A Study of Financial Deepening, Capital Accumulation and Macroeconomic Variables in Nigeria

ISIBOR AREGHAN
Covenant University, Ota, NIGERIA

Abstract: Low capital accumulation or savings due to financial shallowness instead of financial deepening is a worrisome situation that needs to be addressed. This is because low capital accumulation will lead to low investment and this would hinder the achievement of one of the Sustainable Development Goals of economic growth and full employment. Data, which were relevant to variables of study like financial deepening and total savings (which was used to capture capital accumulation), and spanning 48 years from 1970 to 2018 were gathered from secondary sources and analyzed using the ARDL model. The result proved that savings accumulation has a long-term positive and significant impact on financial deepening. The paper recommends amongst others that banking habits should be encouraged to every Nigerian so as to increase total savings and hence, capital accumulation.

1.Introduction

Financial deepening refers to the increased provision of financial services with broader choices pitched towards economic development. The World Bank (2001) explained that financial deepening covers the increase in the portfolio of financial assets. Therefore, financial deepening means the ability of financial institutions to effectively mobilize financial resources for development purposes. This means that the contribution of any country's financial sector to economic development is a function of the quality and quantity of financial services rendered, plus also the efficiency with which it provides the services. A deepened financial sector would lead to increased capital accumulation which would then boost investment growth. The overall effect of this is that one of the Sustainable Development Goals (SDGs) of inclusive and sustainable economic growth and full employment for all could be achieved with a deepened financial sector.

According to Nazmi (2005), financial markets are deep from a qualitative standpoint when the following happens:

1. They offer wider range of financial instruments which are different in areas of liquidity, yields, maturities, and degree of risk.

2. They cover different sub-markets, trading in diverse financial instruments.

3. Local financial markets are linked with the foreign financial markets.

4. All the financial markets are linked together through financial instruments.

5. Finally, the markets are linked together through various financial institutions which function as market makers and financial intermediaries.

According to Nnanna (2004), the reforms in the financial system in Nigeria which heightened with the 1986 deregulation, affected the level of financial deepening of the country and the level relevance of the financial system to economic development. Also, Nnanna (2004) opined that deepening represented a system free from repression and that repression policy, which was aimed at motivating local investments through suppressed interest rates,

developed negative outcomes. Hence, banks were encouraged to be quicker to lend.

Financial deepening means an increase in the ratio of money supply to gross domestic product (Obamuyi and Olorunfemi, 2011). Financial deepening is thus measured by relating monetary and financial aggregates such as narrow money and broad money to the GDP. The logic here is that the more liquid money is available to an economy, the more opportunities exist for continuous growth of the economy. A study by Somoye (2014) discovered that the Nigerian financial market stayed shallow up to 2003. The financial deepening index increased from 2007 to 2010 due to the introduction of mobile banking, but fluctuated downwards a little bit in 2013 due to fraud and fear of some financial services by the populace.

Somoye (2014) also suggested that the financial system is the engine growth of any economy, that is, as the financial system lends to other sectors at moderate costs, the total economy grows comprehensively. However, empirical data of the Nigerian economy shows an opposite direction. The World Bank (2014) revealed that Nigeria deposit money banks' credit to the private sector (% of GDP) was 12.59 in 2013 compared to that of South Africa whose deposit money banks' credit to the private sector (% of GDP) was 67.38 in 2013. The maximum and minimum values for Nigeria's deposit money banks' credit to the private sector over the past 48 years was 38.35 registered in 2007 and 3.86 recorded in 1970 respectively. This compared to South Africa who's highest and lowest values for deposit money banks' credit to the private sector over the past 48 years was 78.29 in 2007 and 42.76 in 1980 respectively.

Capital accumulation is seen both as a means for developing countries to achieve their long term economic growth, and also as a catalyst for countries to escape low level equilibrium investment trap. According to Adekunle and Aderemi (2012), the process of economic growth involves transforming an economy from being a 5% savings and investing economy to that of an economy that saves and invests at least 12% of its net income. Also, there should be a stable exchange rate and inflation rate that would ensure the stability of financial

deepening. Hence, to achieve and sustain economic growth, a nation must dedicate a substantial part of her national income to savings, which is reinvested to accumulate capital (Adekunle and Aderemi, 2012). Also, to increase and maintain capital accumulation, an economy must increase savings ratios, maintain good banking system and system of loans, avoid corruption, good infrastructure to make investment more worthwhile, a stable exchange rate, and low inflation rate. However, this has not been the case with Nigeria as her capital accumulation figure has been fluctuating from available empirical data. Also, inflation rate has been on the increase while exchange rate stability is still a thing hoped for. Hence, this study intends to examine how financial deepening has impacted and made effective capital accumulation and also stabilize macroeconomic variable in Nigeria.

2. Literature Review

This section focused on the concept of financial deepening and capital accumulation, the theoretical review and the empirical review.

3. Conceptual Framework

Shaw (1973) stated that financial deepening is the resultant effect of the adoption of appropriate financial policy and the widening of the financial markets. The effort to introduce this in Nigeria resulted in the deregulation of the financial system in 1986 plus the various financial reforms thereafter. Financial deepening entails the ability of financial institutions to effectively mobilize savings for investment purposes (Nnanna, 2004). The growth of accumulated savings or capital provides the real structure for the creation of diversified financial investments. It also presupposes active operations of financial institutions in the financial markets, which in turn imply the supply of quality financial instruments and services (Ikpefan, 2012). This conforms to the findings of a study by Nnanna (2004) that financial deepening represents a system free from financial repression. They concluded in their study that policies of financial repression directed at increasing domestic investments through

suppressing interest rates produced negative answers. Hence, the negative real interest rates did not encourage investments but encouraged the banks to be more risk averse and more hesitant to lend. On the other hand, when interest rates are more market oriented, bank lending increased, and same to domestic investments and capital accumulation.

Capital accumulation refers to the investment of money or any financial asset for the purpose of increasing wealth which may be in the form of profit, rent, interest, royalties, capital gain or return. For investment in non-productive physical assets such as residential real estate or works of art that appreciate in value, and human capital, capital accumulation could result in increased skills of the labour force which can increase earnings from work, social capital which is the wealth and productive capacity that the people in a society hold in common. Both non-financial and financial capital accumulation are usually needed for economic growth, since additional production usually requires additional funds to enlarge the scale of production.

3.1 Investment

According to Isibor, Felicia, Maria, Godswill, and Chisom, (2018), investment can be defined as the acquisition of an asset with the aim of receiving a return. It can also mean production of capital goods for future production. There are two classes of investment: public investment and private investment. Public investment is simply investment by the government. When government expenditure creates positive production externalities, which focus on stimulating the accumulation of private capital, we can say that these expenditures are productive. It is generally assumed that public investment in infrastructure, education, and health belongs to this category. If financial resources are scarce, public investment may also reduce the possibilities of the private sector to obtain credit to finance investment. Private investment refers to non-government investments, for example domestic and foreign private investments.

According to Isibor, Ojo, and Ikpefan (2018), the Nigerian investment climate is characterized by high production costs, inadequate infrastructure and corruption, high rate of crime, and political instability. Nevertheless, private capital flows are motivated by profit considerations. For government

to achieve its desired objectives of high economic growth and rapid development, it must pursue policies that will increase both the public and the private investment. Aggregate investment in any economy comprises both the public and private investments. Although the prime motive of the public sector investment may be different from that of the private sector, they both face the same challenges in financing their investment requirements.

A study by Busari (2007) explained that lack of guarded deregulation was the major cause of low domestic investment figures in Nigeria. According to him, deregulation was suppose to foster domestic investment, thereby reducing the influx of foreign direct investment, but this is not the case in Nigeria, unlike China that developed her local industries and increased the amount of funds that go into her local industries. Also, Abiola, Adedoyin, Umoren, and Isibor (2019) concluded that lack and/or access to funds was the major setback of local investment growth in Nigeria, and this factor is caused by lack of guarded deregulation.

3.2 Issues in Nigeria Exchange Rate

Between 1959 and 1994, ad-hoc administrative measures were put in place, the Nigeria foreign exchange was the pound sterling until the actualisation of the sterling by 10 % in 1967. After the exchange rate was changed from pound to naira in 1973, fixed exchange rate were set for the US dollar and the pound sterling. This was done to promote orderliness in the foreign exchange market (Adebiyi, 2002). During the 1970s, many countries were forced to change their exchange rate due to unprecedented changes such as high rate of inflation and unemployment, low productivity and instability in the international financial system. Between 1972 and 1994, the Nigeria monetary authorities decided to set naira at par with the US dollar. This period coincided with oil boom period and by 1981, ₦1.00 equaled $0.65. The official foreign exchange reserve was $1 billion.

In 1985, a one currency intervention system was adopted, where the naira was quoted against a single intervention currency which was the dollar. Adebiyi (2002) postulated that this policy was adopted in order to minimise the problem of high incidence in the naira exchange quotation. With the introduction

of SAP, the Second Tier foreign exchange market was introduced in September 1986. The SFEM was operated along with a managed first tier exchange market. Nigeria moved from a fixed exchange rate regime to a floating exchange rate regime during this period. In 1987, the Unified official market was introduced where both the first tier and second tier foreign exchange market were merged. In 1988, banks transacted foreign exchange business among themselves but this was discontinued in 1989 due to instability.

In October 1990, the Foreign exchange market was deregulated again and the Interbank Foreign Exchange market was introduced (IFEM). They used weighted average to determine the exchange rate at different times. In December 1990, the Dutch Auction System was introduced, although it was first used in April 1987 but was scrapped due to instability in the FOREX market. In 1994, the Federal Government fixed the official exchange rate at N21.1960 to a dollar, in order to secure the illegalities of the parallel market and to prevent bureau the change from selling foreign exchange (Ikpefan, Isibor, and Okafor, 2016).

In 1995, the dual exchange rate policy was introduced with the aim of reducing the depreciation of naira in the parallel market and for efficient allocation and utilisation of resources. The foreign exchange provision decree 17 of 195 was enacted which established the autonomous foreign exchange for trading for privately sourced foreign exchange and the exchange control act of 1962 was scrapped. By the end of 1996, one US dollar equaled ₦80.00. In 1997, deregulation of some payments increased the pressure on the foreign exchange which depreciated it to one US dollar equaled ₦85.00. In 2000, the dual exchange rate system was repealed by the Federal Government and the autonomous foreign exchange rate was merged with the government official rate. The official rate of ₦22.00 to 1 US dollar was also scrapped.

The exchange rate in 2001 was ₦111.20 to 1 US dollar in the foreign exchange market and ₦128 in the parallel market. In 2002, the Dutch Auction System was reintroduced and the Retail Dutch System was implemented with the CBN selling to end-users through the banks. By January 2003, the naira further depreciated to ₦131. In 2006, the market was further deregulated with the introduction of Wholesale Dutch Auction System (Ikpefan, et al, 2016). This was meant to consolidate the gains of the retail Dutch auction system as well as deepen the foreign exchange market on their accounts for onward sale to their customers. These exchange rate regimes have held some implication on economic performance.

3.3 Negative Impact of Exchange Control Regulation

Exchange control regulation gave rise to the emergence of black market operations, while smuggling and other forms of leakages were rampant. A regime of exchange control inhibited the growth of export because a subsidised exchange rate leads to over-valuation which discourages exports. It also discourages capital flows and leads to capital flight in the form of over-invoicing of imports and under-invoicing of exports. It also led to distortions in relative prices in the economy because the authorities have to maintain a persistently misaligned official exchange rate (Ikpefan, Isibor, and Okafor, 2016). Exchange control regulation also rendered the economic law of demand and supply dormant while leading to spill-over effect in other areas like tax compliance and adherence to financial regulations. Finally, it encouraged the development of rent-seeking behaviours among private entrepreneurs because of the rationing of foreign exchange at subsidised rates to those with preferential access to the authorities.

3.4 Inflation

Inflation, which is a general increase in prices of goods and services, increases transactions and information costs which directly inhibit economic development. For example, economic agents will find planning difficult when inflation makes nominal values uncertain. Firms and individuals will be reluctant to enter into contracts when inflation is imperfectly predicted and judgments about absolute and relative prices are uncertain. The reluctance to enter into contracts over time will inhibit investment and entrepreneurship (Boyd, Levine, and Smith, 2001), which will affect resource allocation and economic growth and development. Inflation will inhibit the development of the financial sector and result in financial repression. High inflation will also discourage any long term financial contract and financial intermediaries will tend to maintain very

liquid portfolios. Thus, in an inflationary environment, intermediaries will be less eager to provide long-term financing for capital formation and economic growth and development; both lenders and borrowers will also be less willing to enter into long-term nominal contracts (Boyd, Levine, and Smith, 2001). High inflation is often associated with various forms of financial repression as governments take actions to protect certain sectors of the economy. For example, interest rate ceilings and directed credit allocations are common in high inflation environments. Such controls lead to inefficient allocations of capital that inhibit economic growth and development.

The relationship between financial repression and inflation can also be bi-directional (Chirwa, 2001). In some instances, repression is a crude effort to protect certain sectors from inflation. In other instances, financial repression is introduced to assist the government in financing its own activities is a cause of both inflation and resource misallocation. Moreover, inflation will have contemporaneous effects on the financial ratios that are used to measure financial sector development. High inflation will increase the opportunity costs of holding money and lead agents to economise on money holdings. Thus, the ratio of money to GDP might decline as a direct consequence of inflation. Furthermore, the ratios of financial assets to GDP might decline in a high inflation environment if nominal debts do not increase as rapidly as GDP. This is particularly likely if the financial repression that is common in high inflation episodes keeps real interest rates low or even negative. Chirwa (2001) showed that inflation affects financial deepening and has a direct effect on economic growth and development as well.

3.5 Financial Deepening Theory

Financial deepening theory states that financial deepening is induced by increase in total savings or capital accumulation as well as increase in total investment in an economy.

McKinnon (1973) and Shaw (1973) asserted that "allowing market forces to determine real interest rates can exert a positive effect on growth rates as interest rates rises to its competitive market equilibrium". They argued that financial repression leads to interest rates that force out profitable investments, produce a penchant for capital projects,

deter future savings, and all these lower total investments in an economy.

Capital accumulation happens due to the fact that large real money stock produces larger amount of loanable funds available to borrowers (Busari, 2007). Wide financial intermediation between savers and investors widens the motivation to save and invest, improving the profitability of investments. Therefore, low deposit interest rate lowers the liability of the banking sector, thereby hindering the supply of investment finance. Therefore, increasing deposit rate of interest to equilibrium levels should push economic growth upwards, (Busari, 2007).

Also, Adekunle and Aderemi (2012) opined that stable and favourable macroeconomic variables like exchange rate and inflation can help deepen the financial system of a nation. High inflation can destroy sales of financial product and this would disrupt the benefits of financial deepening. When exchange rate is not stable, export business suffers as exporters deal with its negative effect on their businesses. This therefore defeats the purpose of financial deepening.

3.6 Empirical Framework

Karimo and Ogbonna (2017) investigated the impact of deepening on economic growth in Nigeria using the Toda–Yamamoto augmented Granger causality test. The result revealed that financial deepening leads to economic growth while economic growth does not cause financial deepening. This was due to the fact that credit to the private sector was minimal. However, the study should have used other econometric technique like the OLS to know the depth of the impact of financial deepening on economic growth.

Ogbuagu and Ifionu (2015) examined the effect of capital accumulation, human capital development on economic growth using granger causality. The result showed no causality between capital flow, human capital development, and economic growth. The author should have conducted a regression analysis to determine whether a significant relationship occur among the variables.

Eigbiremolen and Anaduaka (2014) used the augmented Solow human capital growth model to examine the effect of human capital development on economic growth from 1999-2012. Empirical results show that human capital development exhibits significant positive impact on output level. The researcher should have conducted a regression analysis to confirm the result for proper recommendation.

Also, Adelakun (2010) investigated the link between financial development and economic growth using the OLS estimation technique. The result showed that there is a positive and significant effect of financial development on economic growth in Nigeria. However, the researcher should have added other variables and use a multiple regression technique.

Sanni (2012) examined foreign capital inflows, financial deepening, and economic growth in Nigeria from 1986 to 2005. The Johansen–Juselius co-integration test result suggested that foreign capital inflows and financial deepening contribute to economic growth in Nigeria. However, the period of study should have been extended to 2012 to capture the current period of study.

Also, King and Levine (1993) in their study established the fact that financial deepening is an intrinsic part of the growth process and that a repressed financial system is inimical to economic growth. In his empirical study, as reported by Nzotta (2004), Goldsmith (1969) calculated the values of the financial interrelation ratio (FIR), which is the ratio of all financial instruments in an economy at a particular period of time, to the value of the national wealth. He found that the ratios for developing countries were far lower than those of developed countries. This was due to the undeveloped nature of the capital market in the developing countries. Goldsmith (1969) therefore concluded that the low level of development of the financial structure negatively affects development.

Calderon and Liu (2003) studied the direction of causality between financial development and economic growth by using the Geweke decomposition test on pooled data of 109 developing and industrial countries from 1960 to 1994. The study found that financial development leads to economic growth. Also, the Granger causality test showed a bi-directional relationship between financial development and economic growth. The study therefore concluded that financial deepening contributed more to causal relationships in developing countries than in industrialized countries because access to credit in developing countries is majorly by financial instruments while industries in industrialized countries have access to other forms of credit like long-term loans. However, the researchers should have increased the sample size to inculcate the current year of study.

Ndebbio (2004) investigated financial deepening, economic growth, and development for Sub-Saharan African countries. The study concluded that development in the financial sector of these countries spur sustainable economic growth. The study failed to examine the impact of undeveloped financial sector of some Sub-Saharan countries. Khan (2008) used the Autoregressive Distributed Lag (ARDL) technique to examine the relationship between financial development and economic growth in Pakistan from 1961 to 1995. His findings revealed that in the short run, financial development impact positively on economic growth. However the sample size should have been increased to include the current year of study.

From these literatures, one can sum up the reasons why financial deepening is weak in developing countries as including low level of foreign direct investments, shallow capital market, distortions in interest rate, and weak association between financial openness and financial deepening. Anyanwu (1995) in his study concluded that the low level of corporate governance in financial institutions has sustained poor financial deepening in the financial system. This is because factors like corruption and mismanagement of funds always impair the growth of financial instruments and services in any economy. Moreover, in a world of frictionless capital markets and diverse levels of country risks, the less-developed financial sector is totally by-passed by international investment flows. Therefore, developing economies with weak financial infrastructure may witness large outflows of foreign capital (Anyanwu, 1995). These issues discussed earlier, show why financial deepening is not advancing fast in Nigeria.

4. GAP In Literature

From the reviewed literature above, all the reviewed studies examined the effect of financial deepening on economic growth per se. However, this study examined its effect on capital accumulation, investment, and macroeconomic variables believing that, from financial deepening theory, increased capital accumulation would lead to increased investment, which would in turn lead to the achievement of one of the Sustainable Development Goals of economic growth and full employment through increased investment. However, for financial deepening to be sustained, there has to be a stable macroeconomic variable in place.

5. Data Source and Methods

The annual data for this study are from 1980 to 2019 and the reason for this large span is to examine the impact of all the independent variables on the dependent variables for a long period of time. The data to be gathered are for variables which include financial deepening (M2/GDP), investment (credit to the private sector), capital accumulation (total savings), inflation (INF), and exchange rate (EXR). The data was tested for unit root or stationarity using the Zivot-Andrews unit root test and it would be analyzed using the multiple regression regression econometric approach so as to test for impact between the dependent variable and the independent variables.

6. Research Design

The model to be estimated is culled from the financial deepening theory which states that financial deepening which is very vital for economic development is impacted by increase in total savings or capital accumulation as well as increase in total investment in an economy, Darrat and Al-Sowaidi (2010). Also, to maintain such financial deepening, there has to be the stability of macroeconomic variables (Anuli and Dennis, 2017). The modified model is:

$FDEEP_t = \alpha 0 + \alpha 1 CPS_t + \alpha 2 SAV_t + \alpha 3 INF_t + \alpha 4 EXR_t + V_t$

Where

$FDEEP_t$ represents financial deepening in the current year

CPS_t is credit to the private sector and it represents investment

SAV_t represent total savings in the economy and is used to capture capital accumulation

INF_t shows the level of inflation in the economy

EXR_t represents the exchange rate in the economy

V_t represents the error term. The error term represents other variables that can affect the dependent variables that are not captured in the model or in the study. This implies that other variables can impact the dependent variables FDEEP but are not captured in the scope of the study.

7. Justification of Variables

CPS: Financial deregulation affects investment growth which in turn can effect economic development. Therefore, the credit to the private sector was used to represent investment and investment growth as it represents how much of the total savings was channeled to the private sector for both domestic and international investment in Nigeria.

SAV: was used to capture total savings or capital accumulation as it represents the total deposits in the banking sector which would be channeled to investment.

FDEEP: Financial deepening data was used to capture financial deepening used in the study.

INF: As shown in the literature review section, inflation affects investment as it affects prices of raw materials, production, sales, and so on. Hence, its use in the model to represent macroeconomic variable.

EXR: Exchange rate affects exportation of produced goods in the country, and subsequently investment growth. Hence, its use to capture macroeconomic variable.

8. Results and Discussions

Descriptive Analysis of the Variables of the Study
This section examines the statistical characteristics of each variable in the model. It shows the mean, median, standard deviation, skewness, and so on, of each variable in order to present the variables in a definite and true form. Also, with this descriptive analysis, each variable is shown in its simplified form while making the comparisons of each variable easy. Table 1 contains the descriptive analysis of all the variables used in the three models.

From Table 1, the mean is the average value of each variable and is obtained by adding up each value for a variable and dividing by the number of observations. CPS has the highest mean figure of *19.12* while FDEEP has the lowest with value *10.3*. For median which is the middle value of the data in a variable, CPS has the highest value of *18.2* and FDEEP also the lowest with value of *11.1*. Maximum and Minimum values are the highest and lowest values of data in a variable. CPS has the maximum value of *21.6* while FDEEP has the minimum value of *7.9* from the result. Standard deviation (Std. Dev.) is a measure of dispersion or spread in the data. From the result, CPS has the highest value of *2.2* while FDEEP has the lowest value of *0.4*.

Skewness is a measure of the distribution of the values of each variable around its mean. A Positive skewness value of two and below implies that the distribution is normal, while a positive skewness value above two or having a negative sign shows that the distribution is not normal. From the result, the value of skewness is positive and below two for all the variables, thus meaning a normal distribution for each variable. Kurtosis measures the flatness of the distribution of the series. The kurtosis for a normal distribution is 3. If it exceeds 3, the distribution is peaked, and if below 3, the distribution is flat. From the result, the value of kurtosis shows that all the data are normally distributed around its mean.

Jarque-Bera test measures the skewness and kurtosis of a data to see if it matches a normal distribution. With the probability value estimate at zero, the null hypothesis of the absence of a normal distribution is rejected at 10 % level of significance. From the result, the probability value estimate is zero for all the variables, thus all the variables have a normal distribution using the Jarque-Bera test. Sum represents the sum of squared differences from the mean. CPS has the highest value of *492.5* and FDEEP has the lowest value of *390.3*. Finally, Sum Squared Deviation shows the deviation of the sum of square from the mean. CPS has the highest figure of *144.3* while FDEEP has the lowest figure of *120.2* from the result.

**Table 1**: **Result of Descriptive Analysis of Variables**

	FDEEP	CPS	SAV	INF	EXR
Mean	10.36025	19.12056	13.28619	11.29461	13.32710
Median	11.09346	18.23902	14.72184	12.40593	13.28546
Maximum	14.01274	21.62184	17.19203	15.08106	16.23684
Minimum	7.921604	13.01427	9.926385	10.27482	11.15380
Std. Dev.	0.418927	2.243071	2.015382	2.105419	2.121408
Skewness	0.050278	0.062813	0.012643	0.024701	0.036327
Kurtosis	2.592016	2.897490	2.613890	2.621064	2.751846
Jarque-Bera	1.172190	1.610296	2.015378	2.037280	2.013628
Probability	0.052101	0.383720	0.186132	0.201438	0.225807
Sum	390.2648	492.5129	400.3702	409.1840	415.9024
Sum Sq. Dev.	120.2403	144.3290	132.6281	133.1907	135.9032
Observations	36	36	36	36	36

Source: Author's computation using Eviews 9 (2019)

Data Plot

This was established to examine the relationships between the dependent variable (FDEEP) and the independent variables (SAV and CPS). The data plot for each variables are as follows:
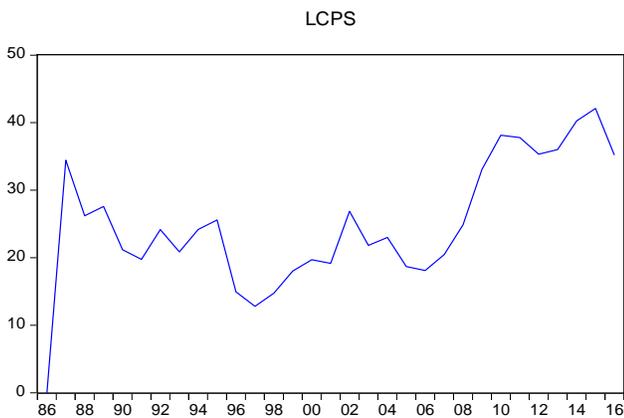
Using figure 1 below:
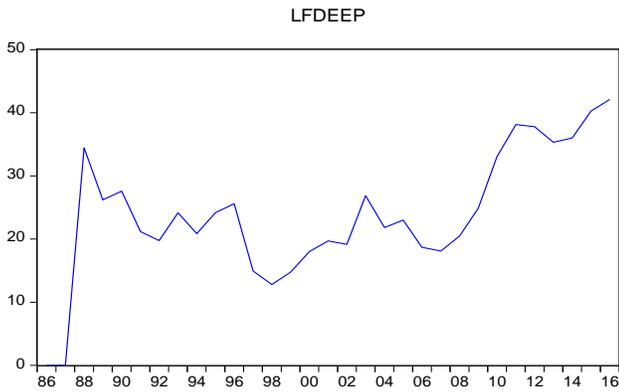
LFDEEP

Source: Author's computation using Eviews 9 (2019)

From figure 1, LFDEEP which is financial deepening, has a fluctuating trend over the years. The fluctuations may be due to inconsistent policies of the government towards the financial system.
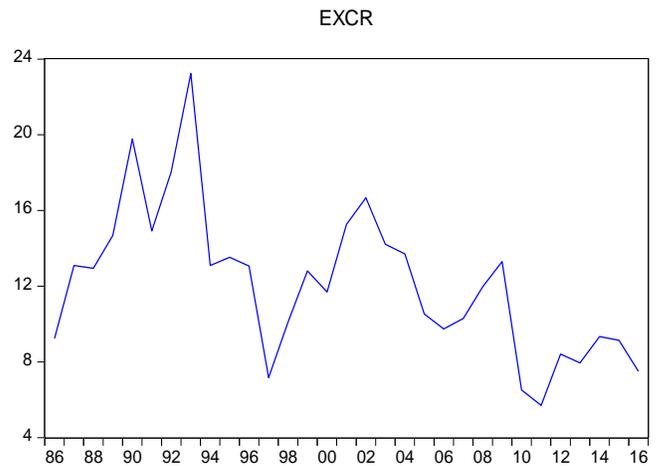
Also, examining figure 2 below:

LCPS

Source: Author's computation using Eviews 9 (2019)

This shows that credit to the private sector (CPS) has also been fluctuating over the years. The reason for the fluctuation maybe be due to high level of lending rates, lack of long-term loans for industries, and so on.
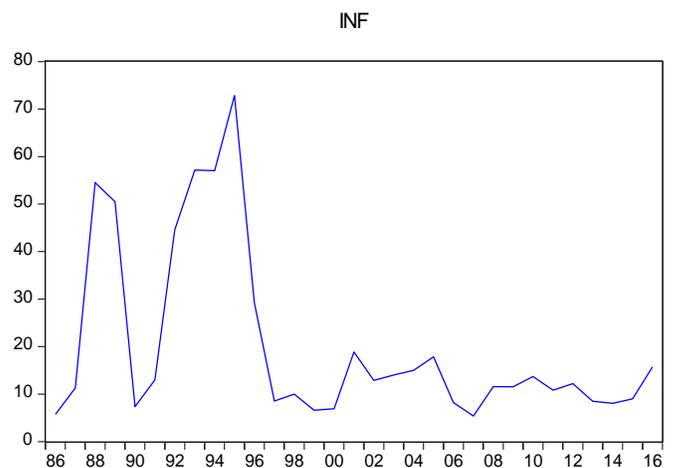
Looking at figure 3 below:

EXCR

Source: Author's computation using Eviews 9 (2019)

Using the figure 3 above, a fluctuating relationship too exists in exchange rate (EXCR) as it moves in a fluctuating manner. The reason may be that exchange rate has been known to fluctuate in Nigeria since the adoption of a floating exchange rate in 1986.
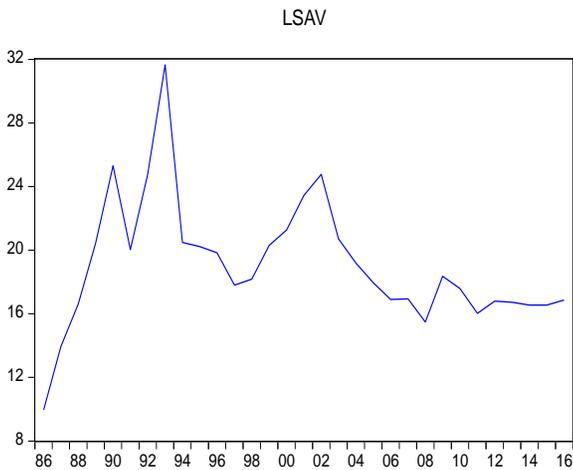
Examining figure 4 below:

INF

Source: Author's computation using Eviews 9 (2019)

Also, inflation (INF) has been fluctuating over the years from the data plot above.
From figure 5 below:

LSAV

The above also shows a fluctuating movement in SAV over the years in Nigeria. This may be as a result of mergers and acquisition in the banking sector which has led to what is called "bank runs".

Zivot-Andrews Unit Root Test

This test was carried out to examine the stationarity of the data (Zivot and Andrews, 1992). At 5% significance levels, trend and intercept, the value of the Zivot-Andrews test statistics must be greater than the value of its critical values at 5% whether at level or at first difference. Using the table 2 below:

Table 2: Result of Zivot-Andrews unit root test at level and intercept with maximum lag of 4

Variables	Zivot-Andrews test statistics	5% Test Critical Values	Remark
FDEEP	-4.296729	-3.57	Stationary at level I(0)
CPS	-4.303149	-3.57	Stationary at level I(0)
SAV	-4.323979	-3.57	Stationary at level I(0)
INF	-3.749824	-3.57	Stationary at level I(0)
EXR	-3.968379	-3.57	Stationary at level I(0)

Source: Author's computation using Eviews 9 (2019)

From the table above, it can be seen that all the variables were stationary at level and intercept using 5% critical value as the value of all the test statistics was higher than the value of the test critical values at 5%.. Hence, the use of multiple regression technique.

Multiple Regression Result

Model: $FDEEP_t = \alpha0 + \alpha1CPS_t + \alpha2SAV_t + \alpha3INF_t + \alpha4EXR_t + V_t$

Table 3: OLS Result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CPS	0.428021	0.170559	2.509520	0.0196
INF	-0.442225	0.292750	-1.510590	0.1434
SAV	0.005243	0.003090	1.696585	0.0022
EXR	-0.008377	0.002968	-2.822133	0.0092
C	0.520359	0.282572	1.841510	0.0774
$R^2 = 0.61$	Adjusted $R^2 =$ 0.59	F-statistics = 10.40163	Durbin-Watson Test = 1.93	

Source: Author's computation using Eviews 9 (2019)

From the table 3 above, the R^2 was 0.61 to show that all the exogenous variables cause 61% changes in the endogenous variable FDEEP. After adjusting for degree of freedom, the adjusted R^2 becomes 0.59 to show that all the coefficients now explain 59% changes in FDEEP while holding other factors constant. The F-statistics tells the overall significance of the regression. This is to assess the significance level of all the variables together. The null hypothesis under this is that all the regression coefficients are equal to zero and therefore implies that, overall, the regression is wrong. The F-statistics figure of 10.4 is greater than zero, hence, the null hypothesis is rejected and this means that the regression is meaningful. Finally, the Durbin-Watson test shows whether there is any autocorrelation in the model. The Durbin-Watson figure of 1.93 from the table above shows no sign of autocorrelation in the model.

Using the probability value to test for the significance of the parameter of the coefficients at 10% significance level, the result shows that credit to the private sector (CPS) representing current investment, total savings (SAV) representing capital accumulation and exchange rate (EXR) are all statistically significant in impacting financial deepening, thus leaving inflation rate (INF) negatively insignificant.

However, exchange rate (EXR) is negatively significant in impacting the dependent variable (FDEEP). This is due to the negative sign in its coefficient figure. While credit to the private sector (CPS) and total savings (SAV) are positively significant due to the positive sign in their coefficient figure.

This proves that capital accumulation (total savings), investment (CPS) and exchange rate stability are a necessity for financial deepening. Once capital accumulation and increased investment especially exportation of locally-made goods are achieved, one of the Sustainable Development Goals (SDGs) of inclusive and sustainable economic growth and full employment can also be achieved.

9. Discussion of Result

The multiple regression result showed that total savings (SAV) which represent capital accumulation, is statistically significant in impacting financial deepening. Therefore, it means that once capital accumulation is achieved, one of the Sustainable Development Goals (SDGs) of inclusive and sustainable economic growth and full employment can also be achieved.

Also, the credit to the private sector (CPS) was positively significant in impacting financial deepening. This, therefore, means that capital accumulation cannot lead to economic growth if not invested. Hence, investment is a necessity for achieving financial deepening and also the SDG goal of of inclusive and sustainable economic growth and full employment.

Furthermore, exchange rate (EXR) was negatively significant in impacting financial deepening. This means that investment, especially international trade investments (exports mainly) can be achieved with exchange rate stability, and this would boost investment growth and finally help Nigeria achieve the SDG goal of of inclusive and sustainable economic growth and full employment.

Finally, the Durbin-Watson result showed that there was no autocorrelation in the model.

10. Conclusion and Recommendations

Conclusion
This study analyzed how financial deepening can help drive capital accumulation in Nigeria in order to achieve the Sustainable Development Goal of economic growth and full employment. Literature relating to financial deepening, capital accumulation, inflation, and exchange rate were examined. Data on all the variables from 1980 to 2019 were analyzed using the multiple regression econometric technique. The result showed that capital accumulation, investment, and exchange rate have significant impact on financial deepening.

11. Recommendations

Based on the result of the analysis above, the following are recommended:

1. In order to achieve the Sustainable Development Goal of economic growth and full employment, policy makers should improve and strengthen the competitiveness of the financial sector, especially the banking sector. This would help achieve capital accumulation and investment growth.

2. The Government must ensure efficiency in its regulation and supervision of all financial institutions by allowing the financial institutions broaden their financial market to improve the financial structure of Nigeria.

3. The Central Bank of Nigeria, through its monetary policy, should stabilize the exchange rate in order to boost financial deepening through increase in investment.

4. Banking habits should be encouraged to every Nigerian through various means like seminars, advertisement, and so on. This would increase total savings that will promote investment and this would deepen and improve the financial sector.

5. The informal financial institutions should be developed with strong regulatory framework to cater for the rural area dwellers and small-scale depositors in order to increase total capital accumulation and impact financial deepening positively for economic development.

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