Financial liberalisation and economic growth in Nigeria

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Abstract

This study investigated the impact of financial liberalisation on economic growth in Nigeria spanning from 1981 to 2021. Data for the study were obtained from Central Bank of Nigeria (CBN) Statistical bulletin. 2021. The formulated model was subjected to unit root test using the Augmented Dicey Fuller and Philip-perron unit root approach. The ADF and PP findings indicated that the variables had heterogeneous order of integration. Some of the variables were stationary at levels 1(0) while others were stationary after first difference 1(1). (1). Based on this, the research utilised the Auto-regressive distributive lag (ARDL) Model to determine the long-run connection as well as the behaviour of the variables. Hence, the study demonstrated that financial liberalisation has long and short-run link with economic growth. Additionally, research revealed that credit to private sector (CPS) has considerable favourable influence on economic growth. On the other hand, prime lending rate (PLR) and financial deepening (FD) had a large negative influence on economic growth in the short-run while deposit savings rate (DSR) had positive but negligible association economic growth in the short-run. The research found that, financial liberalisation has considerable influence on economic growth in Nigeria. It was therefore recommended amongst others that the central bank of Nigeria should look into activities of deposit money bank (DMBs) regarding the continuous rise in lending rate and adopt policy measures that would reduce and make the lending rate attractive to enable the surplus sector of the economy save more funds that would enhance investment and grow the Nigerian economy rather than slow it down

Keywords: Gross Domestic Product, Prime Lending Rate, Deposit Savings Rate, Credit to Private Sector, Financial Deepening.

1. Introduction

The aspiration and attendant growth of every nation (developed & developing) is to achieve stable price level, favourable balance of payment, employment and inflation. It is imperative to note that these macroeconomic objectives are largely reliant on a liberalized financial system or sector other-wise called financial liberalisation. Therefore, financial liberalisation refers to policy measures geared towards a deregulated and transformed financial system with the aim of achieving a liberalized financial market. This situation will lead to an efficient financial system (market) that will be free from government control which will lead to massive growth of an economy through increase mobilization of savings that will spur investment. The multiplier impact of increase investment is reduced unemployment rate, stable price of goods and services and favourable balance of payment. In this scenario, lending rate as a

determinant will be driven by market forces of demand and supply.

In agreement with this viewpoint, Nwadiubu et al. (2014) pointed out that more savings would be encouraged since interest rates would become more market-driven if government oversight and constraints on the operation of the financial sector were removed. According to the traditional Keynesian theory that saves and investment are equal, bigger savings would encourage higher investment. All other factors being equal, a rise in investment would result in economic growth and progress. Theoretical literature generally accepts that liberalising the financial sector might be very important for promoting economic growth and development. According to McKinnon and Shaw's finance-growth theory, which supports this assertion, financial liberalisation is the key to the economy's financial potential. Theoretically, financial deregulation should enhance economic growth by promoting private investment in high-priority sectors and an increase in savings through a rise in the real deposit rate (Orji et al., 2015). This shows that financial liberalisation tactics improve savings, which encourages more effective resource allocation, investment development, and economic expansion. It is impossible to overstate the impact of financial liberalisation on economic development.

Nonetheless, despite the many advantages of financial liberalisation for economic growth and development, it has come under fire since it raises the danger of speculative assaults on a nation's vulnerability to global shocks and capital flight. According to Tswamuno et al. (2007), citing Gridlow (2001), "Developing nations in the 1980s and early 1990s had been made to think that foreign investment in the form of shares and bonds sold on the local markets were more long-term in character than foreign bank credit they drew in the 1970s. Yet, there have been large capital outflows from poor nations at times in recent years, shattering that assumption. There was also a notion that financial deregulation may make financial crises more prevalent (Baldacci et al., 2002). (Baldacci et al., 2002). It was further suggested that knowledge asymmetries, which are widespread in developing nation financial markets and transactions, might be deleterious to liberalisation. As a consequence, it was suggested, developing markets lack the ability to assemble information important to financial transactions and cannot assure that capital would flow in cases when their marginal productivity is greater than their opportunity costs, in compared to their developed counterparts. It is more worrisome to note that in the past ten year's (2011-2021) lending rate has been on a consistent raise. For instance, in 2011 lending rate was 16.02% it upsurges to 16.79% in 2012. Additionally, the period between 2013 to 2018 reported further increase (16.72%, 16.55%, 16.85%, 16.85% & 17.56%) in lending rate. it is imperative to note that as the monetary authority (CBN) increase the monetary policy rate (MPR) deposit money bank equally increase their leading rate putting pressure on investors. It is expected that if the financial market is liberalized, bank lending rate would be determined by the forces of demand a supply. This means that increase in the cost of capital will lead to low access to funds however, when the cost of capital (lending rate) is reduced investors will have access to more funds for investment purposes. However there was a decline between 2019 to 2021 (15.53%, 12.32% & 11.55% (CBN, 2021).This situation has practically made it very impossible for members of the public particularly investors in the real sector to access cheap loanable funds for investment purposes that would have enhance the growth of the Nigerian economy in terms of employment, price stability and poverty reduction.

Furthermore, within last ten years, financial deepening has been highly volatile this is attributed to government control through the monetary author (CBN) and the deposit money banks (Dmbs) in the guide of fixing of monetary policy rate and lending rate in addition to very high valued collateral. Take for instance, in 2012, the value of financial deepening was 21.35% and appreciated to 23.14% in 2013. However, the value declined to 22.65%, and 21, 94% within 2014 and 2015. As usual the trend improved to 23.65%, 24.90%, 23.07% and 23.52% between 2016 and 2019 before nose-diving to 23.36% and 22.90% in 2020 and 2021 (CBN, 2021) respectively. This scenario indicates that the circulation of funds in the country is not stable but characterized by unpredictability that limited the productive capacity of the private sector which in turn have resulted to slow growth of the economy. This can also be the reason why the Nigerian unemployment rate is very high resulting to hunger and hardship.

Correspondingly, it is hypothesized by theory that a liberalized financial market will encourage savers (surplus sector) to save their money that would have channeled to the deficit sector for investment purposes. This is evident to the fact that the interplay between demand and supply in the financial market will increase the savings rate for customers to save more. However, the trend of savings rate in the past ten years is reported to be very low and revolve around 1.41% and 4.13%. This might be the reason for high inflation (21.47%) and unemployment rate (33.3%) in the country. however, in the past ten year, private sector credit indicated improvement but has not contributed much to the growth of Nigeria economy due to the interplay of other economic variables as discussed above.

Based on this unpleasant trend, this paper reviewed several studies bordering on financial liberalisation and economic growth. An in-depth review of the empirical literature showed that all of the studies utilized econometric techniques. None of the studies tried using survey method to capture the views of investors (respondent) directed on how indicators of financial liberalisation (LR, SR, CPS etc) contribute to their investment and by extension the growth of the Nigerian economy. Also, some of the studies; Mansour and Hassan (2021); Ilugbusi et al (2020); Sulaiman et al (2012); and Igbinosa (2021) used foreign direct investment (FDI), exchange rate (EXR) and inflation rate (INF) which are not adequate to proxy financial liberalisation. Further evaluation revealed that, Mansour and Hassan (2021); Ilugbusi et al (2020); Syed and Shahid (2019); Foluso et al. (2017); Orji et al. (2015); Qazi and Shahida (2013); Nwadiubu et al. (2014); Sulaiman et al (2012); and Igbinosa (2012) reported a positive relationship between financial liberalisation and economic growth while Yakubu et al. (2020) in their study demonstrated an inverse relationship between the variables. These conflicting results can be attributed to different methodology. Some of the studies used ordinary least square (OLS). This methodology does not account for the long-run dynamic relationship between the variables as well as the speed of adjustment annually. Finally, the most recent among these studies is carried out between 1970 to 2018 by Mansour and Hassan (2021). So, to broaden the study's scope beyond what has previously been done, this work used savings interest rate, lending interest rate, credit to the private sector, and financial depth as proxies for financial liberalisation.

In order to do so, the purpose of this article is to empirically assess how financial liberalisation has affected Nigeria's economic development from 1981 to 2021. The remainder of the study is organised as follows; after this introduction in section 1, part 2 would briefly examine, conceptual,

theoretical and empirical literature on financial liberalisation. Although part 4 will describe the findings, section 3 will concentrate on the research methodologies, including the definitions of study variables. The study will be concluded in Section 5 with a short comment on the implications for and suggestions for policy.

2. Review of Literature

In Mansour and Hassan (2021), with a focus on Egypt and Saudi Arabia especially, the influence of financial deregulation on economic growth in emerging nations is investigated. The study uses a model that takes GDP growth as the dependent variable and uses the following macroeconomic variables as financial liberalisation indices: Broad money as a percentage of GDP, Domestic bank credit to the private sector as a percentage of GDP, Monetary sector credit to the private sector as a percentage of GDP, and Net inflows of foreign direct investment as a percentage of GDP. The World Bank's open data website was utilised to acquire annual information for Egypt and the Kingdom of Saudi Arabia for the years 1970–2018. The Autoregressive Distributed Lag (ARDL) approach is employed in the empirical study. The findings reveal that both countries' financial and external liberalisation policies do not have a favourable influence on the growth rates of their economies after more than three decades of implementation. Our study has also led us to the conclusion that any financial liberalisation policies in both countries must be preceded by the improvement of their institutional and financial development frameworks as well as the attainment of macroeconomic stability.

Ilugbusi et al. (2020) looked at 33 years, from 1986 to 2018, to estimate the influence of financial liberalisation on economic growth in Nigeria. Using the McKinnon and Shaw hypothesis as the theoretical foundation, gross domestic product (GDP) was used to represent economic growth, while prime lending rates, savings deposit rates, exchange rates, credit to the private sector, and the ratio of private investment to GDP were used to represent financial liberalisation. The CBN Statistical Bulletin was utilised as the source for the data, and auto regressive distributed lag was employed for estimation. The study showed a long- and short-term link between financial liberalisation and economic progress. Subsequent study found that credit to the private sector had highly beneficial advantages on economic growth while prime lending rates had no good effects. On the other hand, the rate of interest on savings deposits, the value of the dollar, and the percentage of private investment to GDP have limited unfavourable influence on economic progress. According to the study's results, financial deregulation considerably increases economic growth, with loans to the private sector having the largest influence. As a consequence, the study offered numerous suggestions, including that the government raise the saving deposit rate higher through the Central Bank of Nigeria in order to boost growth in domestic savings by the surplus sector of the economy.

Financial liberalisation, political stability, and economic progress in Kenya were evaluated by Yakubu et al. (2020) using time series data from 1970-2016. In order to estimate models containing quadratic and interaction variables, the authors decided utilising quantile regression. The unit root test was developed to explore the stationarity problem. Kenya's real economic growth was affected by political stability and was constrained by the country's lack of capital account openness and financial development. There is a non-linear U-shaped link between financial development and real economic growth,

with the former serving as a drag and the latter as an engine of long-term growth. The government should maintain liberalising the capital account in order to support economic development. The domestic financial market should also be liberalised to reduce the negative impacts of financial repression and maintain the political atmosphere stable.

To what extent does Financial Liberalization (FL) contribute to economic expansion? that is the question Syed and Shahid (2019) set out to answer. Using the Panel Cointegration through Fully Modified Ordinary Least Square (FMOLS) technique, 58 nations' panel data were analysed for the period 1973–2012. The eight aspects of banking sector reforms that make up the FL index are the subject of this analysis. According to the estimates, the reaction to FL is more favourably significant in Least Developed Countries (LDCs) than in Developed Countries (DCs). The reason for this is that the market-based financial systems of the developed countries are much more prevalent than the banking sectors of the LDCs. In addition, excessive liberalisation has mixed effects in both categories of nations. Too much FL is shown to have a large negative influence on the DCs, suggesting that it undermines financial institutions and the economy as a whole via currency over-valuation, capital flight, liquidity issues, financial hardship, and even the rare financial catastrophe. While the results for the LDCs show a positive and significant effect of too much FL, this indicates that these countries still have the capacity to absorb the positive effects of additional financial reforms, which are good for the development of financial intermediaries and, in turn, foster the growth rate.

This study by Foluso et al. (2017) uses data from 30 nations in sub-Saharan Africa (SSA) to analyse how financial liberalisation has affected economic development. This research uses dynamic panel estimate to analyse how financial liberalisation and banking crises affect GDP growth in SSA. The Arellano and Bover technique is used to estimate the linear generalised method of moments. The results show that for SSA, the coefficient of the variable representing financial liberalisation is positive and statistically significant. While statistically small, the dummy sign for financial liberalisation became negative for low-income nations. The statistics also demonstrate that a financial crisis is inversely connected with economic growth, indicating that a banking crisis's length may have a substantial influence on economic expansion throughout sub-Saharan Africa. These results have implications for a number of African nations, especially those whose economies are now undertaking financial reforms, given the important role that most financial intermediaries play in developing countries.

Orji et al. (2015) construct a financial liberalisation index for Nigeria from 1981 to 2012 using the McKinnon-Shaw framework to analyse the impact of financial deregulation on GDP growth in the country. Cointegration analysis and the ordinary least squares method are used in the study. Private investment and financial liberalisation (abbreviated FINDEX and PINV respectively) are shown to have a major impact on GDP growth in Nigeria. A negative correlation between real loan rate (LDR) and GDP growth in Nigeria throughout the studied period was discovered. In order to strengthen the impact of liberalisation on the economy and to ensure that the benefits of the liberalisation exercise are maximised, we conclude that the monetary authorities and policy makers in Nigeria need to support the liberalisation process by developing complementary policies and financial sector reform measures.

Between 1971 and 2007, Qazi and Shahida (2013) conducted an empirical study to determine how financial liberalisation affected economic development in Pakistan. Real Gross Domestic Product (GDP) per capita and the Financial Development Index (FDI) were used as surrogates for economic growth and financial development, respectively. The research used an auto regressive distributed lag estimate method, and its findings verified the expectations of the new growth theory by showing a strong link between long-term growth and many measures of financial liberalisation. Their research accounted for financial liberalisation as a policy instrument with the potential to stimulate economic expansion.

The Johansen Co-integration test and the Error Correction Mechanism were used by Nwadiubu et al. (2014) as they probed the relationship between financial liberalisation and GDP growth in Nigeria (ECM). The research relied on time series data on the study's variables, collected annually from 1987 to 2012 from the Central Bank of Nigeria Statistics Bulletin. Results of the econometric modelling, when considered at a 5% level of significance, are consistent with the co-integration equation and long-run equilibrium between the variables. A high coefficient of multiple determination is found for the Error Correction Mechanism in both the Over-parameterized and Parsimonious Models. According to the available descriptive statistics, financial liberalisation has had a negligible impact on economic growth in Nigeria throughout the study period. The report concludes that in order for the economy to thrive sustainably, the government must prioritise monetary stability, maintain a healthy macroeconomic climate, and build necessary infrastructure.

Based on their findings, Sulaiman et al. (2012) conclude that financial liberalisation has a negative impact on economic development in developing countries like Nigeria. This study used a model in which proxy GDP is the dependent variable while loan rates, currency rates, inflation rates, financial deepening (M2/GDP), and openness are the financial liberalisation indicators. The Central Bank of Nigeria's Statistics bulletin was the primary source for the yearly time series data used in this analysis, covering the years 1987 to 2009. The empirical study makes use of the Error Correction Mechanism and the Johansen Co-integration test (ECM). The results of the Co- integration test suggest that the variables and the co- integrating equations are linked in a long-run equilibrium relationship at the 5% level of significance. Very high R2 values for the Error Correction Mechanism are found in both the Over-parameterized Model (95%) and the Parsimonious Model (91%), which removes superfluous variables. The research shows that Nigeria benefits from economic development due to financial liberalisation. Recommendations include strengthening the regulatory and supervisory framework for the financial sector and ensuring that economic stability has been achieved or is being actively sought prior to the introduction of any financial liberalisation measures.

From 1981 to 2009, Igbinosa (2012) analysed Nigeria's financial liberalisation and economic development. The research employed GDP as a surrogate for economic growth, while interest rates (both deposit and lending rates), money supply, credit distribution by banking sector to the domestic economy, FDI, and market capitalization were all used as indicators of financial policy initiatives. The research relied on secondary data gleaned from World Bank databases and evaluated using ordinary least squares (OLS). Money supply, in particular, was shown to have a positive correlation with economic expansion, whereas interest rates were

found to have a negative and non-significant correlation.

An in-depth review of the empirical literature showed that all of the studies utilized econometric techniques. None of the studies tried using survey method to capture the views of investors (respondent) directed on how indicators of financial liberalisation (LR, SR, CPS etc.) contribute to their investment and by extension the growth of the Nigerian economy. Also, some of the studies; Mansour and Hassan (2021); Ilugbusi et al. (2020); Sulaiman et al. (2012); and Igbinosa (2021) used foreign direct investment (FDI), exchange rate (EXR) and inflation rate (INF) which are not adequate to proxy financial liberalisation. Further evaluation revealed that, Mansour and Hassan (2021); Ilugbusi et al. (2020); Syed and Shahid (2019); Foluso et al (2017); Orji et al (2015); Qazi and Shahida (2013); Nwadiubu et al. (2014); Sulaiman et al. (2012); and Igbinosa (2012) reported a positive relationship between financial liberalisation and economic growth while Yakubu et al. (2020) in their study demonstrated an inverse relationship between the variables. These conflicting results can be attributed to different methodology. Some of the studies used ordinary least square (OLS). This methodology does not account for the long-run dynamic relationship between the variables as well as the speed of adjustment annually. Finally, the most recent among these studies is carried out between 1970 to 2018 by Mansour and Hassan (2021). This paper has resolved to extend the scope from 1981 to 2021.

Financial Liberalisation

Financial liberalisation denotes policy measures geared towards a deregulated and transformed financial system with the aim of achieving a liberalized financial market. This situation will lead to an efficient financial system (market) that will be free from government control which will lead to massive growth of an economy through increase mobilization of savings that will spur investment. According to Ilugbusi (2020), financial liberalisation occurs when the government lifts all regulations and limitations that were previously imposed on the financial system. It is possible to achieve financial liberalisation in a number of ways, as outlined by Obamuyi (2010). These include "deregulating interest rates," doing away with or reducing credit controls, removing barriers to entry in the banking sector, giving commercial banks more independence, allowing private ownership of banks, and allowing for less regulation of international capital flows. Several academics, like Bekaert et al. (2004), Henry (2004), and Levine and Zervos (1996), concur with this viewpoint and claim that financial liberalisation would reduce the cost of debt and equity by bringing previously separate markets together. They also claimed that more stock liquidity would arise from deregulation. Because of the ease with which domestic and international investors may enter and exit the market, it follows that higher levels of liquidity contribute to the expansion of the underlying market. Supporters of financial liberalisation also stated that it would help to enhance local business governance and lessen the gap between the two types of financing.

After the groundbreaking research of McKinnon (1973) and Shaw (1973), financial liberalisation gained widespread support and is now practised in both developing and wealthy nations. They argued that financial deregulation may boost investment and savings, so contributing to economic expansion. The government of Nigeria is widely believed to support liberalisation, and as such, a number of changes have been made in the banking sector and financial market to stimulate the necessary increase in investment and savings. When it comes to

the private sector, Nigeria's government has prioritised reforms like the 1952 introduction of the banking code and the subsequent strengthening of the private sector,

Financial Sector Reform in Nigeria

In 1952, banking regulations were adopted, marking the beginning of a process that would ultimately result in widespread reform and the development of new policies for Nigeria's financial system. There have been several reform regimes in the banking industry since then. Systemic growth problems drive many of these changes. The change was implemented to help the economy become more globally competitive.

Authorities in Nigeria, including the Central Bank of Nigeria (CBN), maintained extensive influence over the banking system even before the industry was widely liberalised in 1987. Bank admission was limited, and interest rates, the value of the currency, and other tools of monetary policy were all under direct government control (Emenuga, 2005). The reform that took place in 1987 liberalised this regulation, making possible a free-floating market-based exchange rate system. Several policy implementation mechanisms were eliminated under this reform period, only to be reinstated afterwards. In 1991, the government imposed severe limits on the number of banks that could be licenced and had complete control over interest rates. As of 2007 (Omotar). Core tenets of the 2004 policy overhaul include the consolidation of banking institutions through mergers and acquisitions, the gradual withdrawal of public sector funds from banks, the adoption of a risk-focused, rule-based regulatory framework, the adoption of zero-tolerance in the regulatory framework, and the automation of the process of reporting returns. Tight implementation of the framework for dealing with systemic banking crisis and other contingencies (Okagbue & Aliko, 2005).

Economic Growth

Gains in aggregate productivity, as shown by an expanding Gross Domestic Product, are the hallmark of a thriving economy (RGDP). Productivity refers to a nation's propensity to generate its own outputs (both material and immaterial) from its own resources. An increase in production leads to a flourishing economy. The expansion of the economy may be evaluated in two ways: the real expansion and the inflated expansion known as nominal growth. According to Haller (2012), economic growth is the process of expanding national economies, as shown by rising macro-economic indicators like the GDP per capita, which have beneficial consequences on the economic and social sectors. To put it simply, economic growth is a rise in per capita income. It includes a rise in per capita gross domestic product (GDP), gross national product (GNP), and net national income (NI), all measures of national wealth. It also encompasses structural changes to the economy (Akpotor, 2021).

According to Mladen (2015), GDP growth is the primary indicator of economic growth since it measures the expansion of a country's total output over time. Changes in material production are part of economic development, and they occur over a very short time frame, often a year.

Theoretical Review

Financial Liberalization Theory

It was Mickinnon-Shaw (1973) and Romer (1980) who first proposed the idea of financial liberalisation (1987). Financial liberalisation, in which financial repression is abandoned in favour of financial liberalisation or freedom, was the primary emphasis of Mickinnon and Shaw's (1973) concept for achieving economic development. These two academics argued

that a high savings and investment rate is impossible to achieve without financial liberalisation, financial institutions, which in turn encourages domestic investors to borrow and save, leading to greater equity accumulation and lower borrowing costs. In order for the economy to benefit from new funding opportunities, the financial markets must function normally, Gibson and Tsakalos (1994) claimed that financial liberalisation is essential. That's doable if regulations governing the financial sector are loosened, allowing the cost of borrowing money to be set by the market's response to the supply and demand for those funds. The implication of this theory to this study is that, as a result of freedom in the financial system, lending rate would slow-down or reduce which will lead to increase in savings, making it possible for the private sector to access sufficient funds that would result to massive investment. The multiplier impact of this is that, increase in investment will mean job creation, stable price of goods and services, favourable balance of payment and exchange rate leading to increase in economic growth and development. It therefore implies that, economic growth can be achieved through liberalisation of the financial sector to attain the much anticipated growth and development of the economy.

Harrod–Domar Growth theory

Harrod (1939) and Domar (1970) proposed the Harrod-Domar Growth hypothesis (1946). According to this theory, progress is an outcome of advancement in the real sector. In nations with a big and rapidly growing population, their theory is used to explain economic growth in terms of the savings rate and the productivity of capital. Mobilizing savings and generating new investment opportunities to spur rapid economic growth is central to the development strategy, as proposed by the

Harrod-Domar hypothesis. The theory states that the ratio of savings to GDP (s) and the ratio of capital production to GDP (c) are directly proportional to and inversely proportional to the rate of economic growth (g) (r). G, thus, is equal to s divided by k.

According to the proponents of this theory, there are three distinct types of economic growth: warranted growth (the rate at which producers would be compensated for their efforts; also known as the profit taste), actual growth (the rate at which an economy actually grows), and natural growth (this is the rate of growth at full employment which is determined and allowed by the increase in population and rate of technological progress). Full employment and sustained economic development, the theory posits, do not arise by happenstance in a successful economy. As a result, the report suggests that increased economic development may occur under other circumstances as well, and that savings and investment alone are not adequate.

3. Methodology

The statistics bulletin published by the Central Bank of Nigeria (CBN) was mined for secondary data for this article. During the time period from 1981 to 2021, we use GDP as a stand-in for economic growth and prime lending rate, deposit savings rate, loans to the private sector, and financial deepening as proxies for financial liberalisation.

3.1 Model Specification

According to the financial liberalisation theory, which is used as a foundation for the model's specifics, a country needs a high savings and investment rate in order to spur real growth in its financial institutions, which in turn encourages domestic investors to borrow and save, increasing their equity and thereby reducing their cost of borrowing. This study's model is based

on a tweaked version of the models used by Sulaiman et al. (2012) to examine how monetary deregulation affected GDP growth in Nigeria. This is how their model is defined:

GDP = f (LR, EXR, INF, FD, DOP)
Where;
GDP = Gross Domestic Product LR = Lending Rate EXR = Exchange Rate INF = Inflation Rate
FD = Financial Deepening DOP = Degree of Openness f = functional relationship
As a proxy for financial liberalisation, credit to the private sector (CPS) and the savings deposit rate (SDR) were added to the original model. The Prime Lending Rate, Savings Deposit Rate, Credit to Private Sector, and Financial Deepening are the exogenous variables in the model that are used to determine the endogenous variable (Gross Domestic Product). These are the details of the model:

GDP = f (PLR, DSR, CPS, FD) 3.1

The mathematical model could be symbolically expressed as;

GDP = B0 + B1PLR + B2SDR + B3CPS + B4FD   3.2

Equation (3.2) above is transformed into an econometric model by incorporating the disturbance term (ε) as follows;

GDP = B0 + B1PLR + B2SDR + B3CPS + B4FD + e   3.3

A severely skewed variable may be transformed into a more typically distributed one using logarithmic transformations (Kenneth 2011)

The updated model used in this investigation looks like this

LGDP = B0 + B1PLR + B2SDR + B3LCPS + B4FD + e   3.4
Where;

GDP = Gross Domestic Product PLR = Prime Lending Rate, SDR= Savings Deposit Rate, CPS = Credit to Private Sector,   FD = Financial Deepening f = functional relationship

B0 = Intercept of relationship in the model/constant B1-B4 = Coefficients of each independent or explanatory variable e= Stochastic or Error term

Description of variables in the Model.

Gross Domestic Product: In this study, we stand in for economic growth using the non-oil GDP. GDP expansion is measured on a yearly basis. The growth rate was calculated by dividing the actual GDP by the total population. Non-Oil GDP/Total Population = Economic Growth. Demirguc-Kunt and Levine (1996), Levine and Zervos (1996), and Demirguc-Kunt and Makismovic (1996) all share this view (1996).

Prime Lending Rate: The cost of capital for loans made to the deficit sector is utilised as a proxy for financial liberalisation in this research by focusing on the prime lending rate. The rate is reported as a percentage each year.

Savings Deposit Rate: The savings deposit rate is the interest provided to depositors for saving a portion of their income, similar to the prime lending rate. Percentages per year are often used to express this.

Finances extended by banks in the form of loans, non-equity security, trade credit, and other accounts receivable that give rise to a demand for repayment are what are meant by "credit to the private sector" in this context. Liberalization of the financial system is often defined by the degree to which the private sector is able to get loans. This yearly figure is reported in billions of naira.

Financial Deepening (M$_2$): There is a positive correlation between financial deepening and growth, since it serves as a proxy for the size of the money supply and so reflects the maturity of the financial

system. Specifically, the ratio of liquid liabilities (M2) value to real GDP was used to arrive at this estimate. The level of financial development was stood in for by the ratio of liquid liabilities to GDP. According to the research of authors like King and Levine (1993) and Beck et al (2001). Value of liquid assets (M2) divided by gross domestic product (GDP) equals liquid liabilities.

3.2 Method of Data Analysis

In order to prevent false regression, the researchers used the Augmented Dickey Fuller (ADF) unit root test to determine the proper order of integration for the variables under investigation. Because of the mixed results of the Augmented Dickey Fuller unit root test, the ARDL model was chosen for this analysis. Variables were either already stationary at level 1(1) or became stationary after first difference.

As a means of estimating the connection between the variables, the study used the autoregressive distributive lag model (ARDL) proposed by Pesaran, Shin, and Smith (2001). In order to conduct a test for a cointegration relationship, the following model specification is used:

The following are the parameters for the Autoregressive Distributed Lag (ARDL) Model:

$$\Delta LGDP_t = \beta_0 + \Delta LGDP_{t-1} + \Sigma\beta_{1t}\Delta PLR_{t-1} + \Sigma\beta_{2t}\Delta SDR_{t-1} + \Sigma\beta_{3t}\Delta LCPS_{t-1} + \Sigma\beta_{4t}\Delta FD_{t-1} + \Delta LGDP_{t-1} + \Sigma \Phi_{1t}\Delta PLR_{t-1} + \Sigma \Phi_{2t}\Delta SDR_{t-1} + \Sigma \Phi_{3t}\Delta LCPS_{t-1} + \Sigma \Phi_{4t}\Delta FD_{t-1} + U_t$$

$$3.5$$

If the obtained F-statistics is more than the upper limit critical value of 5%, then it may be concluded that cointegration occurs. Cointegration does not exist if the calculated F-statistic is less than the lower limit critical value of 5%. Therefore, the inference is deemed inconclusive if the value of the estimated F-statistics falls anywhere between the higher and lower

critical levels. If a cointegration connection is shown to exist, then the long-run model may be estimated according to the criteria set above.

$$\Delta LGDP_{t-1} + \Sigma\Phi_{1t}\Delta PLR_{t-1} + \Sigma\Phi_{2t}\Delta PLR_{t-1} + \Sigma\Phi_{3t}\Delta SDR_{t-1} + \Sigma\Phi_{4t}\Delta LCPS_{t-1} + U_t$$

$$3.6$$

As with the long-run model, the short-run model of the error correction specification would be estimated to determine the short-run dynamic behaviour of the model's variables, as follows:

$$\Delta LGDP_t = \beta_0 + \Delta LGDP_{t-1} + \Sigma\beta_{1t}\Delta PLR_{t-1} + \Sigma\beta_{2t}\Delta SDR_{t-1} + \Sigma\beta_{3t}\Delta LCPS_{t-1} + \Sigma\beta_{4t}\Delta FD_{t-1} + ECT_{t-1} + U_t \quad 3.7$$

Where the ECT in the above equation is specified as;

$$ECT_t = \Delta LGDP_t - \beta_0 - \Delta LGDP_{t-1} - \Sigma\beta_{1t}\Delta PLR_{t-1} - \Sigma\beta_{2t}\Delta SDR_{t-1} - \Sigma\beta_{3t}\Delta LCPS_{t-1} - \Sigma\beta_{4t}\Delta FD_{t-1}$$

Finally, the study diagnosed the model by conducting test for serial correlation, Ramsey reset test and heteroskedasticity.

4. Results and Discussion

To prevent the issue of false regression, it is virtually standard practise in time series analysis to check the sequence of integration for each series. The Augmented Dickey-Fuller (Dickey & Fuller, 1979) and Phillips-Perron (Phillips and Perron, 1988) test techniques are used to investigate whether or not the variables under investigation are really stationary. The Phillips-Perron and Augmented Dickey-Fuller procedures were employed in this study. If the Augmented Dickey Fuller (ADF) test statistics exceed the Mackinnon Critical Value (MCV) at 5% and in absolute term (i.e. ignoring the negative value of both the ADF test statistics and the Mackinnon critical values), we accept the null hypothesis (Ho) that the data is non-stationary and reject the alternative hypothesis (H1) that the data is stationary.

Table 4.1a: Unit Root Test Using Augmented Dickey Fuller (ADF)

Variables	Levels		First Difference		Order of Integration	P-value
	ADF Statistics	5% Critical Value	ADF Statistics	5% Critical Value		
LGDP	-1.394594	-2.936942	-3.459534	-2.938987	1(1)	0.0147
PLR	-3.399770	-2.936942			1(0)	0.0168
SDR	-0.885861	-2.936942	-6.440019	-2.938987	1(1)	0.0000
LCPS	-0.910671	-2.936942	-4.522652	-2.938987	1(1)	0.0008
FD	0.806510	-2.936942	-6.768504	-2.938987	1(1)	0.0000

Source: Extracts from E-view 10.   * Level of significance at 5%

The variables included in the study were put through Augmented Dickey Fuller (ADF) Tests to assess if they are stationary series or non-stationary series, according to the results from table 4.1a above. The stationarity test results show that LGDP, SDR, LCPS, and FD were stationary at initial difference 1, whereas PLR are stationary at level 1(0). (1). The variables exhibit mixed order of integration or stationarity of level and first differences, according to assessments of the variables' stationarity.

Table 4.1b: Unit Root Test Using Philip-Perron (PP)

Variables	Levels		First Difference		Order of Integration	P-value
	T. Statistics	5% Critical Value	T. Statistics	5% Critical Value		
LGDP	-1.045981	-2.936942	-3.385071	-2.938987	1(1)	0.0175
PLR	-3.363278	-2.936942			1(0)	0.0184
SDR	-1.149558	-2.936942	-6.479562	-2.938987	1(1)	0.0000
LCPS	-0.853217	-2.936942	-4.461509	-2.938987	1(1)	0.0010
FD	0.621247	-2.936942	-6.039243	-2.938987	1(1)	0.0000

Source: Extracts from E-view 10.   * Level of significance at 5%

The variables included in the study were put through Philip-perron (PP) Tests to assess if they are stationary series or non-stationary series, according to the results from table 4.1b above. The stationarity test results show that LGDP, SDR, LCPS, and FD were stationary at initial difference 1, whereas PLR are stationary at level 1(0). (1). The variables exhibit mixed order of integration or stationarity of level and first differences, according to assessments of the variables' stationarity. For the data analysis, the Autoregressive Distributive Lag (ARDL) method, which can handle both stationary at level I(0) and first difference I(1), was used. The ARDL test, which takes into account both short- and long-term trends when examining the connection between the dependent and independent variables, is therefore the most appropriate analytical technique.

Table 4.2: ARDL Bound Test

Test Statistics	Value	K
F-statistics	4.470536	4

Significance	I (0)	1(1)
10%	2.45	3.52
5%	2.86	4.01
2.5%	3.25	4.49

1%	3.74	5.06

Source: Authors computation from E-view 10 Output

Table 4.2 presents the results of the bound test, which compared the F-statistics with the critical bound values. The value of the F-statistic is 4.470536. The outcome demonstrated that, at a significance level of 0.05, the F-statistic is bigger than both the lower and upper limits of the critical values, which are 2.86 and 4.01, respectively. It follows that there is a degree of co-integration between financial liberalisation and economic growth in Nigeria. As a consequence, the projected results of the long-run and short-run Auto-Regressive Distributive Lag (ARDL).

Table 4.3: ARDL Long-run Result

Variable	Coefficient	Std. Error	t-statistics	Prob
LCPS	0.892519	0.159321	5.602028	0.0000
PLR	0.081294	0.070952	1.145751	0.2654
SDR	-0.021800	0.044508	-0.489790	0.6296
FD	-0.062957	0.052590	-1.197129	0.2453

EC = LGDP - (0.8925*LCPS + 0.0813*PLR -0.0218*SDR -0.0630*FD)

Source: Authors computation from E-view 10 Output

Table 4.3 of the Autoregressive Distributive Lag (ARDL) long-run result suggest a positive relationship between the log value of credit to private sector (LCPS) and the log value of gross domestic product (LGDP). On average, a 5 percent point increase in LCPS is associated with a surge in annual LGDP of 0.89 percent point per yearly. The p-value equally indicate that there is a statistically significant relationship between LCPS and LGDP. Analysis of the component of LCPS and LGDP submit that the positive impact largely reflects massive awareness in financial liberalisation and access to credit with a reasonable or reduced cost of capital. This is in agreement with study done by (Ilugbusi et al, 2020).

Investigation of prime lending rate (PLR) advocates a positive relationship with the log of gross domestic product (LGDP). The result denotes that a 5 percent rise in PLR is related to an increase in annual LGDP of 0.08 percent point increase per year. The positive effect of PLR on LGDP is largely associated to harsh economic environment and in particular consistent increase in monetary policy rate in the Nigerian economy. The result does not conform to apriori expectation and the p-value shows that there is no significant relationship between PLR and LGDP. Finally, result suggest an inverse relationship between the coefficient of savings deposit rate (SDR); financial deepening (FD) and the log of gross domestic product (LGDP). On average, a 5 percentage point increase in DSR and FD is associated with a slowdown in annual gross domestic product (LGDP) of 2% and 6% point per year. The negative impact does no conforms to apriori and is statistically insignificant. This means that there is no significant relationship between DSR, FD and LGDP.

Table 4.4: ARDL Short-run Result

Variables	Coefficient	Std. Error	t-Statistics	Prob
C	0.792277	0.192350	4.118939	0.0005
D(LCPS)	0.301917	0.095868	3.149298	0.0050
D(LCPS(-1))	-0.009275	0.097326	-0.095302	0.9250
D(LCPS(-2))	0.054928	0.097076	0.567828	0.5778
D(PLR)	0.004876	0.004687	1.040281	0.3106
D(PLR(-1))	-0.014210	0.007083	-2.006247	0.0585
D(PLR(-2))	-0.010547	0.005162	-2.043263	0.0544

D(DSR)	0.000295	0.009759	0.030239	0.9762
D(DSR(-1))	0.008575	0.009534	0.899486	0.3791
D(DSR(-2))	0.011192	0.007651	1.462846	0.1590
D(FD)	-0.032330	0.008040	-4.021207	0.0007
D(FD(-1))	-0.004995	0.008128	-0.614584	0.5458
D(FD(-2))	0.003821	0.008436	-0.452881	0.6555
ECM(-1)	-0.249963	0.064924	-3.850093	0.0010

Adj R² =0.645473, F-statistics = 6.181888 (0.000064), DW =2.073655

Source: Authors computation from E-view 10 Output

The coefficient of the error correction term which is the ECM, shows the speed at which the dependent variables adjust to equilibrium in the short-run. According to apriori expectation, the ECM should be significant and negative to show that the error in the previous period has been corrected and the model has returned back to equilibrium. From the result in table 4.4, the ECM coefficient is negative as required and significant. This implies that the model adjusts to equilibrium in the short-run. Hence, it shows that financial liberalisation adjust in the short-run to correct the discrepancies and disequilibrium in economic growth. The speed of adjustment is -0.249963within each period.

It is evident from the ARDL short-run findings that the constant parameter (Bo) is positive at +0.792277. Keeping all other factors, the same, this suggests that GDP will increase by 0.79 percent annually. The coefficient for CPS (credit to the private sector) is +0.301917. In the latest time, CPI is positively correlated with GDP. This outcome is consistent with first-principles expectations. The positive finding indicates that an increase of one unit in private sector credit results in a 0.30 percent rise in GDP. Research by (Ilugbusi et al, 2020). Prime lending rate (PLR) coefficient is -0.014210 in the second year. The PLR has a negative correlation with GDP. An immediate rise in PLR by one unit would reduce GDP by 0.0142%. This finding is both substantial and consistent with existing knowledge.

The investigation by confirmed the unfavourable impact (Orji et al., 2015).

Deposit savings rate (DSR) coefficients point to a favourable effect on GDP expansion. The small uptick in the savings rate over the last decade might be responsible for this. Deposit savings rate as a component of financial liberalisation has a considerable beneficial influence of Economic development in Nigeria, according to research by Qazi and Shahida (2013) and Igbinosa (2012). Lastly, contrary to what might be expected a priori, financial depth slows economic expansion. The lack of access to banking and investment opportunities in rural regions may be to blame. The high cost of capital charged by banks may also play a role, making it very difficult for small businesses and individuals to get finance.

Further findings regarding the adjusted R2 coefficient confirmed the level of the relationship by recording 65% variation in the dependant variable, indicating a genuine relationship between the variables. Overall, the model's significance was determined to be high, with a probability value of 0.000064 indicating its significance. The auto-correction issue in the series was shown to be nonexistent by Durbin Watson's test of 2.073655. Overall, the data suggested that financial liberalisation had a substantial impact on GDP development in Nigeria

Diagnostic Test

Table 4.1.5: Ramsey Reset Test, Serial Correlation LM Test and Homoscedasticity Test Results

	F-Statistic	**Prob.Value**

Ramsey Reset Test	1.487584	0.2375
Breusch-Godfrey Serial Correlation LM Test	1.670464	0.2160
Breusch-Pagan-Godfrey Heteroskedasticity Test	2.299415	0.0685

Source: *Author's Computation using E-view 10*

Table 4.1.5 shows that the f-statistic (1.487584) from the linearity test of the Ramsey reset test has a calculated p-value of 0.2375, which is larger than the 5% (0.05) critical threshold, indicating that the model is properly defined. Hence, the investigation found against the null hypothesis.

Least Squares (Breusch-Godfrey) Serial Correlation The chi-square probability value for the serial or autocorrelation test is 0.2160, and the f-statistic is 1.670464. Hence, the study shows that the model does not exhibit any serial correlation, since the calculated probability is greater than the critical value of 5% (0.2160).

The Chi-Square probability value is 0.0685, and the f-statistic, as determined by the Breusch-Pegan-Godfrey test for heteroscedasticity, is 2.299415. There is no evidence of heteroskedasticity in the model, since the probability Chi-square value is more than 5% (P > 0.05). Since a constant variance is preferred in regression, we may conclude that residuals are homoscedastic.
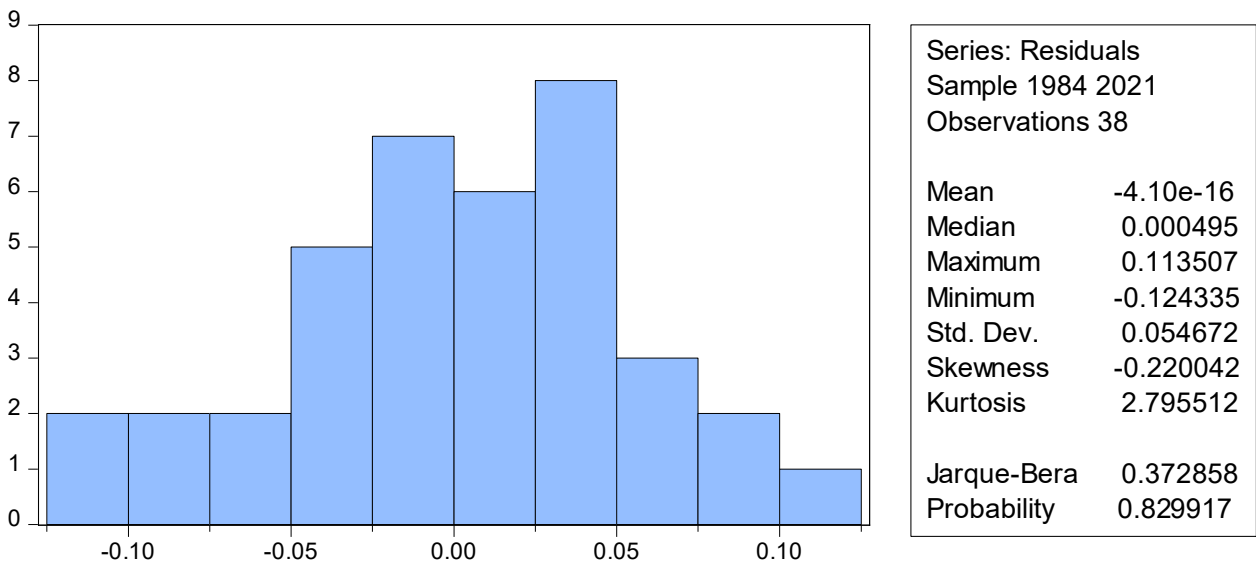

Figure 4.1, shows summary of the normality test with Jarque-Bara value of 0.372858 and a corresponding probability value of 0.829917 more than 0.05 level of significance, indicating that the residuals are normally distributed.
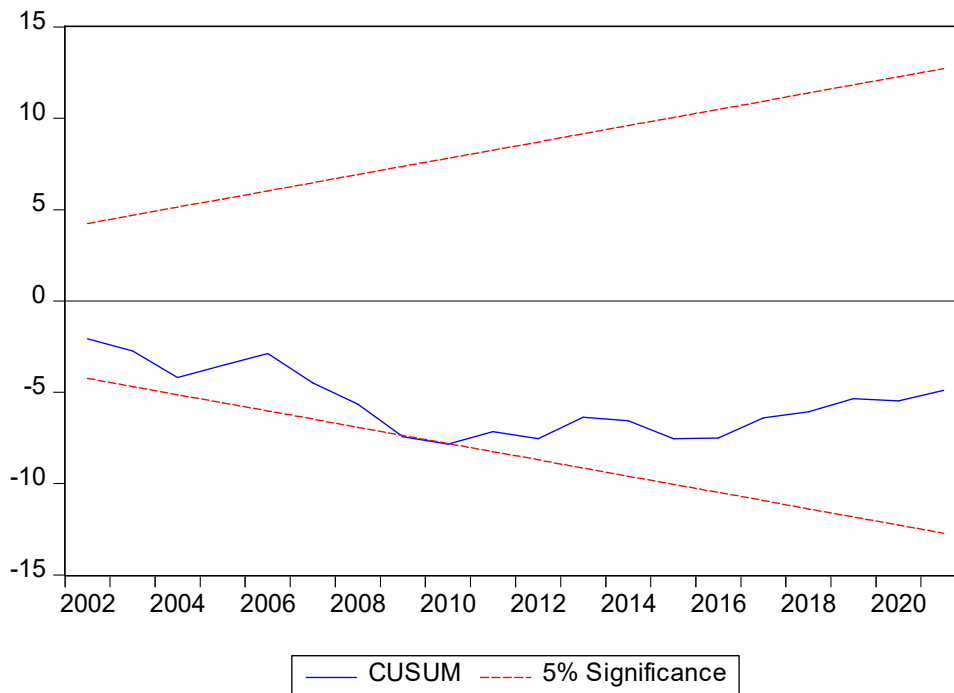
Figure 4.1: Normality Test

Figure 4.2: Stability Test

Figure 4.2, shows summary of the stability test, the result showed that the model is stable. This is evident to the fact that the blue line is in-between the two red (-5 & +5) or less than 0.05 level of significance.

Policy Implication
It is claimed that the binding limits on credit required for investment may be eliminated if control and restriction were removed from the financial industry. The notion of financial liberalisation posits that, by reducing regulatory hurdles and freeing up the market's potential for distribution and efficiency, it would boost investment and spur expansion. A priori, one would anticipate that increased investment and higher GDP growth rates would result from a more liberal financial system. This study's findings generally corroborate prior theoretical predictions. All explanatory variables and their lagging values showed the expected sign and relationship with GDP, with the exception of financial deepening (FD). Curious and at odds with theoretical hypotheses is the inverse correlation between FD and GDP. The

study's findings go against the a priori assumption that financial deepening will lead to more financial services and greater economic growth.

5. Conclusion and Recommendation

Conclusion
Based on the findings, it is therefore concluded that credit to private sector, prime lending rate, and financial deepening influence economic growth. Hence, various financial liberalisation measures such as credit to private, prime lending rate and financial deepening both in the long and short-run improve economic growth in Nigeria.

Recommendation

Based on the findings, the following recommendation were made below;

   i.   The central bank of Nigeria should look into activities of deposit money bank (DMBs) regarding the continuous rise in

lending rate and adopt policy measures that would reduce and make the lending rate attractive to enable the surplus sector of the economy save more funds that would enhance investment and grow the Nigerian economy rather than slow it down.

ii. Also, the monetary policy authority (CBN) should critically review the monetary policy rate down-ward to enable the deposit money banks (DMBs) to reduce their lending rate down-ward, while savings rate should be increased to attract more savings from members of the public.

iii. Finally, federal government in collaboration with the monetary authority (CBN) should completely liberalize the financial market which will effectively allow the interaction of demand and supply to determine financial rates that will spur investment. Through this means rapid growth development of the economy can be achieve which will equally help the government achieve its macroeconomic objective.

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