Research article

The Effect of Financial Deepening on Economic Growth in Nigeria

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ABSTRACT

This paper examines the effect of financial deepening on economic growth in Nigeria with the application of the cointegration and error correction mechanism (ecm) in a multiple regression framework. Annual time series data for this study were obtained from secondary sources, mainly from the CBN Statistical Bulletin (2019) from 1981 to 2019 on financial deepening variable (Broad money supply as a ratio of GDP (M3/GDP); Credit to private sector as a Ratio of GDP (CPS/GDP); Total savings as a ratio of GDP (TSE/GDP) and Market capitalization (MCAP) were used as explanatory variables while Economic growth in Nigeria the dependent variable was proxy as real gross domestic product (RGDP). The Phillips-Perron statistics test results showed that all the selected economic and financial deepening variables (InRGDP, M3/GDP, CPS/GDP, TSE/GDP and InMCAP) were integrated at first difference. In other words, they were found to be stationary at order one I(1) while the Johansen unrestricted cointegration rank test results showed that there is a longrun relationship between broad money supply as a ratio of GDP, credit to private sector as a ratio of GDP, total savings as a ratio of GDP, log of market capitalization and log of real gross domestic Product in Nigeria. The empirical results showed that the entire explanatory variables of the economic and financial deepening in Nigeria met their expected signs except total savings as a ratio of GDP (TSE/GDP) with a negative sign.

The results also revealed that broad money supply as a ratio of GDP (M3/GDP), credit to private sector as a ratio of GDP (CPS/GDP) and the log of market capitalization (InMCAP) had positive effects on the log of real gross domestic product (InRGDP) in Nigeria for the sample period. This means that 1 per cent increase in M3/GDP, CPS/GDP and InMCAP raised real gross domestic product in Nigeria by 0.224993, 0.267342 and 0.202752 per cent respectively. Finally, the error correction mechanism (ECM) results which was -0.536968 was statistically significant and had the appropriate negative sign. It suggested however, that there was a high adjustment process in the practice of the financial deepening in Nigeria since the speed of adjustment is 53.7 per cent approximately. The Diagonistic and stability test tests confirmed the robustness of the model over time. The study, therefore, recommended that monetary authorities should adopt a single digit lending interest rate policies that will promote and further deepen the financial sector especially in the area of credits to private sector so as to encourage investors to borrow more to investment and thereby increase economic growth in Nigeria. Also, savings should be stimulated in other to place more funds in the vault of the banks, as this will intermediate investors seeking funds. This will also make total saving as a ratio to GDP to contribute significantly to economic growth in Nigeria. **Copyright © IJEBF, all rights served.**

Keywords: Real Gross Domestic Product; Financial Deepening, Broad Money Supply, Credit
        to Private Sector, Total Savings and Market Capitalization.

1.0   Introduction

Every individual in the society needs finance for different purposes. To provide the needed finance, there are many financial institutions rendering financial services. They make up the financial system in an economy. The financial system is the system that enables lenders and borrowers to exchange funds (Investopedia, 2019). It is a system that covers financial transactions and the exchange of money between investors, lenders and borrowers. The financial system provides an enabling environment for economic growth and development, productive activity, financial intermediation, capital formation and management of the payments system (Central Bank of Nigeria, CBN, 2017). With intermediation, savers lend to intermediaries, who in turn lend firms and other fund using units. The saver holds claim against the intermediaries, in form of deposits rather than against the firm. These institutions provide a useful service by reducing the cost to individuals, of negotiating transactions, providing information, achieving diversification and attaining liquidity (Igwebuike, Udeh & Okonkwo, 2019).

The Nigerian banking sector has a long and dynamic history, pre-dating the nation's political independence in 1960 (Newman, 2012). The Nigerian Banking System is traceable to the year 1892 with the establishment of First Bank of Nigeria under the control of the British colonial administration (Jude & Ekundayo, 2014). Subsequently, Nigerians and other African countries also established their own banks, which operated alongside the expatriate foreign banks in Nigeria. Prior to the nation's independence, the Colonial government established the Central Bank of Nigeria in 1959 as the apex regulatory body charged with the administrative responsibilities over the Nigerian Banking Sector (Olukayode & Somoye, 2013). A bank is a financial institution set up purposely for safe keeping of money, valuable goods and documents like wills and others (Okosodo & Mamudu, 2018). The existence of banks in Nigeria has been a big boost to business activities and help to oil the wheel of business activities by making money available for investment purposes (Newman, 2012). Okafor, Ezeaku and Ugwuegbe (2016) noted that there are different types of banks in Nigeria, among which are Central bank, Commercial bank known as Deposit Money bank, Industrial Bank, Micro Finance Bank, Mortgage Bank, Development Bank e.t.c.

Financial deepening may be defined as the increase in the introduction and supply of financial assets or securities within the financial sector (financial market) of the economy (Efanga, Ogochukwu & Ugwuanyi, 2020). Nzotta and Okereke (2009) Opined that financial deepening is the capability of financial institutions in any given economy to efficiently and effectively channel savings towards investment purposes. Financial deepening vehemently channels savings and funds in the vaults of the banks and allocates them to households, entrepreneurs, business and government for investment opportunities and beyond investment purposes with a view of return on investment, which will enhance economic growth. Hence, the wider the coverage the better the depth of financial deepening in an economy. Nwanna and Chinwudu (2016) added that financial deepening is to improve economic conditions of a

country through increased competitive efficiency within financial markets thereby indirectly benefiting non-financial sectors of the economy. Financial deepening also helps in increasing the provision and choices of financial services which would come through its financial infrastructure.

Osakwe and Chukwunulu (2019) reported that financial deepening involves a diverse process where primary, secondary and retail markets, various financial instruments like deposits, credits, debt securities, foreign exchange and financial institutions interact to provide financial services to the economy (Levine, 2005). It is viewed as a means of using various financial products and services in diversifying risks. This shows that it enhances the output performance of the economy via healthy competition among firms in the financial markets with non-financial segment as indirect beneficiaries (Torruam, Chiawa & Abur, 2013). Ndebbio (2004) sees financial deepening as an increase in the supply of financial assets in the economy. It comprises all the measures of financial assets to give us the approximate size of financial deepening. The widest range of such assets as broad money, liabilities of non-bank financial intermediaries, treasury bills, value of shares in the stock market, money market funds, etc., are included in its computation. On the other hand, there is the view that financial deepening is the outcome of economic growth rather than the cause of growth in the economy. Here economic growth gives rise to higher demand for more financial services leading to expansion in the depth of the financial sector (Ardic & Damar, 2006).

Jhingan (2003) defined economic growth as a process whereby the real per capital income of a country increases over a long period of time. According to him, economic growth is measured by the increase in the amount of goods and services produced in a country. Economic growth occurs when an economy's productive capacity increases which, in turn, is used to produce more goods and services. Economic growth is the steady process of the economy by which the productive capacity augments over time to bring about increasing levels of national output (Gezer, 2018). Financial deepening has been defined as an increase in the supply of financial assets in the economy (Ngerebo & Lucky, 2016). It includes the aggregate or wide range of financial assets that are available in the economy. It basically supports the view that development in financial sectors leads to development of the economy as a whole (Azu-Nwangolo & Ogechi, 2018). Financial deepening also implies the ability of financial institutions to effectively mobilize savings for investments.

The growth of domestic savings provides the real structure for the creation of diversified financial claims. Financial deepening generally entails an increased ratio of money supply to Gross Domestic Product (Christian, 2013). Financial deepening/development thus involve the establishment and expansion of institutions, instruments and growth process. Osinsanwo (2013) describes financial deepening as increased financial services geared to all levels of the society. Onyemachi (2012) defined financial deepening as an effort aimed at developing the financial system that is evident in increased financial instrument/assets in the financial markets-money and capital markets, leading to the expansion of the real sector of the economy.

The growing importance of stock market and banks around the world has opened a new avenue of research into the relationship between financial deepening and economic growth (Arestis, Demetriades and Luintel, 2001). The general idea that economic growth is related to financial deepening was first highlighted by Schumpeter in 1911(Okoli, 2010). The financial deepening role in economic growth has received much attention. However, the focus has been almost entirely on bank based financial deepening measures, while ignoring the possible impact of stock market development. Financial reforms have been a regular feature of the Nigeria financial system. The Central Bank of Nigeria has been trying hard to ensure that the financial sector in Nigeria maintain a considerable depth and remain liquid with a view to competing effectively within the global financial market. The reforms have evolved in response to the challenges posed by developments in the system such as systemic crisis, globalization, technological innovation and financial crisis. The reforms often seek to act proactively to strengthen the system, thus, there is urgent need to deepen the financial sector and reposition it for growth and integration into the global financial system in conformity with international best practices.

Financial deepening plays an important role in determining the growth of an economy. It broadens its resource base, raises the capital needed to stimulate investment through savings and credit, and boost the overall productivity. The design and implementation of effective interventions and programs in the Nigeria banking sector and stock market has led to a continued growth in financial assets, with a direct contribution from financial

intermediaries. However, economic growth in Nigeria, whether as a result of financial deepening or other growth factors has been fluctuating over the last decade with a rate as low as 0.5 in 1999. Therefore, it is of importance to examine the banking sector and stock market deepening effects on economic growth in Nigeria bearing in mind the recent economic recession, financial downturn and how it affects the real sector of the economy hence, the current study examines the relationship between financial deepening and economic growth Nigeria from 1981 to 2019.

2.0   Literature Review

2.1   Conceptual Issues

Conceptual clarifications on the impact of financial deepening on economic growth in Nigeria were done in the following sub-headings: a) Financial deepening; b) Broad Money Supply; c) Credit to Private Sector; d) Market Capitalization; e) Savings and f) Economic Growth.

2.1.1   Financial Deepening

Financial deepening implies the ability of financial institutions to effectively mobilize savings for investment purposes (Alenoghena, Enakali-Osoba, & Mesagan, 2014). Accordingly, to Hammilton and Godwin (2013) financial deepening has been defined as an increase in the supply of financial assets in the economy. It includes the aggregate or wide range of financial assets that are available in the economy. Financial deepening generally entails an increased ratio of money supply to Gross Domestic Product; it is increased financial services geared to all levels of the society, hence, financial deepening/development involve the establishment and expansion of institutions, instruments and growth process (Osinsanwo, 2013). Financial deepening is to improve economic conditions through increased competitive efficiency within financial markets thereby indirectly benefiting non-financial sectors of the economy. Financial deepening also helps in increasing the provision and choices of financial services which would come through its financial infrastructure (Nwanna & Chinwudu, 2016).

According to Shaw (1973) financial deepening means an increase in the provision of financial services measured by the ratio of money supply to GDP in the economy. The more liquid money is available in an economy, the more opportunities exist for continued growth. Moreover, financial deepening can be defined as an effort aimed at developing the financial system that is evident in increased financial instrument/assets in the financial markets-money and capital markets, leading to the expansion of the real sector of the economy. Obviously, it is the effort of developing countries to achieve growth through financial intermediation (Onyemachi, 2012). It is thus measured by relating monetary and financial aggregates such as M1, M2 and M3 to Gross Domestic Product (GDP). M1 is the sum of the tender that is held outside banks, travelers' cheques, checking accounts (but not demand deposits), minus the amount of money in the Federal Reserve float, while M2 is the sum of M1 plus savings deposits (this would include money market accounts from which no cheques can be written) and small denomination time deposits. M3 is M2 plus the large time deposits. Financial deepening equally considers ratio of private sector credit to GDP as a primary financial deepening measure.

2.1.2   Broad Money Supply

Money supply is the total amount of all forms of money in circulation in a given country at a given period of time. It is written as near money (M1) plus broad money (M2). M1 indicates the total currency in circulation plus current account deposits with commercial banks plus savings and time deposits (Mamudu & Okosodo, 2019). In economics, broad money (M2) is a measure of the money supply that includes more than just physical money such as currency and coins (also known as narrow money). It generally includes demand deposits at commercial banks, and any monies held in easily accessible accounts. Broad money can have different definitions depending on the situation of usage, usually it is constructed as required to be the most useful indicator in the situation. More generally, broad money is just a term for the least liquid money definition being considered and less a fixed definition across all situations. The M2 includes M1 plus short term time deposits in banks and 24-hour money market funds.

Broad money supply is a measure of money supply that consists of M1, plus savings and small time deposits, overnight deposit at commercial banks, and non-institutional money market accounts. This is a key economic indicator used to forecast inflation, since it is not as narrow as M1 and still relatively easy to track. All the components of M2 are very liquid, and the noncash components can be converted into cash very easily. Broad money includes notes and

coins but also saving accounts and deposits. It can also include Treasury Bills and gilts. These financial securities are seen as near money. M1, M2, M3 are measures of money supply, that is the amount of money in circulation at a given time. The sum of all these measures of financial assets gives us the approximate size of financial deepening which means that the widest range of such assets as broad money, liabilities of non-bank financial intermediaries, treasury bills, and value of shares in the stock market, money market funds and others will have to be included in the measure of financial deepening. Generally, the types of commercial bank money that tend to be valued at lower amounts are classified in the narrow category of M1 while the types of commercial bank money that tend to exist in larger amounts are categorized in M2 and M3, with M3 having the largest. The terms M1, M2, M3 refers to monetary aggregates (Nwanekpe, Uche & Nnamani, 2019).

2.1.3   Credit to Private Sector

Credit to private sector is the total credit given to private individuals, firms and corporate bodies for investment purpose by deposit money banks at a given rate of interest. Banks credit is the credit facilities which the deposit money banks gives to their customers, investors or others that meet the bank requirements for such loans or overdraft with a certain lending rate of interest charged for a specific period of time (Mamudu & Okosodo, 2019).

The private sector encompasses all for-profit businesses that are not owned or operated by the government. It is the segment of a national economy owned, controlled and managed by private individuals or enterprises. The private sector credits (PSC) are aggregate Naira values to financial savings (FS). The ratio of credit to private sector (CPS) relative to nominal GDP indicates the level of financial services and it is employed to measure all private resources used to finance the private sector. It is the most important measure of financial intermediary development (Yartey, 2013) as it captures the channeling of funds from savers to investors in the private sector. This indicator excludes credit to government, government agencies and public enterprises as well as credit issued by the central bank.

2.1.4   Market Capitalization

Market capitalization is the market value of a company's issued shares. According to Adeusi, Sulaiman and Azeez (2013) market capitalization is the current stock price per share multiplied by the total number of outstanding shares in the stock market. The stock market is an important institution that contributes to economic growth of emerging economics. Stock Exchange is an organization which provides facilities for trading in securities by its members. The Nigerian stock market offers array of financial instruments to meet long term financing needs of the public and private sectors. These instruments comprise shares, stocks, equity, bonds, debts and financial derivatives (Okosodo & Mamudu, 2017).

Capitalization is a measure that equals the value of listed shares divided by GDP. It is the total dollar market value of all of a company's outstanding shares. The assumption behind this measure is that overall market size is positively correlated with the ability to mobilize capital and diversify risk on an economy wide basis hence adopting Nwanekpe, Uche and Nnamani (2019) approach, the market capitalization is proxied by MC = Market Capitalization/GDP where, MC = Market Capitalization and GDP = Gross Domestic Product.

2.1.5   Savings

Savings is that part of income that is not spent or consumed immediately but kept for future purpose. Some of the factors that determines savings in Nigeria are amount of income earned, investment owned, profits, amount paid as tax and the rate of interest received (Okosodo, 2009). Savings refers to all or part of income which are not spent immediately but reserved for future purposes. Money which is saved constitute a withdrawal from the circular flow of income, but it can only come back to the circular flow of income through investment. There are three types of savings, these includes personal savings (income kept by an individual), corporate savings (income kept by a firm, an industry, company or business organization) and government savings (income kept by local, state or federal government). Savings in an economy are easily calculated through the total value of deposits or money kept by customers in their savings, demand and time deposit accounts for a period of time, which banks pay deposit interest rate on for not using them immediately. The reasons for savings includes to raise capital or capital formation, unforeseen and unexpected contingencies, accumulation of wealth, and acquisition of social status (Cole, 2017).

Okosodo and Mamudu (2018) noted that with an efficient financial intermediation functions of the banks, the productive capacity of the economy will be increased over time. Igyo, Simon and Iorlumun (2016) concluded that financial intermediation role of the banks cannot be effective and efficient without sufficient funds in their vaults. As a result, banks engage in several practices in order to attract savings and time deposits from their customers. One of the instruments put to use is to raise the interest paid by the bank to customers on the total amount deposited by these customers with a period of time usually one month. In other to capture the impact of savings on economic growth, the current study used total savings as ratio of GDP at current basic prices.

2.1.6 Economic Growth

The term economic growth refers to the increase (or growth) of a specific measure such as real national income (RGDP), gross domestic product (GDP), or per capita income (PI). National income or product is commonly expressed in terms of a measure of the aggregate value added output of the domestic economy called gross domestic product (Onyemachi, 2012). CBN (2018) added that gross domestic product (GDP) is the monetary value of goods and services produced in an economy during a period of time irrespective of the nationality of the people who produced the goods and services. It is calculated without making deductions for depreciation. GDP at constant basic prices (otherwise known as the Real GDP) equals GDP at Constant Market Prices less indirect taxes net of subsidies (CBN, 2017).

Economic growth means an increase in a nation's Real Gross Domestic Product (RGDP) that is, an increase in a nation's output of goods and services or the physical expansion of the nation's economy (Antwil, Mills & Zhao, 2013). Real GDP is proxy in this work for economic growth. It is the total aggregate value of goods and services produced in a country over a given period usually one year. Marlyse and Bakang (2014) reported that there are two main measures instituted and used to measure economic growth. The first is Gross National Product (GNP) that computes the total value of goods and services produced by all nationals within and outside the country over a given period, and the second is Gross Domestic Product considered as the broadest indicator of economic output and growth. It is designed to measure the value of production of those activities that fall within the boundary of the national accounts system (Yahaya & Kolapo, 2020).

Economic growth is generally agreed to indicate development in an economy because it transforms a country from a five percent saver to a fifteen percent saver. Thus it is argued that for stock market and bank financing to contribute or impact on the economic growth in Nigeria, it must operate efficiently (Bashiru, 2013). Levine (2002) argued that bank and stock markets provide financial services which are essential for the growth of a country and is of the opinion that the services provided by bank and stock market may be complementary. Accordingly to Rajan and Zingales (2003) financial deepening is essential for growth, it is not only a substitute for the machine but also an essential lubricant. Since the Nigerian economy slipped into recession in 2016, with the growth figures showing the economy contracted 2.06% between April and June, which resulted in a general slowdown in economic activity, a lot of questions have risen from different quarters as to, how proactive is the financial deepening to our gross domestic product? This of course, has necessitated a re-evaluation of how positive our financial deepening indicators have influenced the proxy measure of Nigerian economic growth (Amaefula, 2019).

2.2 Theoretical Literature
2.2.1 Financial Intermediation Theory

Financial intermediation theory states that efficient financial deepening promotes financial intermediation which is seen as the extent to which financial institutions bring deficit spending units and surplus spending units together (Ndebbio, 2004). The theory also postulates that financial deepening can enhance economic growth. The question arises as to what kind of financial deepening measures are most appropriate, bank based or stock market? Literature on the impact of financial deepening on economic growth had used both bank and stock market based indicators as measures of financial deepening (Victor & Samuel, 2014 and Osho, 2014).

Haizinga (2000)[12], however, argued that the stock market is better as a means of financing growth, as it provides a greater opportunities for competition, thereby encouraging entrepreneurship. In principle, the stock market is expected to accelerate economic growth, by providing a boost to domestic savings and increasing the

quantity and the quality of investment. The market is expected to encourage savings by providing individuals with an additional financial instrument that may better meet their risk preferences and liquidity needs. Better savings mobilization may increase the saving rate. The stock market also provides an avenue for growing companies to raise capital at lower cost. In addition, companies in countries with developed stock market are less dependent on bank financing, which can reduce the risk of a credit crunch. (Osho 2014)[13]. Economic growth is generally agreed to indicate development in an economy, because it transforms a country from a five percent saver to a fifteen percent saver. Thus it is argued that for stock market and bank financing to contribute or impact on the economic growth in Nigeria, it must operate efficiently(Bashiru, 2013[14]). Levine (2002)[15], argued that bank and stock markets provide financial services which are essential for the growth of a country and is of the opinion that the services provided by bank and stock market may be complementary.

The study is anchored on the financial intermediation theory. Each of the selected arms of the financial sector has a significant role of channeling fund from surplus to deficits economic unit for investment purpose. The two sectors generate large pool of funds, and provide mechanisms that allow such fund to be assessed by other economic units in the economy. It is through the later (providing mechanisms that allow funds to be assessed) that the respective sectors foster financial deepening in the economy.

2.2.2 The Supply-Leading Theory

The supply-leading theory states that financial deepening spurs growth. The existence and development of the financial markets brings about a higher level of saving and investment and enhance the efficiency of capital accumulation. This hypothesis contends that well-functioning financial institutions can promote overall economic efficiency, create and expand liquidity, mobilize savings, enhance capital accumulation, transfer resources from traditional (non-growth) sectors to the more modem growth inducing sectors, and also promote a competent entrepreneur response in these modern sectors of the economy. The work of Dernirguc-Kunt & Levine (2008) in a theoretical review of the various analytical methods used in finance literature, found strong evidence that financial development is important for growth. To them, it is crucial to motivate policymakers to prioritize financial sector policies and devote attention to policy determinants of financial development as a mechanism for promoting growth.

2.2.3 Demand - Following Theory

The demand-following view of the development of the financial markets is merely a lagged response to economic growth (growth generates demand for financial products). This implies that any early efforts to develop financial markets might lead to a waste of resources which could be allocated to more useful purposes in the early stages of growth. As the economy advances, this triggers an increased demand for more financial services and thus leads to greater financial development. Some research work postulate that economic growth is a causal factor for financial development. According to them, as the real sector grows, the increasing demand for financial services stimulates the financial sector. It is argued that financial deepening is merely a by-product or an outcome of growth in the real side of the economy, a contention recently revived by Ireland (1994) and Demetriades and Hussein (1996). According to this alternative view, any evolution in financial markets is simply a passive response to a growing economy.

2.2.4 Endogenous Growth Theory

Endogenous Growth Theory or new growth theory was developed in the 1980's by Romer, Lucas and Rebelo, among other economists as a response to criticism of the neo-classical growth model. The endogenous growth theory holds that policy measures can have an impact on the long-run growth rate of an economy (Wikipedia, 2013). The model posits that the long-run growth rate is determined by variables within the model, not an exogenous rate of technological progress as in a neo-classical growth model.

Jhingan (2006) explained that the endogenous growth model emphasizes technical progress resulting from the rate of investment, the size of the capital stock of human capital. In an endogenous growth model, Nnanna et al. (2004) observed that financial development can affect growth in three ways, which are: raising the efficiency of financial intermediation, increasing the social marginal productivity of capital and influencing the private savings rate.

This means that a financial institution can affect economic output by efficiently carrying out its functions, among which is the provision of credit.

2.3 Empirical Literature

Several empirical studies have been conducted on financial deepening and economic growth in Nigeria. These studies reported mixed results on their findings that financial deepening have both positive and negative significant effect on economic growth in Nigeria (Nzotta & Okereke, 2009; Ohwofasa & Aiyedogbon, 2013 and Nwanekpe, Uche & Nnamani, 2019). In a study carried out by Yahaya and Kolapo (2020) on the impact of financial deepening on economic growth in Nigeria using the error correction methodology revealed that banking sector and capital market related financial deepening variables are significant determinants of economic growth in Nigeria with coefficient value of 4.6015 and 3.28E-09 at 5% significant level respectively. The study concluded that financial deepening promotes economic growth in Nigeria, with the recommendation that policy holders should implement the financial inclusion policies that increases the flow of investible funds and improves the capacity of banks to extend credit to the economy.

Efanga, Ogochukwu and Ugwuanyi (2020) examined the impact of financial deepening on the Nigerian economy between 1981 and 2018 using the Fully Modified Least Squares (FMOLS) Model on real gross domestic product as proxy for economic growth in Nigeria (dependent variable), while ratio of money supply to gross domestic product, ratio of private sector credit to gross domestic product and ratio of market capitalization to gross domestic product as independent variable. Their results indicated that financial deepening (money supply to gross domestic product, ratio of private sector credit to gross domestic product and ratio of market capitalization to gross domestic product) had positive impact on the Nigerian economy (real gross domestic product) within the period under review. To boost economic growth, they recommended that monetary authorities should implement monetary policies that will increase money supply. Also, Nigerian commercial banks should be encouraged to improve upon credit facilities made available to the private sector.

Amaefula (2019) empirically questioned if economic growth was enhanced by financial deepening between 1981 and 2016 using multiple regression analysis model and Auto-Regressive Distributed Lag (ARDL) methodology on gross domestic product (GDP), money supply (M2) and credit to private sector (CPS). The ARDL results revealed that there was no evidence of short-run relationship that existed between financial deepening and economic growth, but the long-run equilibrium relationship was recorded to be only significant at 10% level of significance. The result further revealed that in case of distortion in the economy, there was approximately 0.2% adjustment speed adjusted towards long-run equilibrium. This showed a slow speed of adjustment towards equilibrium. Hence, he recommended that government should incorporate more reforms in the Nigerian financial system that will enhance positive effect of financial deepening on economic growth both in the short-run and in the longrun.

Igwebuike, Udeh and Okonkwo (2019) examined the effects of financial deepening on the economic growth of Nigeria (1981 to 2016) through two of the basic arms of the financial industry (Insurance companies and Banking Industry) on secondary data from CBN statistical bulletin and Global Financial Development bulletin (2017) using an ex-post facto research design and the Ordinary Least Squares (OLS) methodology. Their results showed that insurance industry premium to GDP has positive but no significant effect on economic growth in Nigeria, while credit to private sector by commercial banks to GDP has positive and significant effect on economic growth in Nigeria. They recommended among others, that the insurance industry should undergo another round of recapitalization to further widen their capacity to provide cover in the economy, as this will create an environment of greater security, which will foster more investment and innovation and in extension economic growth.

Nwanekpe, Uche and Nnamani (2019) empirically explored the effect of financial deepening indicators on the performance of pharmaceutical firms in Nigeria using annual time series secondary data extracted from annual account and financial statement of the selected manufacturing firms for the periods of 2006-2016 and financial deepening variable(ratio of broad money supply to GDP (M2/GDP); ratio of credit to private sector to GDP (CPS/GDP); and market capitalization (MCAP) as explanatory variables while the response variable was earnings per share (EPS) of pharmaceutical firms in Nigeria. The study adopted ex-post facto research design and employed Ordinary Least Squares (OLS) panel regression analysis techniques. The findings revealed that financial deepening

(ratio of broad money supply to GDP (M2/GDP); ratio of credit to private sector to GDP (CPS/GDP); and market capitalization (MCAP) has a significant positive influence on earnings per share (EPS) of pharmaceutical firms in Nigeria. They concluded that financial deepening helps pharmaceutical firms' growth in Nigeria. The study therefore recommended that financial deepening should be encouraged since it triggers the performance of pharmaceutical firms and overall economic growth of Nigeria.

A comparative analysis by Osakwe and Chukwunulu (2019) on the effect of financial deepening on economic development of Nigeria and Ghana for the period 1989 to 2017 on selected macroeconomic variables (standard of living, literacy rate, interest rate, inflation, and stock market liquidity) using Johansen co-integration and Granger causality methodology. The results indicated a long run relationship between financial deepening and economic development for Nigeria and Ghana while the granger causality results did not support the cointegration results. This is true for all the variables in Ghana. For Nigeria, some variables of development such as literacy rate and stock market liquidity granger cause financial deepening. The study thus concludes that financial deepening has more effective contributions to the development of Nigerian economy than that of Ghana.

Assessment of financial deepening on the growth of Nigerian economy from 1990-2016 was done by Echekoba and Ubesie (2018) with the main objective of evaluating the effect of private sector credit, money supply and market capitalization on economic growth in Nigeria using the ordinary least square regression methodology (OLS). Their results showed that the three independent variables (private sector credit, money supply and market capitalization) of the study all have significant effect on economic growth in Nigeria. It was therefore recommended that policy makers should consider reducing impediments to liquidity in the stock market, easing restrictions on international capital and entry into the market to ensure that more companies will be listed, while policies aimed to reduce the high incidence of non-performing credits should be made to ensure that private sector credits are channeled to the real sector of the economy. Also, monetary authorities should implement policies that will increase the flow of investible funds and improves the capacity of banks to extend credit to the economy as this will make broad money supply and private sector, to significantly impact on economic growth in Nigeria.

Karimo and Ogbonna (2017) examined the causal relationship that existed between financial deepening and economic growth in Nigeria between the period 1970 and 2013. The study used the Toda–Yamamoto augmented Granger causality test and results elicited from the analysis revealed that the growth-financial deepening nexus in Nigeria supported the supply-leading theory. This means that it is financial deepening that leads to growth and not growth leading to financial deepening. The study recommended that policy efforts should be channeled towards clearing drawbacks that would impair and distort the growth of credit allocated to the private sector, and will also act as a catalyst to boost investors' confidence in the stock market operations.

Ogbuagu and Ewubare (2017) investigated the relationship between financial depth, macroeconomic volatility, and economic growth in Nigeria using a general model of error correction and causality model with time series data. Their results showed that there is a long-run and short-run impact of financial deepening on economic growth. The causality result showed a unidirectional causality between exchange rate volatility, stock traded, stock market capitalization, and broad money. They concluded with the suggestion that government and policy makers should embrace policies that will deepen financial services in Nigeria.

Emmanuel and Steve (2017) investigated the relationship between financial deepening and entrepreneurial growth in Nigeria from 1986 to 2016 using Pearson Correlation to ascertain the relationships that existed between the variables. Their empirical results showed that the ratio of money supply to Gross Domestic Product (M2/GDP) and the ratio of credit to private sector to GDP (CPS/GDP) had positive and insignificant relationship with entrepreneurial growth; while the ratio of deposit money banks' branches to GDP (DMBB/GDP) had negative and significant relationship with entrepreneurial growth. They recommended that there should be an effective regulation of supply of money in order to increase capital flows to the real sector of the Nigerian economy so as to trigger entrepreneurial growth. Also, the Central Bank of Nigeria should ensure that commercial banks gives out more credit facilities to entrepreneurs (private sector), including the young graduates and new entrepreneurs without or collaterals to enable them invest in productive innovative ventures.

Paul (2017) examined the impact of financial deepening on economic growth in Nigeria using data from secondary sources from 1986-2015 with the application of the ordinary Least Square (OLS) technique, Co integration, and Error correction model (ECM) as estimation tools. The results revealed that economic growth in Nigeria in the long-run is influenced by the indices of financial depth, while financial deepening is positively and significantly related to economic growth. He therefore recommended for financial inclusion, financial reforms; infrastructural development, and efficient payment system to encourage savings; boost public confidence in the money and stock markets to stimulate investment and efficient resource allocation.

Olawumi, Lateef and Oladeji (2017) examined the extent to which financial deepening has affected the performance of selected Nigerian commercial banks in terms of profitability, with the objective of empirically investigating the relationship between financial deepening and bank performance using financial deepening (M2/GDP), ratio of credit to private sector to GDP, ratio of deposit liabilities to GDP as variables of financial deepening. Findings from their study revealed that financial deepening made positive contributions to the level of profitability of the selected commercial banks in Nigeria. The study concluded that contributions of each component of financial deepening to selected commercial banks performance is strong and are statistically significance.

The effect of financial deepening on economic growth in Nigeria was carefully examined by Nwanna and Chinwudu (2016) from 1985 to 2014 using stock market and bank deepening variables such as money supply, market capitalization, private sector credit and financial savings on economic growth of Nigeria. Stock market provides the avenue through which long term fund could be raised for investment project. The study adopted the supply leading hypothesis and the ordinary least square (OLS) econometric techniques and the result of the analysis revealed that both bank based and stock market financial deepening (money supply, market capitalization, private sector credit and financial savings) has significant and positive effect on economic growth in Nigeria. They therefore recommended that there should be improvement by encouraging more participation in the stock market as well as easing restrictions on international capital and entry into stock market to ensure more companies are listed.

Okafor, Onwumere and Chijindu (2016) conducted a causality and impact study on financial deepening and economic growth in Nigeria for a-33-year period covering 1981 – 2013 using the Johansen cointegration technique, the Error Correction Model and the Granger causality test. Their findings revealed that there is a long run relationship between economic growth, broad money supply and private sector credit, with high speed of adjustment towards long run equilibrium. The results also revealed that while broad money has positive and non-significant impact on economic growth, private sector credit has negative and non-significant impact on growth. The Granger causality test results showed that neither broad money supply nor private sector credit is granger causal for economic growth and vice versa. The study therefore recommends that private sector friendly policies should be implemented to ensure that investors do not only have access to credit but such credit should be at affordable cost, i.e. at a relatively low interest rate.

Andabai and Igbodika (2015) examined the causal relationship between financial deepening and performance of Nigerian economy using time series data from 1990-2013 and the results of their study revealed a long-run equilibrium relationship between financial deepening and performance of Nigerian economy, while there is a causal relationship between financial deepening and performance of Nigerian economy. The study therefore recommends that the monetary authority should implement policies that will increase the flow of funds and improves the capacity of banks to extend credit to the economy, while Security and Exchange Commission should be diligent in the supervision of the operators in the capital market to ensure that efficiency and discipline is restored in the market, so as to increase investors' confidence, expand liquidity, mobilize savings and enhances capital accumulation.

Alenoghena (2014) investigated the contributions of capital market and financial deepening to economic growth in Nigeria over the period of 1981 to 2012 using error correction mechanism model and the study revealed that Stock Market Capitalization (MCAP), Narrow Money Diversification (NMD) involving credit to private sector, and Interest Rate (INT) significantly impacted the promotion of economic growth of the country during the period of study. Though, other measures of liquidity represented by Financial Development (FID) and Monetization Ratio (MTR) were not significant in explaining the trend in economic growth, they exhibited very strong coefficients in the process. He recommended that Government and other stake holders in the economy should take measures to further

improve the liquidity of the financial market to enhance overall economic efficiency in the country, while the focus of policy targets should be specific in the expansion of credit to the producing sectors of the economy and further monetization of the economy by extending financial services to deficient locations.

Fasoranti and Santos (2014) the effect of inflation and financial deepening on output growth in Nigeria using Cointegration and ECM approach of Stock-Watson's dynamic ordinary least squares (DOLS). Their results showed an indication that inflation effect on growth is independent of financial development while the financial development effect on growth is dependent of inflation. Finally, since financial development effect on growth is dependent of inflation, policy that will ensure price stability that will promote output further should be encouraged.

Nwaeze, Michael and Nwabekee (2014) studied the extent to which financial intermediation impacts on the economic growth of Nigeria between the period of 1992 and 2011 using the Ordinary Least Squares (OLS) regression technique to estimate the hypotheses formulated in line with the objectives of the study. Their empirical results showed that both total bank deposits and total bank credits exerts a positive and significant impact on the economic growth of Nigeria. They therefore recommended amongst others that banks should increase the interest paid to customers on the different bank accounts they operate to encourage more patronage from them, and also ensure that a major part of their credit is channeled to the productive sectors of the economy such as agriculture, industry and power sector.

Ohwofasa and Aiyedogbon (2013) empirical investigation on financial deepening and economic growth in Nigeria from 1986-2011 using Vector autoregressive (VAR) methodology revealed that the series were co-integrated and that long run relationship existed between the variables. The results of the VAR estimates revealed among other things that a one year lag of economic growth, gross national saving as a ratio of GDP (lag 1) and exchange rate (lag 1) have significant positive impact on current economic growth while the impact of GCF (lag 1) on the current level of economic growth was negative and statistically significant. It was also empirically discovered that PSC/GDP (lag 2) and GNS/GDP (lag 2) happened to be key determinants of M2/GDP. Similarly, the key determinants of PSC/GDP include its year 1 and 2 lagged values and GNS/GDP (lag 2) with GNS/GDP (lag 2) and PSC/GDP (lag 2) exhibiting negative impact. Finally, on the current level of GNS/GDP, it is observed that M2/GDP (lag 1) and PSC/GDP (lag 2) exhibit significantly negative determining influence while PSC/GDP (lag 1) and the past value of GNS/GDP (lag 2) were also seen as its key determinant. The study recommended that savings should be stimulated in order to place more funds in the hands of banks to intermediate investors seeking funds. Also, lending rate should be reasonable so as not to deter investors to borrow to embark on viable investment projects.

Shittu (2012) examined the impact of financial intermediation on economic growth in Nigeria with time series data from 1970 to 2010 using co-integration test and error correction model. The result revealed that financial intermediation has significant impact on economic growth in Nigeria. Onwumere, Ibe, Ozoh and Mounanu (2012) examines the impact of financial deepening on economic growth in Nigeria for the period of 1992 - 2008 and adopted the supply-leading hypothesis using variables such as broad money velocity, money stock diversification, economic volatility, market capitalization and market liquidity as proxies for financial deepening and gross domestic product growth rate for economic growth. They found that broad money velocity and market liquidity promote economic growth in Nigeria while money stock diversification, economic volatility and market capitalization did not within the period studied. The study recommended that government policy should be geared towards increasing money supply and promoting efficient capital market that will enhance overall economic efficiency, create and expand liquidity, mobilize savings, enhance capital accumulation, transfer resources from traditional sectors to growth inducing sectors of the economy.

Sulaiman and Azzez (2012) critically explore the effect of financial liberalization on the economic growth in developing nations with its assessment focusing on Nigeria with annual time series data from 1987-2009. The study employs co-integration and error correction model (ECM) by making Gross Domestic Product as a function of lending rate, exchange rate, inflation rate, financial deepening (M2/GDP) and degree of openness as its financial liberalization indices. Co-integration result confirms the existence of long run equilibrium relationship while the ECM results show a very high $R2$ in both the over parameterized model (95%) and parsimonious model (91%). The study therefore concludes that financial liberalization has a growth-stimulating effect on Nigeria.

Onyemachi (2012) examined the causal relationship between financial deepening and economic growth in Nigeria for the period 1986 to 2010 using the Vector Auto Regressive model and the results revealed that financial deepening does not impact or influence economic growth in the short run, while in the long run there is a significant effect of financial deepening on economic growth, leaying credence to the supply leading hypothesis that financial deepening causes economic growth. The results also showed that GDP had a positive and significant impact on deposit money bank asset, money supply and private sector credit, thereby laying credence to the demand following hypothesis. He therefore recommended that monetary authorities should continue with the policy on reforms to consolidate the emerging confidence in the financial system.

Okoli (2010) examines the relationship between financial deepening and stock market returns and volatility in the Nigerian stock market for the period 1980-2009. The study employs the popular GARCH (1, 1) model. Four modeled equations were estimated and analyzed. Financial deepening was represented by two variables, the ratio of the value of stock traded to GDP (FD1t) and the ratio of market capitalization to GDP (FD2t). Empirical results 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 (FD2t) 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. Result also recorded that the conditional volatility of returns is slightly persistent.

3.0 Research Methods
3.1 Theoretical Framework
Financial Intermediation Theory

This study is based on the theory of financial intermediation which states that savings are mobilized from the surplus sector of the economy to the deficit sector (credit) for investment purposes through the intermediation function of the financial institutions and thereby spur economic growth. Financial sector has a significant role in the channeling of fund from economic agents having surplus to economic agents having deficits. All the two sectors generate large pool of funds, and provide mechanisms that allow such fund to be assessed by other economic units in the economy. It is through the later (providing mechanisms that allow funds to be assessed) that the respective sectors foster financial deepening in the economy.

3.2 Model Specifications

Some of the variables used in this model were identified in the literature. The specification by Igwebuike, Udeh and Okonkwo (2019) was adapted and his model is presented as follows:

$$GDP = \beta_0 + \beta_1 CTPSTGDP + \beta_2 SATGDP + \mu \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots.. \quad 3.1$$

Where: GDP = Gross domestic product, CTPSTGDP = Credit to private sector by commercial banks to GDP; SATGDP = Savings accumulated to GDP, μ = Error term, b_0 = Intercept or constant and b_1–b_2 = Coefficient of the independent variables. Other variables identified in the literature as influencing financial deepening on economic growth in Nigeria apart from the ones included in Igwebuike, Udeh and Okonkwo's work include broad money supply as a ratio of GDP (M3/GDP) and market capitalization expressed in Billions of Naira (MCAP). The reason for the modification of equation (3.1) to include these variables (M3/GDP and MCAP) in the current model specification is to empirically capture the effect of financial deepening on economic growth in Nigeria from 1981- 2019.

$$InRGDP_t = f(M3/GDP_t, CPS/GDP_t, TSE/GDP_t, InMCP_t)\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots..... \quad 3.2$$

The log-log linear equation of equation 3.2 is expressed more specifically for the purpose of statistical test as equation 3.3.

$$InRGDP_t = \beta_0 + \beta_1 M3/GDP_t + \beta_2 CPS/GDP_t + \beta_3 TSE/GDP_t + \beta_4 InMCAP_{t+} U_t \ldots\ldots\ldots\ldots\ldots.3.3$$

(Apriori expectation β_1, β_2, β_3 and $_{\beta4} > 0$).

Where, InRGDP = Log of real gross domestic product expressed in Billions of Naira; M3/GDP = Broad money supply as a ratio of GDP at current basic prices; CPS/GDP = Credit to private sector as a ratio of GDP at current basic prices; TSE/GDP = Total savings as a ratio of GDP at current basic prices; InMCAP = Log of market capitalization expressed in Billions of Naira; U_t = Disturbance term or error term, β_0 = Intercept, β_1–β_4 = Coefficient of the

independent variables and t is the time trend. Note: InRGDP was used as a proxy for economic growth in Nigeria (dependent variable) while M3/GDP, CPS/GDP, TSE/GDP and InMCP are the explanatory variables (independent variable)

The error correction specification of equation 3.3 is presented as equations 3.5:

$\Delta InRGDP_t = \beta_0 + \beta_1 \Delta M3/GDP_t + \beta_2 \Delta CPS/GDP_t + \beta_3 \Delta TSE/GDP_t + \beta_4 \Delta InMCAP_t + \beta_8 ECM_{t-1} + U_t$..3.5

The ECM in equation 3.4 is the Error Correction Mechanism which indicates the speed of adjustment to equilibrium whenever disequilibrium occurs in the economy.

3.3 Sources of Data

Data for this study were obtained from secondary sources which include Central Bank of Nigeria Statistical Bulletin (2019), Academic Journals for various years, National Bureau of Statistics and various issues.

3.4 Method of Data Analysis

This study used log-log linear modeling specification because log-log linear modeling is superior and more effective to linear form and gives more favourable results. The method used in analyzing the data collected for this research is basically descriptive and statistical in nature. Phillips-Perron test statistic was employed to perform the unit root test of stationarity. Statistical theory requires that variables be stationary before application of standard econometric techniques. This was done in order to avoid spurious (misleading) results. The Johansen cointegration test was also conducted to examine the existence or otherwise of longrun relationship among the economic and selected financial deepening variables in the model. The error correction model was thereafter estimated to determine the speed of adjustment from short to longrun equilibrium. Diagnostic and stability tests were also conducted to confirm the robustness of the model over time.

4.0 Data Presentation, Analysis and Discussion of Results

The economic and financial deepening data used in this study are presented in appendix A at different time trend. The analysis and discussion of results stated with the unit root test results, the Johansen cointegration test results and the results of the error correction representation (shortrun).

4.1. Unit Root Test Results

Prior to the estimation of ECM, a unit root test was conducted on the selected economic and financial deepening Indicators (log of real gross domestic product (InRGDP); broad money supply as a ratio of GDP (M3/GDP); credit to private sector as a Ratio of GDP (CPS/GDP); total savings as a ratio of GDP (TSE/GDP); log of market capitalization (InMCAP) were examined using the Phillips-Perron test statistics to determine their stationarity status. Statistical theory requires that variables be stationary before application of standard econometric techniques. This was done in order to avoid spurious (misleading) results. The results of the Phillips-Perron unit root test are displayed in Table 4.1.

Table 4.1: Unit Root Test Results

Variable	Level	First Difference	Order of Integration
InRGDP	0.651647 (0.8780)	-5.960312 (0.0000)	1(1)
M3/GDP	-0.602862 (0.8582)	-5.892947 (0.0000)	1(1)
CPS/GDP	-0.923984 (0.7696)	-5.012315 (0.0002)	1(1)
TSE/GDP	-2.300893 (0.1769)	-6.660942 (0.0000)	1(1)
InMCAP	1.205251 (0.1976)	-5.974786 (0.0000)	1(1)
5% C.V	5% = -2.941145	5% = -2.943427	

Source: Author Regression Output from EViews 9.

Note: i. Pro-value are reported in parenthesis,
    ii. The Philips-Perron statistics are compared to 5 per cent critical value (C.V).

The Phillips-Perron test results in Table 4.1 shows that all the selected economic and financial deepening variables (InRGDP, M3/GDP, CPS/GDP, TSE/GDP and InMCAP) are integrated at first difference. In other words, they are found to be stationary at 1(1). This implies that the hypothesis of non-stationarity is rejected for all the variables at their first difference. This justified the need to test for co-integration.

4.2 Cointegration Test using the Johansen Methodology

The results of the Unrestricted Cointegration Rank test for the model is presented in Table 4.2. Starting with the null hypothesis that there are no cointegrating vector (r = 0) in the model, the results show that there exists at least one cointegrating equation in the model as both the Trace and Max-Eigen statistics reject the null of r = 0 as against the alternative of r = 1 at 5 per cent level of significance which shows that there is a longrun relationship between broad money supply as a ratio of GDP (M3/GDP); credit to private sector as a ratio of GDP (CPS/GDP); total savings as a ratio of GDP at (TSE/GDP); log of market capitalization (InMCAP) and log of real gross domestic Product (InRGDP) in Nigeria (see the table below).

Table 4.2: Unrestricted Cointegration Rank Test result for model.

Hypothesised No. of CE(s)	Trace Stat.	Critical Value (0.05)	Prob**	Hypothesised No. of CE(s)	Max-Eigen Stat.	Critical Value (0.05)	Prob**
None *	92.07539	69.81889	0.0003	None *	47.93871	33.87687	0.0006
At most 1	44.13668	47.85613	0.1071	At most 1	24.92510	27.58434	0.1055
At most 2	19.21158	29.79707	0.4778	At most 2	10.11036	21.13162	0.7342
At most 3	9.101218	15.49471	0.3561	At most 3	7.925478	14.26460	0.3863
At most 4	1.175740	3.841466	0.2782	At most 4	1.175740	3.841466	0.2782

Source: Author Regression Outputfrom EViews 9.

Note: i. r represents number of cointegrating vectors. ii. Both Trace and Max Eigenvalue tests indicates 1 cointegrating equations respectively at the 0.05 level. iii. *****denotes rejection of the hypothesis at the 0.05 level and IV. ****** Mackinnon-Haug-Michelis (1999) p-values

4.3 Short-run Error Correction Representation

The results of the short-run error correction representation for the model is reported in Table 4.3.

Table 4.3: Short-run Error Correction Representation for the Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.485257	0.266064	5.582330	0.0000
D(M3/GDP)	0.224993	0.190101	1.183545	0.2453
D(CPS/GDP)	0.267342	0.121461	2.201052	0.0213
D(TSA/GDP)	-0.315144	111.8786	-0.281684	0.7800
D(InMCAP)	0.202752	0.042317	4.791266	0.0001
ECM(-1)	-0.536968	0.163766	-3.278874	0.0015

Source: Author Regression Output from EViews 9.

Dependent Variable: D(InRGDP)
Method: Least Squares
Date: 08/26/20 Time: 14:27
Sample (adjusted): 1982 2019
Included observations: 38 after adjustments

The short run error correction results presented in Table 4.3 showed that the entire explanatory variables of the economic and financial deepening in Nigeria met their expected signs except total savings as a ratio of GDP (TSE/GDP) with a negative sign. The empirical results also revealed that broad money supply as a ratio of GDP (M3/GDP) has positive effect on the log of real gross domestic product (InRGDP) in Nigeria for the sample period.

This means that 1 per cent increase in broad money supply as a ratio of GDP raised real gross domestic product in Nigeria by 0.224993 per cent. This result is consistent with previous empirical studies of Ogbuagu and Ewubare (2017).

The results further revealed that credit to private sector as a ratio of GDP (CPS/GDP) has a direct and significant impact on the log of real gross domestic product (InRGDP) in Nigeria. This implies that 1 per cent increase in credit to private sector as a ratio of GDP increases real gross domestic product in Nigeria significantly by 0.267342 per cent. This finding supports the work of Nwanna and Chinwudu (2016).

The short run results also revealed that total savings as a ratio of GDP (TSE/GDP) had negative effect on the log of real gross domestic product (InRGDP) in Nigeria. A unit change in total savings as a ratio of GDP reduced real gross domestic product in Nigeria by -0.315144 per cent.

The results also revealed that the log of market capitalization (InMCAP) has a direct and significant relationship with the log of real gross domestic product (InRGDP) in Nigeria. Thus, 1 per cent change in market capitalization raised real gross domestic product in Nigeria by 0.202752 per cent. This is consistent with the work of Echekoba and Ubesie (2018).

Finally, the error correction mechanism (ECM) which is -0.536968 is statistically significant and has the appropriate negative sign. It suggests however, that there is a high adjustment process in the practice of the financial deepening in Nigeria. It is also a confirmation that indeed broad money supply as a ratio of GDP, credit to private sector as a ratio of GDP, total savings as a ratio of GDP, market capitalization and real gross domestic product in Nigeria are cointegrated.

4.4   Diagnostic Test

To confirm the robustness of the model, a diagnostic test was performed as shown in Table 4.4.

Table 4.4: Key Regression and Diagnostic Statistics for Model

R-squared	0.685351	Mean dependent var	1477.101
Adjusted R-squared	0.600249	S.D. dependent var	1485.809
S.E. of regression	1485.623	Akaike info criterion	17.58900
Sum squared resid	70626.46	Schwarz criterion	17.84756
Log likelihood	-328.1909	Hannan-Quinn criter.	17.68099
F-statistic	100.1846	Durbin-Watson stat	1.755558
Prob(F-statistic)	0.000013		

Source: Author Regression Output from EViews 9.

The coefficient of determination R^2 indicates that 68.5 per cent of the total variation of real gross domestic product in Nigeria is jointly explained by broad money supply as a ratio of GDP, credit to private sector as a ratio of GDP, total savings as a ratio of GDP and market capitalization. The Akaike information criterion, Schwarz criterion and Hannan-Quinn criterion showed that the model is correctly specified. F statistic measuring the joint significant of all regressors in the model is statistically significant at the 5 per cent level. The Durbin-Watson statistic of 1.755558 approximately 2 revealed the absence of autocorrelation among the explanatory variables.

4.5. Stability Test

Stability test was performed for the model using cumulative sum (CUSUM) and cumulative sum of square (CUSUM Q) of recursive residuals as shown in figures 4.1 and 4.2. The existence of parameter instability is established for the model if the cumulative sum of the residual goes outside the area between the critical (straight bounded upper and lower) lines.
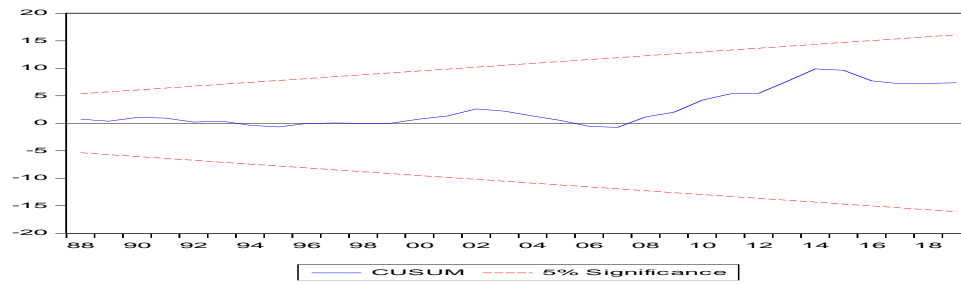
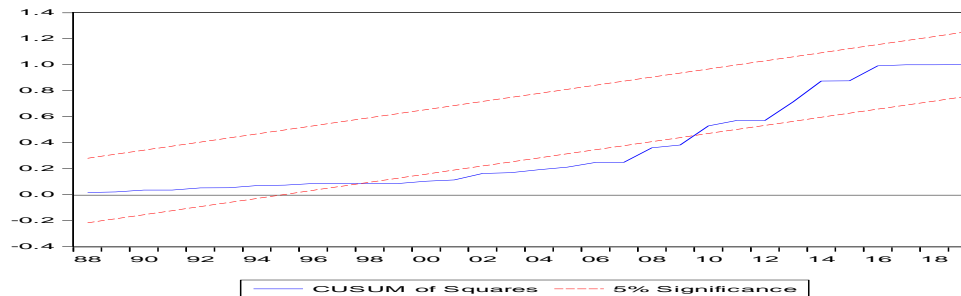**Fig.4.1 Plot of Cumulative Sum of Recursive Residuals**

Fig.4.3 Plot of Cumulative Sum of Square of Recursive Residuals

From figure 4.1 and 4.2, it was observed that the model at 5 per cent level of significance, CUSUM and CUSUM Q were both stable. In conclusion, at 5 per cent critical value CUSUM explain the stability of the model overtime.

5.0 Concluding Remarks

In reviewing the effects of financial deepening on economic growth in Nigeria from 1981 to 2019, one can deduce from the findings that the direct and significant relationship of CPS/GDP and MCAP on real gross domestic product in Nigeria is as a result of internationalization of the exchange to the outside world that leads to increase in market capitalization and thereby cause economic growth in Nigeria.

The shortrun results showed that broad money supply as a ratio of GDP had positive but not significant impact on real gross domestic product in Nigeria. It was also revealed that there is an inverse and insignificant effect of total savings on the real gross domestic product in Nigeria. This negative and insignificant relationship can be attributed to low level of monetization in the country.

The empirical investigation on the effect of financial deepening on economic growth in Nigeria spanning 39 years on annual data, confirms the stationarity of the selected economic and financial deepening variables (Real Gross Domestic Product, Broad Money Supply as ratio of GDP, Credit to Private Sector as a ratio of GDP, Total Savings as ratio of GDP and Market Capitalization) were stationary at first difference 1(1) respectively. The Johansen cointegration test indicates a long run relationship between M3/GDP, CPS/GDP, TSE/GDP, MCP and real gross domestic product in Nigeria while the error correction model shows a high adjustment process in the Nigerian financial system since the speed of adjustment to longrun equilibrium is above 50 per cent. It is also a confirmation that indeed broad money supply as a ratio of GDP, credit to private sector as a ratio of GDP, total savings as a ratio of GDP, market capitalization and real gross domestic product in Nigeria are cointegrated.

On a long-term prospect, Nigerian financial systems stand a chance of providing better and more robust financial deepening that will lead to sustainable growth and development in Nigeria.

5.1 Recommendations

Based on the empirical findings of the study, the following recommendations were made:

(a) The Central Bank of Nigeria should implement policies that will increase broad money supply as a ratio to GDP, as this will encourage capital flows and enhance economic growth in Nigeria.

(b) Monetary authorities should adopt a single digit lending interest rate policies that will promote and further deepen the financial sector especially in the area of credits to private sector so as to encourage investors to borrow more to investment and thereby increase economic growth in Nigeria.

(c) Savings should be stimulated in other to place more funds in the vault of the banks, as this will intermediate investors seeking funds. This will also make total saving as a ratio to GDP to contribute significantly to economic growth in Nigeria.

(d) The regulators of the Nigerian stock exchange (Security and Exchange Commission) should make policy that will bring improvement and encourage more participation in the stock market, as well as easing restrictions on entry into stock market to ensure more companies are listed in the market and thereby increases market capitalization.

(e) The Central Bank of Nigeria should implement a policy that will enhance the capacity of banks to increase the flow of investible funds and improve their capacity to extend credit to the economy. This will make both broad money supply and credit to private sector as a ratio to GDP to further impact on economic growth in Nigeria.

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Appendix

Appendix A: Economic and Financial Deepening Indicators (N' Billion)

YEAR	RGDP (₦'Billion)	(M$_3$/GDP in %)	(CPS/GDP in %)	(TSA/GDP in %)	MCP (₦' Billion)
1981	15,258.00	9.99	5.92	6.96	5.00
1982	14,985.08	10.19	6.88	7.44	5.00
1983	13,849.73	10.85	7.16	8.58	5.70
1984	13,779.26	11.80	7.31	9.45	5.50
1985	14,953.91	11.60	6.80	9.30	6.60
1986	15,237.99	11.76	7.53	10.35	6.80
1987	15,263.93	11.05	8.45	9.67	8.20
1988	16,215.37	11.97	8.53	8.83	10.00
1989	17,294.68	10.95	7.25	6.23	12.80
1990	19,305.63	9.49	6.71	6.27	16.30
1991	19,199.06	12.65	6.94	6.92	23.10
1992	19,620.19	12.21	6.39	6.30	31.20
1993	19,927.99	13.13	10.10	7.80	47.50
1994	19,979.12	13.06	8.14	7.93	66.30
1995	20,353.20	9.99	6.22	3.73	180.40
1996	21,177.92	9.15	6.31	3.34	285.80
1997	21,789.10	10.05	7.69	4.24	281.90
1998	22,332.87	10.64	7.67	5.01	262.60
1999	22,449.41	11.85	8.12	5.93	300.00
2000	23,688.28	12.74	7.69	5.74	472.30
2001	25,267.54	15.60	9.40	7.08	662.50
2002	28,957.71	13.29	8.21	7.60	764.90
2003	31,709.45	14.68	8.24	6.61	1,359.30
2004	35,020.55	12.31	8.21	6.99	2,112.50
2005	37,474.95	11.85	8.26	9.01	2,900.06
2006	39,995.50	13.25	7.99	9.37	5,120.90
2007	42,922.41	15.54	11.12	13.04	13,181.69
2008	46,012.52	22.07	17.67	16.95	9,562.97
2009	49,856.10	21.88	20.55	23.25	7,030.84
2010	54,612.26	20.33	18.60	10.90	9,918.21
2011	57,511.04	20.05	16.93	10.37	10,275.34
2012	59,929.89	21.62	20.43	11.24	14,800.94
2013	63,218.72	23.40	19.67	10.81	19,077.42
2014	67,152.79	22.93	19.24	13.49	16,875.10
2015	69,023.93	22.18	19.84	12.17	17,003.39
2016	67,931.24	23.90	20.77	12.13	16,185.73
2017	68,490.98	25.16	19.43	11.39	21,128.90

| 2018 | 69,799.94 | 23.31 | 17.63 | 11.80 | 21,904.04 |
| 2019 | 71,387.83 | 23.75 | 17.28 | 11.82 | 25,890.22 |

Source: CBN (2019) Statistical Bulletin Volume 30, December.