Financial Intermediation and Capital Formation: A Time Variant Study from Nigeria

Dr. Henry Walero Akani & Ruth Lesi Tony – Obiosa

1Department of Banking and Finance, Rivers State University
Nkpolu - Port Harcourt, Rivers State, Nigeria

2Department of Accountancy, Rivers State University
Nkpolu - Port Harcourt, Rivers State, Nigeria

ABSTRACT
This study examined the effect of financial intermediation on Nigeria gross fixed capital formation from 1985-2018. The objective was to investigate the effect of financial intermediation indicators on Nigeria gross fixed capital formation. Time series data was sourced from Central Bank of Nigeria Statistical bulletin and publications of Nigeria Bureau of Statistics. Nigeria gross fixed capital formation was proxy for dependent variables while banking sector credit, banking sector deposit, savings prime lending and maximum lending rates was proxy for independent variables. Ordinary least square methods of cointegration, granger causality test, unit root test and Vector error correction model. The study found that financial intermediation can explain 47.1 percent variation on Nigeria gross fixed capital formation. The estimated F-statistics and probability found that the regression model is fixed and adequate to explain variation on Nigeria gross fixed capital formation. The beta coefficient of the variable found that commercial banks deposit and savings rate have negative relationship with Nigeria gross fixed capital formation while commercial banks credit, maximum lending rate and prime lending rate. The variable was stationary at first difference and there was presence of long run effect from the cointegration test. The granger causality test proved bi-directional effect while the vector error correction model found adequate speed of adjustment. We conclude that financial intermediation significantly affect Nigeria gross fixed capital formation. We recommend financial inclusion policy, expansionary monetary policy and other implementable policies to increase effective financial intermediation in Nigeria financial market.

Keywords: Financial Intermediation, Capital Formation, Time Variant, Nigeria

INTRODUCTION
The role and importance of capital formation on economic growth was the theoretical theme of the classical theory of economic growth and development (Adam, 1776, Ricardo, 1817, Harrod, 1939, Kaldor, 1963, Srinivasan, 1964, Jorgenson and Grichiches, 1967). For instance Robert Solow on the technical progress emphasized the important play by capital formation on the growth of developing countries while for Genson and Griliches (1979) and Lucas (1988) noted that capital formation has interdependent relationship to issues relating to the progress of technological up gradation, innovations and increase in productivity. Conceptually capital formation means that society does not apply the whole of its current production activity to the needs and immediate disuse of consumption but directs some parts of it to the creation of capital goods (Jhingan, 2005).

However, the opinion that financial intermediaries has a major role to play in the realization and achievement of desired economic development can be traced to the classical monetary policy theories such as Milton Friedman. It was later deepened by the 20th century economists such as Schumpeters in 1911 who argued that the creation of credit through the banking system was an essential source of
entrepreneurial capacity to drive real growth. Levine et al (2000) opined that financial intermediaries emerge to lower costs of researching potential investments exerting corporation, controls, managing risks, mobilizing savings and conducting exchange. It is a rise in the level of production in an economy along with the advancement of technology, improvement in living standards. It involves a rise in the level of production in an economy along with the advancement of technology, improvement in living standards and so on.

Capital formation is a critical success factor of economic growth. Gross Fixed capital formation as a determinant of economic growth is divided into Gross private investment and Gross public investment. Capital formation is influenced by the development of the financial market, the fiscal and monetary policy of the country and the extent of external influence such as foreign aids, external debt and the level of foreign trade. Gross fixed capital formation leads to technical progress which help to realize the economics of large scale production, increase specialization in terms of providing machine, tools and equipments for growing labour force (Ainabor et al, 2014). In Nigeria like other developing and capital formation is challenged by high level of consumption, capital flight and huge importation such currency laws. This means that inadequate capital formation is a major constraint to economic growth. Therefore capital formation should be considered priority if the monetary policy goal of economic growth is to be achieved.

The effect of these policies on Nigerian capital formation remained debatable. An examination of the growth of Nigerian economy and the percentage of capital formation to Gross Domestic Product can elucidate this fact. For instance, between Nigerian Gross Fixed Capital Formation was 11.63%, 10.23%, 8.15%, 10.48% and 11.02% of Gross Domestic Product between 2016 – 2018 compared with 43% in Mauritania in 2017, 32% in Indian and 58% in Bhutan, the growth of Nigerian economy within the 5.98%, 5.31%, 4.21%, 5.49% and 6.22% (Lucky & Kingsley, 2018). The deregulation of the financial sector increase the number of commercial and merchant to 89, some of the banks’ collapse in less than five years of existence due to harsh monetary and macroeconomic operating environment, this further challenge the growth of capital formation and the economic growth as investors lost their investment. The high macroeconomic and monetary policy volatility affects the rate of interest that crowd-out investment while high inflation crowd out savings. Thus, the institutional framework for capital formation and economic growth should be revisit if the economic growth is to be achieved. Again, the sensitivity of Nigerian macroeconomic variables to external shocks also challenges Nigerian capital formation and economic growth, for instance, the global financial crisis of 2007/2008 led to the crash of Nigerian capital and the banking sector crisis of 2009. The present fall in oil price has also challenged the performance of the economy in all the sectors. This means that poor capital formation is one of the reasons that led to sluggish growth of Nigerian economy within the period.

Despite the concusses agreement on the positive effect of financial intermediation on capital formation of the developed countries, the relationship between financial intermediation and capital formation of Nigeria remained controversial as empirical findings proved mixed results. Some reports positive effect while others reports negative (Pathania, 2013), (Sarkar, 2006), (Torbira & Ogbulu, 2014), (Uremadu, 2006), (Weil, 2005). Again, some of the empirical findings fail to capture the various components of financial intermediation such as bank credit, bank deposits and cost of financial intermediation. From the above problems and research gaps, this study examined the effect of financial intermediation on Nigeria gross fixed capital formation.

LITERATURE REVIEW
Overview of Financial Intermediation
Financial intermediation relates to intermediate functions of financial institutions in mobilizing savings and allocating resources. The importance of financial institutions especially banks in generating growth within the economy has been widely discussed in literature (Nwaeze et al, 2014). Several economists have argued that the role of intermediation which banks play help in providing linkages for different sectors of the economy as well as encouraging high level of specialization, expertise, economies of scale and creating a conducive environment for the implementation of various economic policies of
government. For instance, Schumpeter (1912) as cited in Zakaria (2008), argued that financial intermediation through the banking system plays an essential role in economic development by affecting the allocation of savings, thereby improving productivity, technical change and the rate of economic growth. He acknowledged that efficient savings through identification and funding of entrepreneurs is vital to achieving desired objectives. Thus, one of the activities of financial institutions involves intermediating between the surplus and deficit sectors of the economy. The availability of credit function positively allows the fruition of this role and is also important for growth of the economy (Nwaeze et al, 2014).

Finance is required for different purposes by different organizations, individuals and other economic agents. In order to provide the needed finance, there are varieties of institutions rendering financial services. Such institutions are called financial institutions. Commercial banks are among such institutions that render financial services. They are mainly involved in financial intermediation, which involves channeling funds from the surplus unit to the deficit unit of the economy, thus transforming bank deposits into loans or credits. However, modern economic transactions will be difficult, if not impossible, with un-intermediated finance as the business world of today is much more complex and financial requirements are too large. Even without considering the complexity of modern times, un-intermediated finance has its inherent problems such as high tendency for subjectivity, unattractive interest rates, method of security was too crude and at times inhuman, repayment periods were usually too short for any meaningful long-term use, such that it became difficult for long-term projects to be financed from money raised from such medium, amongst others. According to Bencivenga and Smith (1991), in the absence of banks such as financial intermediation, too much investment is self-financed and long delays exist between investment expenditure and receipts of profits from capital invested. They further argued that the absence of intermediary sector results in a composition of savings that is unfavourable to capital formation.

**Gross Fixed Capital Formation**

The gross capital formation contributes to sustainable economic growth not only on the demand-side but also on the supply-side, because an important part of these expenditures are dedicated to the renewal of the firms’ fixed capital. Having in view that fixed capital is one of the main production factors it is important to quantify its efficiency. Under these conditions, we can use a formula derived from the one initially proposed in the economic growth model of Domar for the quantification of capital accumulation efficiency. We have to mention that capital accumulation is approximated by gross capital formation. Therefore, the gross capital formation efficiency (Egcf) is defined as the ratio of the relative change of gross domestic product to the weight of gross capital formation in the gross domestic production in the previous year.

So it may be written: 

$$\text{Egcf} = \frac{\text{GDP}_1 - \text{GDP}_0}{\text{GDP}_0} : \frac{\text{GDP}_0}{\text{GCP}_0}$$

Where:

- $\text{GDP}_1$, $\text{GDP}_0$ = Gross Domestic Product in current and reference year, respectively in real terms.
- $\text{GCF}_0$ = Gross Capital Formation in the reference year.
- But, since Gross Domestic Product may be divided into Domestic Demand (DD) and Net Exports (NX), on one hand, and the relationship between capital accumulation and consumption is mainly
a problem of domestic demand, on the other hand, under the conditions of a certain external
equilibrium Egcf could be expressed:

\[ Egcf = \left( \frac{DD_1 - DD_0}{DD_0} \right) \cdot \frac{DD_0}{GCF_0} + \left( \frac{NX_1 - NX_0}{DD_0} \right) \cdot \frac{DD_0}{GCF_0} \]  

It results that Egcf could be divided into two components, an internal component (Egcfi) and an external
components (Egcfe), where:

\[ Egcfi = \left( \frac{DD_1 - DD_0}{DD_0} \right) \cdot \frac{DD_0}{GCF_0} \text{, and } Egcfe = \left( \frac{NX_1 - NX_0}{DD_0} \right) \cdot \frac{DD_0}{GCF_0} \]  

Therefore, the efficiency of gross capital formation is strongly influenced by the relative change of
domestic demand. The method can be usually applied in the case of yearly estimation of efficiency of
gross capital formation. If we intend to make estimates for periods over one year we consider that the
arithmetic mean of yearly values may be used. In order to quantify the level of gross capital formation
efficiency during 2000-2006 for countries of the European Union, in 2007, we appeal to average values of
relative changes in domestic demand, gross domestic product and weight of gross capital formation in
gross domestic product.

Theories of Investments

A number of theories seeking to explain the investment behaviour of business firms and governments
exist in the literature. Some of them include (1) Marginal efficiency of capital hypothesis (2) The
Accelerator theory of investments and (3) Tobin Q theory of investment. We will briefly examine each of
these theories in turn.

Marginal Efficiency of Capital Hypothesis: Marginal efficiency of capital hypothesis is a Keynesian
concept; that stipulates the rate of discount which equates present value of net expected revenue from an
investment of capital to its cost. The concept plays a major role in the Keynesian theory of investment;
the level of investment is determined by the marginal efficiency of capital relative to the rate of interest. If
the marginal efficiency rate is higher than the rate of interest, investment will be stimulated; if not,
investment will be discouraged. This concept is based on the ordinary mathematical technique of
computing present value of a given series of returns discounted at a specified discount rate. (Encyclopedia
of Banking & Finance)

The Accelerator Theory of Investments: The Accelerator theory of investment suggests that as demand
or income increases in an economy, so does the investment made by firms. Furthermore, accelerator
theory suggests that when demand levels result in an excess in demand, firms have two choices of how to
meet demand. It is either to raise prices to cause demand to drop or to increase investment to match
demand. The theory proposes that most companies choose to increase production thus increase their
profits. The theory further explains how this growth attracts more investors, which in accelerates growth.

Tobin Q-Theory of Investment: There are two fundamental problems with both the accelerator theory
and the neoclassical theory of investment. First, by implication, both theories hold that in each period
meaning that the adjustment of the capital stock, to its desired level, is instantaneous and complete each
period. The solution to this is to add an adjustment cost function to the optimization problem, (Treadway,
1969). The second problem is that expectations play no role in the neoclassical and accelerator theories.
Solutions to these problems were proffered by Brainard and Tobin in 1968. Tobin in 1969 postulated the
Tobin Q-Theory of investments which states that investment is made until the market value of assets is
equal to the replacement cost of assets. Furthermore, by adding a marginal adjustment cost function to the
profit function the neoclassical theory becomes logically equivalent to the Q- theory. The Q-theory of
investment as suggested by Brainard and Tobin (1968) and Tobin (1969) was, in some ways,
foreshadowed by Keynes in 1936. For example, he argued that stock markets will provide guidance to investors and that: There is no sense in building up new enterprise at a cost greater than at which an existing one can be purchased (Baddeley, 2003).

**Application of Theory**
This study is built on modern theory of financial intermediation, the theory is important to the study as follows: First, and that used in most studies on financial intermediation, is the informational asymmetries argument. These asymmetries can be of an ex ante nature, generating adverse selection, they can be interim, generating moral hazard, and they can be of an ex post nature, resulting in auditing or costly state verification and enforcement. The informational asymmetries generate market imperfections, i.e. deviations from the neoclassical framework.

**Empirical Review**
Akujobi (2008) examined foreign direct investments and capital formation in Nigeria, posits that, FDI, is a significant positive contributor to the overall capital formation efforts in Nigeria. However, the gains of FDI do not come so automatically. He therefore, recommended that efforts must be directed at removal of such impediments as poor transparency in laws, especially in the areas of property rights, patent rights, copyright protection and commitment to enforcement of contracts etc.
Uremadu (2008) tried to explore the possible determinants of capital formation in Nigeria for the period 1980-2004. Empirical results showed a positive influence of cumulative foreign private investment (CFPI), Index of energy consumption (INDEXEC) and total banking system credit to the domestic economy (BSTCr), and a negative influence of gross national savings (GNS), domestic inflation rate (INFRI), maximum lending rate(MLR), foreign exchange rate(EXCHR) and debt service ratio(DSR) on capital formation. It was discovered that foreign exchange rate leads capital formation in Nigeria, followed by index of energy consumption and then debt service ratio. The paper therefore recommended a reduction in exchange rate distortions / misalignment; increase in energy supply by providing constant electricity and infrastructure to boost industrial energy consumption; and continuous minimization of foreign debts to reduce amount of national income used for debt servicing Donwa and Odia (2009), considered the impact of globalization on the gross fixed capital formation in Nigeria from 1980 to 2006. Using the ordinary least square, it was found that globalization proxy by openness was negatively and insignificantly related to gross fixed capital formation. In other words, globalization has not helped in assisting fixed capital formation. Foreign Direct Investment and Gross Domestic Product were positive and significant while exchange rate had a negative impact on GFCF. Interest rate had positive and insignificant relationship with GFCF. Suggestions on how Nigerian could benefit from globalization and improve on her gross fixed capital formation were proffered.
Aiyedogbon (2011) tried to explore the relationship between military expenditure and capital formation in Nigeria. The study spanned a period of 1980–2010. It employed the econometric methodology of vector error correction model and testing the results using stationarity test, co-integration and variance decomposition. Findings reveal that military expenditure (Milex) and lending rate have negative impact on gross capital formation (GCF) in Nigeria in both the short- and long-run. The GDP is positively significant in the long run while it is positive and insignificant in the short run. The study recommends that the present funding of the military should be cut to release more funds for other sectors. The military authority should utilize the available resources and discharge their role in creating investment-friendly environment in order to enhance economic development in Nigeria.
Ezekwesili (2012) posits that Nigeria’s poor capital formation comes from low education development of her people. She reiterated that, the resurgence of entrepreneurial spirit based on hard work and sound education are the panacea or critical factors to changing Nigeria. Orji and Mba (2012) studied the relationship between foreign private investment, capital formation and economic growth in Nigeria using a two-stage least squares (2SLS) method of estimation. The study finds that the long run impact of capital formation and foreign private investment on economic growth is larger than their short-run impact. There is thus, a long-run equilibrium relationship among the variables as the error correction term was significant, but the speed of adjustment was found to be small in both models. The two stage least squares
estimates were very close to the OLS estimates suggesting that OLS estimates are consistent and unbiased. Hence, endogeneity was not a problem in the estimated models. There was therefore no simultaneity between GDP growth and capital formation model. Policy implications of study were highlighted and remedies proffered.

Kanu, Ozurumba and Anyanwu (2014), writing on “Capital expenditures and capital formation in Nigeria posits that Capital Expenditures (CAPEX) had a negative significant relationship with Gross Fixed Capital Formation (GFCF) in Nigeria at both 1% and 5% Alpha levels, while other macro economic variables such as Imports, National Savings and Gross Domestic Product maintained a positive significant relationship with GFCF in the short run. In the long run, CAPEX still maintained a significant negative relationship with Gross Fixed Capital Formation; while Imports and National Savings equally had a positive significant relationship with GFCF. It was also observed that the lagged value of GFCF had no significant impact on GFCF in the preceding year; however this degenerated into a significant negative relationship in the second year. Outcome of that study did not come by chance, as a functional classification of the nation’s expenditure profile for the period under review reveals that; outlays on capital expenditure accounted for only about 32% of total expenditures, while the remaining balance of 68 % went to recurrent expenditures.

Shuaib, Ekeria and Ogedengbe, (2015) examined the impact of fiscal policy on the growth of the Nigerian economy using time series data from 1960-2012. The paper tested the stationarity through Group unit root test, and stationarity found at first differenced at 5% level of significance. Factor method, Goodness-of-fit summary, VAR and its properties were tested. Also, the Co-integration Technique and Pairwise-Granger Causality were employed in this study to test and determine the long-run relationship among the variables examined.

Shuaib, Ekeria and Ogedengbe, (2015) examined the impact of inflation rate on the economic growth in Nigeria. The study explored secondary data for the period of 1960 to 2012 and used E-view 7.2 statistical window in processing and analyzing the time series data. The empirical result of the test showed that for the periods, 1960-2012, there was no cointegrating relationship between Inflation and economic growth for Nigeria data. Furthermore, we examined the causality relationship that exists between the two variables by employing the Pairwise-Granger causality at two lag periods.

Shuaib, Ekeria and Ogedengbe, (2015) examined the impact of corruption on the growth of Nigerian economy using time series data from 1960 to 2012. The paper utilized secondary data and the paper explored various econometrics and/or statistical analytical (Eview 7.2) method to examine the relationship between corruption and economic growth. The paper explored unit root, Cointegration analysis to test for the Nigeria’s time series data and used an error correction mechanism to determine the long-run relationship among the variables examined. From the results of the findings, it was discovered that corruption has an inverse relationship with growth of an economy.

Shuaib, Ekeria and Ogedengbe, (2015) examined balance of payments: Nigerian Experience: 1960-2012 using time series data from 1960-2012. The study explored secondary data from the Central Bank Statistical Bulletin for the period of 1960 to 2012 and used various econometric analyses and/or statistical analytical (E-view 7.2) method to examine the relationship between balance of payments and economic growth. The paper tested the stationary through Group unit root test. The co-integration technique employed in this study is Engle and Granger, (1987) approach in assessing the co-integrating properties of variables, especially in a multivariate context to determine the long-run relationship among the variables examined. Further effort was made to check the causality relationship that exists between the two variables by employing the Pairwise-Granger causality at one lag period.

Bakare (2011) asserted that capital formation influences the economic welfare of a country. It helps in meeting all the requirements of an increasing population in developing economy. It leads to the proper exploitation of natural resources and the establishment of different types of industries, levels of increase and the varied wants of the people are satisfied. They consume a variety of commodities, their standard of living rises and their economic welfare increases. Capital formation raises the level of national income. Bakare, (2011) using co integration to ascertain the relationship between capital formation and economic
growth, his result showed that capital formation has a direct relationship with economic growth of Nigeria. 
Ainabor, et. al (2014) examined the impact of capital formation on the growth of Nigeria using time series data from 1960 to 2010. The paper applied Harrod –Domar model to Nigerian growth model and tested if it has a significant relationship with Nigerian economy. The paper utilized secondary data and the paper explored various econometrics and/or statistical analytical (Evie 4.0) method to examine the relationship between capital formation and economic growth. The paper tested the stationarity, OLS, cointegration of Nigeria’s time series data and used an error correction mechanism to determine the long-run relationship among the variables examined. The results of the findings supported the Harrod-Domar model which proved that the growth rate of national income was directly related to saving ratio and capital formation (i.e. the more an economy is able to save-and invest-out of given GNP, the greater will be the growth of that GDP).

Ugwuegbe and Uruakpa, (2013) investigated the impact of capital formation on economic growth in Nigeria. To analyze the impact of capital formation, stock market capitalization, inflation rate and interest rate on economic growth, the study employed Ordinary least square (OLS) technique. To test for the properties of time series, Phillip-Perron test was used to determine the stationarity of the variables and it was discovered that gross fixed capital formation and economic growth are integrated of order zero I(0), Johansen co integration test was employed to determine the order of integration while error correction model was employed to determine the speed of adjustment to equilibrium. The empirical findings suggested that capital formation has positive and significant impact on economic growth in Nigeria for the period under review.

Orji and Mba (2011) in their study looked at relationship between FPI, Capital Formation and Growth, in Nigeria using the two-stage least squares (2SLS) method of estimation. The study finds that the long run impact of capital formation and foreign private investment on economic growth is larger than their short-run impact. There is thus, a long-run equilibrium relationship among the variables as the error correction term is significant, but the speed of adjustment is small in both models. In their result, the two stage least squares estimates are very close to the OLS estimates suggesting that OLS estimates are consistent and unbiased. Hence, endogeneity was not a problem in the estimated models. There is therefore no simultaneity between GDP growth and capital formation model. These findings therefore have some policy implications as discussed in the work.

Literature Gap
The study of Kanu & Ozurumba (2014) examined the impact of capital formation on the economic growth of Nigeria using multiple regressions technique. This study examined the effect of financial and capital formation. The study of Shuaib, Igbinosun and Ahmed, (2015) examined the impact of government agricultural expenditure on the growth of the Nigerian economy. This study examined the effect of financial and capital formation Aiyedogbon (2011) explores the relationship between military expenditure and capital formation in Nigeria. This study examined the effect of financial and capital formation. The study of Umerede (2006) investigated possible determinants of capital formation using Nigerian data covering 1980-2004 studied. This study examined the effect of financial and capital formation.

METHODOLOGY
This study used quasi-experimental research design approach for the data analysis to examine the effect of financial intermediation on capital formation in Nigeria. The data for this study are secondary data was sourced from Central Bank of Nigerian statistical bulletin, stock exchange facts book and financial statement and annual reports of the quoted manufacturing firms. Based on the objectives of the study, the functional model is specified as follows:

\[ GFCF = f (CBD, CBL, PLR, MLR, SR) \]
It is empirically stated as

\[ GFCF = \beta_0 + \beta_1 CBD + \beta_2 CBC + \beta_3 PLR + \beta_4 MLR + \beta_5 SR + \mu \]

Where:

- \( GFCF \) = Gross fixed capital formation as percentage of GDP
- \( CBD \) = Commercial banks deposits as percentage of GDP
- \( CBC \) = Commercial banks credit as percentage of GDP
- \( PLR \) = Prime Lending Rates
- \( MLR \) = Maximum lending rate
- \( SR \) = Savings rate
- \( \beta_0 \) = Regression Intercept
- \( \beta_1 - \beta_5 \) = Coefficient of the independent variables to the dependent variable
- \( \mu \) = Error term

A-prior Expectation of the Result

The explanatory variables are expected to have positive and direct effects on the dependent variables. That is a unit increase in any of the variables is expected to increase Capital formation. This can be express mathematically as \( \beta_1, \beta_2, \beta_3, \beta_4, \beta_5 > 0 \).

Data Analysis Method

The technique used in this study is the Ordinary Least Square (OLS) estimation technique. The of variables and the overall significance of the regression respectively. Other test instruments test instruments in the OLS are the T-statistics and F-test which were used to test the significance that will also be employed are the Durbin Watson test which will be used to test the presence or absence of auto correlation between and among the explanatory variables and the adjusted R square to test the percentage variation of the dependent and the independent variables.

Unit Root Test for Stationarity of Series

This involves testing whether a stochastic process is stationary or non-stationary and the order of integration of the individual series under consideration. Currently, the most accepted method for the testing for unit root is Augmented Dickey-Fuller (ADF) test due to Dickey and Fuller (1979, 1981), and the Phillip-Perron (1988) and Phillips (1987). For the purpose of this study, the ADF unit root will be adopted and the general form of ADF test to be estimated by the following regression:
Where \( Y \) is the time series, \( t \) is the linear time trend, \( \alpha \) is the constant, \( n \) is the number of lags in the dependent variable and \( e \) is the random error term.

**Cointegration Test**

For the cointegration test, the maximum likelihood test procedure established by Johansen and Juselius (1990) and Johansen (1991) will be used. In the test, if \( Y_t \) is a vector of \( n \) stochastic variable then there exist a \( P \)-lag vector auto regression with Gaussian errors. Johansen methodology takes its starting point in the vector auto regression (VAR) of order of \( P \) given by:

\[
Y_t = \alpha + \Delta Y_{t-1} + \sum_{i=1}^{P} \beta_i Y_{t-i} + \varepsilon_t
\]

Where \( Y_t \) is an \((nX1)\) vector of variables that are integrated of order commonly denoted (1) and \( \varepsilon_t \) is an \((nx1)\) vector of innovations. In order to determine number of co-integration vectors, Johansen (1989) and Johansen and Juselius (1990) suggested two statistic tests, the first one is the trace test (trace). It tests the null hypothesis that the number of distinct cointegrating vector is less than or equal to \( q \) against a general unrestricted alternatives \( q=r \) the test calculated as follows:

\[
\text{trace} = T \sum_{i=1}^{r} \lambda_i
\]

T is the number of usable observations, and the \( \lambda_i \) is the estimated eigenvalue from the matrix. The second statistical test is the maximum eigenvalue test (\( \beta_{\text{max}} \)) that is, calculated according to the following formula: \( \text{max}(r, r+1) = T \ln (1 - \beta_r + 1) \). The test concerns a test of the null hypothesis that there is \( r \) of co-integrating vectors against the alternative that \( r +1 \) co-integrating vector.

**VAR and Granger Causality Test**

The test of cointegration ignores the effect of the past values of one variable on the current value of the other variable. So, the study will try the Granger causality test to examine such possibilities. Granger causality test whether lagged values of one variable predict changes in another, or whether one variable in the system explains the time path of the other variables (Granger, 1969). The test for Granger causality is performed by estimating equations of the following form:

\[
\Delta Y_t = \alpha_0 + \sum_{i=1}^{m} \alpha_i \Delta Y_{t-i} + \sum_{i=1}^{m} \beta_i Y_{t-i} + \delta_{t-1} + \varepsilon_t
\]

Where \( \varepsilon_t \) and \( \mu_t \) are white noise disturbance terms (normally and independently distributed), \( m \) is the number of lags necessary to induce white noise in the residuals, and \( ECM_{t-1} \), is the error correction term from the long-run relationship. \( x_i \) is said to Granger-cause \( y_i \) if one or more \( \alpha_{2,i} (i = 1, \ldots, m) \) and \( \delta \) are statistically different from zero. Similarly, \( y_i \) is said to Granger cause \( x_i \) if one or more \( \beta_{2,i} (i=1,m) \) and \( \delta \) are statistically different from zero. A feedback or bi—directional causality is said to exist if at least \( \alpha_{2,i} \) and \( \beta_{2,i} (i=1,m) \) or \( \delta \) and \( \beta \) are significantly different from zero. If on the other hand, \( \alpha_{2,0} \) and \( \beta_{2,0} \) are statistically significant.
RESULTS AND DISCUSSION
The following tables present the dynamic relationship between the dependent variable and the independent variables.

Table 1: Level Series Regression Result

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBC</td>
<td>0.025765</td>
<td>0.007497</td>
<td>3.436567</td>
<td>0.0021</td>
</tr>
<tr>
<td>CBD</td>
<td>-0.032437</td>
<td>0.106989</td>
<td>-0.303177</td>
<td>0.7643</td>
</tr>
<tr>
<td>PLR</td>
<td>0.047012</td>
<td>0.039938</td>
<td>1.177121</td>
<td>0.2502</td>
</tr>
<tr>
<td>MLR</td>
<td>0.362842</td>
<td>0.272083</td>
<td>1.333570</td>
<td>0.1944</td>
</tr>
<tr>
<td>SR</td>
<td>-0.571491</td>
<td>0.225183</td>
<td>-2.537895</td>
<td>0.0178</td>
</tr>
<tr>
<td>C</td>
<td>5.213866</td>
<td>2.474356</td>
<td>2.107161</td>
<td>0.0453</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.471732</td>
<td>Mean dependent var</td>
<td>5.829355</td>
<td></td>
</tr>
<tr>
<td>Adjusted R-squared</td>
<td>0.366079</td>
<td>S.D. dependent var</td>
<td>3.629446</td>
<td></td>
</tr>
<tr>
<td>S.E. of regression</td>
<td>2.889735</td>
<td>Akaike info criterion</td>
<td>5.132192</td>
<td></td>
</tr>
<tr>
<td>Sum squared resid</td>
<td>208.7642</td>
<td>Schwarz criterion</td>
<td>5.409738</td>
<td></td>
</tr>
<tr>
<td>Log likelihood</td>
<td>-73.54898</td>
<td>Hannan-Quinn criter.</td>
<td>5.222665</td>
<td></td>
</tr>
<tr>
<td>F-statistic</td>
<td>4.464897</td>
<td>Durbin-Watson stat</td>
<td>1.405182</td>
<td></td>
</tr>
<tr>
<td>Prob(F-statistic)</td>
<td>0.004815</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: E-view 9.0

From table 1, the estimated regression result found that financial intermediation value can explain 47.1 percent variation on Nigeria gross fixed capital formation while the remaining 52.9 percent can be traced to variables not captured in the regression model. The estimated F-statistics and probability found that the regression model is fixed and adequate to explain variation on Nigeria gross fixed capital formation. The Durbin Watson statistics is greater than 1.00 but less than 1.50 which implies the present of serial autocorrelation. However, the beta coefficient of the variable found that commercial banks deposit and savings rate have negative relationship with Nigeria gross fixed capital formation while commercial banks credit, maximum lending rate and prime lending rate, the presence of the serial autocorrelation in the table below.

Table 2: Diagnostic and Autocorrelation Test

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient Variance</th>
<th>Uncentered VIF</th>
<th>Centered VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>BSC</td>
<td>5.62E-05</td>
<td>2.893257</td>
<td>1.154760</td>
</tr>
<tr>
<td>CBD</td>
<td>0.011447</td>
<td>20.96002</td>
<td>1.228753</td>
</tr>
<tr>
<td>PLR</td>
<td>0.001595</td>
<td>5.247232</td>
<td>1.232044</td>
</tr>
<tr>
<td>MLR</td>
<td>0.074029</td>
<td>51.54416</td>
<td>5.113402</td>
</tr>
<tr>
<td>SR</td>
<td>0.050707</td>
<td>32.75767</td>
<td>4.695185</td>
</tr>
<tr>
<td>C</td>
<td>6.122436</td>
<td>22.72845</td>
<td>NA</td>
</tr>
</tbody>
</table>

Source: E-view 9.0

Table that was produced from the regression analysis was the table of co-efficient which is as shown above Multicollinearity of predictor variables was tested using variance inflation factors (VIFs). Multicollinearity is the undesirable situation where the correlations among the independent variables are strong. It exists in the model if VIF ≥ 10. From table 2 the VIF for exchange rate was 5.62,
VIF for commercial bank lending was 0.01, VIF for commercial bank deposits was 0.001, and VIF for prime lending rates was 0.07 while VIF for savings rate is 0.05. This meant that variance inflation factors for all predictor variables were less than 10 hence Multicollinearity was not in existence. For the significance of the t-test all the values were above the p-value (0.05) threshold, which shows Insignificance, to measure the relationship between the financial intermediation and Nigeria gross fixed capital formation.

### Table 3: Augmented Dickey Fuller Unit Root Test: At Level

<table>
<thead>
<tr>
<th>Variable</th>
<th>ADF</th>
<th>Mackinnon at 1%</th>
<th>Mackinnon at 5%</th>
<th>Mackinnon at 10%</th>
<th>PRO</th>
<th>DECISION</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>GFCF</td>
<td>-2.298259</td>
<td>-3.661661</td>
<td>-2.960411</td>
<td>-2.619160</td>
<td>0.1788</td>
<td>Not Stationary</td>
<td>Accept H0</td>
</tr>
<tr>
<td>CBC</td>
<td>1.492421</td>
<td>-3.661661</td>
<td>-2.960411</td>
<td>-2.619160</td>
<td>0.9989</td>
<td>Not Stationary</td>
<td>Accept H0</td>
</tr>
<tr>
<td>CBD</td>
<td>-2.991873</td>
<td>-3.661661</td>
<td>-2.960411</td>
<td>-2.619160</td>
<td>0.0467</td>
<td>Not Stationary</td>
<td>Accept H0</td>
</tr>
<tr>
<td>PLR</td>
<td>-3.700259</td>
<td>-3.661661</td>
<td>-2.960411</td>
<td>-2.619160</td>
<td>0.0091</td>
<td>Not Stationary</td>
<td>Accept H0</td>
</tr>
<tr>
<td>MLR</td>
<td>-2.688120</td>
<td>-3.670170</td>
<td>-2.963972</td>
<td>-2.621007</td>
<td>0.0878</td>
<td>Not Stationary</td>
<td>Accept H0</td>
</tr>
<tr>
<td>SR</td>
<td>-2.754414</td>
<td>-3.670170</td>
<td>-2.963972</td>
<td>-2.621007</td>
<td>0.0770</td>
<td>Not Stationary</td>
<td>Accept H0</td>
</tr>
</tbody>
</table>

Source: E-view 9.0

The unit root test at level as shown in the table above proved that the variables are not stationary, as ADF statistics is less than the Mackinnon critical value and the probability coefficient is greater than 0.05 except broad money supply therefore the variables are not stationary at first difference, we accept the null hypotheses. From the above, we proceed to test the stationarity of the variable at first difference.

### Table 4: Augmented Dickey Fuller Unit Root Test: First Difference

<table>
<thead>
<tr>
<th>Variable</th>
<th>ADF</th>
<th>Mackinnon at 1%</th>
<th>Mackinnon at 5%</th>
<th>Mackinnon at 10%</th>
<th>PRO</th>
<th>DECISION</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>GFCF</td>
<td>-7.510354</td>
<td>-3.670170</td>
<td>-2.963972</td>
<td>-2.621007</td>
<td>0.0000</td>
<td>Reject H0</td>
<td>Stationary</td>
</tr>
<tr>
<td>CBC</td>
<td>-6.180182</td>
<td>-3.679322</td>
<td>-2.967767</td>
<td>-2.622989</td>
<td>0.0000</td>
<td>Reject H0</td>
<td>Stationary</td>
</tr>
<tr>
<td>CBD</td>
<td>-6.641260</td>
<td>-3.679322</td>
<td>-2.967767</td>
<td>-2.622989</td>
<td>0.0000</td>
<td>Reject H0</td>
<td>Stationary</td>
</tr>
<tr>
<td>PLR</td>
<td>-4.630764</td>
<td>-3.724070</td>
<td>-2.986225</td>
<td>-2.632604</td>
<td>0.0012</td>
<td>Reject H0</td>
<td>Stationary</td>
</tr>
<tr>
<td>MLR</td>
<td>-6.443418</td>
<td>-3.711457</td>
<td>-2.981038</td>
<td>-2.629906</td>
<td>0.0000</td>
<td>Reject H0</td>
<td>Stationary</td>
</tr>
<tr>
<td>SR</td>
<td>-7.372486</td>
<td>-3.699871</td>
<td>-2.976263</td>
<td>-2.627420</td>
<td>0.0000</td>
<td>Reject H0</td>
<td>Stationary</td>
</tr>
</tbody>
</table>

Source: E-view 9.0

From the table, the unit root test at first difference found that the variables are stationary and therefore integrated in the order of 1(1).

### Table 5: Cointegration Test: Unrestricted Cointegration Rank Test (Trace)

<table>
<thead>
<tr>
<th>Hypothesized No. of CE(s)</th>
<th>Eigenvalue</th>
<th>Trace Statistic</th>
<th>0.05 Critical Value</th>
<th>Prob.**</th>
</tr>
</thead>
<tbody>
<tr>
<td>None *</td>
<td>0.917228</td>
<td>158.7009</td>
<td>95.75366</td>
<td>0.0000</td>
</tr>
<tr>
<td>At most 1 *</td>
<td>0.774962</td>
<td>86.44267</td>
<td>69.81889</td>
<td>0.0013</td>
</tr>
<tr>
<td>At most 2</td>
<td>0.479079</td>
<td>43.18961</td>
<td>47.85613</td>
<td>0.1280</td>
</tr>
<tr>
<td>At most 3</td>
<td>0.363902</td>
<td>24.27707</td>
<td>29.79707</td>
<td>0.1890</td>
</tr>
<tr>
<td>At most 4</td>
<td>0.214393</td>
<td>11.15741</td>
<td>15.49471</td>
<td>0.2020</td>
</tr>
<tr>
<td>At most 5 *</td>
<td>0.133627</td>
<td>4.159764</td>
<td>3.841466</td>
<td>0.0414</td>
</tr>
</tbody>
</table>

Source: E-view 9.0

The cointegration test result from the trace statistics found that the variables are cointegrated at two variable, this implies at least two cointegrating equation, therefore, there is the presence of long run relationship between
the dependent and independent variable

Table 6: Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

<table>
<thead>
<tr>
<th>Hypothesized No. of CE(s)</th>
<th>Eigenvalue</th>
<th>Max-Eigen Statistic</th>
<th>0.05 Critical Value</th>
<th>Prob.**</th>
</tr>
</thead>
<tbody>
<tr>
<td>None *</td>
<td>0.917228</td>
<td>72.25824</td>
<td>40.07757</td>
<td>0.0000</td>
</tr>
<tr>
<td>At most 1 *</td>
<td>0.774962</td>
<td>43.25307</td>
<td>33.87687</td>
<td>0.0029</td>
</tr>
<tr>
<td>At most 2</td>
<td>0.479079</td>
<td>18.91254</td>
<td>27.58434</td>
<td>0.4213</td>
</tr>
<tr>
<td>At most 3</td>
<td>0.363902</td>
<td>13.11967</td>
<td>21.13162</td>
<td>0.4413</td>
</tr>
<tr>
<td>At most 4</td>
<td>0.214393</td>
<td>6.997642</td>
<td>14.26460</td>
<td>0.4894</td>
</tr>
<tr>
<td>At most 5 *</td>
<td>0.133627</td>
<td>4.159764</td>
<td>3.841466</td>
<td>0.0414</td>
</tr>
</tbody>
</table>

Source: E-view 9.0

Findings of the study from maximum Eigen also proved at least two cointegrating equation and justifies the presence of long run relationship between financial intermediation and Nigeria gross fixed capital formation within the period covered in this study.

Table 7: Normalized Cointegrating Equation

<table>
<thead>
<tr>
<th>GFCF</th>
<th>CBC</th>
<th>CBD</th>
<th>PLR</th>
<th>MLR</th>
<th>SR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.000000</td>
<td>-0.022963</td>
<td>1.364281</td>
<td>0.089743</td>
<td>-7.339995</td>
<td>4.886531</td>
</tr>
<tr>
<td>(0.00953)</td>
<td>(0.16306)</td>
<td>(0.05312)</td>
<td>(0.59575)</td>
<td>(0.49396)</td>
<td></td>
</tr>
</tbody>
</table>

Source: E-view 9.0

The inability of the cointegration test in table 4.6 and 4.7 to establish the direction of long run relationship motivates us to test for normalized cointegration to establish the direction of long run relationship. From the results, it could be deduced that commercial banks credit and maximum lending rate will have negative long run relationship while prime lending rate, savings rate and commercial banks deposit will have positive long run relationship.
Table 8: Parsimonious Error Correction Results

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>1.122973</td>
<td>0.631314</td>
<td>1.778787</td>
<td>0.1006</td>
</tr>
<tr>
<td>D(GFCF(-1))</td>
<td>-0.144071</td>
<td>0.217199</td>
<td>-0.663314</td>
<td>0.5197</td>
</tr>
<tr>
<td>D(GFCF(-3))</td>
<td>-0.400076</td>
<td>0.301887</td>
<td>-1.325254</td>
<td>0.2098</td>
</tr>
<tr>
<td>D(CBC(-1))</td>
<td>-0.056305</td>
<td>0.041290</td>
<td>-1.363657</td>
<td>0.1977</td>
</tr>
<tr>
<td>D(CBC(-2))</td>
<td>-0.057559</td>
<td>0.046610</td>
<td>-1.234912</td>
<td>0.2405</td>
</tr>
<tr>
<td>D(CBC(-3))</td>
<td>0.015231</td>
<td>0.029240</td>
<td>-1.821093</td>
<td>0.0936</td>
</tr>
<tr>
<td>D(CBD(-1))</td>
<td>-0.173221</td>
<td>0.095119</td>
<td>-1.325254</td>
<td>0.2098</td>
</tr>
<tr>
<td>D(CBD(-2))</td>
<td>-0.264835</td>
<td>0.114183</td>
<td>-2.319389</td>
<td>0.0388</td>
</tr>
<tr>
<td>D(CBD(-3))</td>
<td>-0.219488</td>
<td>0.233171</td>
<td>-0.941316</td>
<td>0.3651</td>
</tr>
<tr>
<td>D(PLR(-1))</td>
<td>0.034337</td>
<td>0.029092</td>
<td>1.180312</td>
<td>0.2607</td>
</tr>
<tr>
<td>D(PLR(-2))</td>
<td>0.010553</td>
<td>0.040838</td>
<td>0.258407</td>
<td>0.8005</td>
</tr>
<tr>
<td>D(MLR(-1))</td>
<td>0.031605</td>
<td>0.319502</td>
<td>0.098921</td>
<td>0.9228</td>
</tr>
<tr>
<td>D(MLR(-2))</td>
<td>1.010505</td>
<td>0.459395</td>
<td>2.199641</td>
<td>0.0482</td>
</tr>
<tr>
<td>D(SR(-1))</td>
<td>0.129311</td>
<td>0.314618</td>
<td>0.411010</td>
<td>0.6883</td>
</tr>
<tr>
<td>D(SR(-2))</td>
<td>-1.163008</td>
<td>0.353299</td>
<td>-3.291852</td>
<td>0.0064</td>
</tr>
<tr>
<td>ECM(-1)</td>
<td>-0.364850</td>
<td>0.257748</td>
<td>-1.415530</td>
<td>0.1823</td>
</tr>
</tbody>
</table>

R-squared 0.825387  Mean dependent var 0.071429
Adjusted R-squared 0.607121  S.D. dependent var 2.958460
S.E. of regression 1.854365  Akaike info criterion 4.368521
Sum squared resid 41.26404  Schwarz criterion 5.129781
Log likelihood -45.15929  Hannan-Quinn criter. 4.601246
F-statistic 3.781561  Durbin-Watson stat 1.695491
Prob(F-statistic) 0.012697

Source: E-view 9.0

From the parsimonious error correction result, the estimated variables show that commercial banks credit has negative relationship at Lag I and Lag II but positive at Lag III. Commercial deposit, maximum lending rate, prime lending rate and savings rate has positive relationship at their various lags to the dependent variable. The error correction coefficient is negatively signed, this confirm our a-priori expectation and proved that the variables could adjust at the speed of 36.4 percent annually.

Table 9: Granger Causality Test

<table>
<thead>
<tr>
<th>Null Hypothesis</th>
<th>Obs</th>
<th>F-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBC does not Granger Cause GFCF</td>
<td>30</td>
<td>1.41177</td>
<td>0.2625</td>
</tr>
<tr>
<td>GFCF does not Granger Cause CBC</td>
<td></td>
<td>0.86095</td>
<td>0.4349</td>
</tr>
<tr>
<td>CBD does not Granger Cause GFCF</td>
<td>30</td>
<td>0.99733</td>
<td>0.3831</td>
</tr>
<tr>
<td>GFCF does not Granger Cause CBD</td>
<td></td>
<td>0.13696</td>
<td>0.8727</td>
</tr>
<tr>
<td>PLR does not Granger Cause GFCF</td>
<td>30</td>
<td>0.53562</td>
<td>0.5919</td>
</tr>
<tr>
<td>GFCF does not Granger Cause PLR</td>
<td></td>
<td>1.61264</td>
<td>0.2194</td>
</tr>
<tr>
<td>MLR does not Granger Cause GFCF</td>
<td>29</td>
<td>0.02750</td>
<td>0.9729</td>
</tr>
<tr>
<td>GFCF does not Granger Cause MPR</td>
<td></td>
<td>0.68288</td>
<td>0.5147</td>
</tr>
<tr>
<td>SR does not Granger Cause GFCF</td>
<td>29</td>
<td>0.09396</td>
<td>0.9107</td>
</tr>
<tr>
<td>GFCF does not Granger Cause SR</td>
<td></td>
<td>1.48413</td>
<td>0.2468</td>
</tr>
</tbody>
</table>

Source: E-view 9.0
The Granger causality test in a relationship between financial intermediation variables and gross fixed capital formation found that there is no causal relationship from the independent variables to the dependent variable and from the dependent variable to the independent variables. This finding is contrary to our expectation and queries the predicting capacity of financial intermediation in Nigeria as captured in reforms in Nigeria financial sector.

DISCUSSION OF FINDINGS

The objective of this study was to investigate the relationship between financial intermediation and Nigeria gross capital formation. The study found that 41 percent variation on Nigeria gross fixed capital formation can be traced to variation in financial intermediation variables modeled in the chapter three of this.

Hypothesis one of the study examine the relationship between banking sector credit and Nigeria gross fixed capital formation. The estimated regression results proved that there is positive and significant relationship between commercial banks credit and Nigeria gross fixed capital formation. The results proved that the coefficient of 3.436567 and probability of 0.0021 indicates that a unit increase on the variable will lead to 3.4 percent increase on Nigeria gross fixed capital formation. This finding confirms the a-priori expectation and justifies various reforms in Nigeria financial market directed toward increase efficiency of financial intermediaries such as the consolidation reforms of the banking sector. The findings confirm the findings of Akani and Uzah (2018) that micro finance lending to the various sectors of the economy has positive but insignificant effect on Nigerian macroeconomic stability except lending to agricultural sector and mining and quarrying, the findings of Akani, Lucky and Anyamoabi (2016) that in the static regression result that all the independent variables has positive relationship with the dependent variable except prime lending rate, the findings Akani, Lucky and Kingsley (2016) that all the independent variables has positive effect on the dependent variables. The findings of Akani and Momodu (2016) that there is a long run dynamic and significant relationship between financial sector development proxy by national savings and a negative long run relationship between national savings and inflation rate in Nigeria. The findings of Hao (2006) that bank, as an indicator of financial development, is significant but negatively related to growth, Romeo-Avila (2007) that financial intermediation impacts positively on economic growth through three channels. The finding is also supported by the opinion of Schumpeter (1911) on the importance of bank in promoting per capital income in Kenya. The finding confirms the policy objective of the banking sector reform and the economy.

Hypothesis two of the study examines the relationship between banking sector deposits and Nigeria gross fixed capital formation. The estimated regression results proved that there is negative and no significant relationship between commercial banks credit and Nigeria gross fixed capital formation. The results proved that the coefficient of -0.032437 and probability of 0.7643 indicates that a unit increase on the variable will lead to 0.3 percent decrease on Nigeria gross fixed capital formation. This finding is contrary to a-priori expectation and justifies various reforms in Nigeria financial market directed toward increase efficiency of financial intermediaries such as the consolidation reforms of the banking sector. The findings is contrary to the findings of Akani and Uzah (2018) that micro finance lending to the various sectors of the economy has positive but insignificant effect on Nigerian macroeconomic stability except lending to agricultural sector and mining and quarrying, the findings of Akani, Lucky and Anyamoabi (2016) that in the static regression result that all the independent variables has positive relationship with the dependent variable except prime lending rate, the findings Akani, Lucky and Kingsley (2016) that all the independent variables has positive effect on the dependent variables. The findings of Akani and Momodu (2016) that there is a long run dynamic and significant relationship between financial sector development proxy by national savings and a negative long run relationship between national savings and inflation rate in Nigeria. The findings of Hao (2006) that bank, as an indicator of financial development, is significant but negatively related to growth, Romeo-Avila (2007) that financial intermediation impacts positively on economic growth through three channels. The finding is also supported by the opinion of Schumpeter (1911) on the importance of bank in promoting per capital income.
income in Kenya. The finding confirms the policy objective of the banking sector reform and the economy.

Hypothesis three of the study examines the relationship maximum lending rate and Nigeria gross fixed capital formation. The estimated regression results proved that there is positive and no significant relationship between maximum lending rates and Nigeria gross fixed capital formation. The results proved that the coefficient of 0.362842 and probability of 0.1944 indicates that a unit increase on the variable will lead to 0.3 percent increase on Nigeria gross fixed capital formation. This finding is confirm the a-priori expectation and justifies various reforms in Nigeria financial market directed toward increase efficiency of financial intermediaries such as the consolidation reforms of the banking sector. The positive effect of maximum lending rates confirm the findings of the findings of Hao (2006) that bank, as an indicator of financial development, is significant but negatively related to growth, Romeo-Avila (2007) that financial intermediation impacts positively on economic growth through three channels. The finding is also supported by the opinion of Schumpeter (1911) on the importance of bank in promoting per capital income in Kenya. The finding confirms the policy objective of the banking sector reform and the economy.

Hypothesis four of the study examines the relationship prime lending rate and Nigeria gross fixed capital formation. The estimated regression results proved that there is positive and no significant relationship between prime lending rates and Nigeria gross fixed capital formation. The results proved that the coefficient of 0.047012 and probability of 0.2502 indicates that a unit increase on the variable will lead to 0.4 percent increase on Nigeria gross fixed capital formation. This finding is confirm the a-priori expectation and justifies various reforms in Nigeria financial market directed toward increase efficiency of financial intermediaries such as the consolidation reforms of the banking sector. The positive effect of maximum lending rates confirm the findings of the findings of Hao (2006) that bank, as an indicator of financial development, is significant but negatively related to growth, Romeo-Avila (2007) that financial intermediation impacts positively on economic growth through three channels. The finding is also supported by the opinion of Schumpeter (1911) on the importance of bank in promoting per capital income in Kenya. The finding confirms the policy objective of the banking sector reform and the economy.

Hypothesis five of the study examines the relationship between savings rate and Nigeria gross fixed capital formation. The estimated regression results proved that there is negative and significant relationship between commercial banks savings rate and Nigeria gross fixed capital formation. The results proved that the coefficient of -0.571491 and probability of 0.0178 indicates that a unit increase on the variable will lead to 0.5 percent decrease on Nigeria gross fixed capital formation. This finding is contrary to a-priori expectation and justifies various reforms in Nigeria financial market directed toward increase efficiency of financial intermediaries such as the consolidation reforms of the banking sector. The findings is contrary to the findings of Akani and Uzah (2018) that micro finance lending to the various sectors of the economy has positive but insignificant effect on Nigerian macroeconomic stability except lending to agricultural sector and mining and quarrying, the findings of Akani, Lucky and Anyamoabi (2016) that in the static regression result that all the independent variables has positive relationship with the dependent variable except prime lending rate, the findings Akani, Lucky and Kingsley (2016) that all the independent variables has positive effect on the dependent variables.

CONCLUSION
From the empirical results on the relationship between banking sector credit and Nigeria gross fixed capital formation indicate that there is positive and significant relationship between commercial banks credit and Nigeria gross fixed capital formation. The study concludes that there is positive and significant relationship between commercial banks credit and Nigeria gross fixed capital formation.

From the estimated regression model on the relationship between banking sector deposits and Nigeria gross fixed capital formation results proved that there is negative and no significant relationship between commercial banks credit and Nigeria gross fixed capital formation. The study concludes that there is
negative and significant relationship between commercial banks deposits and Nigeria gross fixed capital formation.

From the findings, the relationship maximum lending rate and Nigeria gross fixed capital regression results proved that there is positive and no significant relationship between maximum lending rates and Nigeria gross fixed capital formation. The study concludes that there is positive and no significant relationship between commercial banks maximum lending rate and Nigeria gross fixed capital formation.

From the findings, prime lending rate and Nigeria gross fixed capital formation, regression results proved that there is positive and no significant relationship between prime lending rates and Nigeria gross fixed capital formation. The study concludes that there is positive and no significant relationship between commercial banks’ prime lending and Nigeria gross fixed capital formation.

The relationship between savings rate and Nigeria gross fixed capital formation, regression results proved that there is negative and significant relationship between commercial banks savings rate and Nigeria gross fixed capital formation. The study concludes that there is negative and no significant relationship between commercial banks savings rate and Nigeria gross fixed capital formation.

RECOMMENDATIONS

1. The study found positive effect of prime lending rate on Nigeria gross fixed capital formation; we recommend that the monetary authorities should partner with commercial banks to ensure that banks comply with the policy of lending at prime rate as this can encourage investment borrowings.

2. Base on the findings on the effect of maximum lending rate on Nigeria gross fixed capital formation; the study recommend that policies should be toward reducing maximum lending rate and integrated it with the objective of Nigeria gross fixed capital formation.

3. From the negative effect of savings rate on Nigeria gross fixed capital formation, the study recommend policies that will increase the operational efficiency of the financial market such as effective financial intermediation and financial inclusion.

4. The negative effect of deposit mobilization can be traced to poor deposit mobilization course by low banking habit and banking density, therefore the study recommend measures to increase banking habit and reduce banking density in Nigeria.

5. The lending environment should also be reformed to meet the financing requirements of the economic unit or agents and business environment should be looked into and reformed to attract bank credit to the various sectors of the economy. That macroeconomic environment should be well planned to suit the functioning of the deposit money banks and its financial intermediation functions and the monetary environment should properly be examined to enhance smooth functioning of the deposit money banks to enhance economic development.

REFERENCES


