



Effects of Financial Systems Development on Nigeria's Economic Growth: 2011 – 2021

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Abstract

The financial system has been identified as a veritable enabler of enhanced productivity and sustained growth of an economy. This study investigates the effects of financial systems development on Nigeria's economic growth using the Autoregressive Distributed Lag (ARDL) model. This empirical investigation underscores the substantial positive impact of financial development on economic growth, through improvement in the performance of key indicators such as market capitalization, aggregate investment, prime lending rates, degree of trade openness, and exchange rates. Our findings reveal that overall financial development, including bank and stock market development, significantly contributes to fostering economic growth. This aligns with existing empirical literature that consistently demonstrates a positive association between financial sector development and economic growth. The study aligns with economic theory, providing logical justifications for the indispensable role of robust financial institutions in promoting economic growth. However, the study reveals that aggregate domestic savings exhibit a positive but statistically insignificant relationship with economic growth. This could be because savings are channeled more to speculative and trading activities than real production activities. Based on the findings, policymakers are encouraged to focus on removing the infrastructural bottlenecks inhibiting production activities in the country and facilitate channeling more savings to real production activities. Priority should be given to expanding access to financial services for both consumers and producers. Additionally, accelerating the integration of financial markets, particularly the bond market, is identified as a potential avenue for significantly boosting access to finance by the private sector.

Keywords:

Financial system
Economic growth
Financial development

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1. Introduction

The link between financial systems development and economic growth continues to be a subject of significant interest. A nation's financial systems is a principal infrastructure required to facilitate economic growth. Its development is therefore expected to speed up the process of economic transformation through greater efficiency in resource allocation and enhanced productivity growth. According to Estrada, Park, and Ramayandi (2010), financial development for a financially underdeveloped country refers to the basic business of building up sounder and more efficient banks, equity markets, and bond markets. A more diverse financial system that is less dependent on banks only is more robust and resilient to shocks as vibrant capital markets are the primary source of long-term capital that finances an economy's long-term investment needs (Ojijo, Olushola & Beyai, 2016). Financial development will also allow a nation's financial institutions to play a greater role in intermediating the pool of net savings. Thus, financial system development facilitates the development of a more efficient financial system in a financially under developed country (World Bank, 2023).

An efficient financial system that performs better their primary function of allocating capital to its most productive uses will be pivotal to sustaining growth. Developing countries need healthy investment for strong medium and long-term growth. Thus, expanding financial access to small and medium enterprises (SMEs) and would-be entrepreneurs is vital for dynamic efficiency in which new products, services, and industries bring about structural change and deliver large welfare gains over time. Expanded access to finance also facilitates the entry of new producers into the market and thereby stimulates a competitive environment conducive for productivity growth (World Bank, 2023).

Broad access of financial services is important for a number of reasons. It is important for poverty reduction, since constraints in financial services have prevented the poor or those with no collateral from engaging in profitable businesses. Limited access to finance also prevents the entry of new and innovative firms that are incapable of self-financing. Access to financing has important effects on how technology and new knowledge are developed, as availability of financing provides an incentive to think creatively (Beck et al., 2007). Financial development also promotes growth by strengthening competition and stimulating innovative activities that foster dynamic efficiency. According to Demirgüç-Kunt and Levine (2008), the overall function of a financial system is to reduce information and transactions costs impeding economic activity, and its five core functions are to produce ex ante information about possible investments and allocate capital; monitor investments and provide corporate governance after providing finance; facilitate the trading, diversification and management of risk; mobilize and pool savings; and ease the exchange of goods and services.

Gurley and Shaw (1967) identified three main channels through which the financial sector may affect economic growth of countries. First, developing the financial sector makes room for increased savings through economies of scale and expertise as financial intermediaries and markets are able to provide savers with a relatively higher yield which stimulate savings. Secondly, by reducing information and transaction costs financial intermediaries and markets perform the essential economic function of increasing the channelling of funds from surplus lenders to deficit units. Thirdly, the financial sector improves the allocation of resources. A recent line of research argues that financial system development enhances growth by promoting the efficient allocation of investment through fund pooling; Risk diversification; liquidity

management; investment screening and monitoring. The financial sector provides an enabling environment for economic growth and development, productive activity, financial intermediation, capital formation and management of the payments system (CBN, 2017). The extent to which the financial sector would impact on the real sector of the economy would, however, depend on the nature and magnitude of the innovations in the financial sector. Within the context of the financial sector, these innovations can be in terms of stability in key performance indicators of the market, which play a big role in the process of financial intermediation.

Several initiatives and legislations have been implemented to develop and strengthen the Nigerian financial system to facilitate its viability, resilience and vibrancy in the performance of its responsibility in a deregulated financial environment since the late 1980s. Some of these were backed by the following legislations; Bank and other Financial Institutions Acts 1991 and 2020 (BOFIA), Foreign Exchange (Monitoring and Miscellaneous Provisions) Act 1995, Nigerian Deposit Insurance Corporation (NDIC) Act 2006, Central Bank of Nigeria Act 2007 and Companies and Allied Matter Act 2020. In spite of many reforms implemented so far, the Nigerian financial sector has not been able to live up to its expectation as the propeller of economic growth and development. Nzotta and Okereke (2009) insist that the financial system in Nigeria has not sustained an effective financial intermediation, especially credit allocation and a high level of monetization of the economy. Ewah et al. (2009) argued that, though the Nigerian capital market appears to have potentials to boost economic growth in Nigeria, over the years, it has failed to contribute meaningfully to the economic growth of Nigeria. This may be due to the low level of market capitalisation, among others, which has continued to undermine the

growth-inducing potentials of the capital market in Nigeria. In view of the foregoing, it is important to examine the effects of Nigeria's financial systems development initiatives on economic growth in Nigeria during the period under consideration.

2. Literature review

A financial system consists of financial institutions such as commercial banks and financial market institutions. The World Bank (2023) defines the financial sector as the collection of organisations, products, and markets as well as the legal and regulatory environment that permits transactions to be carried out using credit. These organizations include financial intermediaries such as banks, stock exchanges and bond markets that collect, deposits, market bonds, and other capital market products, process them, and produce information on possible investments avenues more efficiently than individual savers. Armed with more and better information, financial intermediaries will facilitate investment in more promising firms and industries and stimulate innovation by identifying the most promising new technologies and products.

According to Demirgüç-Kunt and Levine (2008), the overall function of a financial system is to reduce information and transactions costs impeding economic activity hence, its efficiency is measured by how well a financial system performs its core functions and reduce information and financial costs. Thus, a robust and efficient financial system promotes growth by channelling resources to their most productive uses and fostering a more efficient allocation of resources. Therefore, a stronger and better financial system can lift growth by boosting the aggregate savings and investment rates, speeding up the accumulation of physical capital and directing same toward the more productive producers and away from the less productive ones.

Financial development refers to an improvement in the efficiency of a financial system thereby reducing "costs" associated with the operations in the financial system. Financial contracts, markets, and intermediaries came into being as a result of this process of lowering the expenses of learning about something, carrying out a contract, and conducting a transaction. Various financial contracts, markets, and intermediaries have been driven by various kinds and combinations of information, enforcement, and transaction costs as well as various legal, regulatory, and tax systems throughout history and across various nations.

A substantial amount of research indicates that the growth of the financial sector is very important for economic development. By raising the savings rate, mobilising and pooling funds, producing knowledge about investments, facilitating and encouraging the inflows of foreign capital, and optimising capital allocation, it fosters economic growth through capital accumulation and technical advancement. Long-term growth rates are generally higher in nations with more developed financial systems, and a vast body of research demonstrates that this effect is causal—financial development does not only follow economic progress; it also contributes to it. Additionally, it lessens poverty and inequality by granting poor and vulnerable populations more access to financing, facilitating risk management by lessening their susceptibility to shocks, and boosting investment and productivity, which generate higher income (World Bank, 2023).

By giving them access to financing, the development of the financial sector can aid in the expansion of small and medium-sized businesses (SMEs) which tend to be labor-intensive and produce more jobs than huge corporations. They are very important for economic growth, especially in developing nations. Putting in place infrastructure and financial intermediaries are merely the beginning of the financial sector's

development. It calls for establishing strong regulations and oversight procedures for all significant entities. The devastating effects of ineffective banking sector policies were brought home by the global financial crisis. The financial crisis has highlighted the potentially disastrous effects of shoddy financial sector policies for the growth of the financial industry and their influence on the results of the economy. Money is important for development, both when it runs smoothly and when it doesn't (World Bank, 2023).

The recent economic crisis has prompted intense discussion on the best ways to achieve sustainable development and has challenged conventional wisdom in financial sector policies. Re-evaluating financial sector policies in the wake of the crisis is a crucial step in this process. To evaluate the progress of the financial sector and comprehend how financial development affects economic growth and poverty reduction, a reliable measure of financial development is essential. Yet, due to its broad definition and several characteristics, financial development is challenging to quantify in practise. The empirical work that has been done so far typically relies on common quantitative indicators that are accessible for extended time series for a variety of countries. These include assets to GDP ratio of financial institutions, the GDP ratio of liquid liabilities, and the GDP ratio of deposits.

These indicators, however, are only approximations and do not account for all facets of financial development because the financial sector of a nation consists of a variety of financial institutions, markets, and products (World Bank, 2023). A comprehensive yet relatively straightforward conceptual 4x2 framework was created by the World Bank's Global Financial Development Database to assess financial progress throughout the world. Financial depth, access, efficiency, and stability are the four sets of proxy variables identified by this framework as characteristics of a healthy financial system.

A number of studies have documented evidence proving that financial system development plays a fundamental role in the economic growth of countries. Ebiringa and Duruibe (2015) used a vector autoregressive model to analyse the nature of the relationship between the development of the financial sector and economic growth in Nigeria. They hypothesised that expansion of the financial and capital markets in Nigeria has not resulted in sustained expansion of the economy. The findings indicate, among other things, that there is no long-term correlation between economic growth and financial system, suggesting that the expansion of the financial system in Nigeria does not appear to be a key catalyst for economic growth patterns. But in the short run the development of the financial sector had a favourable impact on economic growth. The study concluded that the financial system should be further developed to support the short- and long-term growth of the Nigerian economy. This can be done by encouraging market participants to offer and provide cutting-edge financial products and services, as well as by creating and putting into place sound monetary policies and regulations.

Igwe, Edeh, and Ukpere (2014) looked at the effect of financial deepening on Nigerian economic growth. The supply leading hypothesis was chosen as the study's theoretical foundation. Broad money supply/GDP and Credit to the private sector/GDP were the explanatory variables' logged values. The ADF unit root tests were used to test the times series data for stationarity, and it was discovered that the data were stationary at the first difference. For the long run relationship test, the Engle-Granger Cointegration approach and the Error Correction Model were applied. Results show that the money supply (MS) is positively correlated and only marginally significant in predicting economic growth. Credit to the private sector, however, was unfavourable and of little importance in the near term. The ECM is

adjusting at a rate of 25.51%. If there are short-term fluctuations, GDP is predicted to converge to its long-term equilibrium path at a rate of roughly 25.51% every period. The result is that financial deepening does not have the anticipated effect on Nigeria's economic expansion. They concluded that to stimulate economic growth and investment, there is a need to expand and improve access to private finance.

By examining the independent contributions of the money, capital, and foreign exchange markets to the growth of the economy, Akintola, Oji-Okoro, and Itodo (2020) investigated the impact of financial sector development on economic growth in Nigeria. They used quarterly data from 2000Q1 to 2019Q4 to conduct their research. According to the findings, while financial deepening, banking system liquidity, and all share index had positive and significant long-term effects on the development of real output, the exchange rate spread's behaviour was consistent with declining real output growth rates. In order to increase the rate of economic growth, macroeconomic managers in Nigeria are advised to prioritise the expansion of the money and capital markets. More specifically, the monetary authority should raise policy rates and other monetary policy tools like the cash reserve ratio in order to boost the amount of liquidity in the banking system. As a result, the capacity of banks to lend to the private sector would improve, which will help Nigeria's economic grow.

Gbadebo and Oyedeko (2021) focused on the upside and downside market circumstances in Nigeria as they assessed the economic risk factors and predicted return. An experimental research design was used for the investigation which covered the period from December 2005 to December 2018. The population consisted of all listed businesses on the Nigerian Stock Exchange (NSE). The study employed a purposive sample approach to choose the stocks of 41 firms that were actively traded during the

study period. The analysis used only secondary data from the Central Bank Statistics Bulletin and the NSE Factbook. The dependent variable (stock prices) was taken from the NSE Factbook, whilst the macroeconomic variables (inflation, exchange rate, monetary policy rate, oil price, and money supply) were taken from the yearly statistical bulletin of the Central Bank of Nigeria. In order to estimate the parameters of the first pass and second pass regression models, the study used the Ordinary Least Squares (OLS) technique. Results showed that there were both observed and unobserved risk variables in Nigeria's upside and downside markets. The analysis also shows that economic risk commands a sizeable premium in both the up- and down-market phases. In addition, it was shown that factor likelihood seems to be more accurate than the model of macroeconomic variables. They concluded that, economic risk factors have a substantial role in explaining average return variability in the Nigerian capital market, particularly during periods of market downscaling. The study advises investors to take into account financial, diversifiable risks, and unobservable when calculating predicted returns on the Nigerian capital market.

With particular emphasis on the Central Bank of Nigeria's Credit Schemes, Dori (2016) investigated the consequences of the role that development finance plays in the growth and development of the Nigerian economy. The study showed that the level of growth and development of the Central Bank of Nigeria's development finance is inextricably linked to Nigeria's economic development. The credit schemes of the Central Bank of Nigeria have raised the level of credit inflow, which has raised Nigeria's productivity, employment creation, agricultural output, domestic trade, rural development, exports, foreign earnings, and import replacement. They increased the rate of economic development and expansion in Nigeria thus the three levels of government should

support, adequately publicise, and pay attention to the Central Bank of Nigeria's development finance schemes.

In Developing Asia, financial development and economic growth were studied by Estrada, Park, and Ramayandi (2010). They examined how well-functioning financial institutions like banks, equities markets, and bond markets, which direct capital to its most productive uses, interact with one another to support economic growth. The findings show that from the early 1990s, the region's financial systems have deepened and become more diversified. Financial development significantly boosts growth, especially in emerging nations, according to a more rigorous econometric study of panel data from 125 countries. The findings also indicate that, since the Asian financial crisis, the influence of financial development on the region's economy has reduced and is not notably different from that of other regions. Overall, the evidence is consistent with the idea that maintaining Asia's growth in the post-crisis period depends on the financial sector's continued development. Yet, it is anticipated that the major function of financial sector development in growth will change from mobilising savings, which would increase the amount of investment, to enhancing the efficiency of investment, which would then help to increase overall productivity in the economy.

Ben et al. (2021) used the nonlinear autoregressive distributed lag (NARDL) model to assess financial firms' services deemed important to an economy's growth. The Zivot and Andrews tests, as well as Granger causality to test for causation, were employed to determine whether it is possible to detect a non-linear link in the case of structural fractures. Quarterly data from the three divisions of financial institutions—insurance, banking, and stock market—were used from 1999Q1 to 2019Q4. The results showed that the rate of nonlinear adjustment of economic growth is faster. There

are numerous macroeconomic, and financial elements that can affect the non-linear adjustment. Via causal nexus, a two-way relationship between the variables was discovered.

Usman and Adeyemi (2017) investigated the causal chain and relationship between Nigeria's financial system development and economic expansion. The World Bank data base was used for the study, which used data from 1970 to 2013. The Augmented Dickey-Fuller and Philips-Perron tests were used to determine whether there was a unit root in the time series. The Granger causality test was utilised to look into the direction of causality between financial system development indicators and economic growth, while the Johansen co-integration approach was employed to evaluate long-term relationships between the variables. The findings indicated a long-term association between changes in the financial system and economic expansion. Moreover, there was no feedback effect and unidirectional causality connecting Nigeria's financial sector development to economic growth. This backed up the supply-leading theory. Thus, the study advised that the Nigerian government to implement additional policies to increase the financial sector's efficiency, to speed up economic growth.

3. Methodology

3.1 Theoretical framework: Supply Leading Hypothesis

The supply-leading hypothesis, articulated by Patrick (1966), argues that the development of a robust financial sector contributes to economic growth. This hypothesis contends that well-developed financial institutions have the capacity of promoting general economic efficiency, creating and increasing liquidity, enhancing savings mobilization and accumulation of capital, transferring productive factors from rural to modern use, where it will contribute better to manufacture and industry (Mckinnon, 1973;

Shaw 1973). Darrat (1999) in the same vein asserts that what is needed is for government to promote policies that foster financial system development for sustainable economic development.

Financial sector as the backbone of economic growth has been supported by a lot of theoretical and empirical evidences (Schumpeter 1911; Mckinnon 1973; Shaw 1973; Levine, 2001). Also, the Solow (1957) neoclassical growth model identified economic growth to be contingent on capital accumulation i.e. increasing savings, increasing allocation of resources for investment and increasing capital goods stock to increase productivity. He insists that “financial intermediation through the banking system played a pivotal role in economic development by affecting the allocation of savings, thereby improving productivity, technical change and the rate of economic growth”. The financial sector lowers transaction costs, affects savings and raises the return of investment. Therefore, the financial sector will enhance economic growth. The financial system of any economy plays a determining role by ensuring that savings are invested in an efficient and optimal way.

Onwumere et al., (2013) in their study on the impact of financial structure on economic growth formulated an endogenous growth model which assumes away population growth and technological change. They stated that growth is driven by capital accumulation. This is based on the belief that financial development enhances economic growth. The significance of this study is that the link between financial sector and economic growth could be traced through the activities of the banks and non-bank institutions in the financial system. The endogenous growth theory is supportive of the supply leading hypothesis. The stance of the supply-leading hypothesis holds that the availability of robust financial market leads to increasing supply of

financial assets to meet up with their demand by the sector for goods and services.

3.2 Model specification and estimation technique

The relationship between the growth of Nigeria's financial systems and its economic expansion from 2011 to 2021 was captured using an Autoregressive Distributed Lag (ARDL) model. The model includes GDP as the dependent variable, aggregate investments (AGI), aggregate savings (AGS), savings deposit rate (SDR), prime lending rate (PLR), capital market

capitalization (MCAP), degree of trade openness (OPEN), and exchange rates (EXR) as the explanatory variables.

The following is the functional specification of the model:

$$NGDP = f(AGI, AGS, SDR, PLR, MCAP, OPEN, EXR) \quad 1$$

The Autoregressive Distributed Lag Model of the functional specification in equation (3.1) is written as:

$$NGDP_t = \alpha_0 + \sum_{i=1}^p \lambda_i NGDP_{t-i} + \sum_{i=0}^{q_1} \beta_{1i} AGI_{t-i} + \sum_{i=0}^{q_2} \beta_{2i} AGS_{t-i} + \sum_{i=0}^{q_3} \beta_{3i} SDR_{t-i} + \sum_{i=0}^{q_4} \beta_{4i} PLR_{t-i} + \sum_{i=0}^{q_5} \beta_{5i} MCAP_{t-i} + \sum_{i=0}^{q_6} \beta_{6i} OPEN_{t-i} + \sum_{i=0}^{q_7} \beta_{7i} EXR_{t-i} + \mu_t \quad 2$$

Where:

NGDP = Nominal Gross Domestic Product

AGI = Aggregate investments

AGS = Aggregate savings

SDR = Savings deposit rate

PLR = Prime lending rate

MCAP = Market capitalization

OPEN = Degree of trade openness

EXR = Exchange rates

α_0 to β_7 = the parameters to be estimated

μ_t = Stochastic error term

p and q are optimal lag order, where

p = lag length of the dependent variable

$q_1 - q_7$ = lag length of explanatory variables

$\beta_1 - \beta_7$ = parameters of the independent variables

γ_i = parameters of the lagged values of the dependent variable included as independent variables

\sum = summation sign

A-priori expectation

According to theoretical predictions, the coefficients for aggregate investment, the interest rate on savings deposits, market capitalization, and the degree of trade openness are anticipated

to be positive, while the coefficients for total savings, prime lending rates, and exchange rates are anticipated to be negative.

$$\alpha_0 > 0; \gamma > 0; \beta_1 > 0; \beta_3 > 0; \beta_5 > 0; \beta_6 > 0; \beta_2 < 0; \beta_4 < 0; \beta_7 < 0;$$

In order to analyze the data gathered for the purpose of this study, a quantitative analytical method called Autoregressive Distributed Lag (ARDL) model was applied. In an effort to avoid the emergence of erroneous regression, the data were subjected to diagnostic examinations to determine their stationarity status and the trend trajectory of the data. Some of the experiments included unit root tests, bounds tests for co-integration, and trend analysis. Post estimation diagnostic tests include the Breusch-Pagan-Godfrey test for heteroscedasticity, the Cumulative Sum Test (CUSUM) for model stability, and the Breusch-Godfrey LM Test for Serial Correlation.

The validity of the model and the estimating method depends on how effectively they capture the dynamic features of Nigeria's financial system development and economic growth across the study period. It is felt that the model is

appropriate to achieve the study's stated objectives. For analysing the impacts of one variable on another, the ARDL model enables the integration of both the current and lagged values of the variables taken into consideration for this study. The simplicity of the model's use is also a major justification for its application.

3.3 Sources of Data

The nature of data used in this study is secondary data from the Central Bank of Nigeria (CBN) statistical bulletin. The 2011 to 2021 time periods were covered by the quarterly time series data on the gross domestic product (NGDP), aggregate investments (AGI), aggregate savings (AGS), savings deposit rate (SDR), prime lending rate (PLR), capital market capitalization (MCAP), degree of trade openness (OPEN), and exchange rates (EXR). The choice to period beginning from 2011 is to give time for the legislations including the Central Bank of Nigeria Act 2007 to have the intended effect of the nation's financial system.

4. Results and discussions

4.1 Unit root test

The time series properties of the data used for the regression study were assessed using the Augment Dickey Fuller (ADF) unit root test in an effort to avoid the phenomenon of spurious regression, which is often associated with non-stationary time series data. When the absolute value obtained from the Augmented Dickey-Fuller (ADF) t-statistics is greater than the critical value at 5% level of significance and the probability value (p-value) corresponding to the test statistic is less than 0.05, time series data are deemed to be stationary, according to the decision rule for the unit root test. However, if the p-value is greater than 0.05, the unit root hypothesis is not rejected, and at the 0.05 level of significance, it can be concluded that the time series data are not stationary.

Table 1: ADF unit root test results

Variable	ADF-Statistics	5% Critical Value	P-Value	Order Of Integration
NGDP	-14.63526	-3.526609	0.0000	1(1)
AGI	-7.366038	-3.523623	0.0000	1(1)
AGS	-6.198570	-3.523623	0.0000	1(1)
SDR	-6.679692	-3.520787	0.0000	1(1)
PLR	-4.996623	-3.520787	0.0011	1(1)
MCAP	-5.735400	-2.933158	0.0000	1(1)
OPEN	-7.009614	-3.520787	0.0000	1(1)
EXR	-5.567197	-3.520787	0.0002	1(1)

Source: Author's computation

The summary of ADF unit root tests in Table 1 shows that NGDP, AGI, AGS, SDR, PLR, MCAP, OPEN, and EXR are all stationary at first difference. All ADF-statistics had p-values that were lower than 0.05 and absolute values that were higher than the absolute 5% crucial levels. From this, it may be concluded that all variables are integrated at order one (1). In other words, even though the time series data related to the ones under inquiry are not stationary at level, they are all stationary at the first difference. The variables must be checked for co-integration because they are not stationary at level.

4.2 Test of Cointegration

The results of the ARDL Bounds test of cointegration are presented in Table 2, and the F-statistics is 9.945717, which is higher than the upper critical bound value of 3.50 at 5% level of significance. Due to this, we reject the null hypothesis that there is no cointegration at the 5% level of significance and accept the alternative hypothesis that cointegration exists at this level. This implies a long-term connection between the variables under consideration. The model's long-run form and the error correction model, which measures how quickly equilibrium transitions between the short-run and long-run, may now be estimated since cointegration has been established.

Table 2: Auto-Regressive Distributed Lag Bounds Test of Cointegration

Statistics	Values	Significance Levels	1(0) Lower Critical Bound Value	1(1) Upper Critical Bound Value
F-Statistics	9.945717	10%	2.03	3.13
		5%	2.32	3.50
		2.5%	2.6	3.84
		1%	2.96	4.26

Source: Author's Computation

4.3 Long Run Results

According to the long run model's findings, which are shown in table 3, the estimated coefficient of aggregate investments (AGI) is positive and statistically significant at the 5% level of significance. A rejection of the null hypothesis that the coefficient of AGI is not statistically significant at the 5% level of significance is implied by the P-value of 0.0000, which is less than 0.05 and corresponds to the t-statistic. Holding aggregate savings, savings

deposit rates, prime lending rates, market capitalization, degree of trade openness, and exchange rates constant, an increase in total investments will result in an average increase in economic growth of 1.752241units. This result suggests that overall investments have a long-term, positive and significant impact on economic growth. This finding demonstrates that total investment has a positive impact on the economy's long-term growth trajectory.

Table 3: ARDL Long Run Form regression results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
AGI	1.752241	0.182991	9.575585	0.0000
AGS	-0.093739	0.160596	-0.583694	0.5667
SDR	119219.65	114880.746138	1.037769	0.3131
PLR	595728.10	307344.518825	1.938307	0.0684
MCAP	0.114979	0.029842	3.852978	0.0012
OPEN	-39435.44	20441.853521	-1.929152	0.0696
EXR	-1656828630.48	200942740.243954	-8.245277	0.0000
C	12461996.88	5516328.033598	2.259111	0.0365

Source: Author's Computation based on output from E-VIEWS10 software.

The long run relationship between aggregate savings (AGS) and economic growth is negative though statistically insignificant at 5% level according to the P-value for the t-statistic, which is 0.5667 so aggregate savings have no significant effect on economic growth which indicates that quality of financial intermediation in the economy is poor. Savings are not effectively channelled to productive activities to enhance the allocative efficiency and higher levels of economic growth.

Prime lending rate (PLR) has a statistically significant positive impact on economic growth as the P-value of 0.0684 indicates that the coefficient of (PLR) is significant at less than 0.10. The null hypothesis that the coefficient of PLR is not statistically significant at the 10% level of significance is rejected. Hence prime lending rate has a positive, effect on economic growth in the long-run. However, the association between savings deposit rates (SDR) and economic growth is also insignificant. The p-value is 0.3131, which is greater than 0.05 indicates that the null hypothesis, that the coefficient of SDR is not statistically significant at the 5% level, is accepted. So, over time, the savings deposits rate has insignificant effect on economic growth. Thus, while the prime lending rate is efficient in mobilizing resource to positively influence economic activities, savings deposit rate does not significantly influence

economic activities. This underscores the inefficient performance of the financial intermediation role in Nigeria. The savings rate is not efficient in mobilizing resources from surplus units and the aggregate savings is either inadequate or not allocated efficiently for it to impact economic growth positively and significantly in the long run.

However, a positive and statistically significant association is found between economic growth and capital market capitalisation (MCAP) by the long run model. Thus, the null hypothesis is rejected and the alternative hypothesis, that the coefficient of market capitalization is statistically significant at the 0.05 significance level, is accepted because the P-value for the t-statistic is 0.0012, which is less than 0.05. Thus, all things being equal, a rise in market capitalization will typically lead to an increase in economic growth of 0.114979 units on average. This suggests that over time, market capitalisation significantly enhances economic growth. Hence the capital market appears to be relatively more efficient in mobilizing resources for economic growth than the money market in the Nigerian economy. This may not be unconnected with the oligopolistic structure of the commercial banking sector that emerged following the program of consolidation and recapitalization, through which the number of commercial banks was reduced from about 90 in

2005 to 24 by 2006. As of 2022, there were still only eight (8) commercial banks with international authorization and eleven (11) with national authorization in Nigeria making only 19 commercial banks with national spread. There were also five (5) other commercial banks with regional authorization which still give a total of 24 commercial banks in Nigeria. There was also one, non-interest bank with national spread and two non-interest banks with regional authorization (CBN 2022). The sharp reduction in the number of commercial banks has raised the problem of oligopoly which has led to cartelization in the money market. Thus, the commercial banks are no longer price takers rather they dictate both the savings and lending rates. This has facilitated the wide gaps between the savings and even the prime lending rates that can be observed from columns 8 and 9 in Table 5 while savers take negative real rate of interest for their deposits. Consequently, savers channel their savings to less productive speculative activities including currency swaps to hedge against financial losses instead of saving in commercial banks where it can be more effectively channeled to productive uses.

Exchange rates (EXR) and economic growth exhibit an inverse and statistically significant relationship, according to the long run model results shown in Table 3. The P-value corresponding to the t-statistic is 0.0000, which is less than 0.05 and indicates that the null hypothesis that the coefficient of exchange rates is not statistically significant at the 5% level of significance is accepted. So, over time, exchange rates have a negative and significant effect on economic growth. This is because Nigeria's main export which is crude petroleum and other agricultural produce are priced and sold in

foreign currency hence devaluation of the domestic currency does not bestow any comparative advantage on Nigerian export goods. Though Nigerian labour become relatively cheaper which is expected to facilitate investment in domestic manufacturing to take advantage of the cheap educated and skilled labour force available in the country, other structural problems like poor electricity and transportation infrastructure as well as insecurity have remained bottlenecks. Thus, instead of investors coming to set up manufacturing activities in Nigeria, educated and skilled labour of all ages and walks of life are fast leaving the country for greener pastures. Hence the effect of exchange rate on economic growth has not benefited domestic production. This shows that the exchange rate management strategy adopted by the monetary authorities has been negatively affecting economic growth in Nigeria.

Also, at a 10% threshold of significance, the degree of trade openness (OPEN) negatively and significantly affects economic growth in Nigeria. The null hypothesis is rejected at the 10% significance level, as indicated by its p-value of 0.0696. This suggests that, over time, Nigeria's economic growth is significantly influenced by the extent of trade openness. However, the effect is negative and the coefficient of determination is high at -56880.53.

4.4 Error Correction Model

We evaluate the error correction model's rate of equilibrium adjustment as well as the short run dynamics between the dependent and independent variables. The short-run form is illustrated using the first differenced variables. The findings of the estimated Error Correction Model are provided in Table 4.

Table 4: Error correction model regression results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(NGDP(-1))	0.801541	0.146772	5.461142	0.0000
D(AGI)	1.489335	0.294393	5.058996	0.0001
D(AGI(-1))	-1.518705	0.308547	-4.922118	0.0001
D(AGS)	-0.193168	0.218134	-0.885546	0.3875
D(AGS(-1))	-0.126361	0.179900	-0.702392	0.4914
D(SDR)	-72934.02	169843.21	-0.429420	0.6727
D(SDR(-1))	-76241.67	162612.78	-0.468854	0.6448
D(PLR)	102325.75	661102.03	0.154781	0.8787
D(PLR(-1))	-1335923.98	650902.13	-2.052419	0.0550
D(MCAP)	0.135697	0.046120	2.942236	0.0087
D(MCAP(-1))	-0.077720	0.056215	-1.382539	0.1837
D(OPEN)	-56880.53	52003.53	-1.093782	0.2885
D(OPEN(-1))	15277.51	52730.24	0.289730	0.7753
D(EXR)	-644386830.08	795652744.88	0.000000	0.0000
D(EXR(-1))	1041338640.25	812996106.71	0.000000	0.0000
CointEq(-1)	-1.734507	0.214543	-8.084669	0.0000
R-squared	0.908048	Mean dependent var	814787.1	
Adjusted R-squared	0.878386	S.D. dependent var	2445242.	
S.E. of regression	852732.5	Akaike info criterion	30.37041	
Sum squared resid	2.25E+13	Schwarz criterion	30.82551	
Log likelihood	-626.7785	Hannan-Quinn criter.	30.53722	
Durbin-Watson stat	2.490990			

Source: Author's Computation

The results reveal that the estimated coefficients of aggregate investments (AGI), capital market capitalization (MCAP), and exchange rates (EXR) had a considerable impact on economic growth in the short run. However, the p-values of the coefficients for aggregate savings (AGS), savings deposit rate (SDR), and trade openness (OPEN) show no significant relationship between these performance indicators and economic growth. The fact that only the first lagged coefficient for prime lending rates (PLR) is statistically significant indicates that there are delays in the transmission of prime lending rates to economic growth in Nigeria. Table 4 also show that the error correction term is negative and statistically significant at the 5% level of significance. The calculated ECM coefficient (-1.734507) gives an indication of how quickly things are adjusting to equilibrium. It shows that the disequilibrium is adjusted by about 17.3% every quarter. This implies a long-term causal relationship between the dependent and independent variables.

According to the adjusted R^2 , the regression model's explicit explanatory variables together contribute about 88% of the variance in Nigeria's economic growth. This implies that the regression model has a good fit.

4.5 Test for Model Stability

The suitability and stability of the estimated model are assessed using the CUSUM test. It is employed to determine whether the model is reliable and suitable for making any long-term decisions.

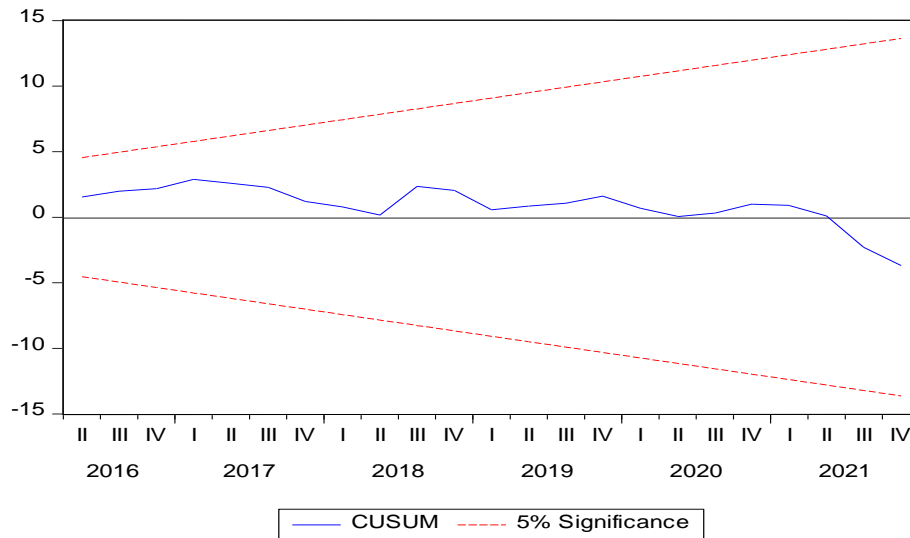


Figure 1: Cumulative Sum Test for Model Stability

The suitability and stability of the estimated model are assessed using the CUSUM test. It is employed to determine whether the model is reliable and suitable for making any long-term decisions. The test is based on the premise that the null hypothesis that all the parameters are stable cannot be rejected if the plot of the CUSUM test remains within the 5% critical boundaries. The null hypothesis of parameter stability is rejected at the 5% level of significance if one of the parallel lines is crossed or if the cumulative sum crosses outside the borders of the two critical lines. The plots in figure 1 are constrained to the 5% critical boundaries, demonstrating the stability of the residual variance. As a result, at the 5% level of significance, the null hypothesis that all parameters are stable cannot be rejected, indicating that the model is stable.

The economic implication of the long run result is that some key financial systems development indicators such as aggregate investments, market capitalization, prime lending rates, the degree of trade openness and exchange rates have a long run impact on economic growth. However, only aggregate

investment, market capitalization and prime lending rates have positive and significant effects on economic growth. This supports the findings of Usman and Adeyemi (2017) and Patrick (1966) who argue that the development of a robust financial sector contributes to economic growth. But indicators such as aggregate savings and savings deposit rates do not have long run impact on economic growth. Since these are essentially money market indicators, the failure of these indicators to significantly channel financial resources to activities that propel economic growth shows that the reforms have failed to promote efficiency in the financial intermediation and allocative roles of the money market.

Also, trade openness and exchange rate have negatively affected economic growth at 10% and 05% level of significance respectively. The finding on exchange rate is consistent with Akintola, Oji-Okoro, and Itodo (2020) that found that exchange rate spread affect economic growth negatively in Nigeria. This points to poor exchange rate and trade policy management respectively.

According to the results of the estimated error correction model, there are short-term delays in the transmission of prime lending rates to economic development. Also, in the short-run economic growth is significantly and positively impacted by total investments and market capitalization, while exchange rates negatively and significantly affect economic growth. The short run effect however, becomes positive after a one-period lag. This could be because increase in the fiscal space arising from additional naira that accrue to government from the conversion of the federation's share of the proceeds of oil sales to domestic.

5. Conclusion and Recommendations

A favourable impact of financial development on economic growth is strongly supported by the findings from our empirical investigation particularly by evidence from indicators like market capitalization, aggregate investment and prime lending rates. Measures should therefore be taken to promote competition in the commercial banking segment for a more efficient financial intermediation and resource allocation in the economy. The capacity of the Central bank to effectively monitor activities of the money market should also be enhanced. The study also shows that degree of trade openness, and exchange rates are negatively related to economic growth which shows the need to finetune Nigeria's exchange rate and trade policies to promote positive contribution of the external sector to economic growth and subsequently economic development.

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APPENDIX

Table 5: Data used for regression Analysis

Year	Aggregate Investments (AGI)	Aggregate Savings (AGS)	Exchange Rates (EXR)	Market Capitalization (MCAP)	Nominal GDP (NGDP)	Degree of Trade Openness (OPEN)	Prime lending Rates (PLR)	Savings Deposit Rate (SDR)
Q1 2011	2606235	1287068	0.006534	24926331	14501448	50.06	15.76	4.12
Q2 2011	2319798	1503039	0.006523	24258494	15054961	53.78	15.78	4.22
Q3 2011	2814011	3888603	0.006404	20994947	16163642	52.68	15.84	4.45
Q4 2011	2440816	6362222	0.006318	19454325	17260346	56.57	16.69	5.77
Q1 2012	2787324	4239657	0.006346	19477037	16450360	47.01	17.1	7.08
Q2 2012	2720030	5041677	0.006349	20963140	17743633	45.31	16.94	7.22
Q3 2012	2439635	5313124	0.006356	23182398	18521601	43.86	16.62	6.75
Q4 2012	2671690	5376044	0.006356	25862784	18998342	43.82	16.51	7.67
Q1 2013	2552399	2754524	0.006357	31508412	18295632	32.89	16.58	5.95
Q2 2013	2950955	2946669	0.006357	34193168	19931016	31.49	16.62	5.69
Q3 2013	2843699	2450550	0.006357	35156648	20464396	32.66	16.59	5.09
Q4 2013	3131026	3215054	0.006359	37695739	21401520	28.85	17.09	5.41
Q1 2014	3201604	3980758	0.006357	38157919	20169778	32.26	16.85	9.21
Q2 2014	3586811	4245241	0.006358	40394079	21734830	35.97	16.57	9.39
Q3 2014	3153620	4223639	0.006357	41221731	22933144	32.61	16.49	8.63
Q4 2014	3653807	2665222	0.005893	35318928	24205863	24.94	16.28	9.4
Q1 2015	3605595	2916053	0.005076	30608710	21041701	26.62	16.84	9.47
Q2 2015	3747167	3213671	0.005077	34866780	22859153	22.54	16.42	8.16
Q3 2015	3223898	2328417	0.005077	31410180	24313637	20.73	17.2	11.28
Q4 2015	3535510	2479372	0.005076	29373890	25930469	17.4	16.93	5.8
Q1 2016	3558174	2592338	0.005076	25382540	22235315	17.65	16.69	5.21
Q2 2016	4385954	2681898	0.003534	28287250	23547467	21.02	16.56	5.27
Q3 2016	3345578	2046567	0.003276	28832230	26537651	22.55	17.13	5.35
Q4 2016	3814478	3440854	0.003279	27317280	29169059	21.93	17.08	9.05
Q1 2017	4190921	4002440	0.003264	26567870	26028356	25	17.16	10.57
Q2 2017	4438124	3483717	0.003269	30562747	27030250	27.36	17.54	10.95
Q3 2017	3797313	3221998	0.003271	37159853	29377674	27.85	17.74	11.12
Q4 2017	4481774	4310037	0.003268	39518990	31275354	26.19	17.78	10.81
Q1 2018	4593157	4217024	0.003272	46438633	28438604	34.46	17.46	10.71
Q2 2018	6083722	5855458	0.003271	42617548	30699567	30.03	17.04	10.02

Q3 2018	6585260	4195294	0.003264	38094344	33368049	36.48	16.69	10.1
Q4 2018	7288104	4784104	0.003257	34844891	35230608	32.41	16.44	10.41
Q1 2019	7849182	6218452	0.003258	34896563	31824350	35.94	15.67	10.55
Q2 2019	9373140	6581110	0.003258	37848881	35001878	34.08	15.51	10.55
Q3 2019	8574812	6594267	0.003257	39996050	37806924	33.16	15.34	9.99
Q4 2019	10066846	5969751	0.003257	38830916	39577340	34.48	14.65	9.5
Q1 2020	10145214	10321456	0.00277	39615494	35647406	21.56	13.26	8.21
Q2 2020	8406496	7804455	0.00277	37935682	34023198	13.69	12.42	7.48
Q3 2020	9915320	9306950	0.002625	40119162	39089461	15.8	11.81	5.39
Q4 2020	12786519	11506335	0.002625	55324269	43564006	15.38	11.78	4.96
Q1 2021	14175678	11290875	0.002625	41596269	40014483	19.64	11.2	5.11
Q2 2021	12264017	11810732	0.002438	39832466	39123713	24.82	11.4	6.15
Q3 2021	14648746	13445636	0.002433	42125120	45113448	23.21	11.64	6.59
Q4 2021	17205509	15653585	0.002299	58090482	49276018	23.76	11.7	7.18

Source: Central Bank of Nigeria (2022); National bureau of statistics (2022)