

Financial Sector Development and Economic Growth in Nigeria: An Empirical Re-Examination

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Abstract

This study investigated the impact of the financial sector development on economic growth in Nigeria, by looking at the independent contributions of the money, capital and foreign exchange markets to the growth of the economy, using quarterly data between 2000Q1 and 2019Q4. The results indicated that while financial deepening, banking system liquidity and all share index had positive and significant impact on the growth of real output in the long-run, the behaviour of exchange rate spread was consistent with falling levels of real output growth. It is therefore recommended that the growth of the money and capital markets be prioritised by macroeconomic managers in Nigeria to improve the level of economic growth. More specifically, the monetary authority should adjust her policy rates and other instruments of monetary policy, such as the cash reserve ratio, to increase the level of banking system liquidity. This will increase banks' lending capacity to the private sector, with the benefit of increasing economic growth in Nigeria.

Keywords: Financial Development; Money, Capital and Foreign Exchange Markets; Economic Growth; Bounds Testing

JEL Classification Numbers: C32, C51, E44

I. Introduction

The channels through which financial development contributes to economic growth, and the divergent views on the direction of causality between the two, have been discussed extensively by early writers (Schumpeter, 1911; Kuznets, 1955; Patrick, 1966). These divergent views can be grouped into the "supply-leading" and "demand-following" hypotheses. The supply-leading hypothesis, articulated by Patrick (1966), argues that the development of a robust financial sector contributes to economic growth, while the demand-following hypothesis contends that the growth of real economic activities increases demand for financial services leading to the development of the financial sector. Schumpeter (1911), who pioneered the significant role of financial sector development in economic growth via the provision of efficient financial services, argues that a well-developed financial system spurs growth in technological innovations by redistributing resources from less productive to the more productive sectors.

Schumpeter's theory of development and the monetary transmission

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mechanism postulated that a free flow of credit in the economy can bring about economic growth. If the credit is circulated enough to reach the low-income earners, the credit circulation would promote inclusive economic growth. Kuznets (1955) opines that financial markets only begin to grow as the economy approaches the intermediate stage of the growth process and develops once the economy matures. Conversely, Lewis (1956) submitted that financial markets first develop, as a consequence of the economic growth process, before driving real economic activity. The financial sector is no doubt the engine oil of any economy as it makes resources available for investment, and consequently leading to economic growth.

Theories and empirical findings have also come up with the need for capital market development. For instance, a more developed financial sector, according to Bencivenga et al. (1996), may provide liquidity that lowers the cost of the foreign capital essential for development purposes, especially when it involves low-income countries that cannot generate sufficient domestic savings. The development of the financial sector can also be seen to be a factor for poverty reduction, especially through their intermediation activities. Credit availability has assisted in the expansion of small businesses, leading to increase in income and employment generation.

In Nigeria, the financial sector has grown steadily in recent times, albeit, the socio-economic peculiarities of the country, occasioned by weak institutional quality, poor governance, corruption and insurgency in some parts of the country, among others. Over the years, the stock market has been very active with high performance ratings, reflecting a steady increase in margin loans to customers. The All Share Index (ASI) returned +40.99 per cent on year-to-date (YTD), at end-December 2017, the highest by any African country during the period (Bloomberg, 2017).

An analysis of the trend of monetary and financial variables also show that credit to the private sector, money supply and market capitalisation have been on an annual increase and have boosted economic growth. However, the recent low levels of economic growth, even in the face of notable financial sector developments, raises doubts about the role of the financial system in promoting economic growth in Nigeria. There is, therefore, the need to re-evaluate this relationship with a view to understanding whether finance still matters significantly in the face of other variables that could be impacting output growth.

The broad objective of this study is to examine the relationship between financial sector development and economic growth in Nigeria, by evaluating the

different contributions of the money, capital and foreign exchange markets, to the growth of the Nigerian economy, using an autoregressive distributed lag (ARDL) model.

Following the introduction, Section 2 presents the literature review in the study area, Section 3 focuses on the key developments in the Nigerian financial sector. Section 4 presents the methodological framework for the study, while Section 5 discusses the results and findings of the study. Section 6 concludes the study, and suggests some policy actions directed at strengthening the relationship between financial sector developments and economic growth in Nigeria.

II. Literature Review

II.1 Theoretical Review

The link between finance and economic growth continues to be a subject of significant interest in macroeconomics. Financial development is considered to be the principal input for economic growth and an important component that affects growth through adjustment in productivity growth and efficiency of capital. It affects the accumulation of capital through its impact on the savings rate by altering the proportion of savings (Pagano, 1993; Levine, 1997). This theoretical support can be traced to the work of Schumpeter (1911), the first to argue that the development of the financial sector spurs technological innovation and economic growth (Agnes, 2009; James, 2011; Bah et al., 2016). Schumpeter posited that innovation in business is the major reason for increased investments and business fluctuations. These innovations could be in terms of new ideas and the commercial applications of new technology, new materials, new methods and new sources of energy. This was later buttressed in the seminal works of McKinnon (1973) and Shaw (1973) which underscored that financial liberalisation will increase savings and then capital accumulation that would be invested and lead to economic growth.

The theoretical underpinning of this study is built on three competing theories of the finance and economic growth nexus - supply-leading, demand-following and the feedback hypothesis purported by Greenwood and Jovanovic (1990). Firstly, the supply-leading or finance-led growth hypothesis posits a causal relationship from financial growth to real growth. The deliberate creation of financial institutions and markets increases supply of financial services and catalyses growth in the real sector. This view which was advanced by Patrick (1966), states that the existence of a well-functioning financial sector in channeling the limited resources from surplus units to deficit units would provide efficient allocation of resources, thereby leading economic sectors in their growth process. Secondly, demand-following or growth-led hypothesis

postulates a causal relationship from real growth to financial growth. As the real sector develops, the increased demand for financial services induces growth in the financial sector. This view was advanced by Robinson (1952), and in summary, it states that financial development follows economic growth and where enterprise leads, finance follows. Thirdly, the feedback hypothesis or the "bi-directional causality view". This view postulates that the finance and economic developments are mutually causal, that is, they have bi-directional causality. According to this hypothesis, a country with a well-developed financial system could promote high economic expansion through technological changes, product and services innovation. This in turn will create high demand on the financial arrangements and services (Levine, 1997). As the banking institutions effectively respond to these demands, higher economic growth will be achieved. Both financial growth and economic developments therefore are inter-dependent, and their relationships could lead to bi-directional causality (Choong et al., 2003).

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. For example, the stability of the money, capital and foreign exchange markets, are reflective of innovations in the financial sector, and this can be measured by the key performance indicators in these markets. Capital, money and foreign exchange markets indicators like the all share index (ASI), banking system liquidity, and exchange rate volatility are suggestive of the level of financial sector innovations or development, which would transmit to the enhancement of financial intermediation, and consequently, economic growth.

Levine et al. (2000) opined that a well-functioning financial sector fosters growth and profit incentives and helps in risk management more efficiently. A well-developed financial sector enhances the process of financial intermediation, and subsequently, economic growth, by channeling financial resources from surplus spending units to the most productive deficit spending units. This is closely associated with growth in financial savings, which, according to Schumpeter's phenomenon of interest, can only be conceived as a purely "monetary phenomenon" (Schumpeter, 1939). Moreover, as the rate of interest is derived from the positive rate of profit associated with the operation of innovative productive activities, it is also a short-term phenomenon (Arena, 1996). Thus,

while interest is the cost of savings generated from the surplus unit, interest is also charged from the deficit unit where the surpluses are channeled to.

In the early stages of economic development, the supply-leading or finance-growth hypothesis can stimulate real capital formation. The development of new financial services creates new opportunities for savers and investors and causes an increase in economic growth. The finance-growth hypothesis becomes less important as financial and economic development proceed, and gradually the demand-following or growth-led hypothesis begins to dominate. Patrick (1966), states that one industry can be encouraged financially on the basis of the supply-leading perspective, and when it develops, its financing shifts to demand-following. Other industries that are still at low levels of development will remain in the supply-leading phase.

II.2 Empirical Review

There exists a rich archive of literature on the relationship between financial sector development and economic growth. Christopoulos and Tsionas (2004) investigated the long-run relationship between financial depth and economic growth, using panel data, and co-integrating regression model. Their results showed that there is no single equilibrium relation between financial depth, growth and auxiliary variables, and that causality runs only from financial depth to economic growth. Ewah et al. (2009), on the other hand, 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.

Saibu et al. (2009), investigated the relationship between financial structure and economic growth, to determine whether or not changes in the financial structure or the overall financial systems explained economic growth dynamics in Nigeria, and found that financial structure in Nigeria have no significant effects on the growth of real output. The result further reveals that, despite the negative effect of financial market on economic growth, financial market has positive effect on stock market development, hence suggesting that neither the financial market nor stock market-based system are dominant factors on economic growth in Nigeria. Similarly, Akinlo and Egbetunde (2010) examined the long run and causal relationship between financial development and economic growth for ten countries in sub-Saharan Africa using the Vector Error Correction Model (VECM), over the period 1980 to 2005. The results showed that there is a long run relationship between financial development and economic

growth in the selected sub-Saharan African countries.

Odeniran and Udejaja (2010) examined the relationship between financial sector development and economic growth in Nigeria, using Granger causality tests in a vector autoregressive (VAR) framework, over the 1960 period to 2009. The results indicated a bi-directional causality between some of the proxies of financial development and economic growth variable. Okpara (2010) investigated the impact of the capital market performance on economic growth in Nigeria. The study, using the framework of a vector autoregression model and granger causality test, found the existence of a long-run relationship between real gross domestic product, market capitalisation, new issues, value of shares traded and turnover ratio of the Nigerian capital market. Specifically, he found the one period lag of the market capitalisation, new issues, value of shares traded and turnover ratio to have positive impacts on real GDP growth in Nigeria. The causality test revealed a unidirectional causality flowing from the capital market indicators (market capitalisation and value of shares traded) to the growth of real GDP in Nigeria.

The conclusion reached by Okpara (2010) is similar to that of Popoola (2014), who argues that the impact of market capitalisation of the Nigerian Stock Exchange has positive impact on economic growth in Nigeria. Nkoro and Uko (2013) investigated the nexus between financial sector development and economic growth in Nigeria using annual time series data from 1980 to 2009, within the cointegration and Error Correction analytical framework. The ratios of broad money stock to GDP, private sector credit to GDP, market capitalisation to GDP, banks deposit liability to GDP and prime interest rate were used as proxy for financial sector development, while real GDP was used as proxy for economic growth. The study revealed a positive relationship between financial sector development and economic growth, even though market capitalisation and private sector credit were found to not stimulate economic growth.

Likewise, Maduka and Onwuka (2013), using Nigerian data covering 1970 to 2008, evaluated the relationship within the framework of a vector error correction model, and concluded that financial market structure has a negative and significant impact on economic growth. Balago (2014), on the other hand, used Ordinary Least Square Regression and Vector Error Correction Models, and found a positive relationship between financial sector development and economic growth for the Nigerian economy. He found that financial sector development (proxied by banking sector credits, total market capitalisation, and foreign direct investment) had a positive effect on economic growth. Several other studies, such as Dandume (2014), Adeniyi et al. (2015), Obinna (2015), and Iheanacho (2016), have re-evaluated the

relationship between financial sector developments and economic growth, within the context of the Nigerian economy, and have unveiled important policy issues, which have significant implications for the Nigerian economy. However, just as they differ in their methodological approaches, their results and implications are also mixed. For example, Iheanacho (2016) used a co-integrating Autoregressive Distributed Lag (ARDL) approach and found a negative relationship between financial sector development and economic growth in Nigeria.

Specifically, Iheanacho (2016) focused on oil-dependent economy, and found no significant difference in the relationship between financial development and economic growth in Nigeria and what is generally obtainable in other oil-dependent economies, such as Libya, Angola and Saudi Arabia.

Taofeek and Olumuyiwa (2016) examined the relationship existing between financial development and inclusive growth for the period of 1980 to 2013. They employed the quantile regression-based threshold analysis. The result of their analysis revealed a 90th percentile threshold level, and that the impact of financial development on inclusive growth is determined by the measure of the previous threshold level. Also, the study found that trade openness and capital investment are necessary for inclusive growth in Nigeria.

One thing that is lacking is that none of these studies considered the financial sector and economic growth relationship by evaluating the independent contributions of the Nigerian financial markets to her economic growth. In addition, the mixed conclusions observed in the papers reviewed raises concerns about the true relationship, and therefore, the need for further evaluation.

II.3 Summary of Review and Gap

The relationship between the financial sector and economic growth has been established theoretically and empirically. Empirical studies have employed various variables to measure the effect of financial sector development on economic growth in Nigeria. For instance, Nkoro and Uko (2013), Balago (2014), Iheanacho (2016), and Dandume (2014) employed the following variables: broad money supply, private sector credit, market capitalisation, banks deposit liability, foreign direct investment, and Prime interest rate to determine the effect of financial sector development on economic growth in Nigeria. Also, Jeanneney and Kpodar (2011), Benjamin (2012), Fowowe and Abidoye (2011), and Dauda and Makinde (2014) employed financial sector variables such as; financial deepening, money supply, and credit to private sector, to determine

the relationship between financial sector development and poverty reduction. Taofeek and Olumuyiwa (2016) also examined relationship between financial sector development and inclusive growth with particular emphasis on the threshold relationship that exists between them. The study by Yelwa et al. (2015) on financial sector and inclusive growth centered on the informal financial sector. However, gaps still exist in the literature, as none of the empirical studies has jointly captured the impact of the money, capital and foreign exchange markets on economic growth in Nigeria. This issue would be addressed in this paper by examining the contributions of the financial sector to economic growth through the roles of the money, capital and foreign exchange markets in enhancing financial intermediation and, consequently, economic growth in Nigeria.

II.4 Developments in The Nigerian Financial Markets

The nature of the Nigerian financial markets is such that there is a co-existence of both the informal and formal segments, which are differentiated only based on the level of government control of the activities in each of the segments. On one hand, the informal segment of the markets encompasses all unofficial activities that appear shadowy, and are basically concealed from the regulatory authorities. According to CBN (2017), the formal segment of the markets, on the other hand, consists of the regulators, and instruments/investments windows. It is made-up of the money, capital and foreign exchange markets.

II.5 Performance of the Nigerian Capital Market

The capital market is the long-term end of the financial market. It is made up of institutions, which facilitate the issuance and secondary trading of medium-to-long-term financial instruments. Unlike the money market, which functions basically to provide short-term funds, the capital market provides funds to the industries and government to meet their long-term capital requirements, such as financing of fixed investment (buildings, plants, bridges, and others).

In Nigeria, the capital market first came into existence with the establishment of Lagos Stock Exchange in 1961. The Exchange was incorporated under the Company's Ordinance as an association limited by guarantee. The CBN gave the Lagos Stock Exchange the initial financial backing in the form of annual subventions. Following the recommendations of the Government Financial System Review Committee in 1976, the Lagos Stock Exchange was reconstituted, and renamed the Nigerian Stock Exchange (NSE) in 1977. Additional trading floors were opened in the same year in Port Harcourt, Kaduna, Onitsha, Ibadan and Benin to bring the market closer to the investing

public and expand activity level in the capital market. The NSE is the centre point of the Nigeria capital market, while the Securities and Exchange Commission (SEC) serves as the apex regulatory body.

The capital market is a good barometer for measuring the pulse of the country's economy. The trend in the number of listed companies, number of listed securities, market capitalisation and the All Share Index (ASI) are important indicators, which can be used to assess the performance of the market.

The number of listed companies on the NSE rose steadily from 92 in 1984 to 169 in 2020, with 9 domestic companies on the premium board, 145 companies on the main board, and 9 companies on the Alternative Securities Exchange Market (ASeM) board. In the Fixed Income market, the NSE has 84 Federal Government of Nigeria (FGN) bonds, 21 state bonds, 27 corporate bonds, 1 supranational bond and 53 memorandum listings.

Between 2000 and 2019, the NSE maintained a bullish nature on the trading floor, with the ASI appreciating to 26,842.07 index points at end-December 2019, from 8,111.00 index points at end-December 2000. The equities market capitalisation also appreciated to ₦13.0 trillion, from ₦0.47 trillion, within the same period. The development was attributed, mainly, to bargain hunting, as the market witnessed increased investors patronage of blue-chip stocks. However, activities in NSE has not always been rosy, particularly during the period of the global financial crisis, which saw the NSE exhibit some bearish sentiments. Specifically, the ASI depreciated from 63,016.56 index points at end-March 2008 to 21,813.76 index points at end-January 2009, and the equities market capitalisation also depreciated by from ₦121.26 trillion to ₦48.79 trillion, within the same period. The significant decline was associated with the divestment by foreign investors in the capital market, in reaction to the lingering liquidity crunch in major economies of the world.

II.6 Performance of the Nigerian Money Market.

The money market is a market for short-term funds, which have a maximum tenor of one year. In Nigeria, the money market has grown immensely since the establishment of the CBN in 1959. This is proven by the growth in numbers, branches and capacity of the operators, and in the volume of money market assets. The market, which has been dominated by government instruments, suffered from excess liquidity and dearth of investment outlets in the period before 1986. The introduction of the Open Market Operations (OMO) in 1993, led to increased activities in the money market, such that, the value of treasury bills sold increased from ₦47,265.0 million in 1993 to ₦323.8 billion and ₦2,421.1 billion

in 2000 and 2002, respectively.

Credit to the private sector has been impressive over the years, though with mixed results. From 1980 to 1982, the cumulative credit to private sector stood at ₦28,209.60 million as against credit to the government, which amounted to ₦20,746.2 million during the same period. Thereafter, credit to the private sector dropped continuously from 1983 to 1986, with the public sector crowding out investment in the private sector. From 1987 to 1991, the private sector received a total of ₦168,148.90 million as credit from the banking sector, as against ₦126,861.50 million credit to the public sector.

Cumulatively, ₦3,683.84 billion and ₦1,151.99 billion were disbursed to the private and public sectors of the economy by the banking sector between 1980 and 2001, respectively. These amounts represented 76.2 and 23.8 per cent, respectively, of the aggregate credit to the domestic economy, during the period. Furthermore, ₦5,710.7 billion and ₦20,478.2 billion credits were disbursed to the private and public sectors of the economy by the banking sector between 1980 and 2003. On the average, total credit to the private and public sectors represented 4.8 and 13.3 per cent of the GDP, during the period.

Banks credit to the private sector of the economy increased by ₦3.75 trillion in 2019, to ₦26.69 trillion at end-December 2019, from ₦22.94 trillion at end-January 2019. At end-December 2019, the total net domestic credit in the Nigerian economy rose to ₦36.18 trillion, from ₦28.65 trillion at end-January 2019. Furthermore, of the total ₦36.18 trillion domestic claims to the economy, claims on the private sector stood at ₦26.69 trillion, while credit to the central government stood at ₦9.49 trillion in 2019. This represented a 74.0 per cent and 26.0 per cent, respectively, of the total domestic claims.

II.7 Performance of the Foreign Exchange Market.

The foreign exchange market involves all institutional arrangements, which facilitates the buying and selling of foreign exchange and settlement of international transactions, at a mutually determined exchange rate. Prior to the deregulation of the foreign exchange market in Nigeria, activities in the market were relatively low due to the administrative fiat (CBN, 2017). During this period, Nigeria operated series of exchange rate regimes, such as, the fixed exchange regime, with the British Pound Sterling serving as the anchor currency. Following the deregulation of the Nigerian economy and subsequent liberalisation of the foreign exchange market, the invisible hand in the Second-tier Foreign Exchange Market (SFEM) determined the exchange rate. The reliance on market forces and the weak macroeconomic fundamentals led to a rapid

depreciation of the naira against major trading currencies of the world. Available data showed that the average annual exchange rate, which was ₦2.00/US\$1.00 in the official market in 1986, depreciated rapidly to between ₦4.00/US\$1.00 and ₦9.90/US\$1.00 in 1987 and 1991, respectively. The devaluation of the naira in 1992, saw the average exchange rate stand at ₦17.30/US\$1.00 for that year, with a further depreciation to ₦22.1/US\$1.00 in 1993. The introduction of guided deregulation policy in 1994 led to the appreciation of the rate to ₦21.90/US\$1.00, the first time since 1986.

The introduction of the Investors and Exporters (I&E) foreign exchange window on April 21, 2017 increased the supply of foreign exchange (forex) into the Nigerian economy. Consequently, relative stability has been observed in the foreign exchange market, as companies and individuals are now able to access more foreign exchange in the market than before to carry out eligible transactions and economic activities are gradually picking up. According to the CBN, the objective of the window is to increase liquidity in the forex market and ensure timely execution and settlement of eligible transactions, which include: Invisible transactions such as loan repayment, capital repatriation, management services fees, consultancy fees, software subscription, technology transfer agreements, personal home remittances and any other eligible invisible transactions; Bills for Collection and; any other trade-related obligations (at the instance of the customers).

The CBN stipulated that the supply of foreign currency to the window shall be through portfolio investors, exporters, authorized dealers and other parties with foreign currency to exchange to Naira. The CBN is also a market participant in the window to promote liquidity and professional market conducts.

As at August 11, 2017 the total turnover in the I&E foreign exchange window stood at US\$7.62 billion, and it increased consistently from US\$0.61 billion in April 2017 to US\$2.17 billion in July 2017. The introduction of the window has encouraged exporters to bring back their export proceeds to the country through the official sources, thus, increasing the stock of foreign exchange in the country.

Another important gain of the window is that it has attracted more foreign capital into Nigeria for various forms of investment. Available data on capital importation data from the CBN between January and May 2017 showed that there was a growth in capital importation in 2017 compared with 2016. The total capital importation at end-May 2017 stood at US\$2.09 billion, representing a growth of 82.8 per cent compared with the US\$1.42 billion recorded in the corresponding period of 2016. Other Investments (OI) Loans attracted the

highest capital of US\$886 million between January and May in 2017, followed by foreign direct investment (FDI) – Equity of US\$436 million and closely followed by foreign portfolio investment (FPI) – Equity of US\$413 million.

In recent times, the foreign exchange market has been shed light on, as the CBN continues to intervene in the market to enhance stability of the naira. In 2018, CBN stabilised the exchange rate by injecting a total of US\$39.9 billion into the foreign exchange market (CBN, 2018).

III. Methodology

This section gives insight into the types of data used in the study, their scope, and necessary transformations. It also gives a detailed narrative of the major technique of analysis, including the necessary pre- and post-estimation tests conducted on the variables and model of the study.

III.1 Data

The data used in this study comprised quarterly data covering the 2000Q1 – 2019Q4 period. The variables include the all share index (ASI) and market capitalisation (MC) of the Nigerian capital market; the short-term interest rates spread, measured as the linear difference between the monetary policy and interbank call rates (MPR_IBCR); and financial deepening (FD), measured as ratio of broad money (M_2) to nominal gross domestic product (GDP), following Ume *et al.* (2015). Others are the exchange rate spread, estimated as the deviation of the bureau de change (BDC) naira/USD exchange rate from the official naira/USD (USD) exchange rate, which is the absolute value of the arithmetic difference between the official and BDC exchange rates (USD_BDC); and the year-on-year growth rate of the real GDP (RGDPG). Market capitalisation (MC) was transformed into its natural logarithm and renamed LMC.

These variables were carefully selected to reflect the performances of the three main sectors of the financial markets, namely; the money, capital and foreign exchange markets. For example, while the all share index and market capitalisation give a reflection of the performance of the capital market, interest rate spread (MPR_IBCR) is suggestive of the level of banking system liquidity, which is an indicator of the performance of the money market. According Ndukwe (2013), a significant rise in short-term interest rates above the benchmark interest rate (Monetary Policy Rate, MPR, in Nigeria) could mean that the banking industry is experiencing a deficit in liquidity and vice versa.

When the liquidity level is adequate for effective financial intermediation, banks would have less need to borrow from each other, and this would cause the IBCR to converge to the value of the MPR or less. However, as the banking system liquidity becomes less optimal, either too high or too low, the IBCR reacts in accordance to the demand and supply of credit by banks. This will create a divergence between the MPR and IBCR. Therefore, while a positive MPR_IBCR suggests excess liquidity, a negative MPR_IBCR implies an increasing squeeze in the banking system liquidity.

Similarly, the performance of the foreign exchange market was measured by the deviation between the exchange rates in the bureau de change (BDC) and official (USD) segment of the foreign exchange market, exchange rate spread (USD_BDC). This variable is indicative of the stability of the foreign exchange market, as it gauges the level of demand and supply of foreign exchange in the market. A rise in USD_BDC implies an increase in exchange rate premium between the official and BDC windows and vice versa.

The ASI and MC were sourced from the official website of the NSE; while MPR, IBCR, USD and BDC were gotten from the Statistics Department of the CBN. GDP was sourced from the database of the National Bureau of Statistics (NBS).

III.2 Technique of Analysis

The main technique of analysis employed in this study is a co-integrated autoregressive distributed lag (ARDL) model. This technique is potent in measuring level relationships among variables that are integrated of different orders.

The autoregressive distributed lag (ARDL) model, is a single equation time series model that incorporates lags of both the dependent and independent variables in its estimation. This model, like other time series regression models, requires all incorporated variables to be stationary. However, where the variables are integrated, it is still possible to estimate level relationships by determining whether or not the integrated variables are co-integrated. This can be done by evaluating the co-integrating properties of the variables using the Bounds testing approach of Pesaran et al. (2001). This test is preconditioned on the order of integration of the variables. Here, if X_t is the vector of both explanatory and dependent variables, X_t must not be integrated of order $d > 1$.

This underscores the imperativeness of invariably verifying the unit root properties of the variables to ensure this condition is met. This was done using the

Augmented Dickey-Fuller (1979); Phillips-Perron (1988); and Kwiatkowski, Phillips, Schmidt, and Shin (1992) tests for unit root.

In its level form, the proposed ARDL model in this study is:

$$RGDPG_t = a_0 + \sum_{i=1}^o a_{1i} RGDPG_{t-i} + \sum_{i=0}^p a_{2i} FD_{t-i} + \sum_{i=0}^q a_{3i} MPR_IBCR_{t-i} + \sum_{i=0}^r a_{4i} ASI_{t-i} + \sum_{i=0}^x a_{5i} LMC_{t-i} + \sum_{i=1}^t a_{6i} USD_BDC_{t-i} + e_t \quad (1)$$

Where a_1 to a_6 are coefficients of the level relationships, o, p, q, r, x , and t , are the optimum lag specifications for RGDPG, FD, MPR_IBCR, ASI, LMC, and USD_BDC, respectively, which are determined based on the akaike information criteria (AIC), and e_t is the error term.

Equation 1 can be expressed in a co-integrating form to capture both the short- and long-run dynamics in the relationship between RGDPG and other variables of the model.

$$\begin{aligned} \Delta RGDPG_t &= \phi_0 + \sum_{i=1}^c \phi_{1i} \Delta RGDPG_{t-i} + \sum_{i=0}^d \phi \Delta FD_{t-i} + \sum_{i=0}^f \phi_{3i} \\ \Delta MPR_IBCR_{t-i} &+ \sum_{i=0}^g \phi_{4i} \Delta ASI_{t-i} + \sum_{i=0}^h \phi_{5i} \Delta LMC_{t-i} + \sum_{i=1}^j \\ \phi_{6i} \Delta USD_BDC_{t-i} &+ \delta (RGDPG_{t-1} - c - b_1 FD_{t-1} - b_2 MPR_IBCR_{t-i} - \\ b_3 ASI_{t-1} &- b_4 LMC_{t-1} - b_5 USD_BDC_{t-i}) + \varepsilon_t \end{aligned} \quad (2)$$

Here, Δ means difference operator, c, d, f, g, h and j are the optimum lags for RGDPG, FD, MPR_IBCR, ASI, LMC, and USD_BDC in the short-run, respectively, ϕ_1 to ϕ_6 are the short-run coefficients, which capture the short-run dynamics in the relationship under investigation, and the coefficients b_1 to b_5 are the long-run coefficients. While ε_t is the error term in the co-integrating model, the parameter δ is the speed of adjustment, and it measures the speed at which equilibrium is restored in the long-run among the co-integrating variables.

The Bounds test is conducted under the null hypothesis of "no level relationship", using the Wald test:

$$b_1 = b_2 = b_3 \dots = b_5 = 0$$

Under the null hypothesis, when the test statistic lies above the upper bound at a chosen level of significance, the null hypothesis is rejected, and if it lies below the lower bound, it cannot be rejected. However, if it lies within the upper and lower bound at a chosen level of significance, the test is inconclusive.

For robustness, the estimated model was tested for serial correlation, heteroskedasticity and normality in the distribution of its residual. This was done using the Breusch-Godfrey Serial Correlation LM Test, Breusch-Pagan-Godfrey

Heteroskedasticity Test, and the Jacque-Bera Test for Normality, respectively. In addition, the stability of the model was also evaluated using the CUSUM and CUSUM of squares plots.

Table 1: Description of the Variables and A-priori Expectations

S/N	Variable	Notation	Measurement	A-priori expectation	Data source
1	Economic growth	RGDPG	Year-on-year growth rate of real gross domestic product	Dependent Variable	NBS
2	Financial Deepening	FD	The ratio of broad money to nominal gross domestic product	+	CBN and NBS
3	Short-term Interest rate spread	MPR_IBCR	The arithmetic difference between the monetary policy rate and interbank call rate	+/-	CBN
4	All Share Index	ASI	All share index of the Nigerian Stock Exchange	+	NSE
5	Market Capitalisation	MC	Equities market capitalisation of the Nigeria Stock Exchange	+	NSE
6	Exchange rate spread	USD_BDC	The arithmetic difference between the official exchange rate and Bureau de change exchange rate of the Naira	+/-	CBN

Source: Authors computation

Table 1 presents a brief description of the variables and their respective *a-priori* expectations within the proposed ARDL model, in terms of the direction of their

impacts on the real GDP growth in Nigeria. In line with the objective of this study, the proposed ARDL model regresses key financial sector indicator variables against real GDP growth, to determine the impact of financial sector development on economic growth in Nigeria. On the basis of *a-priori* expectation, while FD, ASI and MC are expected to have positive impacts on real GDP growth, the impacts of MPR_IBCR and USD_BDC on RGDPG are indeterminate, as they can be either positive or negative.

IV. Empirical Analysis

IV.1 Preliminary Analysis

IV.1.1 Unit Root Tests

The unit root tests are presented in Table 2. Under the null hypotheses of 'unit root' for both the ADF and PP tests, at 5 per cent level of significance, while RGDPG, FD, ASI, LMC, and USD_BDC are non-stationary but integrated of order

Table 2: Result of the Unit Root Tests

PP							
Level		RGDPG	FD	MPR_IBCR	ASI	LMC	USD_BDC
	t-Statistic		-1.7401	-2.3139	-4.4898	-2.4625	-2.3844
Prob.		0.407	0.170	0.001	0.129	0.149	0.249
At First Difference		d(RGDPG)	d(FD)	d(MPR_IBCR)	d(ASI)	d(LMC)	d(USD_BDC)
	t-Statistic		-8.6286	-12.2391	-13.7866	-6.5028	-7.7157
Prob.		0.000	0.000	0.000	0.000	0.000	0.000
ADF							
Level		RGDPG	FD	MPR_IBCR	ASI	LMC	USD_BDC
	t-Statistic		-1.5877	-1.4767	-4.5009	-2.6037	-2.5569
Prob.		0.484	0.540	0.000	0.097	0.106	0.249
At First Difference		d(RGDPG)	d(FD)	d(MPR_IBCR)	d(ASI)	d(LMC)	d(USD_BDC)
	t-Statistic		-8.6262	-4.1034	-10.961	-6.4195	-7.598
Prob.		0.000	0.002	0.000	0.000	0.000	0.001
KPSS							
Level		RGDPG	FD	MPR_IBCR	ASI	LMC	USD_BDC
	t-Statistic		0.9037	0.8143	0.0782	0.4503	1.0665
Decision		***	***	n0	*	***	**
At First Difference		d(RGDPG)	d(FD)	d(MPR_IBCR)	d(ASI)	d(LMC)	d(USD_BDC)
	t-Statistic		0.0629	0.5	0.2444	0.0961	0.3317
Decision		n0	**	n0	n0	n0	n0

Source: Author's Estimate

Decision: no=not statistically significant; * significant at 10%, ** significant at 5%, *** significant at 1%.

VI.1 The ARDL Model

The akaike information criteria (AIC) was applied in determining the optimum lags of each variable in the ARDL model. Consequently, various specifications of the model were estimated at varying maximum lags, and in each case, each model was tested for serial correlation, heteroskedasticity and normality in their residual. The study found the ARDL (4, 4, 2, 2, 3, 3) to have best-fit in describing the relationship between real GDP growth and the financial sector indicators under consideration.

VI.1.1 The Bounds Test

Table 3 presents the result of the Bound test for existence of long-run relationship among the variables. The null hypothesis of “no level relationship” was rejected as the estimated F-statistic= 21.94 was higher than the critical I(0) and I(1) bounds at 1 per cent level of significance. This means that a long-run relationship exists among these variables, which would be captured by the co-integrating ARDL model.

Table 3: Result of the ARDL Bound Test

	Restricted Constant and No Trend
Test Statistic	F-Bounds Test
Selected Model	ARDL(4, 4, 4, 1, 2, 3)
Observation	72.00
Value of test statistic	21.94
1% Lower I(0) Bound	3.06
1% Upper I(1) Bound	4.15
Conclusion	Null rejected

Source: Author's Estimate

VI.1.2 The Short- and Long-Run Relationship

From Table 4, the short-run impacts of financial deepening (FD) are negative and statistically significant in both contemporaneous and lagged terms. This implied that, changes in the growth of FD would cause a fall in change in economic growth (Δ RGDPG) in both contemporaneous and lagged terms. Similarly, when change in interest rate spread (Δ MPR_IBCR) rises by 1 unit in its first, second and third lags, change in real output growth will fall by 0.0014, 0.0007 and 0.0006 units, respectively.

In the capital market, only the first lag of change of market capitalisation (Δ LMC)

has statistically significant impact on change in real output. Here, Δ RGDPG is expected to fall by approximately 0.018 percentage points. This also implies that increase in market capitalisation has positive but decreasing impact on economic growth. On the other hand, changes in all share index (Δ ASI) has a positive and statistically insignificant contemporaneous impact on change in real output. However, the impact of change in exchange rate spread (Δ USD_BDC) is negative and statistically significant only in contemporaneous term, suggesting that, in the short-run, there is non-convergence of the Naira exchange rate in the foreign exchange market. In other words, the premium between the official and BDC exchange rate is inimical to economic growth.

In the long-run, financial deepening was found to have a positive and statistically significant impact on economic growth, with a coefficient of 0.1762. This implies that, an increase in financial deepening by one unit will increase economic growth by 0.1762 percentage points. Also, interest rate spread, which measures the level of banking system liquidity, was found to have a positive and statistically significant impact on growth of real output, with a coefficient of 0.0022. An increase in interest rate spread is suggestive of increased in banking system liquidity, which is expected to increase access to credit by investors. This would increase investment, and consequently, long-run economic growth.

In the capital market, the all share index (ASI) was found to exert a positive and statistically significant impact on economic growth in Nigeria, with a coefficient of 2.117. However, while market capitalisation was found to impact negatively on economic growth, its impact, in terms of coefficient (-0.0553), is highly negligible when compared to that of the ASI (2.1173). It is therefore not out of place to say that the capital market is a key driver of economic growth in Nigeria. This position is in line with the assertions of Okpara (2010) and Popoola (2014), who claim, separately, that the Nigerian capital market has impacted positively on economic growth in Nigeria.

Table 4: The Short and Long-Run Estimates

Short-run: Dependent Variable= D(RGDPG)								
	Δ RGDPG	Δ FD	Δ MPR_IBCR	Δ ASI	Δ LMC	Δ USD_BDC	Coint	C
Lag 0		-0.0873* (0.015)	0.0003^ (0.0002)	0.8159*** (0.458)	-0.0179^ (0.013)	-0.0003* (6.7E-05)	-0.9600* (0.073)	
Lag 1	0.1788* (0.068)	-0.2367* (0.021)	-0.0014* (0.0003)		-0.0180* (0.006)	-8.0E-05^ (6.6E-05)		
Lag 2	0.3485* (0.068)	-0.1671* (0.021)	-0.0007* (0.0002)			9.5E-05^ (6.7E-05)		
Lag 3	0.3764* (0.070)	-0.1113* (0.018)	-0.0006* (0.0002)					
Lag 4								
Long-run: Dependent Variable= RGDPG								
		FD	MPR_IBCR	ASI	LMC	USD_USD		C
Lag 0		0.1762* (0.023)	0.0022* (0.001)	2.1173* (0.265)	-0.0553* (0.004)	-0.0005* (3.6E-05)		0.7433* (0.044)

Source: Author's Estimate

Standard errors in parenthesis. *P-Value less than 1%, **P-Value less than 5% *** P-Value less than 10%, ^ P-Value above 10%, Coint=co-integrating parameter, C=Constant.

The deviation between the exchange rates in the bureau de change (BDC) and official (USD) segment of the foreign exchange market, exchange rate spread (USD_BDC), was found to impact negatively on economic growth in the long-run, with a coefficient of -0.0005. This perhaps gives credence to the central bank's efforts at ensuring the convergence of these rates. When the difference between these rates increases, importation, particularly capital goods required for manufacturing, is adversely affected. This has adverse effects on the production capacity of the economy, particularly the manufacturing sector, and consequently, leading to a fall in real output.

The speed of adjustment parameter Coint= -0.9600 is negative and significant², implying that about 96 per cent of disequilibrium is corrected for in one quarter.

VI.1.3 The Diagnostic Tests

The result of the Breusch-Godfrey Serial Correlation LM Test, Breusch-Pagan-Godfrey Heteroskedasticity Test, and the Jarque-Bera Test for Normality are presented in Table 5.

Under the null hypothesis of "no serial correlation", the test statistic F-statistic = 2.364 in the Breusch-Godfrey Serial Correlation LM test is insignificant, with a p-

²A significant speed of adjustment is a confirmation that the variables are truly co-integrated and that they can be expressed in a level relationship.

value of 0.105. This implied that the estimated model is free of serial correlation in the lags of its residual. Similarly, the Breusch-Pagan-Godfrey Heteroskedasticity test is conducted under the null hypothesis of “homoskedasticity”. Here, with F-statistic = 0.778, and a p-value of 0.740, the residual of the estimated ARDL model is homoskedastic. Finally, the Jarque-Bera test for normality in residual, conducted under the null hypothesis of “normality” shows that, with Jarque-Bera = 0.490, which is insignificant, with a p-value of 0.783, the residual of the estimated model is normally distributed.

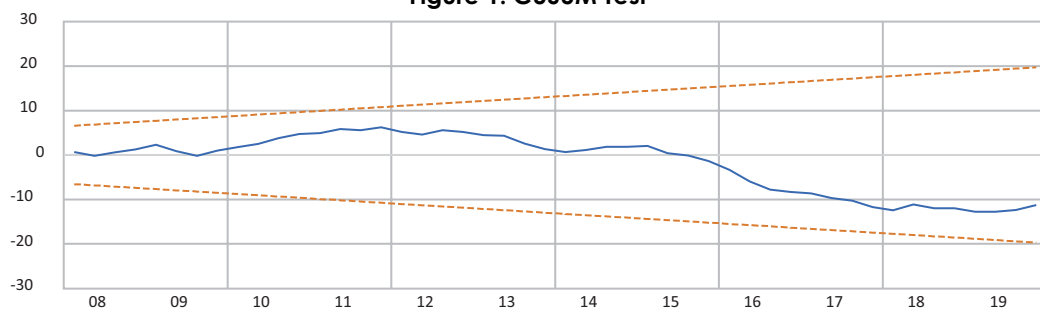
Table 5: Residual-Based Diagnostic Tests

Breusch-Godfrey Serial Correlation LM Test	
F-statistic	2.364
p-values	0.105
Heteroskedasticity Test: Breusch-Pagan-Godfrey	
F-statistic	0.778
p-values	0.740
Jarque-Bera Test for Normality of Residual	
Jarque-Bera	0.490
p-values	0.783

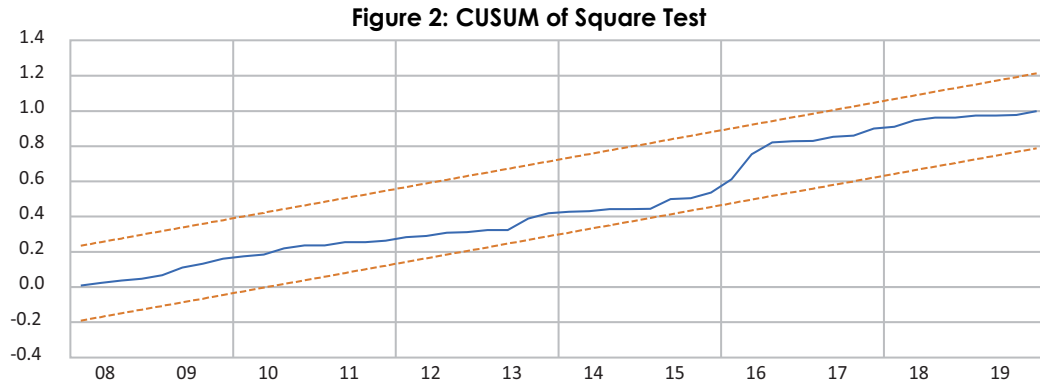
Source: Author's Estimate

Figure 1 and 2, on the other hand, are the graphical plots of the CUSUM and CUSUM of squares points, respectively. Here, while the plotted CUSUM points appear to fluctuate randomly around zero, and lying within the control limits of 5 per cent confidence intervals, the CUSUM of squares plots also lie within the critical lines. These suggest that the estimated model is relatively stable, and that valid inferences can be drawn from its estimated coefficients.

Figure 1: CUSUM Test



Source: Author's Estimate



Source: Author's Estimate

V. Conclusion, Policy Implications and Recommendations.

The Nigerian financial markets, which comprises of the money, capital and foreign exchange markets, has evolved positively over the years. As a key provider of credits to the real sector, the financial sector drives economic growth through its influence of flow of credits and foreign exchange to the most deserving productive agents in Nigeria. However, the recent low levels of economic growth, even in the face of notable financial sector developments, raises doubts about the role of the financial sector in promoting economic growth in Nigeria. There is therefore the need to reevaluate this relationship, and provide key policy recommendations to strengthen the monetary policy framework, which is directed at boosting economic growth in Nigeria by leveraging on the growth of the Nigerian financial system. This was done, in this study, within the framework of a co-integrating autoregressive distributed lag (ARDL) model.

From the estimated model, the study concludes that, while the long-run impacts of financial deepening, banking system liquidity and all share index on economic growth in Nigeria are positive and statistically significant, exchange spread (or premium) between the official and BDC exchange rates, is inimical to economic growth in Nigeria. In other words, the leading drivers of economic growth in Nigeria are the money and capital market; while the non-convergence of exchange rates in the foreign exchange market has negative impact of economic growth. Overall, the financial system is a key driver of economic growth as it helps to facilitate the flow of credit to productive units in the real sector.

It is therefore recommended that the growth of the money and capital markets

be prioritised by macroeconomic managers in Nigeria to improve the level of economic growth. More specifically, the monetary authority should adjust her policy rates and other instruments of monetary policy, such as the cash reserve ratio, to increase the level of banking system liquidity. This will increase banks' lending capacity to the private sector, with the benefit of increasing economic growth in Nigeria. In addition, the CBN should sustain her interventions in the foreign exchange market to promote stability in exchange rate, and accelerate the process of convergence in the rates. This will reduce the cost of foreign exchange, and rigidities in the market structure of the foreign exchange market. The net benefit would be an enhanced importation of capital goods, which would improve the productive capacity of Nigeria, and consequently, promote economic growth.

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