



Financial Deepening Series and Economic Growth Nexus in Nigeria: Cointegration Approach, 1981-2019

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ABSTRACT

Financial deepening is the process that involves developments in quantity, quality and efficiency of financial intermediation services in the financial system. This process involves the relationship of many activities and institutions and possibly associated with economic growth. However, it implies the level of development and innovation of traditional services the objective of this study is to measure the long run relationship existing between financial deepening and economics growth nexus in Nigeria. The study used two ways eager granger residual based of the ordinary least square approach. Result reveals that there is a long run relationship existing between financial deepening series and economic growth nexus in Nigeria, this result creates a headway for the estimation of error correction. Result from the analysis reveals that error correctional analysis proves that the variable converges to long run equilibrium. However, it will take the shock emanating from the convergence one year, seven months and four days to return the error caused by the convergence to equilibrium. it was concluded that financial deepening series and economic growth had a longing relationship in Nigeria Therefore a macroeconomic variable as contained in the financial depth called financial development has been seen to have a serious positive implication on economic activities in Nigeria. If financial depth, inclusion and financial developments are to be maintained, Economy will grow. However, efforts should be directed to reduce the extent of convergence to long run equilibrium as identified in this study. This can only be done by proper management of both monetary and fiscal policies of the government so as to have an endemic growth function.

Keywords: Financial deepening, Economic Growth, Gross Domestic Savings

1. Introduction

Financial deepening is the process that involves developments in quantity, quality and efficiency of financial intermediation services in the financial system. This process involves the relationship of many activities and institutions and possibly associated with economic growth. However, it implies the level of development and innovation of traditional services (Valverde, 2004). Many other authors have also defined financial development in various ways. The World Economic Forum (2012) defines it as the reform or policies agenda, and institutions that are created to lead to effective financial intermediation and markets efficiency, as well as deep and broad access to capital and financial services. It is a catalyst in economic development and is widely recognized by both the monetary and development economists. For Garba (2014) he perceived it as the increased provision of financial services with a wider choice of services created towards the development of all sectors of the economy. According to the new growth theorists, a well-developed financial system facilitates high and sustainable economic growth. Oloyede (1998) remarked thus, "Financial development is the outcome of accepting appropriate real finance policy such as relating real rate of return to real stock of finance". Financial systems play a vital role in economic development and, to be successful in the longer term, countries must take a holistic view by identifying and improving long-term factors that are crucial to their development. Such a process would allow countries to encourage economic prosperity for all participants in the global economy. This approach is supported by empirical studies that have generally found that cross-country differences in levels of financial development explain a considerable portion of the cross-country differences in growth rates of economies (World Financial Development Report, 2013).

Financial development starts with the banking system and depends on the diffusion of scriptural money, which the banking system provides. As countries become highly developed, the share of the banking system in the assets of the financial sector declines, while that of newer and more specialized institutions – such as building societies, life insurance companies, retirement funds and finance assets of the banking system are of lesser value than the financial assets held by all other financial institutions, whereas the reverse is true in economically underdeveloped countries (Garba, 2014). Hence, Shah and Shah (2011) describe financial development as the process involving actions such as funding and expounding functions of financial institutions, developing new (innovative) financial products and developing markets for these products. Osisanwo (2013) describes financial development as increased financial services in an economy with a wider choice of services geared to all levels of the society. It is widely acknowledged that financial development is a multidimensional concept and constitutes a potentially important mechanism for long-run economic growth. It plays fundamental roles in the development and growth of the economy. The effectiveness and efficiency in performing these roles, particularly the intermediation between the surplus and deficit units of the economy, depends largely on the level of development of the financial system. The success of the financial system all over the world in providing its developmental roles has been predicated on the initiation of financial sector reforms such as the introduction of market-based procedures for monetary control, the promotion of competition in the financial sector, and the relaxation of restrictions on capital flows. The aim of initiating these reforms is to create a more efficient and stable system, which will facilitate optimum performance in the economy. This means providing a foundation for implementing effective stabilization policies and successfully mobilizing capital and putting it to effective use, which leads to achieving higher rate of economic growth (Johnston, et al., 1999). Furthermore, the Nigerian financial system is not effectively providing its development roles as such and is currently not in position to fulfill its potential as a propeller of economic growth and development. The formal financial system is relatively shallow and provides a relatively low level of credit to the private sector. Audu and Okumoko (2013) attributed this to the pathetic situation in the country where government deficits that have to be financed by domestic resources provide an opportunity for the banking system to push funds into a relatively safer investment outlet than lending to the private sector. According to them, this has the capacity to push up lending rates, and decrease the amount of resources channeled to private sector credit. Worst still, the banks rely on public fund to finance government borrowing; so, it is a case of lending government fund to same government to generate safe return. Also, Maduka and The fundamental question in economic growth that has occupied researcher's mindset is why countries grow at different rates. The empirical growth literature has come with numerous explanations of cross-country differences in growth, including factor accumulation, resource endowments, the degree of macroeconomic stability, educational attainment, institutional development, legal system effectiveness, international trade and ethnic and religious diversity. The list of possible factors continues to expand, apparently without limit. One critical factor that has begun to receive considerable attention more recently is the role of financial development in the growth process especially in the wake of the recent global economic and financial meltdown. The positive link between the financial depth and economic growth is in one sense fairly obvious. That is, more developed countries, without exception, have more developed financial markets. Therefore, it would seem

that policies to develop the financial sector would be to raise economic growth. Indeed, the role of financial development is considered by many to be the key to economic development and growth. Besides, there are studies that establish little or no positive and significantly relationship between financial development and economic growth. Some studies found that financial development have negative impact on economic growth especially in the long-run and that causality run from economic growth to financial development and not in reverse direction. Other studies have also found support for a positive link between financial development and economic growth. These conflicting results have been traced to orthodox or methodological challenges associated with the estimation method such as single-equations (OLS); the Engle- Granger two step procedures; Johansen reduced rank; and the Vector Auto Regressions (VAR) model; the use of which dominated the empirical studies in this area. However, recent econometric techniques have shown the strong limitations to these techniques and revealed that most economic growth and financial development data have to be subjected to more rigorous analyses involving both the short run and long run co-movement among a number of time series data to unbiased, consistent, and efficient estimates (Enders, 1995). Moreover, these previous studies did not capture the effects of financial regulation reform in the financial sector through the use of dummy variable thereby rendering the empirical results unreliable. While economists have generally reached a consensus on the central role of financial development in economic development theoretically; empirical works supporting this concept are conflicting. One school of thought asserts that financial development plays a limited role in accompanying the development of real activity; the second school of thought accords a crucial role to financial development in boosting the processes of growth, innovation and economic development; while for another group of scholars, the financial market promotes growth, with growth, in turn, comes market formation (Nicet-Chenaf, 2012). In an attempt to identify a gap, most of the studies on financial deepening and economic growth uses banking sector credit and extent of money supply but this work expanded the above to include total domestic savings as a ratio of GDP under a cointegration approach in Nigeria This study therefore, intends to bridge the existing gap in the literature by empirically investigating the nexus between the financial deepening series and economic growth in Nigeria, cointegration approach

2. Literature Review

2.1 Conceptual Review

Concept of Financial Deepening

Ezema (2019) sees financial deepening is a term used by economists to refer to increasing provision of financial services. It can refer both a wider choice of services and better access for different socioeconomic groups. Financial deepening can have an effect on both individuals' and societies' economic situations. Financial deepening generally means an increase ratio of money supply to GDP or some price index. It refers to liquid money. The more liquid money is available in an economy, the more opportunities exist for continued growth. Financial deepening theory also defines the positive role of the financial system on economic growth by the size of the sector's activity. Osisionwo (2013) opines That means that an economy with more intermediary activity is assumed to be doing more to generate efficient allocation. In development studies, financial deepening is very often refers to the increased provision of financial services with a wider choice of services geared to the development of all levels of society.

Concept of Economic Growth

Maduka and Onwuka (2013) see Economic growth can be defined as the increase in the inflation-adjusted market value of the goods and services produced by an economy over time. Statisticians conventionally measure such growth as the percent rate of increase in real gross domestic product, or real GDP. Economic growth is an increase in the production of economic goods and services, compared from one period of time to another. It can be measured in nominal or real (adjusted inflation). In economics, growth is commonly modeled as a function of physical and human capital, labor force, and technology. Simply put, increasing the quantity or quality of the working age population, the tools that they have to work with, and the recipes that they have available to combine

Concept of Broad Money Supply

lyoboyi (2013) defined broad money is a measure of the amount of money, or money supply, in a national economy including both highly liquid "narrow money" and less liquid forms. Broad money is the definition of the Money Supply which includes a wide scope for the definition of money – including both notes and coins, but also more illiquid forms of money – such as bank deposits, treasury bills, and gilts. These are considered 'near money' because

it can easily be changed to cash. Broad money refers to M2, M3, and/or M4. The term "narrow money typically covers the most liquid forms of money, i.e. currency (banknotes and coins) as well as bank-account balances that can immediately be converted into currency or used for cashless payments (overnight deposits, checking accounts, etc.). The money supply is all the currency and other liquid instruments in a country's economy on the date measured. The money supply roughly includes both cash and deposits that can be used almost as easily as cash (CBN, 2019).

Concept of Credit to Private Sector

Obafemi and Udeh (2014) expressed that Domestic credit to private sector refers to financial resources provided to the private sector by financial corporations, such as through loans, purchases of no equity securities, and trade credits and other accounts receivable, which establish a claim for repayment. Bank credit in Nigeria and other countries is defined as the credit extended by the banking institutions to the private sector only: both firms and households. It does not include lending to the government. Credit is essential for the economy to function well. It funds new investments and allows people to purchase houses, cars, and other items. Of course, excessive lending and borrowing usually end up in financial crises but, in principle, credit availability is good for economic development. Domestic credit to private sector by banks refers to financial resources provided to the private sector by other depository corporations (deposit taking corporations except central banks), such as through loans, purchases of no equity securities, and trade credits and other accounts receivable, that establish a claim for repayment. For some countries these claims include credit to public enterprises.

Concept of Domestic Savings

Obumiyi and Demegan (2012) defined Gross Domestic Saving consists of savings of household sector, private corporate sector and public sector. Gross domestic savings had followed a downward trajectory after 2008. The more concerning issue is the perceptible shift of investors' preference towards physical assets as compared to financial assets. This can be attributable to a rise in inflationary pressures. Gross capital formation is a function gross domestic savings. The national savings rate takes into consideration the personal income and expenditures of individuals, the earnings of businesses, and the taxes and expenditures of the government. The rate can be somewhat misleading as governments usually operate at a deficit which would lower the national savings rate. The rate is an indicator of financial health and investment, particularly as household savings can be a source of borrowing for governments, allocated toward public works and infrastructure needs.

2.2 Theoretical Review

Keynesian Theory Approach

The Keynesian theory was propounded by MC Kinnon and Shaw in 1973. The Keynesian theory strongly suggests that high real interest rate raise the cost of borrowing and therefore discourage investment, growth and saving. In contrast, the influential work by Mc Kinnon (1973) and Shaw (1973) predict a positive growth effect arising from positive real interest rate. The financial policy, that fosters the role of financial sector, raises the rate of growth by increasing the quantity, and improving the structure, of real savings improving the structure and average productivity of investments; and by providing entrepreneurial skills and financial guidance to the economy as a whole. This argument is based on the fact that investment opportunities in developing countries abound and that capital accumulation is limited by the availability of investable funds could results to savings.

2.3 Empirical Review

Iyoboyi (2013) investigated the Bank and Non-bank financial deepening and economic growth; the Nigerian experience using the bound testing approach to cointegration. The study discovered cointegrated relationship between economic growth and financial deepening. The results of the investigation are in favor of the financial-growth cum growth financial hypothesis. For the period under study. Nigerians economic growth is sensitive to changes in financial deepening, past level of growth and the openness of the economy.

Obafemi, Oburota and Amoke (2016) studied the relationship between financial deepening and domestic investment in Nigeria while using the Grgor-hanson Endogenous structural break and Correlational methodology. The study discovered a unidirectional causality; running from financial deepening the investigators also

recommended increased integration of the credit and thrift societies, cooperatives, rural savings organization etc, into the mainstream formal financial sector in order to shore up the mobilization of savings for investment.

Obafemi and Udah (2014) carried out an impact of financial sector reforms on Agricultural and manufacturing sectors in Nigeria using the various decomposition and impulse response paradigms to test whether or not financial sector variables stimulate the growth of output in agricultural and manufacturing sectors of Nigerian economy. The result of the investigation suggested that relaxing the financial development constraints and deepening the financial sector is crucial to boost economic growth in the identified two sectors.

Luka (2015) conducted an empirical investigation on financial deepening and economic development of Nigeria with an Ordinary Least Squares analytical framework. The profounder discovered that 27% of the variables under consideration affect GDP per capital while 73% of other variables not captured in the model also affect GDP per capital and adjusted R² of 16.7% show the robustness of the model. A trend analysis was also done in the study. At the end, of the study, it was found that financial deepening index was very low in Nigeria over the years. It was also discovered that the four explanatory variables, as a whole were useful and had a statistical relationship with financial deepening. But three of the variables; trend openness (TROP), inflation rates (INFLA) and ratio of money supply relative to gross domestic product (M2/GDP) had a significant relationship with financial deepening based on GDP per capita.

Kisaka(2015) investigated on the effect of financial deepening on the performance of Smallholder farmers in Homa Bay country, Kenya using the multiple regression analysis. The coefficient of determination indicated that 65% of variation in SHF was attributed to assets, loans, share capital and deposits. It was found that a 1% rise in share capital would result in 1.74% drop in performance of SHF if all other variables remain constant. Hence, share capital and deposits are negatively related to performances of SHF. It was also found that 1% rise in loans would lead to 0.96% rise in performance of SHF and that 1% rise in private credit drive 1.03% rise in performance of SHF. Therefore, loans and other forms of private credit negatively influence the performance of small holder farmers.

Ani (2013) investigated on the effect of foreign exchange reforms on financial deepening; evidence from Nigeria using OLS regressions. The findings of the resulting time series analysis shed considerable light on the degree, dimension and direction of the determinations of financial depth. First, the ratio of FDI to GDP, ratio of market capitalization of listed equities to GDP and real interest rate have positive relationship with financial deepening while exchange rate has a negative relationship with financial deepening. Secondly, among the determinants of financial depth only the ratio GDP to real interest rates posted a significant relationship with foreign exchange. Overall, the evidence from the non-spurious regression results suggests that foreign exchange reforms in Nigeria have not had the desired positive effect on the depth of the Nigeria.

Odhiambo (2009) Carried out an empirical investigation on interest rate reforms, financial deepening economic growth in Kenya, using cointegration and error-correction models, the observer was able to discover a strong support for the positive impact of interest rate liberalization on financial deepening in Kenya-although the strength to the level of depending ratio. The study also discovered financial depth to granger cause economic growth in Kenya.

Obamuyi and Demegin (2012) investigated the impact of interest rate reforms and financial deepening in Nigeria using the co-integration and vector error correction model (EMC) to determine the long and short run dynamics of the model. They discovered that there exists a long run relationship between financial deepening and interest rates. They also observed that interest rate reform has a positive and significant effect on financial deepening in Nigeria.

Omnwumere et al (2015) carried out a research work on financial deepening indicators and economic growth in Nigeria: A causality and impact analysis with the aid of Johansen co integration test. The error correction model as well as the granger causality test was also employed. Their findings revealed that there is a long run relationship between economic growth, broad money supply and private sector credit has negative and non significant impact on growth. The granger causality test results should that neither broad money supply nor private sector credit is granger causal for economic growth and vice versa.

Alenoghena (2014) conducted an empirical investigation on capital market, financial deepening and Nigerian's economic growth using Augmented Dickey- fuller (ADF) test and estimates the error correction mechanism model. This study revealed that stock market capitalization, Narrow money diversification (involving credit to private sector) and interest rate significantly impacted the promotion of economic growth of the country.

Mohan (2015) investigated the impact of financial deepening on economic growth in Indian perspective using Autoregressive Distribution lab (ARDL) bound testing approach of estimating co-integration among variable. Their findings suggest that there exists an equilibrium relationship in long run between financial deepening and economic development. Results also suggest that financial deepening causes economic growth in the long run and also in the short run.

Ogbonna and Karimo (2017) investigated on financial deepening and economic growth nexus in Nigerian using the Toda-Yamanoto augmented granger causality test. They discovered that the growth-financial deepening nexus in Nigeria follows the supply leading hypothesis. This means that it is financial deepening that leads to growth and not growth leading financial deepening.

Okoli (2013) investigated on evaluating the nexus between financial deepening and stock market in Nigeria using Garch (1,1) model. The result of her empirical evaluation revealed that financial deepening (FD1t) measured as the ratio of value of stock traded to GDP do not affect the stock market and there is no news about volatility. But financial deepening (FS2t) measured as the ratio of market capitalization to GDP affect the stock market. It indicated that financial deepening reduces the level of risk (volatility) in the stock market. The result also recorded that the conditional volatility of returns is slightly persistent.

Nzotta and Okereke (2009) examined financial deepening and economic development of Nigeria an empirical investigation employing the two stage least squares analytical framework. At the end of the study, they found that financial deepening index is low in Nigeria over the years. They also found that the mine explanatory variables, as a whole were useful and had a statistical relationship with financial deepening. But four of the variables lending rates, financial savings ratio, cheques GDP ratio and the deposit money banks/GDP ratio had a significant relationship with financial deepening.

Olanrewaju, Aremo and Aiyegbusi (2015) studied the causal linkages between banking sector reforms and output growth of manufacturing sector as well as the direction of such causality. co integration and Granger-causality techniques were applied to ascertain evidence regarding this important issue. The result of Granger causality analysis according to the study showed that the MGDP and banking sector reforms indicators (BF) move differently with one not predicting the other within the study period. Moreover, the empirical results showed that Bank assets, lending interest rate with co-efficient, exchange rate and real rate of interest positively and significantly affected the manufacturing sector's output growth in Nigeria. On the other hand, the financial deepening indicator (M2/GDP) and Interest rate spread negatively and significantly impacted on the MGDP in Nigeria, showing that the effects of banking sector reform indicators could vary widely in an economy.

Oriavwote and Eshenake (2014) examined the implications of financial development on economic growth in Nigeria, for the period of 1990-2011. The study applied the co-integration analysis with its error correction mechanism; the variables included Real Gross Domestic Product, Financial deepening (ratio of money supply to GDP, liquidity ratio, interest rate and the credit to private sector). These findings show that financial sector development has not significantly improved private sector development, while the capital base and liquidity ratio has improved the level of economic growth in Nigeria.

Abdulsalam and Gani (2013) examined the long run relationship between financial development indicators and economic growth in Nigeria over the period 1970- 2010. The findings of the study revealed that in the long-run, liquid liabilities of commercial banks and trade openness exert significant positive influence on economic growth, conversely, credit to the private sector, interest rate spread and government expenditure exert significant negative influence. The findings implied that, credit to the private sector is marred by the identified problems and government borrowing and high interest rate are crowding out investment and growth.

Adekunle, Salami and Adedipe (2013) examined the impact of financial sector development and economic growth in Nigeria. They contended that an efficient financial system is essential for building a sustained economic growth and an open vibrant economic system. They employed the OLS method of the regression analysis; the financial development was proxied by ratio of liquidity liabilities to GDP (M2GDP), real interest rate (INTR), ratio of credit to private sector to GDP (CPGDP) while the economic growth was measured by the real GDP (RGDP). The study finds that only the real interest rate is negatively related. All the explanatory variables were statistically insignificant.

Osuji and Chigbu (2012) investigated the impact of financial development variables on economic growth in Nigeria, using time series data for the period 1960-2008. The research utilized co-integration analysis, causality test and

error correction mechanism for analysis of the data; using variables such as money supply and credit to private sector and GDP. The results showed that money supply and credit to private sector positively impacted on economic growth in Nigeria and were as well co-integrated with GDP for the study period. The Granger test shows a bi-directional causality existing between GDP and all repressors.

Kaipou (2012) examined the relationship that exists between financial development and the growth rate per capita real GDP in OECD countries using panel data estimation techniques for the period 1980 - 2006. The variables used are the liquidity rate and the growth rate of per capita real GDP and the static panel model using OLS technique of analysis were applied. The results show that financial development negatively.

2.4 Knowledge Gap

From the above empirical evidence, the nexus between financial deepening series and economic growth had been deeply revived, most of the studies used OLS and Cointegration, ARDL and cointegration, GARCH and granger causality, none of the study above used OLS cointegration covering the current year of 2019 in Nigeria. This study is meant to cover the above gap.

3 Methodology and Data Analyses

3.1 Research design

This study adopted the exposit-facto research design. The exposit-facto research design is described as after-the-fact research. This is suitable for the work given that it is based on an already completed event and the researcher is meant to analyses the outcomes of the already completed event and draw reasonable conclusions

Nature and Sources of Data

All the data to be employed for this work will be time series, secondary and purely quantitative. They are drawn from sources such as The Statistical Bulletins of Central Bank. They are annualized time series data because they have a natural time ordering covering the period 1981 to 2019.

Model Specification

The study adopted Auto regressive Distributed lag model. (ARDL). The model for this work is specified following the special Classical multiple regression Model called

$$\text{GDP}=\text{F}(\text{RM2}/\text{GDP},\text{RCPS}/\text{GDP},\text{RTDS}/\text{GDP and RTMC}/\text{GDP})$$

$$\text{LNRGDP}_t = \beta_0 + \beta_1 \text{RM2GDP}_t + \beta_2 \text{RCPSGDP}_t + \beta_3 \text{RTDSGDP}_t + \dots + E_t$$

Where: CPS = Credit to the private sector, M2=Broad money supply, SAV= Savings and RGDP= Real Gross Domestic Product. Ratio of.T= Time series data.

Auto regressive Distributed lag model (ARDL)

Auto regressive Distributed lag model (ARDL) formed the method of data analysis. ARDL was chosen over the ordinary least square regression (OLS) because ARDL is a dynamic model while OLS is a static model. (Pesaran and Shin, 1999).

4. Data Presentation and Analysis

The Population of this study is from 1981 – 2019 and the sample of the secondary data was drawn from Statistical Bulletin of Central Bank of Nigeria from 1981 – 2019. The study used ex-post facto research design and time series data which are qualitative in nature.

Year	LNRGDP	RM2GDP	RCPSGDP	RTDSGDP
1981	9.6328	9.9917	5.9172	6.9572
1982	9.6148	10.1864	6.8837	7.4391
1983	9.5360	10.8515	7.1583	8.5803
1984	9.5309	11.8009	7.3148	9.4503
1985	9.6127	11.5976	6.7977	9.3039
1986	9.6315	11.7599	7.5319	10.3519
1987	9.6332	11.0542	8.4524	9.67051
1988	9.6937	11.9742	8.5307	8.83003
1989	9.7581	10.9507	7.2527	6.22644
1990	9.8681	9.4907	6.7138	6.2734
1991	9.8626	12.6502	6.9378	6.9159
1992	9.8843	12.2127	6.3885	6.2965
1993	9.8998	13.1318	10.0961	7.8030
1994	9.9024	13.0639	8.1360	7.9278
1995	9.9209	9.98518	6.2173	3.7315
1996	9.9607	9.15167	6.3135	3.3356
1997	9.9891	10.0514	7.6905	4.2405
1998	10.0133	10.6373	7.6695	5.0148
1999	10.0190	11.8505	8.1239	5.9340
2000	10.0727	12.7359	7.6893	5.7374
2001	10.1372	15.6048	9.4043	7.0780
2002	10.2735	13.2891	8.2110	7.5950
2003	10.3643	14.6818	8.2436	6.6146
2004	10.4636	12.3075	8.2076	6.9889
2005	10.5314	11.8451	8.2550	9.0135
2006	10.5965	13.2504	7.9916	9.3707
2007	10.6671	15.5397	11.1183	13.0392
2008	10.7366	20.4510	17.6733	16.9497
2009	10.8168	21.2509	20.5530	23.2453
2010	10.9080	20.2059	18.5984	10.9027
2011	10.9597	19.3274	16.9260	10.3713
2012	11.0008	19.3731	20.4273	11.2431
2013	11.0543	18.9214	19.6670	10.8076
2014	11.1147	18.2365	19.2393	13.4857
2015	11.1422	19.6773	19.8369	12.1707
2016	11.1262	21.3072	20.7732	12.1300
2017	11.1344	19.6667	19.4283	11.3948
2018	11.1535	19.6299	17.6279	11.7930
2019	11.0224	19.8342	18.4239	13.1234

SOURCES: Calculated by the Researcher from CBN Statistical Bulletin, 2019

Unit Root Test of Stationary

Tests of Unit root using augmented dickey fuller

In an attempt to confirm the order of integration of the series under study thereby confirming their suitability for a linear combination in the form of a model, the unit root test following the form specified as augmented dickey fuller Test was used. The table below represents a summary of the unit root result that was stationary.

Summary of Unit Roots Test Results

Variable	ADF Statistic	Critical Values @ 5%	Probability Value	Inference
LNRGDP	-2.0016	-1.9504	0.0447	I(1)
RM2GDP	-5.6504	-3.5366	0.0003	I(1)
RCPSGDP	-5.0793	-3.5366	0.0011	I(1)
RTDSGDP	-6.5443	-3.5366	0.0000	1(1)

Source: Author's e-view 10 output with data in Appendix, one

From the result of Augmented dickey fuller test contained in table above, LNRGDP, RM2GDP, RCPSGDP, RTDSGDP are all integrated of order 1(1). meaning that is stationary at order 1. Given these different orders of integration, the Ordinary Least Square Regression Method was in preference for the Autoregressive Distributed Lag Model which tolerates stationary property combination. In addition the sample size is also good for OLS, Also, the variables RGDP was log transformed to bring down the data size and ensure linearity.

Summary Descriptive Results

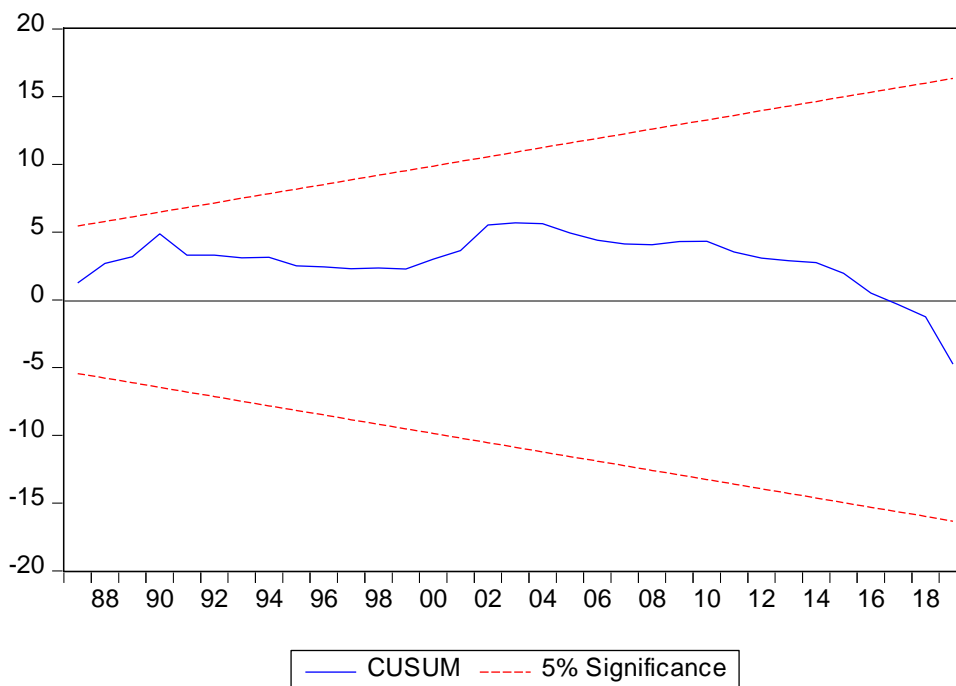
	LNRGDP	RM2GDP	RCPSGDP	RTDSGDP
Mean	10.28826	14.34654	11.24332	9.162460
Median	10.07274	12.73591	8.211023	8.830038
Maximum	11.15353	21.30726	20.77330	23.24536
Minimum	9.530920	9.151674	5.917270	3.335644
Std. Dev.	0.566754	3.982498	5.438442	3.764112
Skewness	0.284468	0.525352	0.785420	1.401909
Kurtosis	1.562668	1.712213	1.801303	6.406732
Jarque-Bera	3.883117	4.488859	6.344674	31.63423
Probability	0.043480	0.005988	0.041906	0.000000
Sum	401.2421	559.5151	438.4895	357.3360
Sum Sq. Dev.	12.20596	602.6909	1123.913	538.4044
Observations	39	39	39	39

Source: Author Computation, 2020 e-view 10 output

Table above shows the summary of descriptive analysis results for all the variables in the study in terms of the mean, the median, maximum, minimum, the standard deviation and the number of observations in raw form called level series. etc.

As shown in time series data was collected from Central of Nigeria (CBN) Statistical Bulletin, 2020 over a period of twenty-nine years that were used in the study for analysis. What determines the normality distribution of the variables is that Jarque-bera must be tending towards 3 and probability of normality distribution must be significant. When these two hypotheses are normal, it shows that the distributions are normally distributed.

Testing auto Correlational relationship between financial deepening reform and economic growth in Nigeria



From the above, result of the auto correlation as presented above reveals that the blue line in the fig 1 above did not overshoot meaning that it did not touch the upper and lower bound. Based on this. There is evidence that

there is no auto correlation existing within the variable of interest and econometric result derived by this variable are good in predicting econometrics results and are not spurious.

Measuring the cointegration relationship between financial deepening reform and economic growth in Nigeria

Null Hypothesis: ECT has a unit root

Exogenous: None

Lag Length: 0 (Automatic - based on SIC, maxlag=9)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-2.742093	0.0075
Test critical values:		
1% level	-2.628961	
5% level	-1.950117	
10% level	-1.611339	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(ECT)

Method: Least Squares

Date: 08/08/20 Time: 12:05

Sample (adjusted): 1983 2019

Included observations: 37 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ECT(-1)	-0.506920	0.184866	-2.742093	0.0094
R-squared	0.168666	Mean dependent var		-0.003410
Adjusted R-squared	0.168666	S.D. dependent var		0.049039
S.E. of regression	0.044712	Akaike info criterion		-3.350474
Sum squared resid	0.071971	Schwarz criterion		-3.306935
Log likelihood	62.98376	Hannan-Quinn criter.		-3.335124
Durbin-Watson stat	1.615879			

Source: Author Computation, 2020 e-view 10 output

From the above table, there is evidence to prove that there is a countertrading relationship existing amongst the variables of interest because the unit root the variable combined is stationary. Besides, the ADF statistics is more negative -2.7420 then the critical vale @ 5% - 1.9501 and the probability value is statically significant 0.0075 which is less than 5%. All these evidences point to the direction that financial deepening series had a long run relationship existing with economic growth nexus in Nigeria.

Measuring the error correction terms existing between financial deepening reform and economic growth in Nigeria

Dependent Variable: LNRGDP

Method: Least Squares

Date: 08/08/20 Time: 12:07

Sample (adjusted): 1983 2019

Included observations: 37 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.015911	0.333459	-0.047715	0.9622
RM2GDP	0.001414	0.007614	0.185657	0.8539
RCPSGDP	-0.004235	0.005460	-0.775500	0.4439
RTDSGDP	0.002281	0.003535	0.645100	0.5236
LNRGDP(-1)	1.005662	0.037003	27.17779	0.0000
ECT(-1)	-0.574556	0.208338	2.757805	0.0097
R-squared	0.993876	Mean dependent var	10.32417	
Adjusted R-squared	0.992888	S.D. dependent var	0.559642	
S.E. of regression	0.047196	Akaike info criterion	-3.121627	
Sum squared resid	0.069051	Schwarz criterion	-2.860398	
Log likelihood	63.75011	Hannan-Quinn criter.	-3.029532	
F-statistic	1006.183	Durbin-Watson stat	1.716553	
Prob(F-statistic)	0.000000			

Source: Author Computation, 2020 e-views 10 Output

From the table above, Result reveals that there is a long run relationship because the ECT(-1) is correctly single with negative -0.574566 and the probability value of the ECT(-1) is significant 0.0097. This points to the evidence there that there is long run relationship which creates a convergence to long run equilibrium. This convergence is an error that needs to be corrected over time. However, to get the error correctional indices, it will determine the number of years, months and days it will take to correct this error if everything being constant. Meaning if more effect is done by monetary authority to control monetary instruments from its incessant fluctuations. Hence, it will take 1 divided 0.574556 which is equal to 1.74 meaning it will take one year, seven months and 4 days to converge the error to long run equilibrium.

5. Conclusion

The study investigated the long run relationship existing between financial deepening series and economic growth nexus in Nigeria, 1981-2019. The economic motivation of the study is anchored on the desire to find out the extent to which financial depth cointegrated with economic growth in the long run, 1981 to 2018. In view of this, it was concluded that financial deepening series and economic growth had a longing relationship in Nigeria. Therefore a macroeconomic variable as contained in the financial depth called financial development has been seen to have a serious positive implication on economic activities in Nigeria. If financial depth, inclusion and financial developments are to be maintained, Economy will grow

Implication of Findings

It is therefore suggested that policy makers should not totally rely on short run dynamics but also use policy instrument to induce economic growth, and also use it to complement other macro-economic policies such as monetary and fiscal policies. More so, policies should be put in place to increase money supply to financed domestic production of export commodities in order to reduce import which leads to rise in the value of exchange rate.

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