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Financial Intermediation and The Nigerian Economy (1986-2020)

Odom, Desmond Uwakwe
Department of Accountancy, Faculty of Management and Social Sciences,
Madonna University Nigeria, Okija Campus, Anambra State, Nigeria
email: odom_desmond02@yahoo.com

Temuhale, Julius (Corresponding author)
Department of Banking and Finance, Faculty of Arts, Social and Management Sciences,
Legacy University Okija, Anambra State, Nigeria
email: temuhale.j@legacyuniversity.edu.ng

Abstract
This study examined the effect of financial intermediation on the Nigerian economy for the period 1986 to 2020. The objective was to probe the effect of Money Supply, Private Sector Credit, Lending Rate, and Gross National Savings on Real Gross Domestic Product in Nigeria over the period. The data analyzed was gotten from the 2019 Central Bank of Nigeria's annual issue of the Statistical Bulletin and the 2019 issue of the world development indicators (WDI). ARDL bound cointegration test revealed a long run relationship between the explained and the explanatory variables. The adjustment coefficient CointEq(-1) showed that any initial distortions in the economy will attempt to adjust to the state of equilibrium at the rate of 88 % per annum. ARDL analysis indicated the effect of Money Supply on real GDP of Nigeria is positive and significant, Private Sector Credit and Lending Rate respectively have negative and significant effects, while Gross National Savings had a negative, but insignificant effect. The study concluded that although financial intermediation has a strong effect on Real GDP of Nigeria over the period, the process is highly flawed; and recommended stringent measures to further supervise bank credit administration if positive results must be achieved.
Keywords: Financial Intermediation, Real GDP, Money Supply, Private sector credit, Lending rate, National Savings.
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I. INTRODUCTION

It is common knowledge that finance is the fundamental requisite for input factors in economic development and this is why it has also been baptized as an engine of growth in any economy (Ogiriki & Andabai, 2014; Ziaurrahman & Masih, 2016). In an economy hasty to develop in spite a series of serious constraints, it has become necessary to pay much attention and place a premium on the financial system and its components as far as mobilization of funds for growth purposes is concerned (Ogiriki & Andabai, 2014). Such a process has been termed "financial intermediation" and the responsibility rests on financial intermediaries to conduct such transfers (Shittu, 2012). The process of channeling of funds from surplus to deficit units of the economy in the views of John and Nwekemezie (2019) encourages productive innovation although it is equally risky. By making saved funds more liquid and investing a portion of it into illiquid long-term investment, the financial system invariably plays a role which is key in the intermediation process.

Furthermore, while discussing about the financial system, Levine (2005) had stressed a close link between economic growth and the liquidity provision function of the system. The link comes following the fact that some high-return projects necessitate commitment of capital for long tenure; however, savers generally do not like relinquishing control over their savings for such long periods.

Of all the financial service industries in Nigeria, Nzotta (2014) views the banking sector as the most dominant sector while describing it as the most vibrant component, and that any difficulty it faces greatly affects the entire economy. Umoh in Ogiriki and Andabai (2014) equally uphold this position stating that the soundness and also the stability of the sector is paramount and justifies the focus of the regulatory authorities' lens on the sector and deposit money banks to be specific.

This explains the aim of the 2004 bank reforms – to ensure bigger, stronger financial positions, safe as well as sound banking practice while enhancing regulatory capacity to supervise the industry (Ogiriki & Andabai, 2014). In the views of Soludo (2004), the main component of the reform program was the in adjustment of the minimum capital base of banks that was increased from NGN2 billion to NGN25 billion by close of 2005.

Having reviewed some researchers' works, it is evident that as the economy continues to grow coupled with global changes in technology and uncertainties, much still remains to be done on financial intermediation as it affects economic growth of a nation.

In order to attain a better and effective financial intermediation, the money supply policy of the nation ought to be expansionary. Through this policy the supply of loanable funds will cause interest rates to fall causing investment and consumption to increase and the GDP to rise as well.

It would be difficult for any sector of the economy to perform effectively in the absence of adequate funding. However, with a strong financial system, this is easily achievable (Asagunla & Agbede, 2018). Financial intermediaries therefore play very important role in the flow of funds and if effectively executed, the financial intermediation process could be a catalyst for economic growth - mopping up the surpluses in some sectors and using same to fund sectors with deficits. This requires trust and confidence of the surplus sector in the financial institutions on the security of their savings (Efayena, 2014).

Apart from credit to private sector and bank lending rate which are financial intermediation drivers, the impact of national savings as well cannot be over-emphasized. To finance the investments required for proper economic growth, the country needs to either generate sufficient savings or resort to borrowing. National saving, however, is deemed to be a preferred option to borrowing because of the negative implication attached to borrowing. National savings provide the domestic resources needed in financing investment needs of a country according to Gotera (2002). Equally, of all the works reviewed, none in Nigeria seemed to have done an in-depth research or used national savings as a proxy for financial intermediation where, if ever any had done so, their work did not cover up to 2020, a gap this work has attempted to fill. This work therefore, is aimed at finding out if money supply (M2), credit to private sector (CPS), gross national savings (GNS) and lending rate (LR) as tools for financial intermediation contribute to economic growth of the nation measured by the real gross domestic product growth rate (RGDPG) within the financial liberalization period 1986-2020. The study is divided into five sections. Section I is the introduction, section II review of related literature, section III is methodology, section IV analysis of data and discussion, section V is conclusion and recommendations.

REVIEW OF RELATED LITERATURE

Conceptual Review

Financial system has been described as diverse financial institutions operating in an orderly manner so as to guarantee the smooth flow of funds, the regulatory/ supervisory authorities with mandate to control the activities of the institutions, the financial market, its participants and instruments traded. In spite of the huge number of banks, which one would have expected to provide a considerable competition, there is wide spread between the deposit and lending rates in sub-Sahara Africa and other emerging markets (Feyen & Zuccardi, 2020). While Pagano (1993) opined that economic performance could be boosted through financial intermediation as efficiency of investments is improved, transaction cost is decreased and savings are either decreased or increased; Nzotta (2014) observed that, credit ceiling, interest rates, as well as sectoral allocation have shown to be useful ingredients that not only ensure the efficiency in resource allocation, but also innovative ideas in development institutions. Moreover, risk is usually mitigated by developed financial intermediaries through diversifying and sharing the risk between investors (Acemoglu & Zilibotti,1997).

Conversely, producers and investors find it too risky to increase productivity by specialization in countries which have inefficient financial markets.

2.1.1. Money Supply and Economic Growth

Money supply is all the currency and other liquid instruments in a country's economy on the date measured. Roughly the money supply in an economy includes both cash and near cash -deposits that can be used as easily as cash. Government issues paper currency and in some cases coins through some combination of their Central Bank and treasuries. The Central Bank regulates and thus influences money supply available to the public through the requirements placed on banks to hold reserves, make credit extension and other regulatory measures.
The position of Keynesians is that with expansionary monetary policy, the supply of funds available for loans through the banking system is increased, and this causes interest rates to fall. This will lead to a slip in interest rate, an increase in aggregate expenditures on investment and interest-sensitive consumption goods triggering a rise in real GDP. This signifies an indirect effect of monetary policy on real GDP.

Friedman (1968) however emphasized that money supply is a key factor that affects the well-being of the economy and went further and accepted the need for an effective monetary policy to stabilize the economy. Friedman kicked against regulating and altering money supply by monetary authorities and advocated for money supply to grow at a fixed rate in order to spur steady growth rate of the economy. Also, for the fact that money supply could be demanded for other purposes other than anticipated transaction, it could be held in different forms such as money, bonds, equities, physical goods and human capital with different as well as unique characteristics and yields, thereby enhancing aggregate money demand while spurring growth. In the long run however, expansionary monetary policy may lead to inflation and may not affect the level of real GDP.

2.1.2 Credit to Private Sector and Economic Growth

The financial resources (loans and advances, non-equity securities, trade credits, as well as other accounts receivable with a claim for repayment) provided to the private sector, is what is commonly referred to as the

private sector credit. Economic growth is the annual percentage increase in real GDP over a given period of time. There are different conception of economic growth and ways of measuring it, but the primary definition is in terms of growth in the long-run productive capacity of the economy, typically measured by real growth in Gross Domestic Product (GDP). Long term growth as posited by Krugman (1994) is driven primarily by productivity. In essence, the factors which determine productivity are those to determine economic growth in the long term. In this perspective, the drivers of economic growth which include access and ease to credit facilities, labour, level of technology, just naming a few, are factors which may either enhance the quality of outputs, or the efficiency with which inputs are converted into outputs.

This implies that a strong, vibrant, and inclusive financial system; availability as well as access to investable funds play vital roles in financing viable economic projects and activities that would spur economic growth as well as development. This is based on the precept that access to credit enhances the productive capacity of firms and improves on their potential to grow. According to Nzotta (2014), the net credit of the banking system to the private sector have an expansion any impact on the money supply and vice versa.

2.1.3 Bank Lending Rate

Interest rates serve various functions in an economy. First and foremost, interest is charged because of the productivity of capital. Interest rate serve as a return on financial assets and an incentive to savers, making them prefer to save rather than consume.

Also, the domestic interest rate together with the rate of return on foreign financial assets, expected charge in interest rates and expected inflation rates, determine the allocation of accumulated savings among domestic financial assets, foreign assets and goods that are hedged against inflation (Oresotu, 1992).

The relationship between bank lending rate and economic growth has been an issue of intense debate for many years and findings have been inconclusive.

However, the expectation has been that lending interest rate would encourage domestic savings thereby making loanable funds available, accessible, and obtainable in the banking institution. However, the criticism has centred around the structure of interest rate in Nigeria which is perceived as" tunnel-like" and capable of discouraging savings and retarding savings as opined by Ojo (1976). In addition to this, in making investment decisions, bank lending rate is expected to play an important role.

Therefore, economic policy makers, business-men, entrepreneurs in developing economies like Nigeria have as a matter of tradition focused on the need by banks to keep the lending interest rate low in order to encourage private domestic investors which in turn will bring about economic growth. A myriad of studies: Obamuyi and Olorunfemi (2011); Noula (2012) and a host of others found the link between bank lending rate and economic growth to be positive while others such as Guuseh and Oritsejafor (2007), William (2009) showed the link to be negative while Onwumere, Okorie, and Ibe (2012), Obute, Asor and Itodo (2012) reported no relationship h. It is as a result of these divergent view positive and negative on the relationship between bank lending rate and economic growth nexus that gave birth to Greenwood-Jovannovic hypothesis which predicts and inverted U-shaped relationship between bank lending rate and economic growth. This implies that bank lending rate may enhance economic growth at the early period, but, then tends to lower it when average investors/entrepreneurs continually exposed to and gain access to financial institutions.

Theoretically, lending rate has significant effect on economic growth and it favour investors when the lending rate is low and expected to foster economic growth.

2.1.4 Gross National Savings

Gross saving is disposable income less consumption usually calculated for each institutional sector and the total economy. The indicator is a basic economic indicator and it measures the level and extent of resources available for investment in capital assets. Savings could be vital to increase the amount of capital available, thus contributing to sustainable future economic growth.

The impact of national savings and economic growth cannot be down-played. To finance the investments required for proper economic growth, the country needs to generate sufficient savings or resort to borrowing. However, borrowing either internally or from abroad has some negative implications such as interest payments on the loans, effect on the balance of payments as well foreign exchange risks.

According to Gotera (2002), national savings is a preferred option for economic growth since it can provide the much desired domestic resources needed to fund the investment effort of a country.

Savings is that part of income that is not spent immediately nor consumed, but reserved for future consumption, investment or probably for unforeseen contingencies. It is considered a vital weapon for economic growth and its role is mirrored in capital formation through increased capital stock and the impact it creates on the capacity to generate more and higher income.

Researchers, Akinbobola and Ibrahim (2011) were of the opinion that higher savings lead to higher investment which in turn leads to higher economic growth (2011).

The Harrod-Domcar model proposed by postulates that Savings as a key determinant of economic growth depends on marginal propensity to save and capital output ratio (Harrod,1939; Domcar, 1946). The national

savings of a nation is the sum total of public savings and private savings and is equivalent to the income of a country after subtracting the government purchases and other expenditure.

The capital fundamentalists assume that increased savings stimulate economic growth through increased investment. This viewers supported by Harrod (1939) and Domar (1946) and Solow (1956) growth models.

It is believed that the people of less developed countries (LDC's) are incapable of high level of individual savings for reasons like; low level of per capital income, indulgence in luxurious and ostentations consumptions by the few who could afford to save.

It is widely agreed on the other side that countries that save more also tend to grow faster provided the financial system in deep white on the other handsome analysts fear that a rising savings rate could hamper economic recovery if consumer expenditures from a large component of aggregate is low. Low savings has been cited by some extant studies among the most serious constraints to economic growth; one of those studies is that of World Bank as cited in Ribaj and Mexhuani (2021) that concludes that on the average third World Countries with higher growth rate incidentally are those with higher savings rate. Thus, savings as an essential macroeconomic variable used to attain economic growth, has been a subject of critical consideration.

The expansionary measures introduced by the Nigerian government in the early 70s were aimed at increasing the liquidity in the economy in order to foster the growth of the economy. It is aimed that this will increase the disposable income of the people which is expected to be distributed over both savings and consumption. This is subsequently expected to elevate the level of investments thereby enhancing the growth of the economy (Akinbobola & Ibrahim, 2011).

To many nations and individuals, borrowing may pave way to greatness but to some (those unable to mange debt) it may lead to impoverishment and great sorrow. External debts have become one central problem in Nigeria. It has generated much public concern prior to 1980.

It is plausible that people would save more if saving institutions were nearer to them than if they were farther. As a result, a negative relationship is assumed to exist between population per bank branch and household financial savings.

2.2 Theoretical Framework

The theory of financial intermediation on which this study is anchored states that the development of intermediaries tends to lead to the development of the financial market: the development of the financial sector leads to the development of the economy. Benston and Smith Jr. (1976) and by Fama (1980) where among the first researchers who propounded this theory.

According to the theory intermediaries are said to be a "come together" of individual creditors/ debtors who exploit the scale economy at the level of transaction technologies. Transaction cost in this case includes the transfer costs for the amounts or of foreign exchange as well as those for research, evaluation and monitoring. Therefore, the role of financial intermediaries is to transform the characteristics (due date, liquidity, etc.) of assets - qualitative transformation of financial assets, offering liquidity and opportunities for diversification of placements. The theory is designed for institutions that take deposits or issue insurance policies and channel funds to firms for investment.

Banks have existed since ancient times, taking deposits from households and making loans to economic agents requiring capital. Thus, money in its dormant form or completely utilized for consumption does not contribute to economic growth. It is through financial intermediation, that savings are mobilized, and other variables highlighted in the study that make this theory relevant to the study. The economic agents invest the funds in productive economic agents invest the funds in productive economic activities which yield returns and thereby boost economic growth.

2.3 Empirical Review

Stephen and Obah (2017) analyzed the impact of National Savings on economic growth in Nigeria and covering the 1990-2015 using Ordinary Least Square method of analysis. The result showed that there was a positive and significant relationship between National Savings and Gross Domestic Product in Nigeria. The study thus recommended amongst others that Government should ensure an adequate macroeconomic policy that will open up the economy in order to encourage foreign direct investment inflow and make Nigeria an export platform, where export commodities could be manufactured for established international market; Strengthen Nigeria's term of trade and induce Savings.

Meanwhile Shittu (2012) in a country specific study employed a cointegration and error correction model approach to investigate the impact of financial intermediation on economic growth in Nigeria from 1970 to 2010 using the ratio of domestic credit to private sector (CPS)/nominal GDP and money supply (M2)/nominal GDP as measures of financial intermediation and real GDP represented economic growth. The results showed that broad money (M2) was more impactful on economic growth than credit to the private sector. Other findings indicated that the last ten decades of the study saw the highest level of loans to the private sector but yet had the worst

annual manufacturing growth rate.

Similarly, Agbada and Osuji (2013) examined the relationship between financial intermediation and output growth for the period 1981-2011. With multiple regression, the estimated the variables and the results indicated a positive and significant relationship between demand deposit and output, a linear and significant relationship between savings/time deposit and output thereby supporting theoretical postulation which says that savings and time deposit are primary sources of capital accumulation. However, loans and advances had a negative and insignificant relationship with output. The study concluded that the combined effect of the variables examined showed there was significant relationship between financial intermediation and economic growth in Nigeria.

Results of other empirical investigation of financial intermediation and growth in Nigeria though similar, vary in terms of methodology, study coverage as well as the exogenous variables. For instance, Adekunle, Salami and Adedipe (2013) worked on financial development and economic growth in Nigeria by examining the role which the banking system plays in fostering the economic wellbeing of Nigeria. The analysis was conducted using OLS and the results showed all the independent variables were not statistically significant. Further results revealed that real interest rate was negatively correlated to growth even though the overall variables explained 74 percent variation in the GDP.

A research by Yakubu and Affoi (2014) used ordinary least Squares regression to examine the contribution of the credit of commercial banks allocated to the private sector towards economic growth within the period 1992 to 2012. The results of the study showed that credit to the private sector, which is a proxy of financial intermediation, significantly and directly impacts the economy.

In a similar but separate study, Mamman and Hashim (2014) worked on bank lending and economic growth in Nigeria covering the period 1987 to 2012. The result of the OLS regression analysis revealed that bank-lending activities are impactful and have statistical relevance on economic growth.

Also, Adusei and Afrane (2013) investigated how financial intermediation relates to economic growth in 12 Credit Union (CU) countries from 1995-2011 by using the panel GMM estimation technique. The findings of the study revealed a significant positive influence of financial intermediation on economic growth.

Ono (2017) investigated the existence of both the short run and long run relationship between financial innovation and economic growth of Russia using Granger-causality test. The result showed reported that economic growth quickened financial development in the short run. However, in the long run, only bank lending has causal effect on economic growth.

Similar study was conducted by Jalil and Ma (2008) on Pakistan and China economy. It reported significant positive influence of financial development measured as loan-deposit ratio and credit to private sector on the economic development of Pakistan. Similarly, Nwaeze et al. (2014) conducted a study on the impact of financial intermediation on economic growth for periods 1992-2011 using an ex-post facto research design and showed that both total bank deposit and total bank credit exert a positive and significant impact on the economic growth.

The study by (Deidda, 2006) is quite informative and unique. It is a micro-based study and uses the inter-temporal approach to explain the theoretical rationale of the impact of financial intermediation on economic growth and assumes a transition between two periods. Period one is the period of financial autarky and period 2 is the period when financial intermediation is attained. Although this study was theoretical in nature, it made use of the General Equilibrium Analysis and the conclusion it drawn was that the growth effect of costly financial development is ambiguous when regime switch is associated with the adoption of more capital-intensive technology. However, there is no empirical work to this effect yet as per the reviewed extant studies.

Data and Methodology

The study adopted the *ex-post facto* research design based on secondary annual time series data from 1989 to 2020 collected from the central bank of Nigeria statistical bulletin for various issues. The study covered the period of 32 years (1989-2020). Stationarity of the data was determined by employing Augmented Dickey Fuller (ADF) unit root test. It is conventional to conduct cointegration test to find out if a long run relationship exists between the dependent and the independent variables. Since the unit root test showed that some of the variables were stationary at level and others at first difference, ARDL – bound testing cointegration technique was used to examine the long run relationship between the explanatory variables and the explained variable. This was followed by the ARDL coefficient estimation technique to establish the direction as well as magnitude of the effect of the explanatory variables on the explained variable. The Error Correction model was used to determine the speed of adjustment of short run distortion effect of the independent variables on the dependent variable to attain long run equilibrium.

Model Specification

Following the model specifications in John and Nwekemezie (2019), stated

RGDPGR = f (CPS, LR, MS),

This study expanded the equation above to accommodate another financial intermediation indicator, gross

national savings.
Thus, the model becomes:
RGDPGR = f(M2,CPS, GNS, LR) where
RGDPG is gross domestic product growth rate, M2 IS broad money supply, CPS is total savings, GNS is gross national savings, and LR is Lending rates.
The econometric ARDL model is presented thus:
$\Delta RGDPG_t = \beta_0 + \Sigma\, \beta_1 \Delta RGDPG_{t-i} + \Sigma\, \beta_2 \Delta M2_{t-i} + \Sigma\, \beta_3 \Delta CPS_{t-i} + \Sigma\, \beta_4 \Delta GNS_{t-i} + \Sigma\, \beta_5 \Delta LR_{t-i} + \mu_t$
$\beta_0 - \beta_5$= the reaction coefficients that evaluate the change in gross domestic product growth rate otherwise called

estimated coefficients, Δ = Difference operator, t-i,t-j,t-k, etc are unknown lags to be determined, μ = error term.

Empirical Results and Discussion
Result of Unit Root Tests
The result of the Augmented Dickey Fuller unit root tests to investigate the stationarity of the variables is presented in Table 1.
Table 1: Results of the Unit root tests
Null Hypothesis : Variable has a unit root

Variable	TEST CONDUCTED	Mackinonnon Critical Value at 5% probability level	Level Test Stat	Mackinonnon Critical Value at 5% probability level	1st Difference Test Stat	Order of Integration
RGDPG	ADF	-2.960411	-3.287035	-	--	I(0)
M2	ADF	-2.960411	--0.685731	-2.963972	-5.454751	I(1)
CPS	ADF	-2.960411	-0.815237	-2.967767	-4.645745	I(1)
GNS	ADF	--2.960411	-1.986649	-2.963972	-6.056809	I(1)
LR	ADF	-2.960411	-3.210630	-	-	I(0)

Source: Eviews 10.0 Output extract on Excel

Augmented Dickey Fuller tests indicate that while Real gross domestic product growth rate (RGDPG) and lending rate (LR) were stationary at level (I(0), money supply M2(%GDP), credit to private sector-PSC(%GDP), and gross national savings-GNS(%GDP) were stationary at first difference I(1). This implies that the variables are stationary at the order of integration stated above and at 5% level of significance.

Distribution of Residuals
In order to further ascertain that data for the study was good enough for analysis, the study investigated if the errors of the regression were normally distributed. This stems from the fact that to make a generalization of the findings based on the model, the residual normality test should be able to tell that the errors are normally distributed. The Jarque-Bera Normality test which requires that for a series to be normally distributed, the histogram should be Bell-shaped was used. The result of the test is presented in Figure 1.

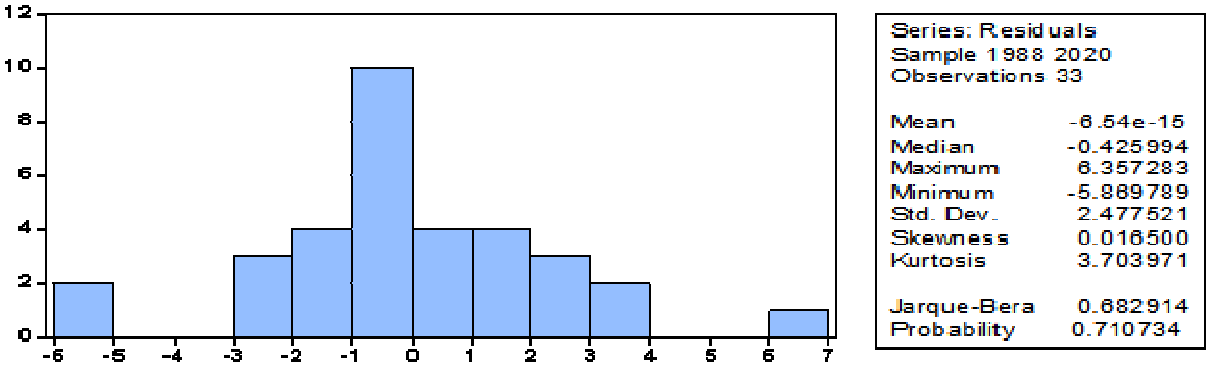

Figure 1 Result of normality Test
Source: Output from Eviews 10.0

From the figure it can be seen that the data distribution follows a bell shape as required. The null hypothesis for Jarque- Bera test is

H_0: Data follow a normal distribution at .05 level of significance. From Figure 1, it can be seen that the P-value of Jarque-bera is 0.710734, which is greater than 0.05. The Null hypothesis of normal distribution can therefore not be rejected. Thus, the data for the study is normally distributed therefore fit for further analysis and

findings of the study can be generalized.

Test for Serial

The study equally tested for the presence of serial correlation using Breusch-Godfrey Serial Correlation LM Test presented in Table 2. Serial correlation is a statistical term used to describe the situation where the residual is correlated with lagged values of itself which is not desirable. This study adopted Breusch Godfrey Serial Correlation LM Test to test for the presence of serial correlation on the residuals. The null hypothesis for Breusch-Godfrey Serial Correlation LM Test is:

H0: There is no serial correlation among the variables in the model.

The probability of F-statistic of 0.2819 (28.19%) is greater than .05 (5%) implying that the null hypothesis cannot be rejected. There is no serial correlation between the data used for the study.

Table 2: Breusch-Godfrey Serial Correlation LM Test:

Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	1.354379	Prob. F(2,19)	0.2819
Obs*R-squared	4.117647	Prob. Chi-Square(2)	0.1276

Authors

Test for Heteroscedasticity

The term Heteroscedasticity is used to describe the situation when the variance of the residuals from a model is not constant. The study employed Breusch-Pegan-Godfrey test (B-P-G Test) to test for the presence of Heteroscedasticity. The test result is presented in Table 3.

Table 3: Heteroscedasticity Test: Breusch-Pagan-Godfrey

F-statistic	0.758847	Prob. F(11,21)	0.6745
Obs*R-squared	9.386257	Prob. Chi-Square(11)	0.5863
Scaled explained SS	5.138960	Prob. Chi-Square(11)	0.9243

Source: Authors

Table 3 reports a p-value of 0.6745 (67.45%) which is more than 5 per cent (p>0.05). This implies that null hypothesis of homoscedasticity cannot be rejected. It is an indication that the residuals have constant variance which is what is desired.

As procedure demands, the study selected the appropriate model for analysis using akaike info criterion (AIC). ARDL(1, 2, 0, 2, 2) model was selected as presented in table 4.

Table 4: ARDL (1,2,0,2,2) Model Selected

Selected Model: ARDL(1, 2, 0, 2, 2)

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
RGDPG(-1)	0.110052	0.180068	0.611172	0.5476
M2	-0.040511	0.481418	-0.084149	0.9337
M2(-1)	1.353700	0.580107	2.333537	0.0296
M2(-2)	0.608689	0.507944	1.198339	0.2441
PSC	-1.073956	0.415757	-2.583132	0.0173
GNS	0.253342	0.310773	0.815198	0.4241
GNS(-1)	-0.128308	0.276596	-0.463884	0.6475
GNS(-2)	-0.509022	0.275403	-1.848281	0.0787
LR	-0.083649	0.158375	-0.528171	0.6029
LR(-1)	-0.339656	0.172759	-1.966070	0.0626
LR(-2)	-0.519473	0.173785	-2.989164	0.0070
C	14.21399	4.974795	2.857201	0.0094
R-squared	0.618363	Mean dependent var		4.359697
Adjusted R-squared	0.418458	S.D. dependent var		4.010441
S.E. of regression	3.058318	AIC		5.348895
Sum squared resid	196.4195	Schwarz criterion		5.893080
Log likelihood	-76.25677	Hannan-Quinn riter.		5.531997
F-statistic	3.093284	Durbin-Watson stat		2.260750
Prob(F-statistic)	0.012591			

Source: Output from Eviews 10.0

The selected model displays the short run effect of the explanatory variables on real GDP growth. From the

results of the selected ARDL(1, 2, 0, 2, 2) regression model, we may note that the variables lagged one period, namely RGDPG(-1), M2(-1), M2(-2), and lagged two period, namely GNS(-1), GNS(-2), LR(-1), and LR(-2) were selected as additional variables in estimating the ARDL model.

From the selected model, the long run equilibrium effect was established as presented in Table 5.

Table 5: ARDL Long Run Form and Bounds Test

ARDL Long Run Form and Bounds Test
Dependent Variable: D(RGDPG)
Selected Model: ARDL(1, 2, 0, 2, 2)
Case 2: Restricted Constant and No Trend
Date: 09/13/21 Time: 00:31
Sample: 1986 2020
Included observations: 33

Levels Equation
Case 2: Restricted Constant and No Trend

Variable	Coefficient	Std. Error	t-Statistic	Prob.
M2	2.159541	0.739235	2.921319	0.0082
PSC	-1.206763	0.430582	-2.802630	0.0107
GNS	-0.431473	0.504529	-0.855199	0.4021
LR	-1.059363	0.285142	-3.715212	0.0013
C	15.97171	5.685680	2.809111	0.0105

EC = RGDPG - (2.1595*M2 -1.2068*PSC -0.4315*GNS -1.0594*LR + 15.9717)

F-Bounds Test — Null Hypothesis: No levels relationship

Test Statistic	Value	Signif.	I(0)	I(1)
			Asymptotic: n=1000	
F-statistic	4.819556	10%	2.2	3.09
K	4	5%	2.56	3.49
		2.5%	2.88	3.87
		1%	3.29	4.37
			Finite Sample:	
Actual Sample Size	33		n=35	

Source: Output from Eviews 10.0

The last section of Table 5 is the ARDL bound test to determine if there is cointegration between financial intermediation variables and the RGDP growth in the long run. The robustness of the ARDL cointegration bound test has been affirmed by many studies in establishing if a long run relationship exists between the dependent variable and the independent variables in the econometric model. It is known to be superior to Engel- Grange, and Johansen cointegration techniques and employed in situations of mixed order integration (Pesaran and Shin, 1999; Pesaran et al. 2001). Its superiority is known to lie in its flexibility as it can be used with I(0) or I(1) variables, or both, works well with small sample data, and provides unbiased estimation of long run relationship and long run parameters. By Distributed Lag (DL) variables we imply lagged values of observed exogenous predictor variables while Autoregressive (AR) variables are lagged values of observed endogenous response variables. Two sets of critical values were given by Pesaran and Pesaran (1996a), and Pesaran et al. (2001) in the bound test. These include a set for the lower bound I(0) values presuming that all the variables are I(0) and the other for the upper bound I(1) values presuming that all the variables are I(1). The variables in the model are said to be cointegrated if the F-statistic is greater than the upper bound values. The F-statistic of 4.81 in the last section of Table 5 above is greater than the upper bound value of 3.49 at 5% level of significance. This implies that there exists a long run relationship between the financial intermediation variables employed in the study and

the real gross domestic product growth rate. The middle section of Table three gives the long run effect of financial intermediation variables on the real GDP growth rate. Meanwhile, the fact that all the variables did not integrate at level implies that in the short run, there are errors. The ARDL error correction model presented in Table 64 was used to measure the speed at which short run fluctuations are corrected before equilibrium is attained in the long run.

Table 6: ARDL Error Correction Regression

ARDL Error Correction Regression
Dependent Variable: D(RGDPG)
Selected Model: ARDL(1, 2, 0, 2, 2)
Case 2: Restricted Constant and No Trend
Date: 09/13/21 Time: 00:50
Sample: 1986 2020
Included observations: 33

ECM Regression
Case 2: Restricted Constant and No Trend

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(M2)	-0.040511	0.363767	-0.111365	0.9124
D(M2(-1))	-0.608689	0.360540	-1.688271	0.1062
D(GNS)	0.253342	0.195760	1.294142	0.2097
D(GNS(-1))	0.509022	0.208038	2.446771	0.0233
D(LR)	-0.083649	0.118781	-0.704224	0.4890
D(LR(-1))	0.519473	0.135196	3.842369	0.0009
CointEq(-1)*	-0.889948	0.148733	-5.983512	0.0000
R-squared	0.682528	Mean dependent var		-0.151212
Adjusted R-squared	0.609266	S.D. dependent var		4.397086
S.E. of regression	2.748563	Akaike info criterion		5.045865
Sum squared resid	196.4195	Schwarz criterion		5.363306
Log likelihood	-76.25677	Hannan-Quinn criter.		5.152674
Durbin-Watson stat	2.260750			

Source: Output from Eviews 10.0

Discussion of Results

The selected ARDL (1,2,0, 2,2) model (Table 2) shows R-squared and adjusted R-squared of 0.618 and 0.418 respectively. This is an indication that money supply, private sector credit. Gross national savings, and lending rate are responsible for 41.8% of the changes in the real GDP growth rate and 58.2% of the changes caused by other factors not represented in the model. The F-statistic of 3.09 and its corresponding probability of 0.012591 imply that the financial intermediation variables in the study have a joint effect on real GDP growth and the effect is significant**.**

The CointEq(-1)* in Table 6 which is the equivalence of the coefficient of the ECM is significant and has the right sign. It's value of -.89 showed that the short run distortion of the independent variables are corrected at the rate of 89% per period- which is one year since the study is worked with annual data.

The results in the short run in Table 4 reveal that one period lag of M2, CPS, and two periods lagged value of LR(-2) with coefficients of 1.353700, -1.073956, and -0.519473, with Pvalues of 0.0296, 0.0173, and 0.0070 respectively are the only variables which have a significant effect on economic growth in the short run. However, while the effect of M2(-1) is positive, the rest of the variables with significant effect are negative. The other variables have no significant effect on economic growth in the short run based on their P-values which are all greater than .05.

In the Long run, the ARDL coefficient estimation in Table 5 showed surprisingly that only money supply has a positive effect on real gross domestic product growth rate, while the rest of the variables in the model, namely, credit to private sector, gross national savings, and lending rate respectively have an inverse effect on the real gross domesic product growth rate. Specifically, the coefficient of money supply, M2, of 2.159541 and

p-value of 0.0082 shows that the effect of money supply on real GDP growth is positive and significant, and that a 1unit increase in money supply will lead to a 2.2 unit increase in economic growth. The result is consistent with the result obtained by Shittu (2012) that broad money supply exerted significant positive impact on the economy. It thus implies that when there is more money

Logic demands that an increase in money supply would invariably bring about an increase in liquidity in the economy and subsequently leading to an increase in the purchasing power of the Nigerian citizens. There are two things that actually happen that we expect should trigger a positive relationship between money supply and stock market returns. First, more money is available for consumption, and secondly, for investment. Whether the money is consumed or invested, this will contribute to the total output of goods and services which seem to be the case in Nigeria as predicted by the study. However, the results contradict Adu, Marbuh and Mensah's (2013) that concluded that GDP of Ghana was negatively affected by money supply. The result also showed an inverse and significant effect of credit to private sector (CPS) as well as lending rate (LR) respectively on economic growth in Nigeria. Specifically, an increase of CPS by 1 unit would lead to a decrease of economic growth by 1.2 units. This result is inconsistent with Jalil and Ma (2008) result which

showed a significant positive influence of credit to private sector on the economies of Pakistan and China, but consistent with Okafor (2018) which showed similar result in Nigeria. The negative impact of credit to private sector on economic growth depicts flawed financial intermediation process through lending in Nigeria. This together with the negative though insignificant effect of gross national savings may be implying that credit channeled to the private sector is mostly diverted for uses which are not productive such as buying and selling, insider abuses by banks and sponsoring unfeasible projects of friends and relatives of bankers.

Also, a 1 unit increase in the lending rate will lead to 1.06 units decrease in economic growth which is as expected. Only few determined and desperate borrowers will continue to

Borrow when interest continues to rise. However, with lower interest rate, aggregate expenditures on investment and interest-sensitive consumption goods are expected to increase, causing real GDP to rise. This result however, contradicts Okafor's (2018) that showed a positive effect of lending rate on economic growth in Nigeria.

Conclusion

It is clear from the analysis that financial intermediation has a significant effect on economic growth in Nigeria both in the short run and in the long run and the effect is largely an inverse one as three of the explanatory variables studied namely credit to private sector, gross national savings, and lending rate indicated. The positive effect of money supply on economic growth is indicative of the fact that when more money is available for consumption, and secondly, for investment it will contribute to the total output of goods and services hence economic growth especially when well channeled. More money will cause interest rates to fall leading to consumption of more interest sensitive goods resulting to increase in the real GDP. The study recommends policies that will enhance discipline in the banking sector and ensure proper channeling of funds for productive uses, proper follow-up and supervision of financed project to make sure the funds are not diverted from intended purposes and are not also dished out to relatives and friends of bank authorities who have no proof of a pending buoyant project. This will curb to an extent the rate of misdirection of funds and encourage proper channeling of funds and overturn the negative effect of credit to private sector on economic growth.

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