2020 empowers the CBN to: grant new banking licences with the approval of the Board of directors of the Bank, prohibit certain foreign bank from carrying on of banking and businesses in Nigeria, directs commercial banks to divest from their subsidiaries in order to minimise risks, among others. Overall, BOFIA 2020 seeks to reposition the financial sector for optimal productivity and thus accelerate economic growth and development.

According to Alley (2022), the regulatory reforms of the 2004 and 2009 significantly improved financial and prudential performance of Nigerian banks, and suggesting that refilled BOFIA 2020 has a strong potential to enhance regulation and financial system stability in the country to the benefits of all stakeholders. In fact, this reform, is expected to provide the desired regulation and restore stability and confidence which very necessary for the development of the financial sector.

Although The effects FD on growth has well been established, the critical question remains is how the FD affects economic growth. This is because the effects of the financial sector development on economic growth is not always direct and general as also highlighted by some of the early literature (Andersen & Tarp, 2003). Recently, some scholars attempted to explore the effects financial sector development on growth by extending the studies (such as Shahbaz, & Mafizur, 2014; brahim & Alagidede, 2018; Chen et al., 2020; Abeka et al., 2021; Cheng et al., 2021) to capture other potential factors. For example, Rioja and Valev (2004) earlier hinted that finance exerts lesser positive effect on growth in regions with higher FD but insignificant

in region with low FD. Therefore, this study re-examines the relationship between FD, trade openness and growth.

The rest of the paper is structured as follows. Section 2 provides a brief literature on financial development. Section 3 provides the theoretical and the empirical models, sources and methods of data analysis. Section 4 presents the empirical results. Finally, section 5 provides the conclusion and policy recommendation.

2. LITERATURE REVIEW

2.1 Theoretical insight

Theoretically, the early writers (Schumpeter, 1911; Kuznets, 1955; Patrick, 1966) on the finance–growth nexus have divergent views. Schumpeter (1911) argues that development of the financial sector enhances economic growth through financial intermediation. While Kuznets (1955) posits that financial sector grows as the economy reaches the intermediate stage of the growth process and develop when the economy matures. However, Lewis (1956) contends that financial sectors first develop as a result of the economic growth process and before driving real economic activity. The divergent views on the finance-growth nexus can be categorised into supply-leading and demand-following as in Patrick (1966), the supply leading hypothesise that a sound financial sector accelerates economic growth. On the other hand, the demand-following approach argues that the growth of real sector increases demand for financial services and thus spurs financial sector development. This implies that the financial sectors drive economic growth, and the development of the financial sectors depend on real sector growth which also depends on the extent of private sector investment. The private sector's demand for financial resources depend on the private sector development.

2.2 Empirical Review

2.2.1 Financial Development and Economic Growth

The relationship between FD and growth performance of the economy has been well studied and documented in the economic literature. Those literature differ in techniques, time frame and even outcomes. Osuji (2020) examines the FD-savings nexus in Nigeria from 1981 to 2018 using the granger causality test and he finds a positive relationship between finance development, deposit rate and savings in Nigeria. The study further reports that FD exerts significance influence on savings. Similarly, Ikubor *et. al.* (2022) examine the impact of the financial sector development on economic growth in Nigeria from time series data spanning from 1981-2021. The data were analysed using different econometric techniques such as Cointegration test, ARDL, vector error correction model (VECM) and standard ordinary least square (OLS). The study confirms the presence of a long-run cointegration between financial sector development and economic growth and also finds short run and long run relationships between the variables. The FD variable and all the controlled variables (Broad Money Supply, total Bank liabilities, total Bank credit and interest rate) are found to have positive and significant impact on economic growth.

Ibrahim and Alagidede (2018) examine the effects of FD on economic growth in sub-Saharan Africa, the analyses how FD can boost economic growth when the growth in finance and real sector are disproportionate. The study used panel data for 29 SSA countries over a period 1980 -2014. The analysis was carried out with system GMM, and the study found that FD spurs economic growth in the region but the extent to which financial sector development helps economic growth depends largely on the on the simultaneous growth of the real and financial sectors of the economy. The analysis further revealed that the elasticity of economic growth to changes in either size of the real or financial market is higher under balanced sectoral growth.

Guru and Yadav (2019) empirically explore the relationship between FD and economic growth using data for five major emerging economies. It employs a GMM for the analysis, the study finds all the selected indicators of financial sector development exert positive significant influence on economic growth. Similarly, Asteriou and Spanos (2019) explore the relationship between FD and economic growth during the recent financial crisis using various panel regressions. The used data from 26 European Union countries overt the period of 1990 -2016. The study reports that the financial sector accelerated economic growth before the financial crisis while after crises the impact was found to be less effective.

Omonzejie and Madueme (2020) examine the relationship between financial deepening and manufacturing sector output from timeseries data ranging from 1985-2018. The data was analysed using ARDL bound testing approach and find the presence of long run relationship between manufacturing output and financial deepening. The results of the long run regression show that all the FD measures (money supply to GDP, market capitalization ratio to GDP and number of banks) have positive influence on manufacturing sector output in Nigeria. The findings of the short run model are found to be somehow similar to the long run results. Similarly, studies (Akintunde & Olaniran ,2022; Adesina & Akintunde,2020; and Kur, Ogbonna & Eze, 2020) explore the effects of finance on economic growth in Nigeria using timeseries data for different time periods. The findings of these studies show that government expenditure impact positively on growth.

Ashakah and Ogbebor (2020) investigate the impact of foreign direct investment and FD on economic growth from panel data of 24 emerging for the 1990-2018 and it was analysed using fixed effects model. The findings revealed that foreign direct investment have positive impact on economic growth of the emerging markets while FD and the interaction variables which measures the indirect effects of the FD on the economic growth of emerging markets are found to exert less influence. However, the results of the controlled variables, trade openness and gross capital formation impact on growth positively while inflation and government expenditure variables have less impact on economic growth in the emerging markets.

Cheng et al. (2021) investigate the relationship between, information communication and technology (ICT) diffusion, FD and economic growth using panel data for 72 countries. The dynamic GMM findings show that regardless of economic growth rate, the results suggest that FD doesn't seems to be favourable to economic growth, but the effect is much lower in the high-income countries. Similarly, Abeka et al. (2021) explore the FD and economic growth nexus in sub-Saharan Africa. The paper attempted to analyse how FD can boost economic growth in the presence of robust telecommunication infrastructure. The study used time-series data of 44 SSA countries from 1996 to 2017 and System GMM employed for the analysis. The finding suggests that telecommunication infrastructure enhances the economic growth effects of the financial sector. This implies that financial sector development promotes growth but the impact is higher when it is supported with robust telecommunication infrastructure. The study further revealed that telecommunication infrastructure also exerts significant direct influence on economic growth.

2.2.2 Finance, Trade openness and economic growth

Atif et al. (2010) investigate the impact of financial sector development and trade openness on economic growth in Pakistan using ARDL bound testing approach and find both trade and finance have positive influence on long run growth. Qayyum et al. (2018) examined the impact of trade openness on economic growth in Pakistan and find that trade impact positively on

growth. They suggest that prudent macroeconomic policies, good financial system and foreign direct investment (FDI's) towards export-oriented industries and services, and improved market access accelerate growth in an economy. In a study in SSA on the trade-growth nexus conducted reports that the trade-led growth hypothesis holds only for the case of four countries from the twenty-one sampled countries.

Herath (2010) examines the impact of trade openness on the economic growth of Sri Lanka. In identifying the impacts of trade liberalisation on growth and trade balance, data were collected at a specific time interval before and after the trade liberalisation. The time period selected was from 1960 - 2007. Using regression analysis and the Chow test to the variables, the findings of the study confirmed a significant positive relationship between trade liberalisation and the economic growth of Sri Lanka. The result of the Chow test proved a clear change in economic growth before and after the trade liberalisation of the country. Similarly, Manni and Afzal (2012) examined the effects of trade openness on the economic growth of some developing countries using Bangladesh's economy as a case study from the period 1980-2010. They applied Ordinary Least Square (OLS) and employed exports, growth, imports, and inflation as variables. Their findings suggest that both real exports and imports had increased with greater openness, which in turn, had eventually led to economic growth after the 1990s. The result further revealed that liberalisation increases growth while inflation is unaffected by liberalisation.

More recently, David et al., (2014) suggest trade openness as an important channel to FD especially in countries with better institutional quality. This implies that trade openness spur growth directly and indirectly through financial sector development. Trade openness expands domestic savings, reduce price of financial services and cost of capital thus favour investment (Weill, 2009). Shahbaz and Mafizur (2014) examine the relationship between exports, FD and economic growth in Pakistan using ARDL BTA. They find a feedback effect between economic growth and FD and export indicating the variables mover in the same direction. This suggests that FD enhances growth and thus export.

Also, Chen et al. (2020) investigates the asymmetric effects of FD on economic growth in Kenya using nonlinear auto-redistributive lag (ARDL). The study reports that positive shocks in FD in the short run increases economic growth while negative short decreases economic growth in the long run. Brueckner and Lederman (2015) employed the instrumental variable approach to a panel of 41 Sub-Saharan African countries. They found trade openness increases economic growth both in the short and long run. Musila and Yiheyis (2015) investigated the case of Kenya and find that trade openness has a positive effect on investment but not on the rate of economic growth. Lawal et al. (2016) applied the ARDL model to Nigeria and found a negative long-run impact of trade openness on economic growth but a positive growth effect in the short run. Further, a two-way causality was found between the two variables. Similarly, Weill (2009) explains how finance, trade and growth are connected, in which it was emphasised that expanding trade influences growth through the financial sector. They posit that finance and trade seemed to reinforce each other.

3. METHODOLOGY

3.1 Theoretical Frame work

This work adopted the demand following hypothesis as its theoretical base and guide, because the theory gives the ground upon which the relationship between FD and trade openness on economic growth can be modelled and analysed.

3.2 Model Specification

The study utilized Auto-Regressive Distributed Lags (ARDL), Bound Testing Approach advocated by Pesaran *et al.* (2001) and Narayan (2005). The advantages of the model (ARDL) over other estimation methods of the time series analysis are one, it suggests that the relationship can be estimated once the order of ARDL is recognised. Two, the bound test allows the mixture of integration I(0) and I(1) of the variables as regressors. That is, it does not necessarily require the variables' stationary test to be at the same level. The third advantage of the ARDL technique lies in its suitability and appropriateness for a small sample size (Pesaran *et al.* 2001).

In line with Pesaran *et al.* (2001), the Vector Autoregressive (VAR) of order *P* can be assembled as follows:

$$Z_t = \mu + \sum_{k=1}^{p} \beta Z_{t-1} + \mu_i \ \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (1)$$

Where Z_t is the magnitude of both X_t and Y_t, where Y_t, is the dependent variable economic growth, X_t, is the set of explanatory variables i.e., trade openness and financial development and t stand for trend or time variable. In line with Pesaran et al. (2001), Y_t, (dependent variable) must be I(1) variable, but the regressor x_t (independent variable) can be either I(0) or I(1). The vector error correction model (VECM) can further be written as follows:

$$\Delta Z_t = \mu + \alpha t + \delta Z_{t-1} + \sum_{k=1}^{p-1} \beta_t \Delta y_{t-1} + \sum_{k=1}^{p-1} \beta_t \Delta x_{t-1} + \mu_i \ \ldots\ldots\ldots\ldots (2)$$

where Δ is the first difference operator. The long-run multiplier matrix δ as:

$$\delta = \begin{bmatrix} \delta_{YY} & \delta_{YX} \\ \delta_{XY} & \delta_{XX} \end{bmatrix}$$

The diagonal elements of the matrix are unrestricted, so the selected series can either be I(0) or I(1). If $\delta_{YY} = 0$, Y is I(1). In other way if $\delta_{YY} < 0$, then Y is I0).
The unrestricted error correction model (UECM) can be stated as follows:

$$\Delta(GDPG)_t = \beta_0 + \beta_1(GDPG)_{t-1} + \beta_2(M_2)_{t-1} + \beta_3(TRA)_{t-1} + \sum_{i=1}^{p} \beta_4 \Delta(GDPG)_{t-1} + \sum_{i=0}^{q} \beta_5 \Delta(TRA)_{t-1} + \sum_{i=0}^{r} \beta_6 \Delta(FD)_{t-1} + \beta_7 ECT_{t-1} + \mu \ \ldots (3)$$

Where Δ is the first difference and μ is a disturbance term; GDPG is the Annual GDP growth rate; FD denotes financial development measured by broad money supply as a percentage of GDP; TRA represents Trade openness (X+M/GDP).
The null hypothesis is denoted by H_0 assumes the absence of co-integration between the variables under study while alternative hypothesis H_1 assumes the presence of relationship between the variables under study. The existence of co-integration or otherwise can be arrived by comparing the computed value of F-statistic with the tabulated critical values of Pessaran *et al.* (2001).

$H_0 = \beta_1 = \beta_2 = \beta_3 = 0$ (No cointegration exist)
$H_A \neq \beta_1 \neq \beta_2 \neq \beta_3 \neq 0$ (Cointegration exist)

3.3 Sources of Data

The study uses annual time series data drawn from the World Bank development indicator online database for the period 1980 – 2019.

4. RESULTS AND DISCUSSION

4.1 Descriptive and Diagnostic tests

4.1.1 Correlation matrix

The correlation matrix explains the relationship between the variables used in the model and the results are presented in Table 1. The variables that have high correlation are economic growth (GDPG) and trade openness (TRA) with 49%. While those that weakly correlated are financial development (FD) and economic performance (GDP) with 15%.

Table 1: Correlation Matrix

	GDP	TRA	FD
GDP	1		
TRA	0.494537	1	
FD	0.153299	0.191778	1

4.1.2 The Unit Root test

The unit root test of Augmented Dickey-Fuller (ADF) was conducted to verify the order of integration of the variables under study. The results of the tests are summarized in Table 2. The results indicate that the variables GDPG and FD are I(1), while TRA is I(0) variable. The mixture of the order of integration of the variables (i.e., I(0) & I(1) provides a justification for us to apply the Autoregressive Distributed Lag (ARDL) bound test model Pesaran (2001).

Table 2: ADF Unit Root Tests Result

Variables	I(0)	I(0)	I(1)	I(1)
ADF	Constant	Constant and Trend	Constant	Constant and Trend
GDPG	-2.758*	-2.399	-11.633***	-11.709***
FD	-2.371	-2.280	-9.089***	-8.659***
TRA	-2.713*	-3.282*	-7.937***	-3.117

Note that *** is p<0.01, ** p<0.05, and * p<0.1 respectively.

4.1.3 Diagnostic tests

In Table 3, we present the diagnostic tests of the model. The robustness/goodness of model has been definite by diagnostic test such as Breusch-Godfrey Serial Correlation LM Test, Heteroskedasticity Test: Breusch-Pagan-Godfrey, Ramsey RESET Test and Jargue-Bera normality test. All the tests revealed the model estimated are serially uncorrelated.

Table 3: Diagnostic tests

Serial correlation Test	**Heteroskedasticity**	**Ramsey reset**	**Normality test**
0.930	0.919	0.306	1.410
(0.407)	(0.515)	(0.584)	(0.493)

4.2 Results of ARDL Cointegration test

4.2.1 ARDL Bound Testing

The results in Table 4 is the outcome of the bound co-integration test. The results reveal that the calculated F-Statistic is 7.79 which is greater than the upper critical bound value (F-tabulated) of 5.06 of the Pesaran (2001) Table at 1% significance level. The null hypothesis of no co-integration is easily rejected at 1% level, thus implying the presence of long-run relationship among economic growth and FD and trade openness.

Table 4: ARDL Bound Test

T-Statistic	Value	K
F-Statistic	7.79	2
Significance	I(0) Lower Bound	I(1) Upper Bound
10%	2.45	3.52
5%	2.86	4.01
1%	3.74	5.06

Note: Computed F-statistic: 7.79 (Significant at 0.05 marginal values). Critical Values are cited from Pesaran et at. (2001),

4.2.2 The Short Run and Long Run Results

The estimated results of the long run, short run and the ECT models are presented in Table 5. In the long-run model, the results show that the coefficient of FD is positive 0.0543 but insignificant while the coefficient of trade openness is positive 0.2084 and significant. This means that 1% increases in trade openness on average leads to 0.20% increase in economic growth. The result from the short run model in Table 5 indicates contrary result to that of the long run model, with trade lag 1 and 2 are positive but not significant. This could be as result of closure of country's land boarders and import restriction of some goods by the Government, COVID-19 outbreaks and lockdowns, and there have been other negative spill over effects. FD lag 2 is positive and significant at 5% level. This means that at lag 2 of the short run model, a 5% increase in FD increases economic growth by 0.37%.

Table 5: Results of Short run model, ECT and Long run model.

GDP annual growth rate (Economic Performance) as Dependent Variables				
Variables	**Coefficient**	**Standard Error**	**T-Statistics**	**P-Value**
		Long-run Results		
C	-4.5339	2.7706	-1.6363	0.1102
FD	0.0543	0.1301	0.4178	0.6785
TRA	0.2084	0.0626	3.3246	0.0020***
		Short-run Results		
C	0.5440	0.6018	0.9038	0.3733
D(GDPG(-2))	0.1551	0.1150	1.3471	0.1880
D(FD(-1))	0.0638	0.2744	0.2327	0.8175
D(FD(-2))	0.3783	0.1747	2.1653	0.0384**
D(TRA(-1))	0.0620	0.0764	0.8114	0.4235
D(TRA(-2))	-0.0418	0.0664	-0.6298	0.5336
ECT(-1)	-0.6779	0.1535	-4.4160	0.0001***

Note that *** is $p<0.01$, ** $p<0.05$, and * $p<0.1$ respectively.

The estimated ECT produced result that conforms with cointegration criterion. The coefficient has negative sign, and statistically significant at 1%. The coefficient 0.6779 implies that the speed of adjustment toward long run equilibrium is at the high rate of 67% per annum as the

system depart from the long run equilibrium. The economic growth, financial development and trade are co-integrated in the long-run.

5. CONCLUSION

This study examined the effects of financial development and trade openness on economic growth in Nigeria. The significant decline in economic growth amidst progress recorded in the financial sector over the years, motivated for this study to re-examine the effect of financial development on growth. The study employed ARDL Bound Testing approach. The estimated results revealed the existence of long-run equilibrium relationship between the variables. That is, both financial development and trade exert significant positive influence on economic growth. However, the effect of the financial development on growth is in the short run while the effect of trade on growth is in the long run. This suggests that both the extent of financial deepening and degree of trade openness matter for long term growth. Therefore, based on the study, we recommend that for rapid growth in the economy there is need to continue to undertake financial sector reforms and policies geared towards developing the financial sector and enhance trade openness.

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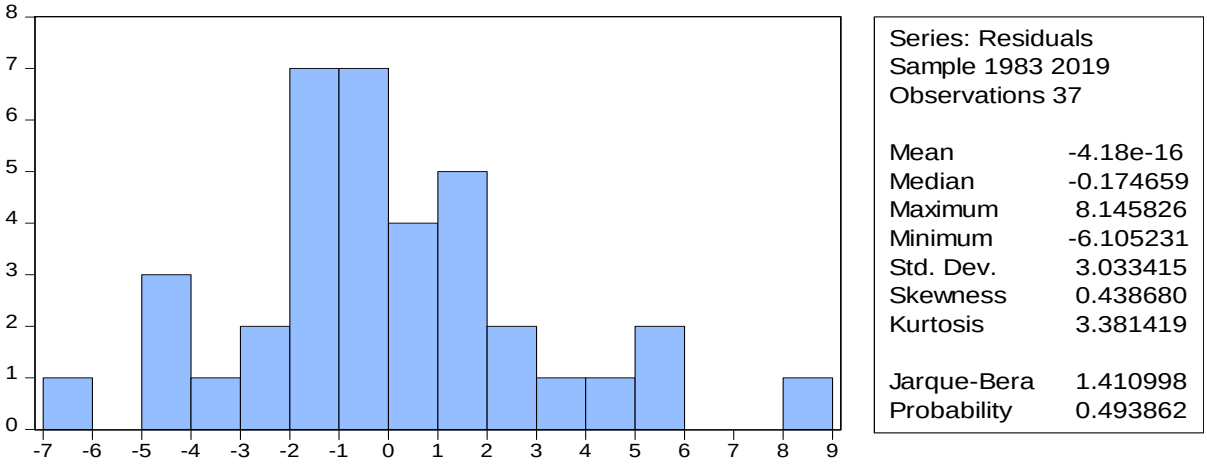
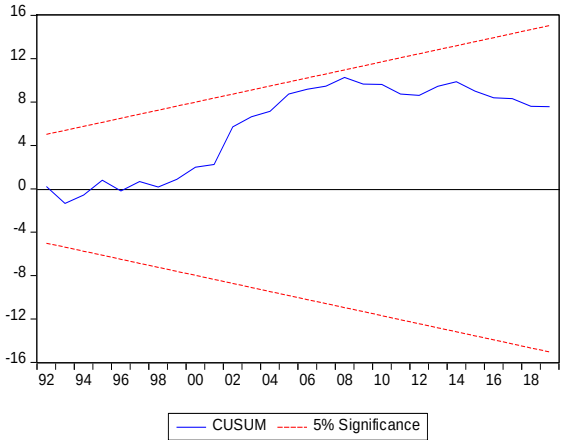
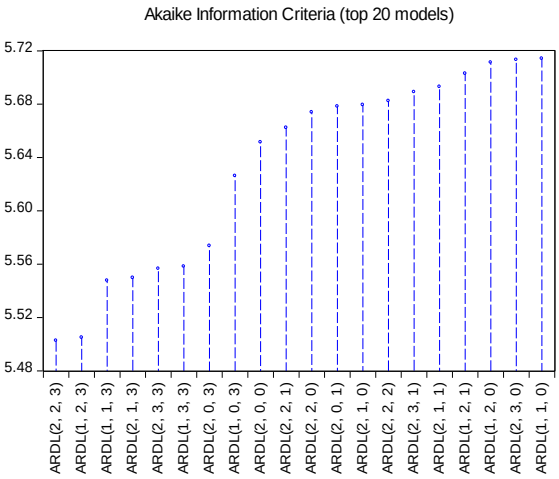
Appendices




16
12
8
4
0
-4
-8
-12
-16
92 94 96 98 00 02 04 06 08 10 12 14 16 18
CUSUM
5% Significance


Akaike Information Criteria (top 20 models)
5.72
5.68
5.64
5.60
5.56
5.52
5.48
ARDL(2, 2, 3)
ARDL(1, 2, 3)
ARDL(1, 1, 3)
ARDL(2, 1, 3)
ARDL(2, 3, 3)
ARDL(1, 3, 3)
ARDL(2, 0, 3)
ARDL(1, 0, 3)
ARDL(2, 0, 0)
ARDL(2, 2, 1)
ARDL(2, 2, 0)
ARDL(2, 0, 1)
ARDL(2, 1, 0)
ARDL(2, 2, 2)
ARDL(2, 3, 1)
ARDL(2, 1, 1)
ARDL(1, 2, 1)
ARDL(1, 2, 0)
ARDL(2, 3, 0)
ARDL(1, 1, 0)