EXTERNAL CREDIT AND ECONOMIC GROWTH: ANY RELATIONSHIP FOR NIGERIA?

Oluwasogo S. Adediran¹*, Emmanuel O. George² and Philip O. Alege³

¹Department of Economics & Development Studies, Covenant University, Ota, Nigeria, E-mail:oluwasogo.adediran@covenantuniversity.edu.ng ²Department of Economics, Olabisi Onabanjo University, Ago-Iwoye, Nigeria, Email:profemmageorge@gmail.com ³Department of Economics & Development Studies, Covenant University, Ota, Nigeria. E-mail: philip.alege@covenantuniversity.edu.ng

*Corresponding Author

Abstract

The growing economic linkage between Nigeria and western economies has raised the important issue of susceptibility of Nigerian economy to the adverse effects of structural changes in advanced economies. The need for increasing external credit flows to boost economic activity has exposed Nigeria to the negative effects of external structural changes. Therefore, an important question of concern in this study is, how does the Nigerian economy grow when there is decline in external credit? This study attempted to answer this question by comparing flow of external credit to economic activity. This is a distinction from previous studies that had compared stock of external credit to economic activity. Using annual data covering thirty-six years for the period 1980-2015. The study adopted the neoclassical growth model and estimated the model using Autoregressive Distributed Lag (ARDL) approach. The study argued that, to the extent that expenditure is credit financed, GDP should be a function of credit flow, which is new borrowing. The implication of this is that economic growth should be more related to changes in the flow of credit rather than stock of credit, in the period of economic crisis.

Keywords: External Credit, Economic Growth, Emerging Market Economies, Neoclassical Growth Model and Autoregressive Distributed Lag (ARDL).

1. INTRODUCTION

The recent evidence in the literature, has clearly shown that African emerging economies are increasingly connected with the rest of the world through trade and financial linkages. For instance, Africa's real export value has quadrupled between 2000 to 2010, with Europe, United States and China as the main destinations. In 2012, 60 percent of the African countries have export GDP ratio of 30 percent or more, while

80 percent of them have export GDP ratio of more than 20 percent. Moreover, Africa's financial linkage through Foreign Direct Investment (FDI), Remittances, Private Capital Flows and Official Development Assistance (ODA) has also increased significantly during the last decade (Gurara & Ncube, 2013). With external financial flows hitting a record high of over US\$ 200 billion in 2012. This growing economic linkage has raised the important issue of susceptibility of African economies to the adverse changes in advanced economies. Historically, Africa's growth pattern is highly linked with the world economic growth. The last global financial crisis demonstrated the strength of the linkage. This is evident, where average economic growth was slashed from an average of around 6 percent in 2006-2008 to 2.5 percent in 2009, as a result of the global economic crisis. Although, it later peaked at 4.6 percent in 2014 but slowdown at 3.7 percent in 2015, which is the lowest since 2009 (Zamfir, 2016).

Sequel to the global economic crisis which had huge effects on several developing countries around the world. The deep domestic economic crises that have pervaded the African economies since early 1970s posed considerable challenges to policy makers and economists. At each turn of events, efforts are being made to design and implement appropriate policy response to these economic disequilibrium. No doubt, the Nigerian economy has witnessed periods of boom and also recessions. For instance, in the 1970s, the economy expanded due to large inflow of crude oil income and by the period 1981-1985, at the wake of the falling oil revenue, the economy declined, given way to a rapid deterioration of the living standard of Nigerians. The subsequent periods were not too different as the consequences of the preceding period dragged into the following periods. Various macroeconomic indicators point to the grave economic situations. In particular, there were sharp fluctuations in the gross domestic product (GDP), chronic fiscal deficit, remarkable fluctuations in inflation rate, unemployment rate, growing size and composition of government expenditure and slow growth of the domestic production.

In addition to this, given that domestic savings in Nigeria, like in any other developing economy is inadequate to address savings-investment gap, so as to bring about the needed investment for required steady growth. There is the need for increasing external credit flows to boost economic activity, while a decline of it may adversely impact the economic activity. An important question of concern in this study is, how does the economy grow when there is adverse external credit shock? This study attempted to answer this question by comparing flow of external credit to economic activity. This is a distinction from previous studies that had compared stock of external credit to economic activity (see Ogun and Akinlo, 2010; Oluitan, 2012; Emecheta and Ibe, 2014; Fapetu and Obalade, 2015). The study argued that, to the extent that expenditure is credit financed, GDP should be a function of credit flow. The implication of this is that economic growth should be related to changes in the flow of credit rather than stock of credit. This is not to invalidate the argument that stock of credit is important for output, because it determines the level of potential growth in an economy. However, focusing purely on credit stock misses the developments in the credit flow, which is more useful for understanding the business cycle.

In the same vein, credit growth in emerging economies is often associated with financial deepening, which is beneficial to long-term economic growth, but it is also related to boom-bust circles and financial crises (Kalema, 2013). As a result, the recent rapid increase in credit growth witnessed in the last decade in Nigeria could be easily traceable to some factors which include: financial deepening, macroeconomic stability, real income gains, increase in capital inflows, developed monetary policy instruments and economic growth. All these explain strong expansion of credit in Nigeria. While part of this credit expansion could be traceable to the process of credit boom in the economy, the resulting evidence can be seen in the vulnerabilities of the economic to both external and internal financial adverse changes. This is because, during credit bubbles, lending standards may be loosen, which encourages excessive asset price bubbles and excessive allocation of capital resources to less productive sector. All these can trigger financial crisis as evident in 2007 - 2009.

It is equally worthy of note that the theoretical strand through which external credit affects economic growth of developing economies, has been extensively emphasized in the literature. Notable in this area are Ogun and Akinlo, 2010; Oluitan, 2012; Emecheta and Ibe, 2014; Fapetu and Obalade, 2015 and Olowofeso, Adeleke and Udoji, 2015 to mention a few. One major deduction from these studies, is that there is no consistency in their findings for developing economies as could be found in developed economies (see Bernanke and Gertler, 1989; Meeks, 2009; Gilchrist and Zakrajsek, 2010). Meanwhile, the great recession that followed the last global financial crisis has increased interest in assessing the real effects of changes in external credit. This gap generates incentive for more enquiries into the impact of external credit in emerging economies. This study is an attempt in this respect. It seeks to examine the short and long run effects of flow of external credit on economic growth in Nigeria. Our findings may have important policy implications for designing stable economic plan for both Nigeria and other emerging economies.

In achieving this task, this paper is divided into six sections. Section one, is the introduction of the study with brief literature, the second section examined the model specification, section three focuses on the data sources, section four focuses on the empirical results and discussion of findings, while section five centers around summary and the final section focuses on policy implications and conclusion.

2. MODEL SPECIFICATION

To achieve the objective of the study, which is to examine the short and long run effects of external credit on economic growth in Nigeria, the study adopted Autoregressive Distributed Lag (ARDL) approach. This approach is also called Bounds test as proposed in Pesaran, Shin and Smith (2001). This cointegration test is more reliable as compared to Johansen and Juselius (1990), as it does not pose a strict classification of regressors to be of the same order of integration. Following Pesaran *et al.* (2001), the study characterized the production function for the general framework for the ARDL model as:

$$rgdp_{t} = f(kap_{t}, lfpr_{t}, mpr_{t}, crr_{t}, tsoc_{t}, tfoc_{t})$$
(1)

where rgdp represents the Nigerian real GDP growth rate, kap is capital input, lfpr is labour force participation rate, which is labour input, mpr is monetary policy rate, crr is cash reserve requirement, tsoc is total stock of external credit to Nigeria and tfoc represents total flow of external credit to Nigeria. Although, analyzing the influence of some other variables such as financial depth, institutional development and human capital could be interesting, but quality and reliable data from World Development Index and Nigerian Statistical Bulletin on the series of the variables used proved sufficient. Therefore, from the above equation (1), the explicit form of the specification can be written as an Autoregressive Distributed Lagged, ARDL [p,q,r,s,v,w,x] model such as:

$$\Delta \ln rgdp_{t} = a_{0} + \sum_{i=0}^{p} a_{1i} \Delta \ln rgdp_{t-i} + \sum_{i=0}^{q} a_{2i} \Delta \ln kap_{t-i} + \sum_{i=0}^{r} a_{3i} \Delta \ln lfpr_{t-i} + \sum_{i=0}^{s} a_{4i} \Delta \ln mpr_{t-i} + \sum_{i=0}^{v} a_{5i} \Delta \ln crr_{t-i} + \sum_{i=0}^{w} a_{6i} \Delta \ln tsoc_{t-i} + \sum_{i=0}^{x} a_{7i} \Delta \ln tfoc_{t-i} + c_{1} \ln rgdp_{t-i} + c_{2} \ln kap_{t-i} + c_{3} \ln lfpr_{t-i} + c_{4} \ln mpr_{t-i} + c_{5} \ln crr_{t-i} + c_{6} \ln tsoc_{t-i} + c_{7} \ln tfoc_{t-i} + \varepsilon_{t}...(2)$$

where Δ is the first difference operator and \ln is for the natural logarithm of the respective variables in the model. From equation (2), it was tested if $\ln rgdp$ is co-moving with the regressors. In the ARDL model, the study tested if real GDP growth rate is co-moving with the regressors. To test for the absence of a long run relationship between $\ln rgdp$ and the regressors, the study restricted the coefficients of $C_1, C_2, C_3, C_4, C_5, C_6$ and C_7 to be zero against the alternative by conducting a restricted F-test. Therefore, the null and alternative

and C_7 to be zero against the alternative by conducting a restricted F-test. Therefore, the null and alternative hypotheses are expressed as follows:

 $H_0: c_1 = c_2 = c_3 = c_4 = c_5 = c_6 = c_7 = 0$ (no long run relationship between $\ln rgdp$ and the regressors)

 $H_1: c_1 \neq c_2 \neq c_3 \neq c_4 \neq c_5 \neq c_6 \neq c_7 \neq 0$ (there is long run relationship between $\ln rgdp$ and the regressors)

Drawing from Pesaran *et al.* (2001), the asymptotic distribution of the test statistics are non-standard irrespective of whether the variables are integrated of order (0) or integrated of order (1). As a result of this, they computed two sets of asymptotic critical values where the first sets assumes variables to be I(0) and the other I(1) which are regarded as lower bounds (LCB) and upper bounds (UCB) critical values respectively. Decisions on whether cointegration exists between $\ln r_g dp$ and its regressors were then made as consistent with the literature, based on the following criteria:

Computed F-statistics > UCB: Reject the null hypothesis

Computed F-statistics < LCB: Fail to reject the null hypothesis

Computed F-statistics value between LCB and UCB: Results are inconclusive.

In the study, there was an evidence of cointegration among the variables, then $\ln rgdp$ and its regressors have a stable long-run relationship. As a result, the study used the two-step strategy of the ARDL approach as proposed in Pesaran and Shin (1997) to estimate the long and short run coefficients (elasticities) of the specified model. Hence, the long run estimation follows this ARDL [p,q,r,s,v,ww,x] model:

Proceedings of ADVED 2017- 3rd International Conference on Advances in Education and Social Sciences 9-11 October 2017- Istanbul, Turkey

$$\ln rgdp_{t} = a_{0} + \sum_{i=0}^{p} a_{1i} \ln rgdp_{t-i} + \sum_{i=0}^{q} a_{2i} \ln kap_{t-i} + \sum_{i=0}^{r} a_{3i} \ln lfpr_{t-i} + \sum_{i=0}^{s} a_{4i} \ln mpr_{t-i} + \sum_{i=0}^{v} a_{5i} \ln crr_{t-i} + \sum_{i=0}^{w} a_{6i} \ln tsoc_{t-i} + \sum_{i=0}^{x} a_{7i} \ln tfoc_{t-i} + \delta_{t}...(3)$$

i=0

Constructing an Error Correction Mechanism (ECM) of the above equation to derive the short-run elasticities:

$$\Delta \ln rgdp_{t} = a_{0} + \sum_{i=0}^{p} a_{1i} \Delta \ln rgdp_{t-i} + \sum_{i=0}^{q} a_{2i} \Delta \ln kap_{t-i} + \sum_{i=0}^{r} a_{3i} \Delta \ln lfpr_{t-i} + \sum_{i=0}^{s} a_{4i} \Delta \ln mpr_{t-i} + \sum_{i=0}^{v} a_{5i} \Delta \ln crr_{t-i} + \sum_{i=0}^{w} a_{6i} \Delta \ln tsoc_{t-i} + \sum_{i=0}^{x} a_{7i} \Delta \ln tfoc_{t-i} + \psi ECM_{t-i} + \lambda_{t}...(4)$$

Where the b's are the elasticities relating to the short run dynamics of the convergence to equilibrium and ψ is the measure of the speed of adjustment. To estimate the model, the study used different lag length. To avoid the loss of degree of freedom, the maximum selection of lag did not exceed 3. The Akaike Information Criterion (AIC) was used to choose the appropriate lag length for the ARDL model.

3. DATA SOURCES

i=0

i=0

The data employed for this study were annual data from 1980 to 2015 sourced from World Development Indicator (WDI) database, International Financial Statistics by International Monetary Funds (IMF) and Statistical Bulletin by Central Bank of Nigeria (CBN). These data were analyzed using E-views 9.0 and Stata 12.

4. EMPIRICAL RESULTS AND DISCUSSION OF FINDINGS

The estimation procedure began by conducting unit root test on the variables in the model. This enabled to examine the time series property of the variables. Although, there are several ways of testing for the presence of a unit root as proposed in macroeconomic literature. However, the study adopted the Phillips-Perron (PP) test. The PP test is sensitive to the structural change in the mean of a stationary variable which is captured in the test, in order to avoid bias in the usual unit root test towards non-rejection of the null of unit root (Phillips and Perron, 1988). Using the PP method, all the series became stationary at first difference I(1), as the series were not all stationary at level I(0). Table 1 presents the summary of PP unit root test of the series. The results shows that, not all the variables were stationary at levels since the absolute values of the PP test did not exceed the critical value at 5 percent level of significance except for *ltfoc*, *lcrr* and *lrgdp*, but same became stationary at first differencing, which is the main procedure for using Autoregressive Distributed Lag (ARDL).

	Log Level				Log First Difference			
	PP	PP	Order of	Remark	PP	PP	Order of	Remar
Variable	Observed	Critical	Integration		Observed	Critical	Integration	k
	Values	Values			Values	Values		
Legdp	-0.714	-12.820	I(0)	Non-Stat.	-21.039	-12.788	Stationary	l(1)
Ltsoc	-8.529	-12.820	I(0)	Non-Stat.	-24.989	-12.788	Stationary	l(1)
Ltfoc	-23.669	-12.500	l(0)	Stationary	-22.029	-12.500	Stationary	l(1)
Lmpr	-11.367	-12.788	I(0)	Non-Stat.	-38.346	-12.756	Stationary	l(1)
Lcrr	-19.442	-12.820	l(0)	Stationary	-32.905	-12.788	Stationary	l(1)
Lrer	-2.0875	-2.9484	I(0)	Non-Stat.	-4.3122	-2.9511	Stationary	l(1)
Lkap	-3.569	-12.788	I(0)	Non-Stat.	-22.844	-12.756	Stationary	l(1)
Llfpr	-5.214	-12.788	I(0)	Non-Stat.	-24.100	-12.756	Stationary	l(1)
Lrgdp	-14.186	-12.500	I(0)	Stationary	26.571	-12.500	Stationary	l(1)

Table 1: Unit Root @ 5 percent level of significance with constant

Note: The optimal lag length was chosen using Newey-West (1994) automatic lag selection, and Non-Stat. = Non-Stationary

Source: Authors computation using Stata 12.0

Having conducted the unit root test as indicated in the previous sub-section, the study rests on the assumption that the variables are I(0) and I(1) as indicated in table 2. Hence, to estimate the bounds test model, appropriate maximum lag length of 2 was chosen to avoid loss of degree of freedom. The lag length was chosen using Akaike Information Criterion (AIC). Based on the bounds test result in table 2, the computed F-statistic of 7.22 exceeds the upper-bound critical value of 3.61 at 5 percent significance level. This indicates the rejection of the null hypothesis of no cointegration between lrgdp and the regressors. This

established the fact that there is a strong indication that *lkap*, *llfpr*, *lmpr*, *lcrr*, *ltsoc* and *ltfoc* serves as the long run forcing variables in explaining the growth of the Nigerian economy.

Test Statistic	Value	K	
F-statistic	7.221392	6	
Critical Value Bou	inds	I	
Significance	I0 Bound	I1 Bound	
10%	2.12	3.23	
5%	2.45	3.61	
2.5%	2.75	3.99	
1%	3.15	4.43	

Table 2: Cointegration test based on bounds test

Source: Author's computation using E-views 9

Table 3 shows the estimated long-run coefficients for Autoregressive Distributed Lag (ARDL) model. In the long run, capital input (KAP) at 10.33 t-Statistic value, was found to have a positive value on the economic output of Nigeria. This higher contribution of capital is not surprising given that both the government and the private sectors are now investing in modern technology and infrastructure to improve productivity. In the same vein, labour force participation rate (LFPR) which is used to measure labour input has a significant negative impact on the economic output with a value of -3.70 at 5 percent level of significance. This explains that, in the long run, additional labour input may not enhancing economic growth. This may be due to lack of skills, low productivity and introduction of modern technology to the economy.

On the other hand, monetary policy rate (MPR), was found to be positively related to economic growth, but is not statistically significant. While, cash reserve requirement (CRR) is negative and statistically insignificant at -1.87. This explains, the weakness of the policy framework of the monetary authority in stabilizing the economy. A good illustration is when the Nigerian monetary authority failed to prevent the adverse effect of the last global financial crisis (2007-2009) on time. This experience exposed the Nigerian economy into the lagged effects of the global financial crisis, which almost crippled the financial system. The contribution of total stock of external credit (TSOC) towards economic growth is positive and statistically significant at 5 percent level of significance. This is unlike total flow of external credit (TFOC), which has a negative impact on economic output, but was statistically significant. This could be as a result of the inability of the economy to channel credit inflow to productive sector, while unnecessary accumulation of credit inflow may not benefit the economy in the long run.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG(KAP)	1.117323	0.108196	10.326848	0.0000
LOG(LFPR)	-64.719322	17.450040	-3.708835	0.0100
LOG(LMPR)	0.078795	0.883909	0.089144	0.9319
LOG(CRR)	-0.591486	0.315713	-1.873493	0.1101
LOG(TSOC)	0.975861	0.360047	2.710374	0.0351
LOG(TFOC)	-0.490972	0.155810	-3.151087	0.0198
C	224.159264	65.074763	3.444642	0.0137

 Table 3: Estimated Long Run Coefficients @ 5 percent level of significance

Source: Author's computation using E-views 9

Table 4 shows the short run dynamics and the adjustment towards the equilibrium at the long run. The specification shows a good fit with the R² of 0.967, which suggests that 97 percent of the variation in economic growth is being explained by the regressors. As a whole, capital (KAP), labour (LFPR), total stock of credit (TSOC) are positive and have statistically significant (at 10, 5 and 5 percent respectively) impact on economic growth. On the other hand, cash reserve requirement (CRR) and total flow of credit (TFOC) are statistically significant and negative at 2.86 and 4.37 respectively. As expected, the lagged terms of LFPR (2.26), CRR (2.19) and TFOC (2.61) are all positive and statistically significant at 5 percent level of significance in the short run, unlike TSOC (1.57) which is positive, but not statistically significant. While KAP and MPR are negative with -2.59 and -2.43 respectively, but have statistically significant impact on economic growth. This further explains that capital and monetary policy normally responds slowly to the Nigerian economic growth in the short run.

The statistically significance of the ECM at -0. 13, confirms the presence of long run equilibrium between economic growth and the independent variables namely KAP, LFPR, LMPR, CRR, TSOC and TFOC. This also confirms the previous ARDL cointegration analysis results. It is found out that the ECM value is between 0 and -1 and is statistically significant at 5 percent level of significance. This implies that, error correction mechanism converges to the equilibrium path slowly.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLOG(RGDP(-1))	-0.529857	0.223132	-2.374637	0.0552
DLOG(RGDP(-2))	-0.389578	0.179828	-2.166392	0.0734
DLOG(KAP)	0.077508	0.041338	1.874994	0.1099
DLOG(KAP(-1))	0.046005	0.033796	1.361257	0.2223
DLOG(KAP(-2))	-0.111478	0.042964	-2.594678	0.0410
DLOG(LFPR)	3.299557	1.296022	2.545912	0.0437
DLOG(LFPR(-1))	4.556530	2.015643	2.260584	0.0645
DLOG(LMPR)	-0.017426	0.049759	-0.350205	0.7382
DLOG(LMPR(-1))	0.125397	0.064866	1.933163	0.1014
DLOG(LMPR(-2))	-0.128049	0.052638	-2.432619	0.0510
DLOG(CRR)	-0.120602	0.042981	-2.805908	0.0309
DLOG(CRR(-1))	-0.054696	0.024652	-2.218691	0.0683
DLOG(CRR(-2))	0.049811	0.022764	2.188153	0.0713
DLOG(TSOC)	0.127117	0.027112	4.688589	0.0034
DLOG(TSOC(-1))	0.055343	0.035268	1.569213	0.1676
DLOG(TFOC)	-0.013196	0.003019	-4.370914	0.0047
DLOG(TFOC(-1))	0.014597	0.005797	2.517872	0.0454
DLOG(TFOC(-2))	0.014740	0.005642	2.612487	0.0400
Ecm _{t-1}	-0.131089	0.038895	-3.370314	0.0150

Table 4: Autoregressive Distributed Lag (ARDL) - ECM

 $Ecm_{t-1} = LOG(RGDP) - (1.1173*LOG(KAP) -64.7193$

*LOG(LFPR) + 0.0788

*LOG(LMPR) -0.5915*LOG(CRR) + 0.9759*LOG(TSOC) -0.4910

*LOG(TFOC) + 224.1593)

R-squared	0.967320	Mean dependent var		0.050193
Adjusted R-				
squared	0.831152	S.D. dependent var		0.035574
S.E. of				
regression	0.014618	Akaike info criterion		-5.662151
Sum squared				
resid	0.001282	Schwarz criterion		-4.471240
Log likelihood	116.5944	Hannan-Quinn criter.		-5.267398
F-statistic	7.103872	Durbin-Watson stat		2.248597
Prob(F-statistic)	0.010728			

5. SUMMARY

On the basis of empirical analysis of the study, using Bounds test approach, it is found that both stock of external credit and flow of external credit plays important role in the Nigerian economic growth. As a result structural economic changes in the associated external economies could alter economic growth in Nigeria. For instance, the contribution of total stock of external credit (TSOC) towards economic growth is positive and statistically significant at 5 percent level of significance. This is unlike total flow of external credit (TFOC), which has a negative impact on economic output, although was statistically significant. This could be as a result of the inability of the economy to channel credit inflow to productive sector, while unnecessary accumulation of credit inflow may not benefit the economy in the long run.

On the other hand, total flow of credit (TFOC) is statistically significant at 5 percent level of significance in the short run, unlike TSOC which is positive, but not statistically significant. This further explains that stock of external credit is an important variable at all times, whereas flow of external credit is more relevant during the period of economic crisis in the short run. This is because, flow of external credit is more correlated with economic growth in Nigeria.

6. POLICY IMPLICATIONS AND CONCLUSION

The short and long run effects of external credit on economic growth in Nigeria have been examined. The empirical results show that, in the short run external flow of credit is more significant to growth in the Nigerian economy, while stock of external credit is more significant in growing the economy in the long run. Therefore, the policy direction for Nigeria is that, to the extent that expenditure is credit financed, GDP should be a function of credit flow (new borrowing) in the short run. The implication of this is that economic growth should be more related to changes in the flow of credit rather than stock of credit in the period of economic crisis.

REFERENCE LIST

- Bernanke, B. & Gertler, M. (1989). Agency Costs, Net Worth and Business Fluctuations, *American Economic Review*, Vol. 79, pp. 14-31.
- Emecheta, B.C. & Ibe, R.C. (2014). Impact of Bank Credit on Economic Growth in Nigeria: Application of Reduced Vector Autoregressive (VAR) Approach, *European Journal of Accounting, Auditing and Finance Research*, Vol. 2, N0.9, pp 11-21.
- Fapetu, O. & Obalade, A. (2015). Sectoral Allocation of Banks` Credit and Economic Growth in Nigeria. International Journal of Academic Research in Business and Social Sciences, vol. 5, N0 6, pp. 161-169.
- Gilchrist, S., & Zakrajsek, E. (2010). Credit Spreads and Business Cycle Fluctuations (Unpublished), Boston University, Department of Economics.
- Gurara, D. Z. & Ncube, M. (2013). Global Financial Economic Spillovers to Africa: A GVAR Approach. African Development Bank Group Working Paper Series N0 183.
- Johansen, S. & Juselius, K. (1990). Maximum likelihood estimation and inference on co-integration with applications to the demand for money. *Oxford bulletin of economics and statistics* vol. 52, pp 169-210.
- Kalema, V. (2013). Managing the Downside Risks of Surging Capital Flows on Financial Stability for Sub-Saharan African Countries. *CBN Economic and Financial Review*. Vol. 15 (14), pp 129-143.
- Meeks, R. (2009). Credit shocks: Evidence from corporate spreads and defaults, Working Paper 0906, Federal Reserve Bank of Dallas.
- Ogun, T.P. & Akinlo, A.E. (2010). The Effectiveness of Bank Credit Channel of Monetary Policy Transmission: The Nigerian Experience, *African Economic and Business Review*, Vol. 8, N0.2, pp 15-29.
- Oluitan, R.O. (2012). Bank Credit and Economic Growth: Evidence from Nigeria, Journal of International Business and Management, Vol 5, N0. 2,pp 1-9.
- Pesaran, M.H. & Shin, Y. (1997). An Autogressive Distributed Lag Modelling Approach to Cointegration Analysis, *in Centennial Volume of Ragnar Frisch, Econometric Society Monograph*, edith by Strom, S., Holly, A. and Diamond, P. Cambridge: Cambridge University Press. http:

//www.econ.cam.ac.uk/faculty/pesaran.

- Pesaran, M.H. Shin, Y. & Smith, R.J. (2001). Bounds testing approach to the analysis of level relationships. *Journal of applies econometrics* vol. 16(3): 289-326.
- Phillips, P. & Perron, P. (1988). Testing for a unit root in time series regression. *Biometrika,* Vol. 75(2), pp. 335 346.
- Zamfir, I. (2016). Africa's economic growth: Taking off or slowing down? Members' Research Service, Directorate-General for Parliamentary Research Services, European Parliament Publication.