



## IMPACT OF FINANCIAL DEVELOPMENT ON ECONOMIC GROWTH IN NIGERIA

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### ABSTRACT

*This study assessed the impact of financial development on economic growth in Nigeria using time series data spanning from 1981 to 2021. The ex-post facto research design was adopted and the data used were sourced from the World Bank Development Indicator database. The data were analysed using Autoregressive Distributed Lag Model (ARDL) bounds co-integration approach. The long-run result shows that financial development contributes positively to economic growth in Nigeria for the period under review while inflation and unemployment impact negatively on economic growth. In the short-run, broad money supply contributes negatively to economic growth in Nigeria. The estimated model passed all the diagnostic tests including structural stability. The study recommended proper monitoring of the financial system, ensure both financial and market stability to encourage investors, government should diversify the economy so that they can have multiple sources of revenue through improving the real sector.*

**Keywords:** Financial Development; ARDL; Economic Growth; Nigeria

### Introduction

It is believed that economic growth cannot be possible without the combined role of investment, labour and financial development. The role of money and finance in economic growth has been examined by economists from different dimensions and with varying degrees of emphasis. As further noted by (Ndebbio, 2014), he stressed the role of financial intermediation by both banks and non-banks in the saving--investment process, where money, whether defined narrowly (M1) or broadly (M2), forms part of a wide spectrum of financial assets in the portfolio of wealth holders. Thus, a well-developed financial system engenders technological innovation and economic growth through the provision of financial services and resources to entrepreneurs who have the highest probability of implementing innovative products and processes (Schumpeter, 1911, cited in Oriavwote and Eshienake, 2014). Long term capital is deemed crucial for economic development as evidenced by the positive relationship between long term capital and economic growth (Demirguc & Levine, 2016). The Nigerian financial sector, like those of many other less developed countries, is highly regulated leading to financial disintermediation which retarded the growth of the economy (Adekunle, Salami & Adedipe, 2013).

They also argued that the link between the financial sector and the growth of the economy has been weak, stressing that the real sector of the economy, most especially the high priority sectors which are also said to be the economic growth drivers are not effectively and efficiently serviced by the financial sector. As further revealed in Adekunle et al, (2013), the banks are declaring billions of profits but yet the real sector continues to weaken, thereby reducing the productivity level of the economy.

Consequently, a good number of studies have attempted the study of the relationship between financial development and economic growth. However, these studies continued to produce conflicting results, thus making the topic a great research burden. Studies like Imoagwu and Ezeanyeji (2019) opined that financial development drives economic growth, others like Adeniyi, Oyinlola, Omisakin and Festus (2015) said that financial development has negative effect on growth in Nigeria. However, there are studies, which have argued that a bi-directional causality exists between financial development and economic growth with many of these studies applying causality test and error correction mechanism (Olayungbo & Quadri, 2021). This lack of consensus on the nature and the direction of the relationship between financial development and economic growth lend credence to the relevance of this study.

The relationship between financial development and economic growth is a long-debated issue in economics. The main theoretical arguments for linking financial development to growth is that a well-developed financial system performs several critical functions in economy to enhance the efficiency of intermediation by reducing information, transaction, and monitoring costs. According to Mauzu & Alagidede (2018), a modern financial system promotes investment by identifying and funding good business opportunities, mobilizes savings, monitors the performance of managers, enables the trading, hedging, and diversification of risk, and facilitates the exchange of goods and services. These functions result in a more efficient allocation of resources, in a more rapid accumulation of physical and human capital, and in faster technological progress, which in turn feed economic growth.

For Nigeria, studying the relationship between financial development and economic growth is a vital one considering the continuing progress in its financial sector performance. According to the central bank of Nigeria statistical bulletin 2014, the depth of the financial sector showed some significant improvements as broad money supply to nominal GDP ratio increased from 19.3% in 2011 to 19.9% in 2014. The banking sector also showed stronger capacity to finance real sector activities with substantial credit flow to the core private sector as CP/GDP ratio increased from 16.9% in 2011 to 19.2% in 2014. In addition, the increased use of the various electronic money products reflected the shift away from cash transactions and thus an improvement in the efficiency of funds intermediation. Consequently, the ratio of currency outside banks to broad money supply fell further to 7.59 per cent in 2014 from 9.39 percent at the end of 2011.

Despite these improvements the Nigeria's economic growth has been dwindling and has still remained fragile, not strong enough to significantly reduce the prevailing level of poverty even though the various indicators used in measuring financial development has been increasing steadily over the years. Although it is common to consider cross-country regression to judge the growth effects of financial development, it is also important to study individual-country evidence at least at a simple level to see whether higher levels of financial development are significantly and robustly correlated with faster rates of economic growth, physical capital accumulation and economic efficiency improvements.

The work of Ndebbio (2014) specifically was based on a cross country regression approach and generally as stated earlier there has been a growing concern about cross country empirical approach and its use for causal inference in particular. The studies based on cross country suffer from potential biases induced by simultaneity, omitted variables and unobserved country specific effect on the finance – growth nexus. This was acknowledged by Levine (2017).

It is widely acknowledged that financial development is a multidimensional concept and constitutes a potentially important mechanism for long run economic growth. It plays fundamental roles in the development and growth of the economy. The effectiveness and efficiency in performing these roles, particularly the intermediation between the surplus and deficit units of the economy, depend largely on the level of development of the financial system. A well-developed financial system enhances investment by identifying and funding good business opportunities, mobilizes savings, enables trading, hedges and diversifies risks, and facilitates the exchange of goods and services, thereby resulting to increase in the growth of economic activities in the country (Chowdhury, 2016).

These functions result in a more efficient allocation of resources, rapid accumulation of physical and human capital, and faster technological progress, which in turn results in economic growth (Adelakun, 2011). Therefore, to achieve a smoothly operating economic system and sustainable growth, a well-functioning financial system is necessary. Though, the financial sector on its own cannot determine economic growth, it plays a pivotal role in stimulating industrial as well as economic development. It also provides reliable and accessible information that lower transaction costs which in turn strengthen resource allocation and economic growth (World Bank, 2020).

According to Sobiech (2015), financial institutions channel resources from surplus economic units to deficit units for investment purposes. This consists of the provision of loans and advances to the private and public sectors for the growth of domestic output and promotion of the export trade, agricultural production and provision of infrastructure. The success of the financial system all over the world in providing its developmental roles has been predicated on the initiation of financial sector reforms such as the introduction

of market-based procedures for monetary control, the promotion of competition in the financial sector, and the relaxation of restrictions on capital flows. The aim of initiating these reforms is to create a more efficient and stable system, which will facilitate optimum performance in the economy. This means providing a foundation for implementing effective stabilization policies and successfully mobilizing capital and putting it to effective use, will lead to achieving higher rates of economic growth.

According to Dandume (2014) many countries have experienced successful financial sector reforms which have been accompanied by improvements in economic growth and efficiency of the financial system, while other countries have faced financial crises and disruptions to economic growth. Given the financial crisis experienced since 1986, many emerging economies, including Nigeria, embraced financial sector reforms. In the early seventies in Nigeria, as a result of the prevailing economic paradigm at that period, the sector was highly regulated with government holding major shares in most of the banks. For instance, in 1986, the liberalization of the banking industry was a major component of the Structural Adjustment Programme (SAP) which government put in place to drive the economy from austerity measure to prosperity measures.

In 2014, consolidation exercise in banking sector played a role in the National Economic Empowerment and Development Strategy (NEEDS) which was used to drive the economic agenda of the ruling government then. The purpose of creating reforms is to create a more efficient and stable system which will facilitate optimum performance in the economy. This provides foundation for implementing effective stabilization policies and successfully mobilizing capital and putting it to effective use, thus, leading to the achievement of higher rate of economic growth. However, the Nigeria's financial system is not effectively providing its development roles as such and is currently not in a position to fulfill its potential as a propeller of economic growth and development (Yang & Chang, 2020).

The formal financial system is -relatively shallow and a relatively low level of credit to the private sector prevail. A parallel World Bank review of financing for Rural Micro and Small-Scale Enterprises has also revealed that the absence of efficiently operating rural financial markets in Nigeria has become a serious constraint on sustainable rural development. Both the formal and informal financial sectors in Nigeria are not currently in a position to effectively support a strong expansion of the real sector and maximize their contribution to economic growth and development. Besides, in spite of the reforms, Nigeria's major productive sectors have considerably shrunk in size since 1980s.

As noted by Akintola, Oji-Okoro and Itodo (2020), poverty is also becoming entrenched in Nigeria with the threat that the children of the poor are also likely to end up poor. Income distribution is so skewed that the country is one of the most unequal societies in the world, with 50% of the population having only 8% of the national income which runs contrary to the aim of financial sector development. Studying the relationship between financial development and economic growth is critical for Nigeria, considering the fact that it is a country whose financial industry has witnessed many reforms in a relatively short time. The Central Bank of

Nigeria has been trying to ensure that the financial sector plays its role in the achievement of growth and development in Nigeria through several reforms implemented. The reformation exercise led to the increase in the minimum capital requirements for the commercial banks, and micro-finance banks respectively, this brings to bear the existence of twenty-five commercial banks.

In the post consolidation era, there are fewer banks now with improved minimum capital requirement of N25 billion each, but unfortunately, the fear of systemic risk lingers, the supply of credit to investors is still questionable, while economic growth relatively stable. Therefore, this study intends to assess the impact of financial development on the economic growth of Nigeria between 1981-2021. The low capital base, dominance of a few banks, over-dependence on public sector deposits and weak corporate governance among others have necessitated banking reforms in the last few years in Nigeria with the major objectives of ensuring price stability and facilitate rapid economic development (CBN, 2017).

As part of the reform agenda, the Central Bank of Nigeria (CBN) mandated all licensed banks to increase the minimum paid up capital from N2 billion to N25 billion with effect from January 1, 2006. The consolidation exercise that resulted from the pronouncement brought the number of banks to 24 groups of banks in 2006 (Balago, 2014). In spite of these reforms however, the Nigerian financial sectors are thin, and experience difficulty in mobilising domestic savings, attracting foreign private capital when compared to other developing countries like Taiwan, Malaysia, Singapore to mention just a few. In fact, the financial sectors are mostly uncompetitive while credit allocation often subject to government intervention. However, most economists argue that growth depends on financial sector development.

Large body of literature, both empirical and theoretical, which has examined this issue, still remains inconclusive. While some studies find that financial institutions development has been instrumental in accelerating economic growth, others have suggested that it has not been very significant. According to Obinna (2015), there exist a causal association between finance and economic growth and argues that well developed capital markets, especially those imbued with rights that protect investors, promote the efficient allocation of capital to projects with high rates of return, in turn stimulating savings, investments and economic growth. Evidence from both single country and cross-country studies suggest that economies with more developed financial markets begin to grow earlier, attain higher growth rates, and achieve higher levels of per capita income than economies with less developed financial markets (Demirguc-Kurt & Levine, 2016). The relationship between financial sector development and economic growth in Nigeria will therefore have to be empirically determined which is the concern of this study.

The objective of this study is to assess the impact of financial development on economic growth in Nigeria between 1981 and 2021.

## **2.0 Literature Review**

### **2.1 Conceptual Issues**

Financial Development is the increase in the provision of financial services with a wider choice of such services which is made available to all categories of people in all societies. It is the macro effect of financial services on the macro or larger economy which play a major role of reducing risk and vulnerability of the disadvantaged individuals and groups and increasing their ability to access basic services such as health, education and other services thereby alleviating poverty (Bang, Mitra & Wunnava,2015). It is the ability of financial institution to mobilize surplus income in the economy and channel them to productive investment purposes which provides platform for the creation of diversified financial claims, financial development also entails active participation in the financial market by supplying active financial instruments and services.

Economic Growth is a sustained annual increase in an economy's real national income over a long period of time. This is a rising trend of net national product at constant prices and may not have positive impact on the economy, it is just a mere increase accompanied by population increase more than the increase in national income Ahuja (2016). Secondly, economic growth is "annual increase in real per capita income of a country over a long period". This definition affects the standard of living of the people positively. Jhingan (2002) asserted that economic growth refers to the increase over time of a country's economic capacity to produce those goods and services needed to improve the well-being of the citizens

### **2.2 Relationship between Financial Development and Economic Growth**

Authors have used different econometric approaches to analyse the effect of financial intermediary development on economic growth. According to Tchamyou and Asongu (2017), financial institutions channel resources from surplus economic units to deficit units for investment purposes. This consists of the provision of loans and advances to the private and public sectors for the purpose of the growth of domestic output and promotion of the export trade, agricultural production and provision of infrastructure. In a study of ten developing countries by Christopoulos and Tsionas (2014) they found long term Granger causality from finance to economic growth, but not of reverse causality.

### **2.3 Theoretical Framework**

The theoretical framework of this study is based on the Bank –based View. This theory was formulated by Gerschenkron in the year 1962 which emphasized the positive role of banks in development and growth. It states that bank can finance development more effectively in developing economies which can also help in reducing market failures and allocate savings strategically especially where institutional background is weak to support market activities. Banks can acquire information and mobilize capital to exploit economies of scale.

## 2.4 Empirical Literature

Large numbers of empirical investigations have been carried out aimed at testing the conflicting theoretical developments in the finance- growth nexus using different techniques. While some studies look at the relationship between the two, a large number of studies are concerned with the question first asked by Patrick (2016) as to what direction does causality between finance and growth run, others in a similar vein deal specifically with stock market indicators.

Mtar and Belazreg (2023) investigated four-ways nexus among innovation, trade openness, financial development and economic growth in 11 European countries from 2001 to 2016 using panel VAR. The study revealed that there is a unidirectional relationship between economic growth and financial development, between trade and economic growth and between innovation and financial development. It also revealed negative relationship between innovation and economic growth, trade and economic growth.

Imoagwu and Ezeanyejii (2019) investigated the relationship between financial development and economic growth in Nigeria using Cointegration and Toda-Yamamoto causality test during the period of 1986 to 2017. The result indicated that financial development has positive relationship with economic growth in the short run, negatively significant in the long run. The ratio of domestic credit to private sector to GDP has positive significant impact on economic growth in the long run but not in the short run.

Iheanacho (2016) carried out a study on the impact of financial development on economic growth in Nigeria using Autoregressive Distributed Lag Model for the period spanning from 1981 to 2011. The result indicated that the relationship is negatively insignificant in the long run but negatively significant in the short run. Osuji (2016) examined the relationship between financial development and economic growth in Nigeria for the period 1960 to 2015 using dynamic series model and granger causality tests. The study found that financial development increases economic growth and bi-directional causal relationship exist among the two variables.

Taofeek and Olumuyiwa (2016) investigated the nexus between financial development and inclusive growth using quartile regression-based threshold for the period of 1980 to 2013, and found that previous threshold determines the impact of financial development. The study revealed that openness and investment in capital are essential conditions for inclusive growth in Nigeria.

Adeniyi et al. (2015) investigated the relationship between financial development in Nigeria using threshold modeling and for the period of 1960 to 2015. The result indicated that financial development does not lead to economic growth in Nigeria. Yusof and Rafinndadi (2015) examined the impact of financial development on economic growth in Nigeria from 1980 to 2011 using Autoregressive Distributed Lag Model Bound test. The study found that financial development and population contribute to economic growth in both long and short run while M2(broad money supply), bank asset, and private sector credit contribute negatively to

economic growth. Using IMF data and various financial indicators for roughly 80 countries over the 1960-1989 period, King and Levine (2013, a, b) concluded that there is a positive relationship between financial indicators and growth and that financial development is robustly correlated with subsequent rates of growth, capital accumulation and economic efficiency. The authors emphasized those policies that alter efficiency of financial intermediation exact a first order influence on growth.

Applying granger causality model to investigate the causal relationship between real and financial sector growth in Nigeria for the period of 1990 to 2014, Aigbokan (2015) found evidence that largely supports the supply leading hypothesis that financial development induces real growth. Odedokun (2016) analysed a sample of 71 developing countries using dynamic panel modeling, and found strong evidence in favour of the finance causes growth hypothesis. The study concluded that financial intermediation promotes economic growth in roughly 85 per cent of the countries studied. The study also observed that the growth-promoting effects of financial intermediation were primarily in low- income countries.

Christopoulos and Tsionas (2014), using panel unit root test and panel co integration analysis to examine the relationship between financial development and economic growth in ten developing countries found strong evidence in favour of the hypothesis that long-run causality runs from financial development to growth. The study found no evidence of bi-directional causality. Furthermore, they found a unique cointegrating vector between growth and financial development and emphasized the long-run nature of the relationship between finance and growth. Dimitris (2014) investigated the long-run relationship between financial depth and economic growth, using panel data, unit root tests and co-integration and OLS techniques of analysis. The results showed that there is no single equilibrium relation between financial depth, growth and auxiliary variables and that causality runs only from financial depth to economic growth.

Adenkule, Salami and Adedipe (2013) found evidence that there is no significant relationship between financial development and economic growth in Nigeria using the ordinary least square (OLS) method thus concludes that the link between financial and real sector still remains weak and could not propel the needed growth towards vision 2020. Using the co integration and Error Correction Mechanism. Eriemo (2014) examined financial sector development and Nigeria's performance in the Global system between 1980 and 2010 using OLS method. The result of the study showed the increasing global relevance of liquidity ratio, money supply bank loans and interest rate in financial sector development policy making in Nigeria.

Ndebbio (2014) studied the relationship between financial deepening and economic growth and development using selected sub-Saharan African countries for one decade (from 1980-1990). The study used M2/GDP and growth rate of per capita real money balances to represent financial deepening and other control variables which affect economic growth, such as the rate of inflation, human capital and the growth rate of labour, as explanatory variables as against real per capita GDP which is the dependent variable. The regression results showed that financial deepening positively affects per capita growth of output in these



selected SSA countries, even though the parameter estimate of the variable of financial deepening was insignificant in one of the equations which was attributed to the shallow finance and the absence of well-functioning capital market in most SSA countries. Another study examined financial sector development and economic growth in Nigeria from 1991 to 2012 using the OLS was conducted by Nnanna (2014). Findings showed that financial sector development did not significantly affect per capita growth of output. This study aims at determining the impact of financial development in Nigeria from 1981 to 2021 during which a lot of policy changes took place in the financial sector using Private sector Credit as a proxy for financial development.

### **3. Methodology**

#### **3.1 Sources of Data**

For the purpose of this study, a secondary source of data is used. An autoregressive distributed lagged modeling technique was employed to study time series data over a forty -year period from 1981-2021. Data on inflation, unemployment and interest are expressed in percentages while data on real gross domestic product per capita is expressed in value. All data were extracted from the World Bank Development Indicators Report except data on unemployment rate which was extracted from National Bureau of Statistics (2022).

#### **3.2 The Model Specification and method of data analysis**

ARDL was used in testing for variables. The Autoregressive Distributed Lagged (ARDL) model enables the dependent variable to be explained by the independent variables and their lags; and also, its own lag. Inflation was measured as the annual percentage change in the cost to the average consumer of acquiring a basket of goods and services that may be fixed or changed at specified intervals, such as yearly. The unemployment rate was measured as the percentage of the active labour force that was willing to work and looking for a job but without a job to total active labour force in the population. Interest rate was measured as the lending bank rate that usually meets the short-term and medium-term financing needs of the private sector. Real gross domestic products as gross domestic products at purchaser's prices, which is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources. Data is in constant local currency. The required ARDL model, pre-estimation and post-estimation diagnostics techniques were necessary for taking decisions and arriving at a satisfactory conclusion.

Autoregressive Distributed Lag Model (ARDL) model plays a key role when faced with making vital economic decisions from past data. Change in economic variables may bring change in other economic variables beyond the time (Schneider, 2019). This is termed as changes distributed over future periods. This is a model containing the lagged values of the dependent variable, the current and lagged values of the

regressors as explanatory variables. The ARDL model uses a combination of endogenous and exogenous variables. It is often necessary for stationary (unit root) test to be conducted to ascertain that no variable is integrated of order 2 that is  $I(2)$ . The ARDL model can be specified if the variables are integrated of different orders. That is, a model having a combination of variables with  $I(0)$  i.e., level stationary variables and  $I(1)$  i.e., 1st difference stationary variables order of integration (Uko, 2017). ARDL model can also be used if all the variables are integrated of order one i.e., stationary after first difference  $I(1)$ . The general model of the ARDL ( $p, q$ ) is as follows:

$$y_t = \varphi + \sum_{i=0}^p \alpha_i y_{t-i} + \sum_{i=0}^q \beta_i x_{t-i} + \varepsilon_t \tag{1}$$

or broken down as

$$y_t = \varphi + \alpha_1 y_{t-1} + \dots + \alpha_p y_{t-p} + \beta_0 x_t + \beta_1 x_{t-1} + \beta_2 x_{t-2} + \dots + \beta_q x_{t-q} + \varepsilon_t \tag{2}$$

The enhanced ARDL Model is thus;

$$\begin{aligned} \Delta GDP_t &= \beta_0 + \sum \lambda_1 \Delta(GDP)_{t-i} + \sum \lambda_2 \Delta\left(\frac{PSC}{GDP}\right)_{t-i} + \sum \lambda_3 \Delta(INF)_{t-i} + \sum \lambda_4 \Delta(INT)_{t-i} + \sum \lambda_5 \Delta(MSP)_{t-i} \\ &+ \sum \lambda_6 \Delta(UNEM)_{t-i} + \beta_1 (PSC/GDP)_{t-1} + \beta_2 (INF)_{t-1} + \beta_3 (INT)_{t-1} + \beta_4 (MSP)_{t-1} \\ &+ \beta_5 (UNEM)_{t-1} + \mu_t \dots \tag{3} \end{aligned}$$

$$\begin{aligned} \Delta GDP_t &= \beta_0 + \sum \lambda_1 \Delta(GDP)_{t-i} + \sum \lambda_2 \Delta\left(\frac{PSC}{GDP}\right)_{t-i} + \sum \lambda_3 \Delta(INF)_{t-i} + \sum \lambda_4 \Delta(INT)_{t-i} + \\ &\sum \lambda_5 \Delta(MSP)_{t-i} + \sum \lambda_6 \Delta(UNEM)_{t-i} + \theta ECT_{t-i} + \mu_t \dots \dots \dots \tag{4} \end{aligned}$$

Where:

$y_t$ : Dependent variable ( $GDP$ )

$y_{t-1}$ : Lag of the dependent variable ( $GDP$ )

$x_t$ : Independent variables ( $PSC/GDP_t, INF_t, INT_t, MSP_t, UNEM_t,$ )

$x_{t-1}$ : Lag of the independent variable ( $INF_{t-1}, INT_{t-1}, MSP_{t-1}, PSC/GDP_{t-1}, UNEM_{t-1},$ )

$p$ : Optimal lag order associated with the dependent variable in years

$q$ : Optimal lag order associated with the independent variable in years

$\varphi$ : Constant

$\alpha_1$ : Coefficient for dependent variable (coefficients for short-run)

$\beta_1$ : Coefficient for Independent variable (coefficient for long-run)

$\varepsilon_t$  : Error Term

Variables used to assess the significance of the relationship between financial development variables and the economic growth of Nigeria, are represented mathematically as:

$$GDPPC = f\left(\left(\frac{PSC}{GDP}\right), INF, INT, MSP, , UNEM\right) \tag{iii}$$

Where Private sector Credit serves as a proxy for financial development. The linear relationship of equation (iii) could be stated as:

$$GDPPC = \varphi + \beta_1 \frac{PSC}{GDP} + \beta_2 INF + \beta_3 INT + \beta_4 MSP + \beta_5 UNEM + \varepsilon_t \quad (iv)$$

Where;

*RGDPPC* (Real gross domestic product per capita) is the dependent variable,

$\varphi$ : is the intercept term,

$\beta_1$ : is the coefficient of INF (Inflation rate)

$\beta_2$ : is the coefficient of INTR (Interest rate

$\beta_3$ : is the coefficient of MSP (Money supply)

$\beta_4$ : is the coefficient of PSC (private sector credit to the ratio of GDP )

$\beta_5$ : is the coefficient of UNEM (Unemployment rate)

$\varepsilon_t$ : is the unexplained part of the actual data and fitted line by regression equation known as the error term.

Economic theory posits that the coefficients should have the following signs:

$\beta_1$ :(-);  $\beta_2$ :(-);  $\beta_3$ :(+);  $\beta_4$ :(+);  $\beta_5$ :(-)

(PSC/GDP) private sector credit is expected to increase the growth rate ( $\beta_1 > 0$ ), inflation (INF) is expected to exert negative effect on growth rate in Nigeria, that is, ( $\beta_2 < 0$ ), the interest rate (INT) is expected to have negative impact on the overall performance of the economy (GDP) that is ( $\beta_3 < 0$ ). Broad money supply is expected to have positive effect on economic growth ( $\beta_4 > 0$ ), while unemployment (UNEM) is expected to decrease gross domestic product ( $\beta_5 < 0$ ).

## 4.0 Results and Discussions

### 4.1 Descriptive Statistics

Table 4.1 presents the summary statistics of all the variables used in the study. It shows that Nigeria's overall growth rate (GDP) from 1981 to 2021 recorded an average increase of 4.3% and had experience fluctuations reaching a minimum of -2.03% and a maximum of 15.3%. Inflation experienced (INF) within the study period averaged 18.06%; it reached an all-time high of 72.8% but declined seriously to 5.38% in. During the period of study, interest rate (LINT) averaged 1.99%, attained a maximum of about 2.4% and experienced a deficit of 1.18%. Likewise, broad money supply had a mean value of 17.92% from 1980 to 2021, experienced a high value of 27.3% and a minimum value of 9.06%.

Private sector credit to the ratio of Gross Domestic Product (PSC/GDP) averaged 10.2% from 1980 to 2021 and had maximum and minimum values of 19.6% and 4.9% respectively while unemployment (UNEM) had an average value of 4.8% from 1980 to 2021 and reached maximum value of 9.7% but declined slowly to 3.7% within the period. Apart from the measures of the central tendency, the Jarque-Berra statistics indicate that inflation rate, interest rate and unemployment are not normally distributed (probabilities less than 0.05), except GDP (economic growth), broad money supply and private sector credit variables which were normally distributed (probabilities greater than 0.05). Money supply and inflation rate were more volatile based on their estimated standard deviations.

**Table 4.1 Descriptive Statistics (Observations = 32)**

	<b>GDP</b>	<b>INF</b>	<b>INT</b>	<b>MSP</b>	<b>PSC/GDP</b>	<b>UNEM</b>
Mean	4.320114	18.06083	1.997637	17.92436	10.21447	4.882719
Median	4.430627	12.71577	2.001985	15.84434	9.395146	4.007000
Maximum	15.32916	72.83550	2.403712	27.37879	19.62560	9.788000
Minimum	-2.035119	5.388008	1.184280	9.063329	4.957522	3.700000
Std. Dev.	4.017196	16.36505	0.237980	6.059191	3.498495	1.906269
Skewness	0.435426	2.170105	-1.082039	0.081633	0.877748	1.688259
Kurtosis	3.286568	6.633406	5.624467	1.375589	3.548650	4.184044
Jarque-Bera	1.120671	42.71876	15.42808	3.553823	4.510378	17.07045
Probability	0.571017	0.000000	0.000447	0.169160	0.104854	0.000196

**Source:** Author’s computation using E-views 9.0.

#### 4.2 Unit Root Test

Stationarity test was conducted to side-step spuriousness of the regression. The result of the unit root test conducted using the Augmented Dickey Fuller (ADF) test is presented in Table 4.2. The series possess an intercept but no trend and the ADF test is run against the null hypothesis of non-Stationarity. As a rule, once the ADF statistic is greater than the critical value at any chosen level of significance, the null hypothesis is rejected in favour of the alternate hypothesis and this implies that the data is stationary. Table 1 shows that, except inflation rate, all other variables are stationary at first difference using the 5% level of significance.

**Table 4.2: Augmented Dickey-Fuller (ADF) Unit Root Test**

Variables	ADF Statistics	Critical Values	Level of Significance	Order of Integration	of Remark
GDP	-3.625627	-2.960411	5%	1(1)	Stationary
INF	-4.511433	-2.963972	5%	1(1)	Stationary
INT	-3.974714	-2.960411	5%	1(0)	Stationary
MSP	-4.486288	-2.963972	5%	1(1)	Stationary
PSC/GDP	-4.858972	-2.971853	5%	1(1)	Stationary

UNEM	-4.754171	-2.963972	5%	1(1)	Stationary
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**Source: Author’s computation using E-views 9.0.**

However, none of the variables was stationary at second difference, I(2), therefore supporting the use of ARDL bounds co-integration approach.

**4.3: Optimal Lag length selection result**

The lag length selection was based on the Akaike information criterion because it has the minimum values among all the criteria. Based on the results on Table 4.3, with maximum lag of 2, the selected Model was: ARDL (1, 0, 0, 1, 0, 0).

**Table 4.3: Optimal Lag Length Selection Result**

Lag	LogL	LR	FPE	AIC*	SC	HQ
0	-462.0728	NA	1436523	<b>31.20485</b>	31.48509	31.29450
1	-359.2712	157.6291*	17618.26*	<b>26.75141*</b>	28.71309*	27.37897*
2	-326.1965	37.48460	29351.34	<b>26.94644</b>	30.58955	28.11190

\* indicates lag order selected by the criterion; LR: sequential modified LR test statistic (each test at 5% level); FPE: Final prediction error; AIC: Akaike information criterion; SC: Schwarz information criterion; and HQ: Hannan-Quinn information criterion.

**4.4. Bounds Cointegration Test result**

The calculated Fisherian statistic of the normalized equation as shown in Table 4.4 is 4.64, and is greater than both the lower bound critical values and upper bound critical values at 10% and 5% levels of significance. Hence, the null hypothesis of no long-run relationship was strongly rejected, meaning that long-run relationship exists among the variables used in the model.

**Table 4.4: Bound Test**

Test Statistics	Value	Significance	Lower bound I(0)	Upper bound I(1)
F-Statistics	4.648784	10%	2.08	3
K	5	5%	2.39	3.38
		2.5%	2.7	3.73
		1%	3.06	4.15

**Source: Author’s computation using E-views 9.0.**

This implies that gross domestic products, inflation, interest rate, broad money supply, private sector credit and unemployment all had equilibrium conditions that kept them together in the long run. This made it possible for the estimation of the long-run and short-run coefficient based on optimal ARDL model.

### 4.5 Long-run and short-run results

The table below shows the results of the long run and short run impact of financial development on economic growth in Nigeria.

**Table 4.5: Long-run results (Selected Model: ARDL (1, 0, 0, 1, 0, 0))**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
INF	-0.124158	0.037610	-3.301177	0.0031
INT	-0.296306	0.375460	-0.789180	0.4381
MSP	-0.123086	0.206958	-0.594739	0.5578
PSC/GDP	0.389204	0.328494	1.184814	0.0001
UNEM	-0.918416	0.389987	-2.355595	0.0274
Constant	11.54944	4.172930	2.767705	0.0110

$$EC = GDP - (-0.1242*INF - 0.2963*LINT - 0.1231*MSP + 0.3892*PSC/GDP - 0.9184*UNEM) + 11.54994$$

**Source:** Author's computation using E-views 9.0

**Table 4.6: Short run Results (Selected Model: ARDL (1, 0, 0, 1, 0, 0))**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(MSP)	-0.745480	0.190509	-3.913092	0.0007
CointEq(-1)*	-0.964021	0.150499	-6.405511	0.0000

### 4.6. Diagnostics tests

Before discussing the results, various diagnostic checks were conducted to ensure that the estimated model is efficient and consistent. The output from the tests are summarized in Table 4.6. The Breusch- Godfrey serial correlation test shows the absence of serial correlation in the model as clearly indicated by the F-statistics of 0.954478 with a probability value of 0.4011. The Breusch-Pagan-Godfrey test shows the absence of heteroskedasticity in the model as indicated by the F-statistics of 0.382717 with a probability value of 0.9030. The Ramsey RESET test indicates that the model is correctly specified as shown by the values of the F-statistics of 0.015407 with probability values of

0.9023. Generally, the calculated probability values for all test statistics were found to be greater than 0.05 significant levels. However, they are not normally distributed based on the probability value of the Jarque-Bera Statistics which is 0.00486.

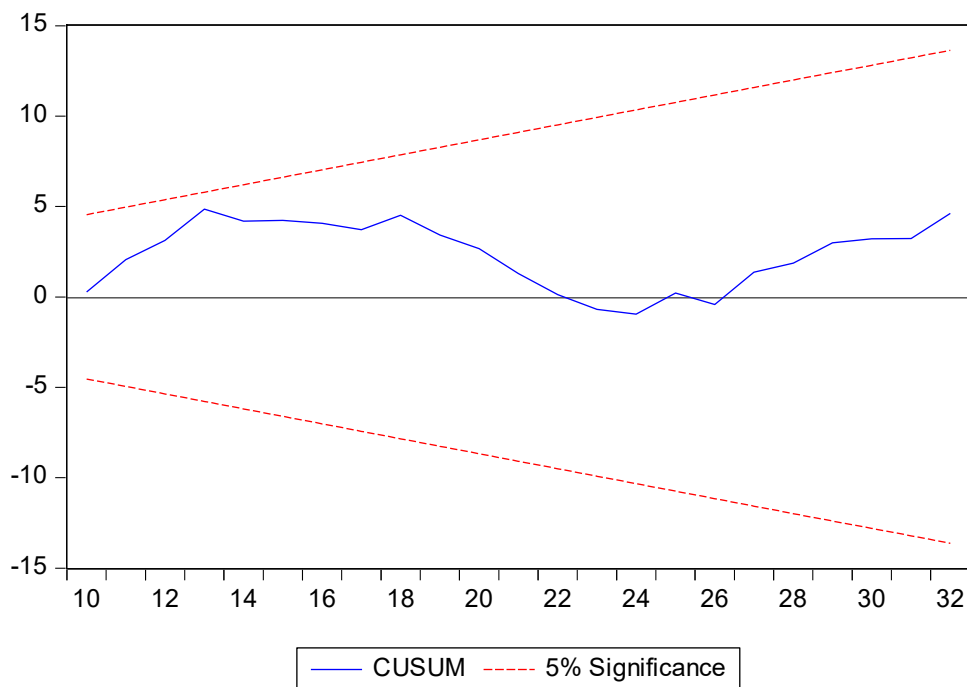
**Table 4.6: Diagnostics Test Results**

Test	F-statistic	Degree of Freedom	Prob.
Serial Correlation (Breush-Godfrey LM Test)	0.954478	F(2,21)	0.4011
Heteroskedasticity Test (Breush-Pagan Godfrey)	0.382717	F(7,23)	0.9030
Model Specification Test (Ramsey RESET Test)	0.015407	F(1, 22)	0.9023
Normality Test (Jarque-Bera Statistics)	11.00021	Na	0.00486

**Source: Author’s compilation using E-Views 9.0.**

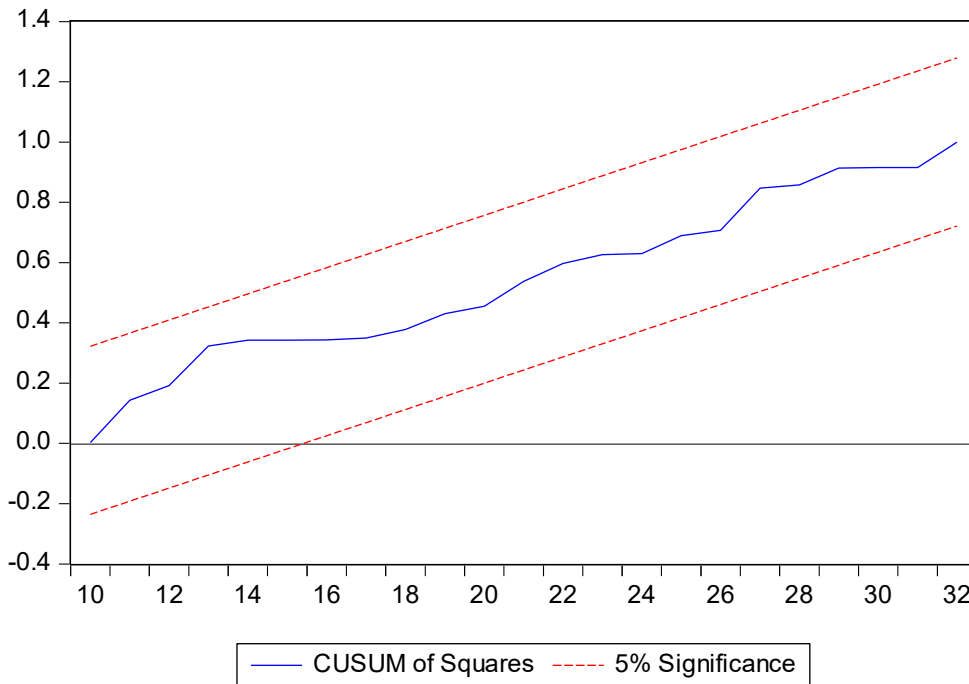
The study also confirmed the structural stability of the model using both cumulative sum of square residuals (CUSUM) and cumulative sum of squared recursive residuals (CUSUMSQ) tests. The blue lines in both the CUSUM and CUSUMSQ plots dwelled within the critical bounds at the 5% level of significance (see Figures 1 and 2).

**Figure 1: Cumulative Sum of Square Residuals (CUSUM)**



Source: Author's computation using E-views 9.0

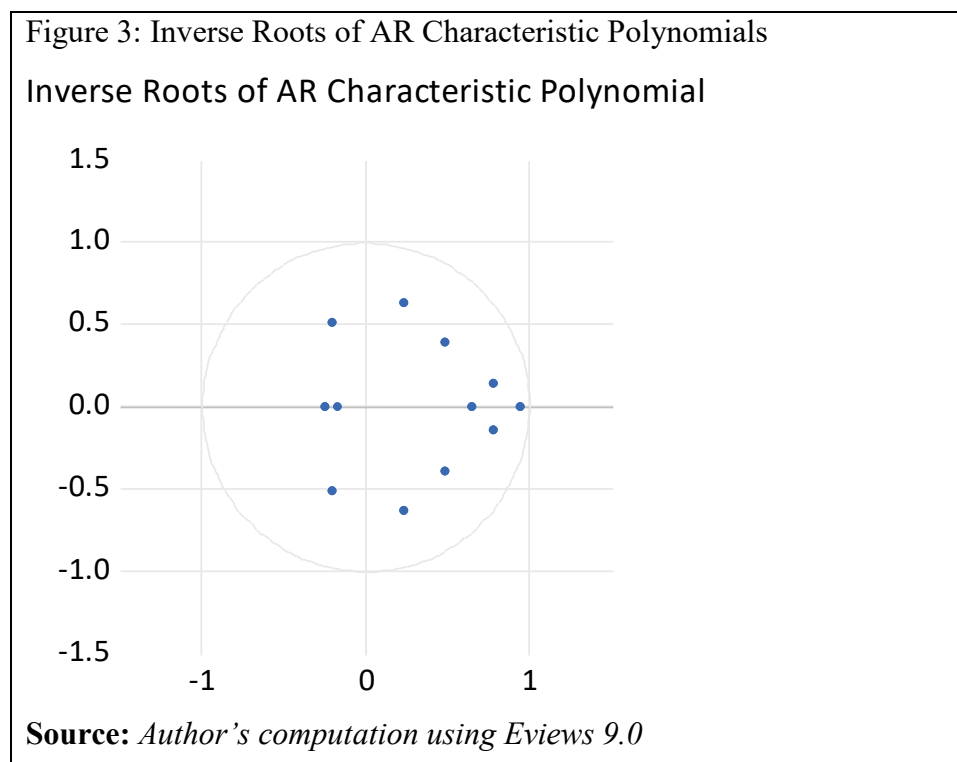
**Figure 2: Cumulative Sum of Squared Recursive Residuals (CUSUMQ)**



Source: Author's computation using E-views 9.0.

The stability of the model was further confirmed using the inverse roots of AR characteristic polynomials. The result indicates that the estimation satisfied the stability condition of no roots lied outside the unit roots circle as shown Figure 3. The modulus is greater than zero but less than one.





Both stability tests confirm the long-run relationships among variables included in the estimated model. Therefore, the estimated ARDL parameters are stable and appropriate for long-run decision making.

#### 4.7 Discussion of results

The long run result indicated that inflation is negatively related to the Gross Domestic Product and is significant based on the probability value of 0.0031 which is in line with theoretical underpinning, it means that 1% increase in inflation will decrease growth rate by 12% as shown by its coefficient of -0.124158. The lending interest rate is negatively related to the economic performance with a coefficient of -0.296306 which is in line with the priori expectations but is insignificant with a probability value of 0.4381. This may be due to the fact that the interest rate may not be too high to discourage investors from borrowing because higher interest rate does not encourage investors and that the payment period is long enough to make investors not to feel the impact, meaning that 1% increase in interest rate will decrease economic growth by 29%.

Broad money supply does not support the a priori expectation because of the coefficient with a value of -0.123086 which reveals that 1% increase in broad money supply will reduce economic performance by 12% and is insignificant because the probability value is 0.5578. It may be that when there is an increase in money supply it does not circulate

within the economy but is being stockpiled and kept by few individuals. Private sector credit which is the proxy for financial development is positively related to the growth rate with a coefficient of 0.389204 and is significant with a probability value of 0.0001 which agrees with the theoretical underpinning. 1% increase in private sector credit will make the economy grow by 38%. This indicates that financial development is actually a propeller of economic growth in Nigeria. Unemployment agrees with the a priori expectations because it is negative with coefficient of -0.918416 which indicates that 1% increase in unemployment will cripple the economy by 90% and is significant with a probability value of 0.0027. This is not far-fetched from the fact that most Nigerians are unemployed, and this makes them unproductive.

In the short run, the money supply does not support the a priori expectation because of the coefficient with a value of -0.745480 which reveals that 1% increase in broad money supply will reduce economic performance by 74% like in the long run but is significant because the probability value is 0.0007. It may be that when there is an increase in money supply it does not circulate within the economy but is being stockpiled and kept by few individuals. The analysis further showed that the coefficient of the error correction term (ECT) was statistically significant with the expected negative sign with a probability value of 0.0000. The coefficient showed a convergence to equilibrium and suggested that about 96% of the disequilibrium in the previous year was corrected in the current year.

## 5. Conclusions and Recommendations

This study empirically examined the impact of financial development on economic growth in Nigeria for a period spanning from 1981-2021. Apart from financial development, which is proxied by private sector credit, inflation rate, interest rate, broad money supply and unemployment were included in the model to make it robust. The ARDL model was used for the analysis of the variables based on the Stationarity test results. The empirical evidence lead to the conclusion that financial development can increase economic growth in Nigeria in the long run while unemployment and broad money supply decrease growth in the short run. The policy implication of this is that Nigerian government needs to channel her resources towards the improvement of the financial sector, ensure proper regulation and supervision. On the basis of the findings, this study recommended that; (i) Proper monitoring of the financial system (ii) Ensure both financial and market stability to encourage investors (iii) Government should diversify the economy so that they can have multiple sources of revenue through improving the real sector.

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