

Commercial Banks Lending and the Growth of Agricultural Sector in Nigeria

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Abstract

The study examined “The effect of Commercial Banks Lending on the Growth of the Agricultural Sector in Nigeria”. The objectives were to examine the impact of total loans and advances on the agricultural sector output, to examine the impact of lending rate on the agricultural sector output, and to establish the relationship between commercial bank liquidity and the agricultural sector output. Data were sourced from secondary, using Central Bank Statistical Bulletin, Multiple regression statistical technique was employed in examining the effect of commercial bank lending on the growth of the Agricultural sector in Nigeria. Based on the analysis, the findings revealed that there was a significant relationship between loans and advances, interest rate, liquidity, bank asset on agricultural output. The study recommended that bank should make efforts to grant agricultural loans at the appropriate time. Also, recommended that the rate of lending should not be more than single digit and adequate funds should be available to commercial banks.

Keywords: *Commercial Banks Lending, Agricultural Sector, total loans and advances, lending rate, commercial bank liquidity*

INTRODUCTION

In Nigeria, agriculture remains the mainstay of the economy since it is the largest sector in terms of its share of employment. Nigeria is placing much emphasis on financing the agricultural sector, since agriculture has the potential of stimulating economic growth through the provision of raw materials, food, jobs and increased financial stability (Obansa and Madeuekwe, 2012). Agriculture financing is one of the most important instruments of economic policy in Nigeria. In her effort to stimulate development in all directions, finance is required by the agricultural sector to purchase land, construct building, acquire machinery and equipment, hire labour, provide irrigation etc. In certain cases such loans may also be needed to purchase new technologies. The structure of the Nigerian economy is multi-sector, in which the banks and the agricultural sectors have roles to play. The relationship between the banking industry and the agricultural sector in Nigeria has been a contentious issue. The role of agriculture in any economy is indeed significant, and requires no debate. It is the most dominant sector, and indeed a major source of livelihood for its citizens (Ijaiya, 2000). This is because, apart from providing food for the teeming population of the economy, it is the only source of raw materials that other sectors look out for, before their production could take place. Also, the rearing of animal provides agro-allied products for industrial growth and development, provision of employment opportunities, especially to the rural population, provision of market for the industrial sector; and provision of the needed linkage between the traditional sector and the modern sector, ensuring food security, and thus, serving as a catalyst for the growth of the entire economy (Abubi, 2009).

According to CBN (2000), Nigeria is endowed with huge expanse of fertile land, rivers, streams, lakes, forests and grasslands, as well as a large active population, that can sustain

highly productive and profitable agricultural sector, which can ensure self-sufficiency in food and raw materials for the industrial sector and as well as provide gainful employment for the teeming population and generate foreign exchange for the economy. According to Udih (2014), bank lending is expected to impact positively on the investible sectors of the economy, through improved agricultural production of goods and services. He opined that sufficient financing of agricultural projects will not only promote food security, but also enhance the entrepreneurship performance of our young investors. Qureshi (2004) contributes that bank credit has the capacity to remove the financial constraints faced by farmers, as it provides incentives to enable farmers to switch quickly to new technologies, which can enhance the achievement of rapid productivity and growth. Ijere (2006) viewed bank lending as a catalyst that can activate the engine of growth, enabling it to mobilize its inherent potentials and to advance in the planned or expected direction. However, the Nigerian agricultural sector, which is significantly made up of peasant farmers, relies more on the informal sources of fund for credit supply. These include: Cooperatives, community development association, thrift associations, family, friends and money lenders. Nwankwo (2013) asserts that the informal sources cannot meet the credit needs of the farmers adequately. Consequently, in order to enhance credit flow to the sector, the government established The Nigerian Agricultural Cooperative Bank (NACB), now The Nigerian Agricultural Cooperative and Rural Development Bank.

The importance of lending to various sectors of the economy stresses the sensitive and vital role that commercial banks play in financial intermediation and facilitation of capital formation to promote agricultural sector, by operating within the regulating framework of the Central Bank of Nigeria (CBN). In line with this, Ahmed (2009) points that bank activities are embedded on intermediate funds between savers (surplus units) and investors (deficit units). They act as catalyst in the process of capital formation. According to Teiba (2008), the establishment of sectoral preferences of commercial banks' lending is to bring about allocation of loans and advances, finance imports and granting advances to where it can enhance productivity. Commercial banks are required to channel to the preferred sector (production sector) a minimum percentage of the total loans and advances, and at a reasonable low rate of interest. It is a well-known fact that the importance of agriculture cannot be underestimated. In Nigeria, prior to and after independence, agriculture was the dominant economic activity; employing over 60% of the population, providing about 70% of federal government revenue and constituting almost 80% of Nigeria's total exports. (Nwankwo, 2013) This impressive role has since diminished following the discovery and subsequent exploitation of oil in commercial quantities, especially beginning from 1970. The discovery of oil has been one major factor retarding the development of agriculture in Nigeria. However, in spite of the enormous roles, the agricultural sector in Nigeria has been engulfed by so many problems, including inadequate finance to carry out various development projects in the sector for the overall development of the country. Commercial banks are reluctant to lend to farmers, citing the risky nature of activities in the sector. Statistical evidence has shown that commercial banks credit to the agricultural sector in Nigeria has remained very low. Commercial banks credit to the agriculture in Nigeria was 2.0 per cent of the total commercial banks credit to agriculture sector in Nigeria. In 1980, it stood at 7.3 per cent of the total commercial banks credit to agriculture sector. In 1990 and 2000, commercial banks credits to agriculture sector were 16.2 per cent and 8.2 per cent respectively of the total commercial banks credit to agriculture sector. By 2010, commercial banks credit to the agriculture in Nigeria fell drastically to 1.5 per cent of the total commercial banks credit to agriculture sector and in 2012, commercial banks credit to the agriculture in Nigeria increased moderately to 3.9 per cent of the total commercial banks credit to agriculture sector. (Nwankwo 2013)

The poor funding of the sector by the government has resulted to its poor performance and productivity. The poor funding of the sector could be attributed to lack of political will and endemic corruption in government institutions in Nigeria. Frequent policy non-implementation and reversals also acted as a constraint to the development of agriculture in Nigeria. Other numerous problems of agricultural financing in Nigeria include; Diversion of loans meant for agricultural projects into other projects; high interest rate charged on loans acquired by farmers; inability of farmer to provide collateral; political interference on loans procurement; corruption; lack of strong political will by the government to solve the protracted agricultural finance problem; farmers inability to provide feasibility report on the projects for which credits are sought; lack of awareness on the part of farmers on the existence of various channels of agricultural credit; increased rate of loan default by farmers, etc. These problems and many others have negatively affected the productivity and development of the agricultural sector in Nigeria. The general objective of the study is to examine the effect of commercial bank lending on the growth of the agricultural sector.

THEORETICAL FRAMEWORK AND LITERATURE REVIEW

The following theories are propounded by scholars on this study

1 The Financial Liberalization Theory

This theory was developed by McKinnon (1973) and Shaw (1973). The hypothesis considers the role of government intervention in the financial markets as a major constraint to savings mobilization, investment and growth. Government's role in controlling interest rates and directing credit to the appropriate sectors of the economy in developing countries, inhibits savings mobilization and impedes the holding of financial assets, capital formation and economic growth. Indirectly, deposit interest rates discourages financial saving which leads to excess liquidity outside the banking system. According to McKinnon and Shaw (1973), pervasive government intervention and involvement in the financial system through the regulatory and supervisory network, particularly in controlling interest rates and the allocation of credit, tends to distort the financial markets. To this extent, government intervention adversely affects savings and investment decisions of market participants, and lead to fragmentation of financial mediation. The ultimate result is a financially repressed economy. The central argument of Mckinnon and Shaw (1973) is that financial markets should be liberalized and allocation of credit be determined by the free market. In this case, the real interest rate will adjust to its equilibrium levels and low-yielding project will be eliminated. This will lead to increase in overall efficiency of investment, savings and total real supply of credit would increase. This, in turn, induces a higher volume of investment which will then lead to economic growth. The main critique of the financial liberalization theory emanates from the imperfect information paradigm. This school of thought disagrees with the proposition of these scholars and examines the problem of financial development in the contest of information asymmetry and costly information that results in credit rationing. As observed by Stiglitz and Weiss (1981), asymmetric information leads to two serious problems. First, adverse selection of imperfect information paradigm and the second is moral hazard, that is, the implication is the information asymmetries of higher interest rates, which actually follow financial reforms and financial liberalization policies in particular, exacerbate risk taking throughout the economy and therefore threatens the stability of the financial system, which can easily lead to financial crises.

2 The Demand – Following Theory

According to the theory, the growth of the economy generates additional and new demand for financial services, “which bring about a supply response in the growth of the financial system” (Patrick 1966).The theory suggests a demand following relationship between

financial and economic development. High economic growth creates the demand for modern financial institutions, their services, assets, liabilities and arrangements, by investors and savers. In this case, the evolutionally development of the financial system is a continuing consequence of the pervasive, and sweeping process of economic development. The level of demand for financial services depends upon growth of real output, commercialization and monetization of agriculture and other traditional substance sectors (Patrick 1966). An accelerated growth rate of real national income stimulates greater demand for external funds by enterprises, and this will bring about as firms find it increasingly difficult to pursue expansion policy form internally generated funds. Moreover, the greater the differences in the growth rates among the different sectors of the economy, the greater will be the responsibility of the financial system to perform the role of financial intermediation, by allocation saving to fast-growing industries away from slow-growing industries and firms. In this way, the system can support and sustain the leading sectors in the process of growth. The demand – following financial hypothesis assumes that there is a high elasticity in the supply of entrepreneurship in the financial services “relative to growing opportunities for profit from provision of financial services”, to the extent that there is sufficient expansion in the number and diversity of types of financial institutions. It is also assumed that there is in existence, favourable legal, institutional and economic environment.

3 The Supply- Leading Theory

Supply - leading theory can be described as finance – lead hypothesis. It postulates that the existence of “financial institutions and the supply of their financial assets, liabilities and related financial services in advance of demand for them. This would provide or lead to an efficient allocation of resources from surplus units to deficit units, theory leading the other economic sectors in their growth process” (Patrick 1966). The supply – leading phenomenon performs two functions. Firstly, it transfers resources from traditional (non-growth) sectors to modern sectors. Secondly, it promotes and stimulates an entrepreneurial response in the modern sector. The supply – lending financial intermediation can be likened to the term “innovative financing” (Schumpeter, 1911) One the most significant effect of supply – leading approach is that, as entrepreneurs have new access to the supply – lending funds, their expectations increase and new horizons as to possible alternatives are opened, thereby making the entrepreneur “think big”. A number of studies have argued in favour of finance – led growth approach (see Cameron 1963; Levine 1997). It should however, be emphasized that rational for the supply – leading approach to the development of a country’s financial system, and hence overall economist development, lies in its potential benefits to the economy in stimulating real economic growth and development, otherwise, managerial skills in supply – leading finance generate more costs than benefits to the economy. Thus, making the objective of the approach far from being achieved, and the entire supply– leading financial theory resulting in a futility exercise. It can also be argued that while the supply – leading finance is not a necessity for launching a country to the path of “self – sustained economic development”, it presents an opportunity to induce real growth by financial means. Its use, analysts believe, is more result – oriented at the early level of a country’s development than later

Bank interest rate

In the past two centuries, interest rates have been variously set either by national government or central banks. For example, the federal reserve rate in the United States has varied between about 0.25percent to 19percent from 1954 to 2008, while the Bank of England base rate varied-between 0.5percent and 15percent from 1989 to 2009, and Germany experienced rates close to 90percent in the 1920's down to about 2percent in the 2000s, During an attempt to tackle spiraling hyperinflation in 2007, the Central Bank of Zimbabwe increased

interest rates for borrowing to 80percent. The interest rates on prime credits in the late 1970s and early 1980s were far higher than had been recorded. US peaks since 1800, British peaked since 1700, and Dutch peaked since 1600, since modern capital markets came into existence, there have never been such high long-term rates" as in this period (Agene, 2005). The loanable funds theory of the rate of interest developed by Knut Wicksell, a Swedish Economist in 1898 has been central to the theory of banks' lending interest rates. According to Philbeam (2008), the loanable funds approach view the interest rate as being determined by the supply and demand for loanable funds in the capital markets. The theory posits that investments and savings determine the long-term level of interest rates, whereas short-term rates are determined by financial and monetary conditions in the economy. It revealed that the intersection of the supply and demand for loanable funds determines the interest rate, and by extension the cost of funds. An increase in the demand for loanable funds exerts pressure on the available loanable funds resulting in a rise in cost of funds and interest rate.

Leaven (2002) stressed that at the economy level, the rise in the income level increase the level of savings, which in turn increases the quantum of loanable funds. However, economic agents could take more debts because of increase in expected future income. Also an increase in the proportion of savings held in the form of interest earning assets compared to non - interest earning assets, resulting from better financial, intermediation, could lead to an increase in the supply of loanable funds. Hutchison (2005) noted that capital adequacy standards may cause the banks to engage in riskier behaviour as they seek returns to offset their higher costs. He argued that the level of capital adequacy that is high enough to ensure that banks will not engage in gambling behaviour entails a cost; and because capital is expensive, banks are only able to pay depositors relatively low interest rates, which he equated to lowering their marginal return to deposits. The banks risky behaviour seems to be higher during economic deregulation and liberalization, when economic activities are very high and dynamic and bank capital is found to be inadequate. Hutchison further noted that the published capital-to-asset ratios of banks are, therefore, frequently overstated by official of banks that are anxious to conceal bad loans.

Comparatively, Angbazo and Saunders (2007) found that the cost of funds to large banks increased, after the Federal Deposit Insurance Corporation Improvement Act (FDICIA) of 1991 was implemented in the United States, suggesting that bank creditors believed that the Act reduced the likelihood of a large bank benefiting from the "too-big-to-fail" policy which was perceived from the congressional testimony of the controller of the currency in September 1984. Its counterpart in the country, the Nigeria Deposit Insurance Corporation (NDIC) Act was promulgated under the laws of the federation of Nigeria, 1990, for the purpose of insuring deposit liabilities of licensed banks and some other financial institutions in Nigeria. The NDIC premium, which is about 0.94percent (15/16 of 1percent) of total deposits of a bank, forms part of the computable items used to arrive at the total cost of funds of bank in Nigeria. Nzotta (2004) identified two sets of services performed by commercial banks; acting as a clearing house and transferring current payments backwards and forward between different customers by means of book entries on the credit and debit sides. The banker also acts as a middleman in a particular type of lending, receiving deposits from the public, which he employs in purchasing securities or making loans to individuals, industry and trade, mainly to meet the demand for working capital. Following from the view of Keynes and under the interbank lending arrangement, the banks borrow funds, usually on short term basis from among themselves and also from the central bank depending on the ruling cost of funds. The borrowers of the funds from the banks in turn pay liquidity premium to the banks to induce them to lend long, and the size of the liquidity premium increases with the time to maturity of the loan.

In line with the argument of Drury (2000) and Modigliani (1997), banks lend to customers who invest the money in projects that yield return in excess of the opportunity cost of investment; where opportunity cost of the investment is also known as either the minimum required rate of return, cost of capital, discount rate or interest rate. Drury had argued that a firm should operate at a point where marginal cost is equal to marginal revenue, and marginal cost is represented by the marginal cost of capital, which is normally used to finance projects. The study by Modigliani, on the other hand, highlighted the fact that firms produce goods and services at the lowest possible cost while maximizing profits. However, Brock (2000) observed that banks find it difficult to monitor their borrowers, while deficient internal controls of both initial and on-going loan evaluations lure banks to lend even in circumstances in which repayment seems unlikely. Brock further observed that bank managers sometimes resorts to double gearing, whereby a bank lends money to a firm within its group so that the firm can buy an equivalent amount of the bank's stocks. Philbeam (2008) noted that the weighted average cost of capital includes the cost of borrowing from overseas, and has its net cost adjusted for anticipated exchange rate movements. This approach acknowledges that borrowing in foreign currency may produce a gain as the cost of funds declines with depreciation of that foreign currency.

Monetary policy is one of the two principal means (the other being fiscal policy) by which governments in a market economy regularly influence the direction of overall economic activity. It is a central bank's mandate to influence the availability and cost of money and credit in the economy. Apart from the open market operations in the money market by the CBN, they lend to the banks that wish to borrow money from it, at its lending rate (the MRR) and replace with the monetary policy rate (MPR). The banks, on their part are expected to maintain minimum cash reserves ratio against unexpected withdrawals (Bassett, 2002). The banks of course, resort to borrowing from the central bank when they run below such stipulated ratio. They raise their own cost of funds and also hold more cash reserves when CBN rate increases. Reserve requirement that emanate from central bank's change of policy affect monetary and financial conditions. A reduction in the reserve requirement increases the quantum of cash held by the banks and, therefore, makes more funds available for extension of credit to investors. In addition, a fall in money supply will result to a rise in interest rate and high cost of capital, leading to a decline in investment spending. Ajayi (2001) stressed that a change in policy leads to a change in money supply which further leads to change in money supply, and for a given money demand, this leads to changes in market interest rates and in bank loan rates for borrowers which may affect the choice between present and future consumption. He stated that changes in interest rate affect not only the cost of credit but also the cash flows of debtors and creditors.

Interest rates were fully deregulated in Nigeria in 1990 and banks thereafter, set their cost of credit and cost of funds according to market forces. Elliehausen (2008) revealed that the three arguments put towards market forces includes that of the real rate of interest (nominal rate must sufficiently adjust for the rate of inflation), that of tight monetary policy (growth of the money market supply is restricted) and the money market behaviour (pressure on inter-bank funds in the market pushes up interest rates). In his Keynote address at the Tenth Annual Conference of the Institute of Bankers of Nigeria of 2004. He noted that banks put up all sorts of arguments and provide several technical rationalization and justifications for high double digit interest rate, which stifles creativity, discourages investment (especially the development of small and medium scale enterprises), suffocates businesses and intimidates the ordinary person in a developing nation like Nigeria (Obasanjo, 2004). Obasanjo's view was at the heels of the persistent complaints of the Manufacturers Association of Nigeria (MAN), about very

high interest rates charged by the banks and the maturity pattern of the loan facility extended to their members, where they are expected to repay the loan within 90 days as if they are traders. MAN had argued that the conversion cycle of raw materials to money is within seven months range which does not give any comfort for a 90 day loan facility. As expected, the banks argued that the prevailing high interest rates were the direct effects of the rising cost of funds in the financial market as well as inflation rate (Brock, 2000). The Fisher effect described inflation as a factor which erodes the equity level of lenders. As a result, commercial bank provides need to raise nominal interest rate to ensure the real value of funds remain the same overtime. According to fisher equation: $t = i + Pe$; he pointed out that this development is due to the fact that lenders of funds require positive real expected return (not just expected returns) from lending their funds while borrowers pay positive real cost for access to loanable funds. Investors therefore, find it uneconomical to lend money at less than the expected rate of inflation since changes in expectations about inflation have a significant influence on the rate of interest.

This is only approximate but in reality, the relationship is; $(1+in) = (1 + ir) (1 + pe)$

So;

$$Ir = \frac{1 + in}{1 + pe} - 1$$

The ability to pay the agreed interest rate is usually one of the conditions of inter-bank lending. This is because a bank borrows money with an obligation to repay on demand or after an agreed period; and he lends funds (extends credit) with an obligation on the part of the borrower to repay under stipulated terms and conditions which include the maturity period. The bank, therefore, borrows money and lends money or extends credit, if and when these terms and conditions are mutually acceptable and fulfilled. The cost of funds to a borrowing bank, therefore, depends on such terms as the duration of the loan (maturity period), risk assessment of the borrower and the expected rate of return from yields on treasury bills or bonds.

Effect of banks' lending rates on the agricultural sector

As a result of instability in the banking sector due to the regular increase in its leading rates; lending rates was reduced from two percent to one per cent and exchange rate kept at eight percent by the Central Bank of Nigeria. These are part of the decisions reached by the monetary policy committee (MPC) after it reviewed local and global economic conditions in the first two months of the year. The MPC left interest rate unchanged because of concern that inflation rate may accelerate as government prepares to remove subsidy. Monetary policy rate was held at six per cent. This has spurred lending to customers with credit growth accelerating to an annual 27 percent, from 25 per cent the previous month, according to CBN data. It was growing at the rate of almost 100 percent in December 2007. The MPC noted that the rebound in global economic activity, which started in the second half of 2009, has continued. The rebound is driven largely by the unprecedented fiscal stimulus in both developed and emerging market economies in the wake of the global financial melt-down as a consequence; monetary policy had been largely accommodative with interest rates down to record lows in most countries, coupled with the considerable expansion of Central Bank Balance Sheets. The key concerns, however, remain the strength and sustainability of the recovery process which is proceeding at varying speeds across the 'continuing rebound in commodity prices, particularly for crude oil, which is helping to support growth in commodity producing regions (Harvey, 2006).

However, the inflation risk of the rise in energy prices appear to be mitigated by low level capacity utilization, weak private demand, and well anchored inflation expectation. Although financial markets have recovered remarkably faster than expected, the MPC observed that financing conditions, especially for businesses and firms are likely to remain difficult in the near term as financial institutions remain cautious about credit extension. Bank lending is likely to sluggish, given the need to rebuild capital and maintain liquidity, and the possibility of further credit write downs, mostly related to non-performing exposures to commercial real estates and stock markets. The MPC added that although the bond markets have rebounded the households, small and medium size enterprises, that have only limited access to capital markets are likely worldwide to continue to face credit constraint except where public lending programmes and government guarantees are in place.

Commercial bank credit effect in the agricultural sector

Commercial bank credit is the borrowing capacity provided to an individual, government, firm or organization by the banking system in the form of loans. According to CBN (2003), the amount of loans and advances given by the banking sector to economic agents, constitute bank credit. Bank credit is often accompanied with some collaterals that helps to ensure the repayment of the loan in the event of default. Credit channels savings into productive investment, thereby encouraging economic growth. Thus, the availability of credit allows the role of intermediation to be carried out, which is important for the growth of the economy. The total domestic bank credit can be divided into two: credit to the private sector and credit to the public sector. Credit to the private sector is the aggregation of all loans and advances granted by banks to the business units and households while public credit is the loans and advances to the government and its agencies (Sunny, 2013). Credit is the extension of money from the lender to the borrower Spencer (1977) noted that credit implies a promise by one party to pay another for money borrowed or goods and services received. Credit cannot be divorced from the banking sector, as banks serve as a conduit pipe for funds to be received in the form of deposits from the surplus units of the economy and passed on to the deficit units who need funds for productive purposes.

Agricultural credit by commercial banks

Agricultural lending market in any country is made up of participating financial institutions and units that can effectively lend resources to facilitate the production of farm produce, crops and livestock. These markets are primarily made up of deposit money banks (DMBs) and other financial institutions (Comptrollers Handbook 1988), firms and individuals. However, the market also includes specialized institutions such as Nigeria Agricultural Cooperative and Rural Development Bank (NACRDB), which is the principal institution involved in agricultural financing in Nigeria. The banks have been playing prominent role and will continue to do so under a package of incentives. The insurance companies can also find useful avenues to invest their long-term funds by buying equipment's for hiring, the informal financial market which includes the family and friends who can also make funds available to interested farmers will continue to be active as before. The informal financial market had grown out of the financial assistance from their different groups (Udry 1993; Steel et al 1997). The size of the borrower is of great importance in negotiating the terms and cost of credit.

Gurdensonl (2005) believes that a cost in agricultural delivery shows how farmers cannot avail themselves of available credit, since the Nigerian bank is not oriented toward development financing. According to the CBN (2000), the face of agriculture in Nigeria has changed to reflect a dwindling of interest of the youth in the sector. In addition to the perennial problem, there is lack of fertilizer to improve crop yields, a dualistic structure reflecting large scale as well as peasant farming. The peasant farmer dominates the landscape and very little of

Nigeria agricultural output is produced using modern methods (CBN 2003). With different types of ecological system, farming can be easily practiced from the dense rainforest belt of the south to the Sudan Savannah of the north. The agricultural output in Nigeria is grouped into cassava, yams, rice, vegetables, maize and rice. Though some of the staples can be cultivated with mechanization, this is constrained by the smallholder land methods and inadequate finance. Finance should be made available to the farmer who have sufficient cultivable land to enable the mechanization of the process, as it is increasingly becoming clearer that the available crops fits well into the Nigerian ecological system. From 1978 to 1989, with special credit allocation to the agricultural sector in place, there was a consistent increase in the lending portfolios of banks to the agricultural sector. This has now been lost to the financial system deregulation as agricultural lending is considered more risky, problematic and unprofitable relative to other sectors. Banks credits to this sectors had increased from about N230 million (then about \$233 million) in 1978 to over N262 billion (\$2.23 billion) in 2005, but food imports cost have equally increased (CBN, 2007). For bank credit to be effective, there must be soft landing for both the bank and the farmer in terms of cost.

Empirical Literature

A lot has been reviewed in terms of lending activities of various deposit money banks. Some opinions deliberated on the factor responsible for banks willingness to extend much credit to some sector of the economy. Brock (2000), Oyedotun (2002), Darnel (2008) and Giant (2003) carried studies on non-parametric method of the relationship between lending rates and other macro-economic variables, including savings and investment. In their studies, they grouped 64 (sixty four) developing countries including Nigeria into three bases on the level of their lending rate. They computed economic rate among which are gross savings, income and investment for countries. Applying the Mann-Whiting test, the finding showed that the impact of lending was not significant for the three groups. Amato (2000) and Adam (2001) used ordinary least square method to ascertain the assessment of the effects of lending rate in enhancing agricultural productivity in Nigeria. The study found out that lending rate plays a significant role in enhancing economic activities and as such, monetary authorities should ensure appropriate determination of rate that will break the double edge effect of rate on savers and local investors. McKinsey (2002) used error correction model (ECM) to investigate lending rates determination in Nigeria. The study found out that as the Nigerian financial sector integrates more with global markets, returns on foreign assets will play a significant role in the determination of domestic interest rates.

RESEARCH METHODOLOGY

The focus of this study has been on the effect of commercial bank lending on the growth of the agricultural sector. Research design is the approach or scheme which defines the tools and strategies of the research. In this study, an exploratory ex-post facto design is employed to identify the factors that contribute to commercial banks and the growth of agricultural sector. Two major sources of data exist, these are the primary sources and secondary sources. Primary sources are generated by the research and secondary sources consists of already existing data used for some other work but were found to be useful in this study. Based on the objectives of the study, the secondary sources are employed in this research. In analyzing the data gathered for this work, ordinary least squares statistical method of multiple regression analytical technique and interpretation was used. This model was employed to establishing the relationship between dependent variable and independent variables.

Model specification

The objectives of the study is to establish the relationship between commercial bank and the agricultural sector. Based on this, the model below has been developed for the study

$$AGOUT = F(LADV, INTR, LQ, AS)$$

Where:

AGOUT	=	Agricultural sector output
LADV	=	Loans and advances
INTR	=	Interest rate
LQ	=	Bank Liquidity
AS	=	Banks Assets

Therefore, the functional relationship is linearised into ordinary least square (OLS) model

$$AGOUT = \alpha_0 + \alpha_1LADV + \alpha_2INTR + \alpha_3LQ + \alpha_4AS + e$$

Where

Dependent variable	=	AGOUT
Independent variable	=	LADV, INTR, LQ, AS
Regression Constant	=	α_0
Regression intercepts	=	$a_0 - a_4$
Stochastic error term	=	e

ANALYSIS OF DATA

The regression result on the effect of commercial bank lending on the growth of the agricultural sector (1986-2019)

TABLE 1(Regression results)

Dependent variable: LAGOUT

Variable	Coefficient	Std. error	t-stat	Prob
C	3.481684	0.932634	3.737732	0.0010
LLADV	0.972832	0.09914	9.812284	0.0000
LINTR	10.00510	1.23959	8.071236	0.0000
LLIQ	0.420054	0.14090	2.981051	0.0067
LBAS	1.569728	0.259084	6.058758	0.0000

Source: Regression result

$$R^2 = 0.984930 \quad R^2(\text{Adj}) = 0.9278402 \quad \text{SER} = 0.737319 \quad \text{F-stat} = 186.9630 \quad \text{DW} = 1.812365$$

The coefficient of multiple determination (R^2) is 0.984930 and an adjusted R^2 of 0.9278402. The later indicates that 98 percent of variations in the observed behaviour of AGOUT is jointly explained by the independent variable namely: LADV, INTR, LIQ, BAS. This shows that the model fits the data well and has a tight fit. Also, the f-statistic is used to test for the significant of such good or tight fit. The model reports on effectively high f-statistic value of 186.9630 which when compared with the table value. This indicates that the high adjusted R^2 value is better than would have occurred by chance, therefore the model is statistically robust. The goodness of fit of the model as indicated by the adjusted R-squared shows a good fit of the model that the model fit the data well. The total variation in the observed behaviour of agricultural output is used at a measure of agricultural growth. The a priori expectations about the signs of the parameter estimates are confirmation to economic theory.

SUMMARY OF FINDINGS

The major findings of the study include:

- i) There is a significant relationship between loans and advances and agricultural output.
- ii) There is a significant relationship between interest rate and agricultural output
- iii) There is a significant relationship between liquidity and agricultural output
- iv) There is a significant relationship between asset and agricultural output.

CONCLUSION/RECOMMENDATIONS

The study examines the effect of commercial bank on the growth of agricultural sector. Based on the analysis of the result, it is shown that there is a significant relationship between loans and advances and agricultural output liquidity and asset had a significant relationship on agricultural output. Commercial bank finances agricultural projects in Nigeria and federal government directs commercial banks to allocate a part of their lending to agriculture at reduced rates. It is concluded that commercial bank plays a vital role in agricultural sector and they give loans to this sector of the economy in order to improve agricultural output. The following recommendations are proffered:

1. Banks should make efforts to grant agricultural loans at the appropriate time
2. The rate of lending should not be more than single digit
3. Adequate funds should be available to commercial banks.

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