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DEPOSIT MONEY BANKS CREDIT AND ECONOMIC GROWTH IN NIGERIA

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Abstract

The paper examined deposit money banks credit and economic growth in Nigeria from 1980-2018. The study used time series data obtained from World Bank Develoment Indicators and Auto Regressive Distributed Lag (ARDL) techinque to examine the effect of domestic credit (DCPS) on GDP as a proxy for economic growth among other variables (INF, LIR). The result showed that 1 unit increase in domestic credit (dcps) has increased GDP by 6%. Inflation rate was found to shrink economic growth rate by 7%.The study concluded that deposit money banks credit was influencial in driving economic growth in Nigeria for the 39 years period studied. The study therefore recommends that the federal government of Nigeria through its Central Bank should strengthen commercial banks to dispense more credits to private investors for sustained increase in economic activities and a robust monetary policy to check mate inflation.

Key words: Deposit money banks, Time series, ARDL, Economic growth, Nigeria.

INTRODUCTION

World over, it is sustained increase in economic activities that guarantee better living standards. Gary (2007) noted that economic growth brings about increased consumption, improved public services and reduced unemployment and poverty rates. Without these increases, standard of living tends to decline. In the year 2013, Africa was identified as the world's poorest inhabited continent. Its entire gross domestic productal together is barely a third of the United States gross domestic product (World Bank, 2017). This is because Africa's ability to produce more goods and services is marred by challenges ranging from leadership problems to technology and these ought to have transformed Africa from a consuming continent to a producing and exporting one. However, despite Africa's low productive capacity, the African Development Bank reported that the economy of Africa is among world's fastest growing economy and forecasted that average growth will reach 3.4% in 2017 while growth is expected to increase by 4.3% in 2018 (AEO, 2017). According to International Monetary Fund (2018), Africa's GDP in

2018was 3.7%, suggesting an increase of 0.3% from the GDP in 2017. This is an improvement occasioned by democratic reforms, institutional revival, technology, banking reforms and adoption of global best practices in international trade and ease of doing business strategy consequently creating a conducive atmosphere for increase in economic productivity for an enhanced living standard and well being.

Resurgence of interest in targeting economic growth in Nigeria owns its origin to 1962 development plan. Since then, successive governments have made economic growth one of their core agenda. Government policies, programmes and private sector participation been the means by which increases in productivity have been encouraged are pursued through institutions of government that are necessary for national development. Bun (1962) in his article titled "five (5) year plan, a key to Nigeria's future" opined that a 4% GDP growth rate was envisioned, hence effort to improve quality education, provision of tools and machineries for manufacturing, access to technology, improved access to financial services, etc are all geared towards achieving economic growth.

In achieving economic growth, the financial system operations of a country are essential for providing means by which productive enterprises can be initiated and sustained. Banks are necessary institutions for providing livehood support for businesses and economic agents. In their role of financial intermediation, banks pool financial resources from surplus units and transmitting same to deficit units through a mutual framework that is beneficial to all parties in transaction. Banks are sometimes obligated to provide loans to the public at an interest rate that is determined by them. As the economy expands, commercial banks allow the general public to increase their credit demand in the forms of loan, overdrafts, etc for investment.

Credit lending by commercial banks is one of the key drivers of economic growth in Nigeria. Scholarly researches have established the effect of deposit money banks credit on economic growth through the ability of commercial banks to attract surplus finances from bank customers and lending same as credit to investors who are in charge of stirring the economy through investment portfolios that increase output.

In Nigeria, people borrow for business and private consumption purposes just like it is done elsewhere around the world especially when the cost of borrowing is affordable, convenient and worth the risk. It is however counterproductive when people borrow for consumption only, such borrowings that do not significantly stimulate expansion in economic activities would hardly increase output of economic agents and consequently economic growth.

Increase in economic productivity is what guarantees high economic growth. People need more equipment to flourish in their sphere of business, more capital to expand and hire more people, more machines to expand output, etc. But without sufficient funds, these aspirations merely become a mirage, a plan and an ambition. Finance is the live-wire of every business enterprise without which it is difficult for such an enterprise to triumph. Often, without finances enterprises die off and when they happen, the economy gradually moves to stupor consequently leading to a decline in economic growth.

Therefore, private sector investors approach banks to secure loans for fuelling their business aspirations. Sometimes application for loan is granted and the prospective applicant gets what he or she want if the collateral is commensurate with the loanable amount among other considerations. However, it becomes difficult sometimes for banks to meet this loan request because of inadequate deposits in their vaults or because of non-performing loans owed by the bank or some cogent reasons that do not warrant loan approval request, then the credit lending capability of banks dwindles and enterprises that require loans to survive at that very moment become moribund.

Hitherto, a strong and robust financial system of a country therefore is essential for stimulating economic growth by increasing her credit lending capacity to business investors and also meeting the financial demands of citizenry by creating an affordable incentive for bank customers to save and borrow money with them.

The Central Bank of Nigeria as an institution of government has a very pivotal role to play in the emergence of a sturdy financial system that is capable of lending credit to

investors by mobilizing funds from surplus zone.CBN designs the financial system regulations for strengthening commercial banks which would safeguard and boost economic growth. Therefore, policies that are friendly and favourable for commercial banks to adapt, are necessarily required to influence increases in deposit money by bank customers and credit lending to business investors by commercial banks. These policies control key variables such as lending and interest rates, inflation among other variables that determine the direction of economic growth in Nigeria.

From the foregoing, Central Bank's monetary policy is influencial in determining the supply and demand for money via the amount of money commercial banks hold in their vaults, the interest rate at which deposits are made and loans are given and the control of inflation in the economy. Therefore, economic growth target is necessarily dictated by the Central Bank and executed by commercial banks through monetary exchanges and economic activities among other strategies. However, despite CBN's monetary control measures geared towards increased productivity interest rates on loans by banks are excessively high thereby hampering flow of credit to private sector. Cost of living is aggravated by inflation consequently creating shocks in the efficient functioning of the economy resulting in poor output and poor standard of living. The aim of this paper therefore is to examine the effect of domestic credit on economic growth in Nigeria from 1980-2018.

LITERATURE REVIEW

The theory of loanable funds in economics is a theory of the market interest rate. The loanable funds doctrine was formulated in the 1930s by British economist Dennis Robertson and Swedish economist Bertil Ohlin. However, Ohlin attributed its origin to Swedish economist Knut Wicksell and the Stockholm school, which included economists Erik Lindahl and Gunnar Myrdal. The loanable funds doctrine extends the classical theory, which determined the interest rate solely by saving and investment, in that it adds bank credit. The total amount of credit available in an economy can exceed private saving because the bank system is in a position to create credit to investors.

Hence, the equilibrium (or market) interest rate is not only influenced by the propensities to save and invest but also by the creation or destruction of fiat money and credit. According to this theory, the demand and supply of loanable funds determine its rate of interest. The term loanable funds includes all forms of credit such as loans, bonds, or saving deposits available for lending to individual or group of investors. Bannock, Ron and Evans (1998) defined loanable funds as money available for lending to individuals, government and institutions in the financial markets. It is comprised of current savings of private individuals and firms, discharging and any increase in money supply made available by the actions of depository institutions, governments and monetary authorities in the financial markets. Thus as observed by Okwo, Mbajiaku and Ugwunta(2012), loanable funds represent a flow of money into the financial markets for loans of all kinds.

The theory of loanable funds by Dennis Robertson and Berlin Ohlin is applicable to the study of deposit money banks and economic growth because variables that are central to the theory namely interest rate, savings, banks credit and price level among other variables are all relevant in examining the effect of domestic credit on economic growth. The loanable funds doctrine, does not equate saving and investment as obtaned in the Keynesian theory as demonstrated in the IS-LM model but integrates bank credit creation into its equilibrium condition. According to Ohlin, "there is a credit market but there is no such market for savings and no price of savings". Since the rate of interest is determined by saving and investment alone in the classical theory which loanable funds theory is an extension, changes in the quantity of money do not affect the interest rate but influence the price level. However in practice, CBN's monetary policy seeks to influence interest rate by its Minimum Rediscounting Rate (MRR) that is aimed at controlling the quantity of money in the vaults of commercial banks. This is where the theory of loanable funds is inefficient in addressing how changes in the quantity of money affect interest rate and price level, albeit its usefulness in determining the effect of domestic credit on economic growth.

Many scholarly empirical literatures have reported the effect of deposit money banks credit on economic growth. The study by Okwo *etal* (2012) examined the effect of bank credit to private sector on economic growth in Nigeria using time series data obtained from Central Bank of Nigeria (CBN) statistical bulletin from 1981-2010. GDP in the model's equation was the dependent variable and used as a proxy for economic growth. The explanatory variables include bank credit to private sector, inflation and interest rates. The study used Augmented Dickey Fuller test statistics to determine the order of integration of the variables. Ordinary Least Squares method was used to examine the effect of bank credit on economic growth. The regression results revealed a strong positive effect of bank credit to private sector on economic growth and this effect is statistically significant. The study concluded that bank credit was found to have a strong effect on economic growth and therefore recommended that CBN should lower its minimum rediscounting rate to enable banks fix low rates on their loanable funds.

Samson and Tarila (2014) studied the effect of deposit money banks intermediation role on economic growth and development in Nigeria. Time series data obtained from Central Bank of Nigeria from 1973-2011 was adopted. OLS and cointegration techniques were used to examine the effect of deposit money banks on economic growth. The findings indicate that credit allocation to the production sector has significantly promoted economic activity within the period of study. The study therefore recommends that banks must channel their credit facility to only productive investment. The study also recommended that deposit money banks should act as efficient financial intermediaries devoted to allocating resources to the most productive uses in the economy.

Modebe, Ugwuegbe and Ugochukwub (2014) investigated the impact of bank credits on Nigeria's economic growth from 1986-2012. The data was sourced from CBN statistical bulletin. OLS method of estimation was used to determine the impact of the independent variables on the dependent. The ADF test was used to determine the order of integration, and all the variables were found to be integrated of order one, that isI(1). The Johansen

and Juselius cointegration test was employed and the result showed that there is at most one cointegrating equation in the model, implying that there is a long run relationship between the variables specified in the model. Result of the Ordinary Least Squares regression showed that there is a negative and significant relationship between Gross Domestic Product and Total Bank Credit to Private Sector in the long run. M2 which was used as a control variable has a positive and significant impact on GDP in the long run. The ECM showed that 24.03% of the disequilibrium corrected yearly. The short run dynamics of the variables indicates that TBCPS also have a negative and insignificant impact on GDP at the short-run. The result of the granger causality test is unidirectional, from GDP to TBCPS. The result also showed bi-directional causality between TBCPS and M2. The study recommended that CBN should lower the lending rate by manipulating monetary policy to enable banks lend with ease.

Okaro and Sunday (2016) evaluated the effects of deposit money bank's credit on economic growth and development in Nigeria (1981-2015). The study adopted the theory of financial liberalisation which states that economic growth in a developing economy rest on an efficient financial sector that pools domestic savings and mobilizes foreign capital for productive investments. Multiple regression technique was used on an annual time series data from 1981 to 2015 sourced from CBN statistical bulletin. Estimated single equation models using Ordinary Least Square (OLS) regression framework was used and the findings indicate that total credit by deposit money banks to all sectors of the economy is positively and significantly related with economic growth in Nigeria. However, the study also revealed that while DMBs credit to private sector drives growth, DMBs credit to public sector frustrates growth due to crowding out effect. Therefore, the study recommended that DMBs should be encouraged to direct their credit to priority sectors of the economy.

Kolapo, Ojo, and Olaniyan, (2018) examined deposit money banks' credit to private-public sectors and its nexus with economic development in Nigeria over the period 1970-2016. The study adopted per capital income as proxy for economic growth, while

credit to private sectors, credit to government sectors, money supply, and lending interest rate were the explanatory variables. The Ng-Perron and Augmented Dickey Fuller Breakpoint Unit Root tests were used in checking the presence of unit root, and in determining the order of integration of the variables. Findings revealed that bank credits to government sectors and lending interest rates were stationary series as $p < 0.01$. The Granger Causality feedback hypothesis establish that banks' credit and economic growth Granger cause each other. The study recommended that monetary authorities should regulate the activities of deposit money banks to ensure that they gear up the growth of credits to private sectors by examining factors, such as lending interest rate which can possibly undermine lending to these sectors.

Econometric results in the empirical literatures reviewed so far showed that the variables are cointegrated or are either integrated of the same order necessitating the use of Least Squares as a necessary technique for evaluation. However, where the variables are not cointegrated or are integrated of different order necessitating an econometric technique other than Least Squares method, such an attempt is made in this study to examine the effect of deposit money banks credit on economic growth in Nigeria using ARDL technique. Also, attempt was made to increase the time frame for the study on banks credit and economic growth in Nigeria to 2018 being latest year for the literatures reviewed in this study.

METHODOLOGY

The study utilized time series data obtained from World Bank Development Indicators from 1980-2018. Descriptive and correlation tests were carried out and were analyzed to determine the characteristics of data set used as well as the relationship among the variables. Also, the Augmented Dickey Fuller test was conducted on the time series data to determine the order of integration of the variables. The model's equation for the unit root test is specified in eqn 1;

$$\Delta Y_t = \beta_1 + \beta_2 + \delta Y_{t-1} + ai\sum_{i=1}^{m} \Delta Y_{t-i} + \varepsilon_t \quad \text{.....eqn I}$$

Where:-

Y_t: is the variable that was investigated.
Δ: is the differential factor

ε_t: is a pure white noise error term.

From the ADF test, if the variables are integrated of different orders, ARDL models can be specified. The model can also be specified if all the variables are integrated of order one, that is I(1). The generalized ARDL (*p, q*) model is specified as;

$$\ln GDP_t = \gamma_{oi} + \sum_{i=1}^{p} \delta_i \ln GDP_{t-1} + \sum_{i=0}^{q} \beta'_{2i} \ln DCPS_{t-1} + \sum_{i=0}^{q} \beta'_{3i} \ln inf_{t-1} + \sum_{i=0}^{q} \beta'_{4i} \ln ir_{t-1} + \sum_{it} \quad \text{.....eqn II}$$

Where;

a.

i. Y'_t is a vector and the variables in $(X'_t)'$ are allowed to be purely I(0) and I(1) or cointegrated;
ii. β and δ are coefficients
iii. γ is the constant
iv. i = 1,...k
v. *p, q* are optimal lag orders and
vi. $\sum_{it}$ is a vector of the error terms-unobservable zero mean white noise vector process (serially uncorrelated or independent)

b. The dependent variable is a function of its lagged values, the current and lagged values of other exogenous variables in the model

c. The lag lengths for *p, q* may not necessarily be the same.

d. *p* lags: used for the dependent variable

e. *q* lags: used for the exogenous variables.

f. Hypotheses

H_o: $b_{1i} = b_{2i} = b_{3i} = b_{4i} = 0$ where i = 1, 2, 3, 4
H_1: $b_{1i} \neq b_{2i} \neq b_{3i} \neq b_{4i} = 0$

To perform the bounds test for cointegration, the conditional ARDL model (p, q_1, q_2, q_3,) with four (4) variables is specified as;

$\Delta lngdp_t = a_{01}+b_{11}lngdp_{t-i}+b_{21}lndcps_{t-i}+b_{31}lninf_{t-i}+b_{41}lnlir_{t-i}+\sum_{i=1}^{p} a_{1i}\Delta lngdp_{t-i} +\sum_{i=1}^{p} a_{2i}\Delta lndcps_{t-i}+\sum_{i=1}^{p} a_{3i}\Delta lninf_{t-i}+\sum_{i=1}^{p} a_{4i}\Delta lnlir_{t-i}+e_{1t}$.....eqn III

$\Delta lndcps_t = a_{02}+b_{12}lngdp_{t-1}+b_{22}lndcps_{t-1}+b_{32}lninf_{t-1}+b_{42}lnlir_{t-1}+\sum_{i=1}^{p} a_{i1}\Delta lndcps_{t-i}+\sum_{i=1}^{p} a_{2i}\Delta lngdp_{t-1}+\sum_{i=1}^{p} a_{3i}\Delta lninf_{t-1}+\sum_{i=1}^{p} a_{4i}\Delta lnlir_{t-1}+e_{2t}$.....eqn IV

$\Delta lnlir_t = a_{04}+b_{14}lngdp_{t-1}+b_{24}lndcps_{t-1}+b_{34}lninf_{t-1}+b_{44}lnlir_{t-1}+\sum_{i=1}^{p} a_{1i}\Delta lnlir_{t-i} +\sum_{i=1}^{p} a_{2i}\Delta lngdp_{t-1}+\sum_{i=1}^{p} a_{3i}\Delta lndcps_{t-1}+\sum_{i=1}^{p} a_{4i}\Delta lninf_{t-1}+e_{4t}$.....eqn V

If there is **no cointegration**, the ARDL (p, q_1, q_2, q_3) model is specified as;
$\Delta lngdp_t = a_{01}+\sum_{i=1}^{p} a_{1i}\Delta lngdp_{t-i}+\sum_{i=1}^{p} a_{2i}\Delta lndcps_{t-i}+\sum_{i=1}^{p} a_{3i}\Delta lninf_{t-i} +\sum_{i=1}^{p} a_{4i}\Delta lnlir_{t-i}+e_t$.....eqn VI

$\Delta lndcps_t = a_{01}+\sum_{i=1}^{p} a_{1i}\Delta lndcps_{t-i}+\sum_{i=1}^{p} a_{2i}\Delta lngdp_{t-1}+\sum_{i=1}^{p} a_{3i}\Delta lninf_{t-1}+\sum_{i=1}^{p} a_{4i}\Delta lnlir_{t-1}+e_t$.....eqn VII

$\Delta lninf_t = a_{01}+\sum_{i=1}^{p} a_{1i}\Delta lninf_{t-i}+\sum_{i=1}^{p} a_{2i}\Delta lngdp_{t-1}+\sum_{i=1}^{p} a_{3i}\Delta lndcps_{t-1}+\sum_{i=1}^{p} a_{4i}\Delta lnlir_{t-1}+e_t$.....eqn VIII

$\Delta lnlir_t = a_{01}\sum_{i=1}^{p} a_{1i}\Delta lnlir_{t-i}+\sum_{i=1}^{p} a_{2i}\Delta lngdp_{t-1}+\sum_{i=1}^{p} a_{3i}\Delta lndcps_{t-1}+\sum_{i=1}^{p} a_{4i}\Delta lninf_{t-1}+e_t$.....eqn IX

If there is **cointegration**, the error correction model (ECM) representation is specified as;
$\Delta lngdp_t = a_0+\sum_{i=1}^{p} a_{1i}\Delta lngdp_{t-i}+\sum_{i=1}^{p} a_{2i}\Delta lndcps_{t-i}+\sum_{i=1}^{p} a_{3i}\Delta lninf_{t-i} +\sum_{i=1}^{p} a_{4i}\Delta lnlir_{t-i}+\lambda ECT_{t-i}+ e_t$.....eqn X

RESULTS AND DISCUSSION

Table 1.1: Descriptive statistics-Common sample

Variables	Mean	Median	Std. Dev.	Skewness	Kurtosis	Jarque-Bera/Prob.
GDP	3.20	4.20	5.47	-0.89	4.67	$9.73_{0.01}$
DCPS	9.64	8.17	4.26	1.24	3.99	$11.36_{0.00}$
INF	19.08	12.22	17.09	1.78	4.99	$27.11_{0.00}$
LIR	17.52	17.55	5.01	0.16	3.49	$0.54_{0.76}$

Source: Author's Eviews Computation

Note: the subscript on Jarque-Bera values is the corresponding probability for each variable.

Table 1.1 described the statistical property of the data set. GDP was found to be negatively skewed. The kurtosis of the data is found to be leptokurtic in form, because of their values that is greater than 3 and therefore prone to produce outliers in the series. The mean of these variables also showed that the data are not normally distributed as indicated by the Jarque-Bera values and its corresponding p-values.

Table 1.2: Correlation Matrix

Variable	GDP	DCPS	INF	LIR
GDP	1.00	0.28	-0.22	0.42
DCPS	0.28	1.00	-0.32	-0.05
INF	-0.22	-0.32	1.00	0.38
LIR	0.42	-0.05	0.38	1.00

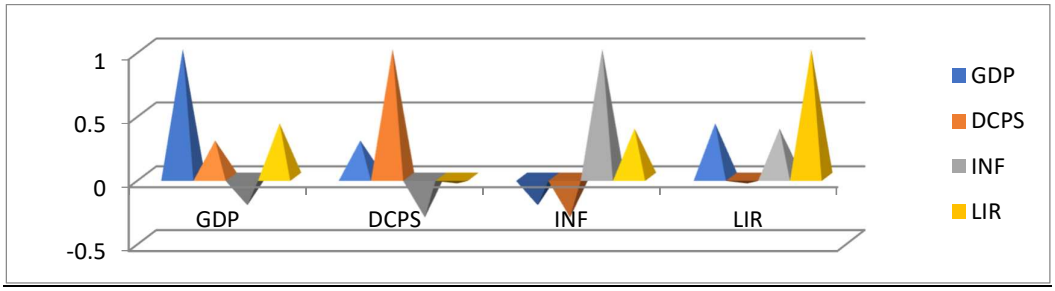
Source: Author's Eviews Computation

Table 1.2 shows the relationship in the variables. From tabel1.3, economic growth (GDP) has a positive relationship with domestic credit (DCPS) and lending interest rate (LIR) at 28 and 42 percents respectively. However, a negative relationship between GDP and inflation rate was also observed and the degree of the relationship was -22%. Overall, GDP's relationship with domestic credit, inflation and lending interest rates showed weak relationships as indicated by their coefficients.

The relationship between domestic credit (DCPS), inflation rate (INF) and lending interest rate (LIR) showed a negative relationship with a very low degree of correlation between domestic credit and lending interest rate at -32 and -5 percents respectively. This is also shown in fig. 1.1 where the series, DCPS and LIR are depicted at the

negative part of the graph. Similarly, result of correlation of the rate of inflation with GDP and domestic credit showed low-negative values which are -22 and -32 percents respectively. The relationship between inflation and lending interest rate is a weak but positive one at 38 percent. These values are also represented on the chart as fig. 1. The correlation coefficients are as presented in table 1.2.

Fig.1.1: Correlation Matrix



Source: Author's Exceloutput

Table 1.3: Summary output of Augmented Dickey Fuller Unit Root Test

VARIABLE	ADF Unit Root Test	t-Statistic	Prob.*	Order of Integration
GDP	ADF test statistics	-3.422852	0.0166	I (0)
	Test critical value: 5%	-2.945842		
D(DCPS)	ADF test statistics	-5.168508	0.0002	I (I)
	Test critical value: 5%	-2.948404		
INF	ADF test statistics	-2.973335	0.0466	I (0)
	Test critical value: 5%	-2.941145		
D(LIR)	ADF test statistics	-5.398049	0.0001	I (I)
	Test critical value: 5%	-2.945842		

Source: Author's Eviews Computation

Table 1.4 Bounds test for cointegration using model 3(constant) Unrestricted Constant and no Trend.

Dependent Variable	F-Statistics	I(0)/I(1) Bounds test at 5%	Cointegration
$lngdp_t$	2.802738	3.23/4.35	No cointegration
$lndcps_t$	2.535620	3.23/4.35	No cointegration
$lninf_t$	2.299297	3.23/4.35	No cointegration
$lnlir_t$	2.065428	3.23/4.35	No cointegration

Source: Author's Eviews Computation

The rule of thumb for interpreting ARDL bounds test is that if F-statistics is higher than the upper bound I(1), there is cointegration. If it is less than the lower bounds I(0), then there is no cointegration. However, if F-statistics is higher than the lower bound but less than the upper bound, cointegration is inconclusive. Following from this rule, the result of bounds test in table 1.4 showed that all the variables have no cointegration, therefore no long relationship in the specified equation and thus only short run ARDL model is specified. The equations for short run ARDL model are thus given below;

Table 1.5: ARDL Result for LNGDP

Dependent Variable: LNGDP Method: ARDL Maximum dependent lags: 3						
Model selection method: AIC Selected Model: ARDL(3, 0, 0, 0)						
LNGDP = 0.25*LNGDP(-1) + 0.29*LNGDP(-2) - 0.22*LNGDP(-3) + 0.06*LNDCPS - 0.07*LNINF + 0.28*LNLIR – 1.59						
(0.16)	(0.07)	(0.16)	(0.74)	(0.13)	(0.14)	(0.68)
[1.45]	[1.85]	[-1.43]	[0.33]	[-1.52]	[1.48]	[-0.41]
R^2 = 0.46 Adjusted R^2 = 0.34 S.E. of Regression = 3.75 DW statistics = 2.02						

Source: Author's Eviews computation
Note: p values ( ) in bracket while t-stat in parenthesis[ ]

The result of ARDL of LNGDP as the dependent variable in table 1.5showed that one unit increase in domestic credit (LNDCPS) and lending interest rate (LNLIR) increases economic growth (GDP) by 6 and 28 percents independently, all things being equal. However, a unit increase in inflation rate decreases economic growth by 7%. Goodness of fit of the model is 46% and adjusted R-squared is 34% which indicates that any modification (addition or subtraction) in the variable would improve the model by less than expected by chance. However, the Durbin-Watson coefficient is 2.02 which signified absence of autocorrelation in the residuals. The Standard Error coefficient is about 3.8, indicating that the variables fall from the regression line by an average mean of 3.8 using the units of the response variable. Economic growth is essential for achieving better living standards and here domestic credit was found to increase it but

increase in inflation rate decreased GDP because high cost of living is detrimental to living standard which economic growth seeks to guarantee. The study by Okwo *etal* (2012) also found out that there is a strong positive effect of bank credit to private sector on economic growth in Nigeria.

Table 1.6: ARDL Result for LNDCPS

Dependent Variable: LNDCPS Method: ARDL Maximum dependent lags: 2							
Model selection method: AIC Selected Model: ARDL(2, 2, 0, 0)							
LNDCPS = 1.15*LNDCPS(-1) - 0.45*LNDCPS(-2) - 0.07*LNGDP + 0.02*LNGDP(-1) + 0.16*LNGDP(-2) - 0.02*LNINF - 0.12*LNLIR + 5.15							
(0.00)	(0.01)	(0.48)	(0.81)	(0.05)	(0.37)	(0.26)	(0.01)
[7.65]	[-2.89]	[-0.70]	[0.24]	[2.01]	[-0.91]	[-1.41]	[2.72]
R^2 = 0.82 Adjusted R^2 = 0.78 S.E. of Regression = 2.03 DW statistics = 2.06							

Source: Author's Eviews computation
Note: p values( )in bracket while t-stat in parenthesis[ ]

Result of ARDL model for domestic credit as the response variable in table 1.6 showed that a unit increase in economic growth for both lag 1 and 2 were found to increase domestic credit by 2% at lag 1 and 15% at lag 2 respectively and statistically significant at the 5% level. However, one unit increase in both inflation and lending interest rates reduced domestic credit by 2% and 11% independently. Goodness of fit of the model is 82% which is very good representation of the model and adjusted R-squared is 78% which indicates that any addition or subtraction in the variables would improve the model by less than expected by chance. The Durbin-Watson statistics showed a coefficient of 2.06implying absence of autocorrelation in the residuals. The Standard Error coefficient is2.03, which means that the variables fall from the regression line by an average mean of 2.03 using the units of the response variable. It is sustained economic growth that guarantees a robust financial system where banks increase their credit lending to private sector for investment. When this happens, funds become available for numerous portfolio investments that stir economic growth. However from

this same result, increases in inflation and lending interest rates were inimical to growth in domestic credit. Result of study by Kolapo, Ojo, and Olaniyan, (2018) on deposit money banks' credit to private-public sectors and its nexus with economic growth in Nigeria corroborated the findings here where lending interest rate was found to undermine credit to public and private sectors in Nigeria.

Table 1.7: ARDL Result for LNINF

Dependent Variable: LNINF Method: ARDL Maximum dependent lags: 1
Model selection method: AIC Selected Model: ARDL(1, 0, 0, 3)
LNINF = 0.51*LNINF(-1) - 1.27*LNGDP + 0.02*LNDCPS + 1.49*LNLIR - 0.92*LNLIR(-1) + 1.96*LNLIR(-2) - 1.51*LNLIR(-3) - 4.43 (0.002) (0.01) (0.97) (0.06) (0.31) (0.03) (0.04) (0.69) [3.40] [-2.54] [0.03] [1.92] [-1.03] [-2.19] [-2.08] [-0.39]
R^2 = 0.59 Adjusted R^2 = 0.49 S.E. of Regression = 12.55 DW statistics = 1.63

Source: Author's Eviews Computation
Note: p values( )in bracket while t-stat in parenthesis[ ]

Result for inflation as a response variable in the ARDL model is shown in table 1.7. Result showed that one unit increase in GDP decreased inflation rate by 120% and it is statistically significant at the 5% level. Similarly, one unit increase in domestic credit increases inflation by 1% all things being equal. However, a unit increase in lending interest rate at lag 2 and 3 increases inflation by 196 and 151 percents independently and are both statistically significant at the 5% level. The model's goodness of fit is 59% and the adjusted R-squared is 49%which also indicates that variables modification would improve the model by less than expected by chance. The Durbin-Watson coefficient is 1.63and the Standard Error coefficient is12.6 which means that the mean deviation from the regression line is averaged mean 12.6 using the units of the response variable. Increase in GDP is an important factor in reducing prices of goods and services which would ensure that there is increase in domestic credit available to businesses which does not cause increase in inflation as the result here indicated. However, when money supply

increases without a corresponding level of productivity, inflation occurs in the economy because consumers borrow money to consume and not to invest. Consequently, increase in lending interest rate led to increase in inflation as the result indicated in this study.

Table 1.8: ARDL Result for LNLIR

Dependent Variable: LNINF Method: ARDL Maximum dependent lags: 1						
Model selection method: AIC Selected Model: ARDL(1, 0, 0, 2)						
LNLIR = 0.69*LNLIR(-1) + 0.19*LNGDP - 0.10*LNDCPS + 0.03*LNINF + 0.04*LNINF(-1) - 0.07*LNINF(-2) + 5.83						
(0.00)	(0.08)	(0.42)	(0.39)	(0.34)	(0.07)	(0.01)
[5.97]	[1.79]	[-0.82]	[0.86]	[0.96]	[-1.84]	[2.78]
R^2 = 0.72 Adjusted R^2 = 0.67 S.E. of Regression = 2.70 DW statistics = 2.02						

Source: Author's Eviews Computation
Note: p values( )in bracket while t-stat in parenthesis[ ]

Result for ARDL model with lending interest rate as a response variable is shown in table 1.8. One unit increase in GDP increases lending rate by 19% but only statistically significant at the 10% level. However, one unit increase in domestic credit reduced lending rate by 10% all things being equal. Similarly, one unit increase in inflation rate increased lending interest rate by 3% and 4% at lag 1. At lag 2, one unit increase in inflation rate reduced lending interest rate by 7% but it is however statistically significant at 10% level. The model's goodness of fit is 72% which is very good and the adjusted R-squared is 67%whichindicates that variables modification would improve the model by less than expected by chance. The Durbin-Watson coefficient is 2.02 which mean absence of autocorrelation in the residuals. The Standard Error coefficient is2.7, which means that the extend of deviation from the regression line is averaged mean 2.7 using the units of the response variable. It is when the economy is robust that financial system stability would be achieved and therefore increase in GDP leads to increase in lending interest rate which suggests a measure to discourage borrowing to control

inflation. Similarly, as domestic credit expands lending rate equally decreases to encourage growth in investments. However, expansion in credits without corresponding investments triggers inflation because of too much money in circulation but it is quickly resolved by increase in lending interest as result in this study indicated.

Table 1.9: Breusch-Godfrey Serial Correlation LM Test

Variable	F-statistic	Probability	Critical values @ 5%
Lngdp	0.125369	Prob. F(3,26)	0.9442
Lndcps	0.060502	Prob. F(2,27)	0.9414
Lninf	2.188967	Prob. F(1,27)	0.1506
Lnlir	0.003664	Prob. F(2,28)	0.9963

Source: Author's Eviews Computation

The Breusch-Godfrey Serial Correlation LM test is a test for autocorrelation or serial correlation. To ascertain the validity or otherwise of the estimates, the null hypothesis of the test is that there is no serial correlation in the residuals. From table 1.9 therefore, we cannot reject the null hypothesis and therefore conclude that there is no auto correlation in the series for all the variables (LNGDP, LNDCPS, LNINF, LNLIR).

CONCLUSION

In conclusion, four ARDL models were specified with varying results that have implication for economic policy. From the study, domestic credit to private sector and lending interest rate has been found to increase GDP. The study also found out that inflation rate is not favourable for increasing economic growth. Furthermore, lending interest and inflation rates were found to shrink domestic credit which is an important driver of economic growth among other macroeconomic variables.

Therefore, in order to achieve sustained economic growth and increase domestic credit that is capable of improving living standards among the generality of Nigerian populace, the study recommends that the Federal Government of Nigeria through its Central Bank should use its monetary policy strategy to effectively checkmate inflation and high lending interest rate by commercial banks because this study has shown that both variables mitigate the effect of domestic credit on economic growth and therefore it is considered unfavourable to the growth of Nigerian economy.

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