IOSR Journal of Business and Management (IOSR-JBM)
e-ISSN: 2278-487X, p-ISSN: 2319-7668. Volume 21, Issue 2. Ser. I (February. 2019), PP 32-44
www.iosrjournals.org

The Impact Of Banking Credit On Economic Growth And Inflation: The Case Of Nigeria

Olaide Emmanuel ORIMOGUNJE
Istanbul Aydin University, Social Science Institute
Corresponding Author: Olaide Emmanuel ORIMOGUNJE

Abstract: *Banking credits have been studied by many authors and most of them have come to a conclusion that credit given by banks is necessary for economic growth and has an influence on inflation. The aim of the study is to investigate the role of bank credit in the economic growth of Nigeria and inflation rate. Macroeconomic variables which include Domestic credit (DC), Net domestic credit (DOMCRE), Gross domestic product (GDP) and inflation were used. The data were collected from the Central Bank of Nigeria's data and statistical report (2018), Central Bank of Nigeria statistical bulletin (2018), World development indicators (2018) and National Bureau of Statistics (2018) for the 1996-2014 period.*
In the emprical analysis at first escriptive statistics and graphics were used. For the econometric mehods Granger causality test were used. The result shows that Domestic Credit and Net Domestic Credit have a statistical significant relationship on gross domestic product but no significant relationship on inflation.
Keywords: *Bank Credit, Economic Growth, Inflation, Variables,* Nigeria

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Date of Submission: 23-01-2019 Date of acceptance: 07-02-2019

I. Introduction

The relationship between bank credit, inflation and the growth of a nation's economy has been an integral part of several macroeconomic studies and it also acts as the yardstick whereby monetary policies are modeled.

Modebe et al (2014) opined that the need for credit which is needed for the growth of an economy is very critical because every economic agent in a society are contending for resources which are very scarce to the different agents for them to achieve their goals. To meet with the needs of the agents which may include, the private sector, Small and medium scale enterprises, government and the real sector of the economy. Each of the aforementioned establishments seeks credit or resource for continuous growth.

For the provision of the needed credit or loans for growth, financial institutions come into play to render these financial services of giving out credit. Commercial banks or money lending banks are one of the major institutions involved in giving out credits to the different agencies or agents. Banks are integral in channeling these funds because they enable the movements of capital which are taken from surplus unit of the economy to the part of the economy which is suffering from deficit. The movement of the funds is seen in the conversion of money deposits to credit (Olowofeso et al, 2015).

Inflation is another macroeconomic variable which interferes with economic growth (Ugurlu,2010, Ugurlu and Saracoglu,2010). Boyd et al. (2000) wrote that inflation interferes with the ability of the financial sector to allocate resources effectively. It causes friction in the credit market based on the increase in the rate of inflation.

The aim of the research is to investigate the impact of bank credit or loans on economic growth of Nigeria and how relates to inflation of the price of goods and services. As it was explained in the introduction, the study will also seek to check the impact of bank credit on all t
he various aspects of Nigeria economy.

The role of bank credit is of greatimportance to the growth of the economy. The growth of every economy is hinged on many macroeconomic variables. The problem that will be solved in the research is to check the impact of bank credit on the gross domestic product, money supply, private sector performance, inflation rate and gross national income.

II. Literature Review

Structure of the banking industry

The idea that comes to the head of average individuals is most times fixed to a particular definition of just saving money and giving out loans or bank credit, but the idea of banking is far bigger than that. There are many other services banks render which are very much necessary for the normal functioning of the complex

economic system. Normal domestic bills can be paid via banks and other payments. The evolution of the banking system has seen the shift of the functions of banking from the mere deposition of money to every day dealing with anything that needs money.

The banking system in Nigeria has been described by an analyst as the number one source or growth and stability of the nation (Babatunde and Shuaibu, 2011). Ubesie et al. (2017) wrote that deposit money banks or commonly known as commercial banks are one of the main drivers of economic development in Nigeria. Bank credit giving to this small and medium scale enterprise, the real sector, the private sector, government and other sector are critical for growth.

A bank can be defined as an institution that makes provision for financial services, which may include issuing loans and accepting deposits. A bank is also a place where money and other valuables are kept. The bank is also a portal whereby currency exchange can be achieved, money transfers, safe keeping of jewelry, provision of loans for different scale of farming, provision of bank credits for members of cooperative societies, SMEs, the private sector and other sectors. A bank is also a place for payment, bookkeeping operations of depositing and withdrawing. It acts as means of efficiently keeping records of income and expenditure.

The different type of banking system is a basic determinant of the structure of the financial system. There are many types of banks that make up the structure of banking in Nigeria,and they include;

Central bank

The central bank is a bank that is not dependent on any national authority, it conducts and creates monetary policies, regulatory framework and conduct researches on financial matters and their application in financial services. The apex bank's main goal is to fight inflation, reduce the rate of unemployment and stabilizes the nation's currency (Amadeo, K. 2017).

Controlling the amount of cash flow in the financial system is the most critical tool used by the Central or apex bank to initiate growth. Rafiu and Mary (2007) gave three policy tools the CBN use to achieve their aim and objectives. The goals of the central bank can be divided into three categories,and they are;

- They set templates which are used as standard requirements for other banks and financial institution. They are the sole bank involved in creating and writing policies which other banks will follow as templates for operations.
- They buy and sell securities from member banks using open market policies.
- The apex bank is inchargeof creating standards, implement targets for all banks and financial institutions and interest rates. The standards are used to rate the following; loans and bank credit, mortgages, bonds, rising interest rate, slow growth, inflation.

Merchant bank

It is the bank that provides loans for companies that deal in international trades. A merchant bank specializes in foreign trade and deals with the multi-national corporation. It also provides some services that are usually meant for investment banks, but it is not involved in providing normal banking services. They also provide finance for a large corporation who do business overseas. For example, a conglomerate that wants to buy another company situated in another country (Rafiu and Mary, 2009). A merchant bank is also a financial firm or money institutions which invest huge financial resources into other businesses,and they offer or provides advisory services to other businesses. In another word, they are involved in giving out business loans and giving help to a large corporation.

Amadeo (2017) opined that Merchant banks act as intermediaries or middlemen which are equipped in the act of fund-raising, providing brokerage services and give out financial advice to firms and private individuals. They are also involved in providing special services in the place of acquisition and mergers. They also provide the financial power involved in the acquisitionand they give out advice too.

Commercial banks

Commercial banks are institutions which provide services like giving out loans and accepting deposits. It offers services such as money deposits, savings and loans can be given to customers of commercial banks. The commercial bank provides several ranges of products to teaming customers (Amadeo 2017). It gives out business loans, auto loans,and mortgages. They offer interest on deposited money. It uses customer's deposits to issue out loans to individuals who pay interest when the loans are repaid. The bank's net interest is the different between the interest it pays to customers and the interest the banks receive for a loan given. Commercial banks are profit oriented (Uwalomuwa et al., 2015)

Community banks

Community banks are financial institutions that are owned and operated in a localized area. The bank focuses on the needs of the localized individuals,and it gives small loans to business and farmers localized in the community.

Community banks operate like commercial banks, but they are quite different from commercial banks in these three ways;

- Community banks do not engage in sophisticated banking activities and export transactions
- Community banks are not members of Central banks or clearing houses.
- Community banks operations are restricted to a particular geographical area,and they are not licensed to operate in any other part of the country.

Nowadays they are called micro-finance banks.

Co-operative banks

Cooperative banks are banks established by members of a cooperative society. Such banks collect deposits and offer other banking services to the society but givespecial preference to the members of the cooperative society that established them. It operates more or less like a cooperative shop. It also operates on cooperative principles (Abiafrian and Bello, 2015).

Profits made by the banks are shared among members of the cooperative society at the end of the year according to their agreed profit and loss sharing ratio.

Consortium banks

A consortium is a bank created to sponsor or bankroll a project or to execute a specific deal. A consortium takes advantage of assets of the banks involved in the consortium. All member banks in the consortium have equal stake and ownership of the bank. After the consortium achieves its goals, it is usually dissolved (Uwalomuwaet al).

The growth of the Nigeria banking sector

The banking industry in Nigeria dated back to pre-colonial times. There were so many trade goods going on in Nigeria in the early 17th century.There were so many currencies flowing in and out and the need for a banking system to control the importing of the British shilling, and distribution was necessary (Agu, 1984). The British shilling was the official currency used by every country in West Africa under British colonial rule.

The need for a bank to be created in Nigeria was necessary because of the introduction of shilling before the end of the 19th century. The shilling was introduced by the British government to harmonize the currencies and because of a variety of currencies that were in circulation. A settled and uniformed government made it important to decide for just one currency exchange and transaction. The introduction of the shilling by the British government required an institution in the mode of a bank to oversee its distribution, importation, provision of credit loans to government and companies (Agu, 1984).

Mr. Alfred Jones of the Elder Dempster and company saw the opportunity and provided funds to establish a bank in Lagos. A branch of Africa Banking Corporation was opened in Lagos in August 1891. The ABC became the first commercial bank to do business in Nigeria.

The Bank of British West Africa (BBWA) was registered in December 1893 at the request of the Lagos government. The bank was as a result of the mutual union between the Lagos state government and the ABC (Africa Banking Corporation).

The monopoly of banking and trade held by the Bank of British West Africa drove some group of British merchants to establish another bank that will serve as competition. The bank was incorporated in 1899 and was called “The Anglo-African bank.” Unlike the Bank of British West Africa which was headquartered at Lagos, The Anglo-African Bank had its own headquarter in Old Calabar to avoid unfavorable competition with BBWA.

By 1905, because of its continuous growth and development, The Anglo-African Bank changes its name to Bank of Nigeria, which signified growth and consistency. It became a major rival to BBWA until they merged with Bank of British West Africa on June 20th. The merger ended the competition in the banking sector. In 1916, a new face of competition came, the Colonial bank was established, and they were as resilient as BBWA. The colonial bank was very competitive, and her financial power was as strong as BBWA. However, in 1925, it was absorbed and taken over by Barclays bank.

Many other foreign banks came into the growing Nigerian economy steadily. First, the United Bank of Africa came in as British-French Bank in 1948. In 1959, the International Bank of West Africa was created in Nigeria and headquartered in Kano, because it aimed to ensure and finance the movement of groundnut to Lagos. Other foreign banks crashed gate the Nigerian economy before and after Nigerian gained Independence from Britain, her colonial master. The Nigeria banking system went through a series of change from the first bank to the introduction of the Central bank which was the time thorough regulation of the banking system was

seen in Nigeria. It was in 1986 which brought a certain kind of stability in the sector which was the structural adjustments program stage (SAP).

Table 1: Banking eras in Nigeria

Banking eras	Period (years)
Free banking era	1947-1952
Regulated banking era	1952-1986
Deregulation era	1986-2004
Consolidation era	2004-2009
Post- consolidation era	2009- till date

Table 2 is a composition of all the banking eras in Nigeria which started from the free banking are which was known as the pre-independence era was the point that marked the genesis of the country's banking sector which was unregulated and had a total of 22 banks between the period of 1947-1952. Regulated banking era started in 1952 based on the need to regulate and create a legislature to control the collapsing Nigeria banking sector. The banking ordinance was seen in 1952 based on a report called the G.D Paton report. It saw the increase in capitalization of banks based on foreignness and being indigenous. It also brought the establishment of the Central bank Of Nigeria. The banking decree of 1969 and the SAP (Structural Adjustment Program) of 1986 brought about the deregulation era which brought the number of banks from 25-125 and brought another increase in the minimum capital for all banks including commercial banks and merchant banks that were N50 million and N40 million respectively. The consolidation era took over in 2004 when the CBN instituted a 13 points agenda to consolidate Nigeria banks and increase their capital. The era brought bank recapitalization to N25 billion, mergers, acquisitions,and liquidation of many banks. 25 banks came out from the consolidation era as big and vibrant banks. The post consolidation era came after the 2009 banking reform after the global economic meltdown.

The establishment of the central bank of Nigeria

The Central Bank of Nigeria (CBN) is the number one body when it comes to regulation in the Nigeria banking system. The founding of the apex came as a result of a detailed report carried out by the then colonial government to investigate practices and management of Banks in Nigeria. A report by G.D Paton in 1952 created an ordinance which was later called the first banking ordinance. The purpose of the report was to ensure the orderly and smooth running of banks in Nigeria and to check against the establishment of banks that were weak. In March 1958, a policy was presented to the legislative arm of government. Through the implementation of the act on July 1, 1959, the apex bank (CBN) was given birth to.

The Central bank is also in charge of nurturing and controlling the money and capital markets. To ensure the smooth running of the financial terrain, treasury bills,and treasure certificate were introduced in 1960 and 1968 respective. In 1961, the Apex bank instigated the establishment of the Nigeria stock exchange. The Nigeria capital marked is nurtured and controlled by the SEC (Security and Exchange Commission).

There were several amendments carried out by the legislature which constituted the legal framework of the operation of the CBN and how they regulate other banks. The adoption of the SAP (Structural Adjustment Program) in 1986 brought about a wide range of liberalization and deregulation measures. The SAP that came into existence in 1986 gave birth to more banks in Nigeria and other financial institution. Many policies and decree were enacted including the BOFI (Bank and other financial institution) decree 25 and 27 of 1991. The BOFI decree gave more power to the APEX bank to cover new financial institution and non-banking financial institution to enhance the effectiveness of monetary policies, supervision,and regulation. In 1997, the complete control enjoyed by the APEX bank was removed based on the amendment of the BOFI (amended) decree no 4 and CBN decree no 3.

Bank Credit

The primary function of a bank is to deposit which in turn are used as a bank credit or bank loan to service certain areas of the economy. The role of the financial system of any nation is to provide adequate directing of assets to the different divisions of the economy for growth to be achieved.

Aliyu and Hashin (2014) defined bank credit as credit extended to banks to borrowers. It is an understanding between cash loaning banks and borrowers where the loaning bank trust a borrower or pay back the money borrowed and certain interest for either a loan, credit card or a credit line as a later date. It is also money banks lend or having already lent to customers within a specific time frame in mind. Olowufeso et al. (2015) opined that bank credit is the total borrowing capacity bank provides to borrowers. It gives the establishment or organization, borrowers or the sector that requires the credit for the ability to use the credit as capital to start a business or to invest in an already growing business. The borrower involved pays off the credit with a certain amount of interest.

Emecheta and Ibe (2014) also defined is as a capacity to borrow in advanced which is given to an individual firm or an organization in the form of cash loan.

The relative quantity and cost of bank credit is a product of the creditworthiness of the borrower through past relationship, income and use of the funds are critical factors. Other intricate factors which are involved are the collateral involved in the bank credit given and what other competing banks are offering.

Bank credit is very critical because if banks are incapable of granting a loan to another part of the economy that needs the credit in the immediate operational environment, the growth of the business sector of that place will be impeded, the deposit will be insufficient which will thwart the capacity of banks to create income.

Aliyu and Hashin (2014) opined that the lending function of a bank is the most important function because of certain features and they are;

- Bank credit given is used to access the stability of a bank. A bank that is eager and competent to give out advances and bank credit are thought to be more steady and reliable than those banks that reject an advance proposition from clients.
- Lending is very important because it is seen as a legitimate prerequisite by the financial authorities which set forth certain banking sum be lent to some sectors in the economy like; Agricultural sector, small and medium scale enterprises, real estate sector, government, industries.
- Lending affect money supply and demand in an economy
- Lending or bank credit goes a long way to affect production, level of entrepreneurship, aggregate output,and productivity
- Bank credit also has a positive relationship with economic development and inflation which is the heartbeat of our study.

Types of bank credit

Olowefeso et al. (2015) gave types of bank credit which is based on the following basis;

- By purpose of the credits
- By duration of the credit
- By nature of the credit

By purpose of the credit;

Real estate loans are secured for the construction of real properties which include short term loans that are used for construction and land development and also long-term credit which are also used for financing the buying of land, homes, foreign properties and business structures.

Loans to financial institution incorporate credits that are given to insurance companies, banks,and some other budgetary establishments.

Farmers are given Agricultural loans which are used in farm development, ranches, bringing fertilizers, harvesting,and processing of farm produce, feeding and caring of livestock.

Loans to individuals are seen in mortgages, credit to finance the purchase of automobile, appliances, covering of medical care cost, personal expenses,and loans which are extended straight to either individual or the retail dealers.

Lease financing receivable is seen where lenders buy equipment and lease them to its customers.

By duration of the credits;

Short term loans are bank credits which are scheduled to be repaid within one year. They are usually given against inventory and accounts receivables. They are unsecured loans such as a line of credit and revolving credit. Businesses take short term loans to meet their working capital needs.

Midterm loans are bank credits which are scheduled to be repaid over a period of one year to five years. Midterm loans are mostly given against immovable properties,and the interest rates on mid-term loans are higher than short term loans.

Long term loans are loans which repayment period extends beyond five years. They are used for constructing plants and factories, housing construction, land purchase, purchasing of equipment and machinery. Immovable properties are used as collateral to protect such loans.

By nature of the credit;

Funded credit or non-documentary credits are given out of the bank's funds to individual or organization through current account or loan accounts. These credits are also called financed credits,and they include loans, cash credit,and bank overdraft.

Son- funded credits or documentary credits are credits which are given through using various documents, this form of credit banks provides the loan, but the use of cash is not involved. Reputations and good name of the bank is the credit involved,and they include a letter of credit (LC) and bank guarantee.

III. Economic Growth And Inflation

1.1 Concept of economic growth

Economic growth is an expansion in the limit of a nation or economy to create merchandise and ventures which is contrasted from one period with another period (Korkmaz, 2015). Total economy growth can be estimated as far as gross national product (GNP) or gross domestic product (GDP).

Emecheta and Ibe (2014) further defined economic growth as the increase in productivity. Productivity is increase in productive output, but economic growth can also be achieved without increase in marginal productivity but through increased birth rates and immigration. For growth to be associated to an economy, the productive economy should make a greater number of merchandise and give a bigger number of administrations than previously. Growth isn't just about the quantity of goods produced however the measure of the estimation of merchandise and ventures provided (Modebe et al, 2014). Thusly, economic growth is related with higher or expanded personal satisfaction or expectation for everyday comforts.

Aliyu and Hashin (2014) further defined economic growth as position change in the national wage or the increase in the level of creation of products and enterprises by a nation over some stretch of time. It is increment in the swelling balanced market estimation of the products and enterprises created by an economy after some time.

Economic growth is measured in terms of the productivity levels within an economy which include certain variables like; Factor productivity, Technological change, Physical capital accumulation, Real gross domestic product.

Measurement of economic growth

Olowofeso et al (2015) opined that economic growth is the measurement of the annual percentage increase in real GDP (gross domestic product) over a certain period of time which is the long-run productive capacity of the economy.

Johnson (2014) wrote that GDP is the most ideal approach to measure economic growth since it considers the nation's whole financial yields which incorporates all merchandise and ventures the nation create for sales which can be either sold domestically or sold internationally.

Measuring GDP mathematically equals,

$$GDP = c + i + g + (x - m) \quad \textbf{(3-1)}$$

Where;

c = private consumption, i = gross investment, g = government, x= exports and m = imports.

Since economic growth rate measures the growth in an economy from period to another in percentage then,

$$\text{Economic growth} = \frac{GDP_2 - GDP_1}{GDP_1} \quad \textbf{(3-2)}$$

The real GDP measures final production, exports goods because they are manufactured in the country. Imports are minus from economic. GDP removes the effect of inflation in measuring GDP, unpaid services are removed, and including child care and it measures only parameters that add value.

1.1.1 Growth trends in Nigeria

The trend of growth in Nigeria will coincide with the development of the banking sector in Nigeria. Aliyu and Hashin (2014) wrote that the development of the banking system in Nigeria from the first banking era is key to measure the growth of the Nigeria economy using GDP.

After the attainment of independence in 1960 and the discovery of crude oil in Nigeria, the economy has witnessed substantial growth (Babatunde and Shaibu, 2017). Real GDP jumped from N2,489 million in 1960 to N4,219 million in 1970 and increased tremendously to N31,546 million in 1980. The crisis in 1981-1986 brought about the downfall of crude oil price which accumulate to 96% of the total Nigeria export compared to other products. After the steady downfall witnessed in 1980-1984, there have been steady growth in GDP since then.

Table3.1: Nigeria's GDP and GDP per capita 2000-2016

YEAR	GDP (Annual, %)	GDP per capita (Annual, %)
2000	5.3	2.7
2001	4.4	1.8
2002	3.8	1.2
2003	10.4	7.6
2004	33.7	30.4
2005	3.4	0.8
2006	8.2	5.4
2007	6.8	4.1
2008	6.3	3.5
2009	6.9	4.1
2010	7.8	5.0
2011	4.9	2.1
2012	4.3	1.5
2013	5.4	2.6
2014	6.3	3.5
2015	2.7	0.0
2016	-1.6	-1.4

Source: Nigeria data portal (2018)

1.2 Concept of inflation

Inflation is the rate at which the general level of costs of products and enterprises is rising and subsequently, the buying intensity of money is falling (Babatunde and Shuaibu, 2011).

When characterizing expansion traditionally, Johnson (2015) opined that inflation is the general increment in the supply of cash in acknowledges which is upheld for a period of time. It is the amount of cash printed or increased or even exploded by government mediation. For example, any time the Central bank of Nigeria prints an extra Naira, it is simply inflation. Most authors or researchers focuses on the idea that inflation is the general rise in price of goods and services bur that should be called price inflation nit the general notion of inflation. The author opined that inflation can be seen based on two critical factors which are;

- The supply of goods and services has generally gone down which shows that people are becoming poorer and product has become more expensive.
- The amount of money in circulation has increased rapidly more than the goods supply. Increasing the amount of money in circulation is expected to come with massive harm.

For economic growth to be achieved, it is not the amount of money in circulation but the consistent great supply of goods and services.

Miguel et al (2014) defined inflation as the sustained upward trend in the general price levels and not the specific increase in one or two goods. Inflation is a state of many prices not high prices. Inflation cannot be said to happen when there is a high price, but it happens when there constant in price levels. Other definitions associated with inflation are;

- Inflation is the process whereby money is devalued and losses it worth
- It losses the power associated with purchasing, i.e. money now buy less compared to what it can buy before
- Inflation is a reoccurring parameter

Michael et al (2017) wrote that in measuring inflation, statisticians take into consideration the amount of goods that are mostly or consistently used by people of an economy or nation and they calculate the average price increase of the goods and services over a certain period of time.

A sudden price increase cannot be termed as inflation because it is a short-term issue associated with the market. It is inflation if the prices of most goods go up at the same period of time.

Akinsola and Odhiambo (2017) gave two different parameters associated with inflation. Deflation is (opposite of inflation) as an increase in the value of money or the purchase power of money while disinflation is the process whereby monetary policies are instituted to slow down the rate of inflation.

Types of inflation

The process where inflation is not uniform or a specific term with a specific definition, we will distinguish the different types of inflation is this .part of the study. Inflation is characterized into types based on variety of factors. The types of inflation are;

- Types of inflation based on the causes;
- Currency inflation
- Credit inflation
- Deficit-induced inflation
- Demand-pull inflation
- Cost-pull inflation

Currency inflation:Currency inflation is caused when much money is made available without an increase in the production of goods and services rendered which cause price to rise. It is a type of inflation which is caused by the increase in printing of currency notes (Micheal et al , 2017)
Credit inflation: This is the inflation that comes with constant credit expansion which leads to rise in price level. Commercial banks sanction more loans and advances to the public than what the economy needs. Credit makes a temporary credit inflation and a huge mirage that the economy is growing.
Deficit-induced inflation:Deficit induced inflation is seen inthe financial plan of the administration which mirrors a shortage when use surpasses the income of the country based on GDP. Based on the deficit and the need to meet the gap, the government most times asks the Central Bank of the country will print additional money. The price rise that is associated with the budget deficit is called deficit-induced inflation.

Demand-pullinflation: Korkmaz (2015) define demand-pull inflation as an increase in total request over the accessible yield prompts an ascent in the value level.
Cost-Push inflation: The situation whereby an inflation occurs which happens because of the rise from the total increase in the production cost. The production cost may rise or increase due to a rise in the prices of raw material and wages. Higher wages means higher cost of production. In cost push inflation (CPI) we have wage push inflation and profit push inflation. In profit push inflation, manufacturers raise prices to expand their profit margins.

EMPIRICAL ANALYSIS

In the empirical analysis, there are three methods and they are graphical approach, descriptive statistics and correlation analysis. In correlation analysis I will be using unit root test and Granger causality test which will be used to test the relationship between variables. The time frame for the data collected was from1996-2014 and they were collected from CBN data and statistics report (2018), world development indicators (2018), CBN statistical bulletin (2018) and National bureau of statistics (2018).
Definıtıon Of Varıables

Domestic credit (DC): Bank credit as credit extended from banks to borrowers. It is the coming together to reach an agreement between banks which lend money and credit borrowers. The lending banks entrust the borrowers to pay back the credit borrowed at a certain interest which has been agreed upon (Aliyu and Hashni, 2014). Olowufeso et al (2015) further wrote that bank credit is the total borrowing capacity bank provides to borrowers. It gives the establishment or organization, borrowers or the sector that requires the credit the ability to use the credit as capital to start a business or to invest in an already growing business. The borrower involved pays off the credit with certain amount of interest.

Net domestic credit (DOMCRE): It can be defined as the sum of net claims on the central government and also claims on other sectors of the domestic economy. Data are in current local currency.

Gross domestic product (GDP): It is the value attached in money to all the finished goods and delivered services given or provided in the confines of a country in a specific time frame.

Inflation (INF): Inflation is the general increase in the supply of funds in credit which is upheld for a period of time. It is the amount of money printed or increased or even blown up by government intervention. For example, any time the Central bank of Nigeria prints an extra Naira; it is simply inflation (Johnson, 2015). Inflation cannot be said to happen when there is a high price, but it happens when there constant in price levels.

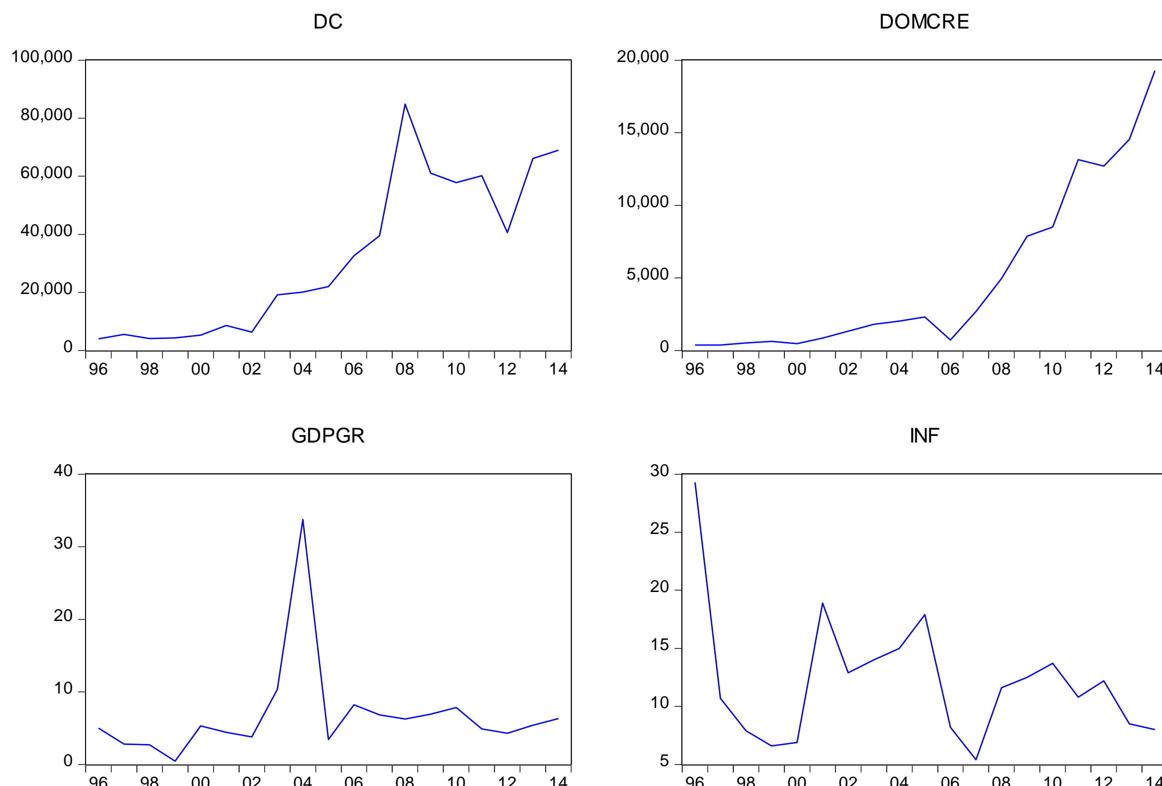

Figure5.1: Graphical representation of variables (1996-2014)

Figure5.1 showsthegraphical representation of variables. The graphical representation can be used to understand the trend of the various macro-economic variables from 1996-2014. According to the graph in figure 4, it shows that net domestic credits (DOMCRE) from banks grew gradually from1996 but fell in 2006 which was $1 million and peaked to $20 million in 2014. Domestic credit has shown fluctuating trends. In 2008 domestic credit peaked at 80 million but fell to $40million in 2012. The amount of bank credit given out based on GDP peaked at 5% in 2005 and showed several fluctuating trends from 2006-2014. There has been fluctuating movement in inflation. As at 1996, inflation was 30%, it fell very low to 5% in 2007 and ended in 2014 at 8%.

Table 5.1: Descriptive statistics of variables (1996-2014)

	DC	DOMCRE	GDPGR	INF
Mean	32158.56	5002.367	6.788887	12.15789
Median	22007.70	2020.173	5.318093	11.60000
Maximum	84830.10	19273.76	33.73578	29.30000
Minimum	3967.500	365.8706	0.474238	5.400000
Std. Dev.	26995.63	5888.688	6.903948	5.576470
Skewness	0.462625	1.140233	3.316568	1.538728
Kurtosis	1.800795	2.978497	13.67682	5.727552
Jarque-Bera	1.816225	4.117451	125.0778	13.38730
Probability	0.403285	0.127617	0.000000	0.001239
Sum	611012.6	95044.98	128.9889	231.0000
Sum Sq. Dev.	1.31E+10	6.24E+08	857.9610	559.7463
Observations	19	19	19	19

Graphical representation of variables is not enough to calculate or get the real impact of bank credit on economic growth which can be seen in GDP and inflation. Table 5.1 shows descriptive statistics of the variables. Descriptive statistics will be used to measure the impacts of the various variables. The aggregate mean of domestic credit for the range of years that is being studied was at 32158.56 while that of net domestic credit, GPDgr and inflation were at 5002.3, 6.7888 and 12.1578 respectively. The standard deviation of the domestic credit, net domestic credit, GPDgr and inflation are 3967.500, 365.8706, 0.4742 and 5.4000 respectively. The maximum value of DC is 84830 while the values of DOMCRE, GDPGR and INF are 19273.76, 33.735787 and 29.30000 respectively. Their different sums include 611012.6 for DC, 95044.98 for DOMCRE, 128.9889 for GDPGR and 231.0000 for INF.

1.3 UnitRootTests

Unit root test is the most appropriate test which can be used to check for the stationarity in a group of data given in a time series. Stationarity of a time series is seen when a change in the time series does not bring a significant change in the distribution. They also describe unit root as one of the causes of non-stationarity. Dickey-Fuller test is one of the most used examples of Unit root test which is based on linear regression. In the case of serial regression, an Augmented Dickey Fuller (ADP) test handles bigger and more complex models. Diehold and Kilian (2000) also described unit root tests as a useful tool in forecasting. They wrote that rather than employing other models by default, a unit root test can be used as a diagnostic tool which can be used to guide in decision making. We use ADF test to investigate stationarity of the variables. The model and the hypothesis of the test are below (Bilgili et al, 2007):

$$\Delta Y_t = \alpha_0 + \delta Y_{t-1} + \sum_{i=1}^{m} \gamma_i \Delta Y_{t-i} + \varepsilon_t \quad \textbf{(5.1)}$$

$$\Delta Y_t = \alpha_0 + \beta_1 T + \delta Y_{t-1} + \sum_{i=1}^{m} \gamma_i \Delta Y_{t-i} + \varepsilon_t \quad \textbf{(5.2)}$$

Test Hypothesis

H_0 : $\delta = 0$ Series are not stationary, there is unit root

H_a : $\delta < 0$ Series arestationary, there is nounitroot

Table 5.2: Unit root result of the variables

	Model	DC	DOMCRE	GDPGR	INF
Level	Constant+ trend	-2.8800	0.1164	-3.6069	-5.0252**
	Constant	-0.9897	2.3425	-3.7077	-5.3841**
	None	0.1396	3.7701	-2.2452	-2.3242
Difference	Constant+ trend	-5.4176**	-4.8390	-6.1771**	-5.2705**
	Constant	-5.5810**	-3.0406	-6.3678**	-5.6420**
	None	-5.2822**	-0.0326	-6.5743**	-5.8887**

Note: ** denotes rejection of null hypothesis at 1% level. (See Appendix I for outputs of the tests)

Table 5.2 summarizestheresult of the unit root test. The result shows that all the variables have unit root.

1.4 GrangerCausalıty Test

In1969 an economist Clive Granger in his research instigated and integrated an approach which is data based and is arranged in a time series which was designed in view to find out causality. Foresti (2006) opined that in the Granger-sense x is a cause of y if it is useful in forecasting y_1.In Granger causality, useful means that x is able to increase the accuracy of the prediction of y with respect to a forecast when considering only past values of y.

In defining Granger causality, Seth (2007) wrote that it is a statistical concept which is based on production. In Granger causality x_1 which is a signal and it causes another signal x_2, then the past values of x_1 should contain information which helps in predicting x_2 above and beyond the information contained in past values of x_2 alone.

Suppose we have three terms x_t, y_t and $w_t$and we first attempt to forecast x_{t+1} using past terms of x_t and w_t. We then try to forecast x_{t+1} using past terms of x_t, y_t and w_t. If the second forecast is found to be more successful, according to standard cost functions, then the past of y appears to contain information helping in forecasting x_{t+1}that is not in past x_t and w_t. In particular, w_t could be a vector of possible explanatory

variables. Thus y_t would be Granger causality x_{t+1}; if (a) y_t occurs before x_{t+1}; and (b) contain information useful in forecasting x_{t+1} that is not found in a group of other appropriate variables (Seth, 2007).
Mathematically, Granger causality is normally tested in the context of linear regression models. Let us consider a bivariate linear autoregressive model of two variables x_1 and x_2

$$Y_{i,t} = \alpha_{1,t} + \sum_{l=1} \beta_{1,i,ly,t-1} + \sum_{l=1} \gamma_{1,i,lxi,t-1} + \varepsilon_{1,1,t} \quad \textbf{(5.3)}$$

$$X_{i,t} = \alpha_{2,t} + \sum_{l=1} \beta_{2,i,ly,t-1} + \sum_{l=1} \gamma_{2,i,lxi,t-1} + \varepsilon_{2,1,t} \quad \textbf{(5.4)}$$

According to Foresti (2006), there are three different types of situation in which Granger causality test can be applied.

- In a simple Granger-causality test, there are two variables and the lags
- In a multivariate Granger-causality test, more than two variables are included because it is supposed that more than one variables can influence the results.
- Finally, Granger causality can also be tested in a VAR framework. In this case the multivariate model is extended in order to test for the simultaneity of all included variables.

Figure5.2: Graphicalrepresentation of differenced variables

To see any relationship between the different variables based on the null hypothesis, we will test the relationship between DDCRE and DGDP, DDCRE and DINF, DDC and DGDP and DDC and DINF and also compute their relevant F-value.

Ugurlu(2006) opined that Granger causality test can be seen for level and also seasonally adjusted using transformation of the relevant data for two or more samples. The test is used to indicate whether a set of lagged variables has power on the other variables. If the null hypothesis is rejected, then we can be allowed to write that one variable does Granger cause the other variables. It can be observed that the result obtained are almost the same when series are adjusted seasonally and also when the sample are studied at two different periods (Ugurlu, 2006).

Table5.3:GrangerCausality Test

	Observation	F-statistics	Probability
DGDP-DDCRE	14	4.25573*	0.0720
DDCRE-DGDP	14	0.04286	0.9954
DGDP-DDC	14	4,25573*	0.0720
DDC-DGDP	14	0.04286	0.9954
DINF-DDC	17	0.20785	0.6554
DDC-DINF	17	0.09971	0.7568
DDCRE-DINF	17	0.09971	0.7568
DINF-DDCRE	17	0.20785	0.6554

*, denotes rejection of the null hypothesis that says there is no casuality at the 10% level. See appendix for lag selection criteria.

According to Table 5.3, the null hypothesis which indicates the DGDP does not granger because DDCRE is rejected at the 10% level of significance. It shows that there is a statistically significant causality from Gross domestic product or Nigeria and Net domestic product of Nigeria. The null hypothesis which indicates the DGDP does not granger because DDC is rejected at the 10% level of significance. It shows that there is a statistically significant causality from Gross domestic product or Nigeria domestic product of Nigeria.

IV. Conclusıon

The relationship between the credit given by banks on inflation and economic growth has been a consistent study carried out by economics to determine its overall effects. It has been observed from various researches that there are several positive effect of bank credit on the growth of various economics and the control over inflation. Banks are financial institutions which make provision for financial services, which may include issuing loans and accepting deposits. A bank is also a place where money and other valuables are kept. The bank is also a portal whereby currency exchange can be achieved, money transfers, safe keeping of jewelries, provision of loans for different scale of farming, provision of bank credits for members of cooperative societies, SMEs, the private sector and other sectors. The bank is also a place for payment, bookkeeping operations of depositing and withdrawing. It acts as means of efficiently keeping records of income and expenditure. The banking sector in Nigeria has evolved over time from the inception of banking in Nigeria during the country was still under colonial rule.

The provision of bank credit has been found to be critical in the growth of major manufacturing industries in Nigeria, the real sector, small and medium scale enterprises and the total economic growth in Nigeria. Economic growth is an expansion in the limit of a nation or economy to create merchandise and ventures which is contrasted from one period with another period while total economy growth can be estimated as far as gross national product (GNP) or gross domestic product (GDP). Economic growth can also be seen as the increase in productivity. Productivity is increase in productive output, but economic growth can also be achieved without increase in marginal productivity. Productivity can only be achieved in constant growth, investment, and consistent bank credit given to manufacturing industries and firms facilitates growth. Economic growth brings increase of stock prices which also provides capital to invest and hire more employees. The provision of more job increases the income. Economic growth is the most watched economic indicator because it is critical in human development and an important yardstick to check whether an economy is doing well or stagnant. Other factors that was mention that has effect on economic growth is foreign direct investments, international trade, natural resources, external debts, health, education levels, corruption and poor political administration.

Bank credit also has an effect on inflation where Inflation is the rate at which the general level of costs of products and enterprises is rising and subsequently, the buying intensity of money is falling. Inflation as the sustained upward trend in the general price levels and not the specific increase in one or two goods . Bank credit can cause inflation in a type of inflation called credit inflation. This is the inflation that accompanies steady credit development which prompts ascend in value level. Commercial banks authorize a larger number of credits and advances to people in general than what the economy needs. Credit makes temporary credit inflation and a huge mirage that the economy is growing. Higher rates of inflation will bring slower or less financial activities in the long run. Higher rates of inflation causes the allocation of capital to be less effective and the equity markets will become very small and less liquid.

Data was collected from the period of 1996-2014 and they were collected from CBN data and statistics report (2018), world development indicators (2018), CBN statistical bulletin (2018) and National bureau of statistics (2018).

In the empirical analysis, graphical approach, descriptive statistics and correlation analysis was used. In the descriptive statistics, the impact of the variables were measured and calculated. In correlation analysis using unit root test and Granger causality test was also used to test the relationship between variables. In unit root, the null hypotheses were all rejected at 1% level which shows that all the variables have unit root.

In Granger Causality test, the null hypothesis which indicates the DGDP does not granger because DDCRE is rejected at the 10% level of significance. It indicates that there is a statistically significant causality from Gross domestic product or Nigeria and Net domestic product of Nigeria. The null hypothesis which indicates the DGDP does not granger because DDC is rejected at the 10% level of significance. It shows that there is a statistically significant causality from Gross domestic product or Nigeria domestic product of Nigeria.

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IOSR Journal of Business and Management (IOSR-JBM) is UGC approved Journal with Sl. No. 4481, Journal no. 46879.

Olaide Emmanuel ORIMOGUNJE. "The Impact Of Banking Credit On Economic Growth And Inflation: The Case Of Nigeria". IOSR Journal of Business and Management (IOSR-JBM), Vol. 21, No. 2, 2019, pp. -.32-44