EFFECT OF CREDIT TO COMMERCIAL BANKS ON ECONOMY GROWTH IN NIGERIA (2000-2022)

[1]Onyia, Chinedu Callistus, PhD and [2]Agada, Aloysius E. PhD

Abstract

This study assessed the effect of credit to commercial banks on the economic growth of Nigeria 2000–2022. The specific objectives of the study are to; (i) determine the effect of credit to commercial banks in the manufacturing sector on real gross domestic product in Nigeria and (ii) determine the effect of credit to commercial banks in the agricultural sector on real gross domestic product in Nigeria. (iii)Examine the influence of interest rates on real gross domestic product in Nigeria. The study used secondary sources of data from the Central Bank of Nigeria Statistical Bulletin. An ex-post facto research design was also adopted. The study employed the Author Regressive Distribution Lag (ARDL) method. The result revealed that Commercial Bank Credit to Manufacturing Sector has a positive coefficient and significant result on Nigeria's Real Gross Domestic Product, with (0.830338; p-value=0.0000<0.05). Commercial Bank Credit to the Agricultural Sector has a positive and significant effect on Nigeria's Real Gross Domestic Product (0.010424; p-value=0.0385< 0.05). Interest rate has positive and no significant influence on Nigeria's Real Gross Domestic Product (0.296302; p-value=0.6708 >0.05). The government should strengthen institutions that are responsible for granting loans and advances to the manufacturing sector because of its attendant benefit not only to the banks but also to the economy at large. Commercial banks in Nigeria should as a matter of urgency create an enabling business environment and credit services for farmers to access cheap funds to enhance agriculture business growth and innovation.

[1] Department of Banking and Finance Enugu State University of Science and Technology, ESUT, Enugu

Email: chinedu.onyia@esut.edu.ng

[2] Department of Business Administration, Cosmopolitan International Business School, Abuja, Nigeria

Email: alloy.agada62@gmail.com

Corresponding Author: chinedu.onyia@esut.edu.ng

INTRODUCTION

Generally, banks in emerging economies are expected to perform important and active roles in financing their economic activities to ensure their contribution to steady economic growth. Ideas about the necessity of finance development and the role that the banking industry plays in economic growth have occupied a key position in the literature on development finance (Nwanyanwu, 2008).

According to Osada and Saito (2010), financial or credit development can improve economic growth by raising money, encouraging the efficiency of loan-able credit, and enhancing capital accumulation. Credit to the banking industry in Nigeria took a new direction and was influenced by the recapitalization and consolidation of banks, which changed their performance. Approaches to financing can be said to improve commensurately in response to competition and the healthy state of soundness the banks have attained. The availability of money enables firms to enhance production, output, and efficiency, which in turn increases the profitability of banks through interest earned (Agada, 2010). The position of finance in economy output was recognized as credits obtained by various companies and farmers to enable them meet operating expenses (Nwanyanwu, 2008). Furthermore, Ademu (2006) stated that the finance provision was enough consideration for the sector's volume and price system as a way of achieving economic growth through self-employment opportunities. He further highlighted that finance can be used to prevent an economic activity from total collapse in the event of unforeseen circumstances. However, there seems to be a general consensus that the intermediary role of banks helps in boosting the economy. Akintola (2004) identifies banks' major stake to include financing the economy and provision of finance to productive sectors of the economy. When the banking industry discharges these important functions satisfactorily, the outcome would be that manufacturing output will improve commensurately.

Akpansung and Babalola (2008) stated that the CBN has been seen to be performing a leading and catalytic role by using direct control not only to control overall credit expansion but also to determine the proportion of bank loans and advances to "high priority sector" and "other". According to them, the sectoral distribution of bank credits is often meant to stimulate productive sectors and consequently lead to increased economic growth in the country.

Business enterprises rely on bank loans to supplement their scarce financial resources. Therefore, credit loans are important for business growth (Onuora and Nawafili, 2017). Bank loans are essential for businesses because they increase their productivity and encourage potential customers to shop on favorable terms. A bank that does not provide credit facilities will lose its customers to competitors. For the survival of banks, they must therefore invest in receivables through loans (Kakuru, 2001). Ojelabi, Taiwo, and Adeniran (2015) see bank lending as a means of providing finance to different sectors of the economy on an agreed repayment basis with interest rates that may depend on the money supply rate.

Statement of the Problem

Nigeria has been a miserable affair in all its extraordinary natural endowments, as the economy still accounts for and makes up a very small percentage of GDP. There is still a gap in understanding the relationship between banking industry credit and economic growth in developing economies. In particular, few studies have been conducted to determine the impact of the various types of deposit money bank credits on the growth of national economies.

0ver the years in Nigeria, the volume of deposit money into the economy has been on the increase. The amount of credit to the private sector has grown from N6, 234.23 million in 1980 to N29.21 billion in 2010.

The economy of Nigeria is fraught with diverse challenges outside infrastructure. Other challenges plague the economy, such as suffocating high interest rates and banks' reluctance to lend and supply to the sector, even though monetary authorities classify it as a priority sector.

This puzzle has raised concern regarding the impact of deposit money bank credit on economic growth in Nigeria. However, most studies tend to focus to the effect of bank lending on the economy without looking at the entire economy. Based on the above conditions, this study examines the effect of commercial bank credit on economic growth for the sample period 2000–2022

Objectives of the study

The main objective of this study is to examine the effect of commercial bank credit on economic growth in Nigeria (2000-2022). The specific objectives are as follows:

(i)   Determine the effect of credit of commercial banks on the manufacturing sector on RGDP in Nigeria.

(ii)   Determine the effect of credit of commercial banks to the agricultural sector on RGDP in Nigeria.

(iii)   Examine the effect of interest rates on RGDP in Nigeria.

Statement of the Hypotheses

The following null hypotheses were developed in line with the specific objectives of this study:

Ho1. Credit of Commercial Banks to the Manufacturing Sector has no significant effect on RGDP in Nigeria.

Ho2. Credit of Commercial Banks to the Agricultural Sector has no significant effect on RGDP in Nigeria.

Ho3. Interest rates have no significant effect on the RGDP in Nigeria.

REVIEW OF THE RELATED LITERATURE

2.1   Conceptual Framework

2.1.1   Bank Credit

Bank credit is the number of loans and advances given by banks to economic agents. Credit is the trust that allows one party to provide money or resources to another party, wherein the second party does not reimburse the first party immediately, but promises either to repay or return those resources later. Through bank credit, savings are channeled into productive activities to increase production growth (CBN Annual Report 2010). Vohra and Sehgal (2012) believed that the provision of credit facilities is one of the functions of banks, not only because it is their social obligation to meet the credit needs of various sectors of the economy, but also because convenient credit is the most profitable. Interest rates on loans have always been above the interest earned from investments. He noted that most business organizations, especially in developing countries, are highly dependent on bank credit as a source of capital.

According to Nzotta (2002), credits are granted after considering the risk and profitability that such lending decisions must follow. He further added that the current status of the banks, economic conditions, monetary policies, capacity and risk of the personnel of the banks, and credit needs of the region also determine the lending to commercial banks in Nigeria.

2.1.2   Credit of a Commercial Bank

Credit by a commercial bank is the process by which an individual, government, firm, or organization borrows money from the banking system in the form of a loan. The number of loans and advances given by the banking sector to economic agents constitutes bank credit. Bank credit is often accompanied by collateral that helps to ensure repayment of the loan in the event of default (CBN 2003).

CBN Annual Report (2010) credit of commercial banks as the quantity of loans and advances given by deposit money banks to economic agents. Credit is an essential part of financial intermediation that provides funds to those economic agents that can put them to the most productive use. Through bank credit, savings are channeled into productive activities to boost output growth. According to Tawose (2012), banks' credit can be explained as a way of making funds available to another sector of the economy on the basis of agreed terms with respect to repayment with interest. Nwaru and Okorontah (2014) defined bank credit as the provision of loans and overdrafts by banks to finance economic activities such as manufacturing and commerce.

Vohra and Seghal (2012) believed that approved loan facilities are one of the principle functions of banks not only because it is their social obligation to cater for the credit needs of the various sectors of the economy but also because credit facilities are the most profitable because the interest rates on loans have always been above those made from investments. They stated that most business organizations, especially in developing countries, are highly dependent on bank credits as a source of capital. According to Nzotta (2002), credit is usually given out after considering the risk and profitability that must follow such lending decisions. He further stated that the current position of banks, economic conditions, monetary policies, ability and exposure of banks personnel, and credit needs of the area served also determine commercial banks' credit lending in Nigeria.

Adekanye (1986) summarized the canon of their lending into six C's:

a.   Character: Intention and willingness to repay

b.   Capacity: management experience and ability to repay

c.   Capital: money, security, and financial reserve

d.   Collateral: Asset pledged as security

e.   Condition: Prevailing economic condition in the economy

f.   Confidence– faith of lender in the above

Most credits offered by commercial banks in Nigeria are mostly short- and medium-term in nature as compared to the long-term credits needed by the manufacturing sector (Ogar, Nkamare and Effiong, 2014). Credit offered by commercial banks to the manufacturing sector is often referred to as business loans/advances (John and Terhemba, 2016). Loan refers to credit provided by financial institutions for a particular period. It is the credit granted where the money is disbursed and repayment is for a later date. Loans given by commercial banks are often accompanied by collaterals to guarantee repayments when due. Interest is charged on the loan at the agreed rate and intervals of payments. On the other hand, loans are funds provided by banks to fulfill working capital requirements, which are payable within one year. Commercial banks approve loan advances largely for short-term purposes. Advance is a facility made available to borrowers by a bank that is repayable within one year.

 Credit channels convert savings into productive investments, thereby promoting economic growth. Thus, the availability of credit allows it to play an intermediary role, which is vital for the growth of the economy. Total domestic bank credit can be divided into two parts: loans to the private sector and loans to the public sector. Loans to the private sector are the aggregate of all loans and advances given by banks to business units and households, while public loans are loans and advances given to the government and its agencies (Sunny, 2013. Banks are therefore debtors to the depositors of funds and creditors to the borrowers of funds. According to Nwanyanwu (2008), bank credit is the borrowing capacity provided to an individual, government, firm, or organization by the banking system in the form of loans.

CBN Briefs (2003) defines bank credit as the number of loans and advances given by the banking sector to various economic agents

According to Nzotta (2004), bank credits positively influence the level of economic activities in any country. It influences what is to be produced, who produces it, and the quantity to be produced. Bank credits affect and alter the level of money supply in an economy or country. It is a known source of bank income and promotes the activities of banks and non-bank financial institutions, thus influencing the level of growth of the financial system. It also affects aggregate output and productivity, the pattern of production, the level of entrepreneurship, and the realization of aggregate economic performance, development, and growth. It could thus be said with absolute assurance that banking industry credit is of crucial importance to banks, monetary authorities, business community, and the economy in general.

Credit of Commercial Bank to the Agricultural Sector

Muftau (2003), on the other hand, defines agricultural credit as credit granted to farm and ranch operators to assist in planting and harvesting crops to support the feeding and care of livestock. Bank credit to the agricultural sector could take the form of an overdraft, short-term, medium-term, or long-term, depending on the purpose and gestation period of the project. Such credits granted to farmers to purchase inputs are paid directly to suppliers who must furnish the bank with evidence of delivery. This is done to avert the diversion of funds, which is common with Nigerian farmers (Adekanye, 1986: Nzotta, 1999). In discussing the importance of credit to the agricultural sector, Nzotta (2012) posited that it reactivates, expands, or modernizes all types of agricultural enterprises that are considered economically feasible and desirable to achieve the stated economic goals of self-sufficiency in agricultural production.

Qureshi (2006) reported that such credit removes financial constraints faced by farmers as it provides incentives to adopt new technologies that would otherwise be more slowly accepted. Thus, the availability of credit enables farmers to quickly switch to new technologies that enable the achievement of rapid productivity and growth. According to Ijere (1996). Credit can be considered from its ability to energize or motivate other factors of production''. For example, it can make latent, potential, or underused capacities functional. He further said that credit acts as a catalyst that activates the engine of growth, enabling it to mobilize its inherent potentials and advance in the planned or expected direction. Therefore, it follows that the greater the influx of capital, the greater the propensity of the economy to move in its given path. As summarized by Fosu (1992), Amin (1996), and Umoh (2003), credit thus constitutes the power or key to unlock latent talents, abilities, vision, and opportunities, which in turn act as the mover of economic development''

Credit of Commercial Bank to the Manufacturing Sector

According to Chukwu (2012), manufacturing credits are loans made to firms, businesses, or corporations. It provides companies and firms with funds that can be used for various purposes, including working, capital, or to finance capital expenditures such as to purchase machinery.

This form of commercial bank credit is loans/credits given by banks to the manufacturing sector, especially SMEs, in the promotion of economic growth and employment generation. The government has implemented various programs and schemes to assist them, including the establishment of sector-specific Development Financial Institutions (DFIs). These included the People's Bank of Nigeria (PBN), the Nigerian Agricultural and Co-operative Bank (NACB), the Nigerian Industrial Development Bank (N1DB), the Nigerian Bank for Commerce and Industry (NBCI), and the National Economic Reconstruction Fund (NERFUND). These institutions were later merged in 2001 to form the Nigerian Agricultural, Cooperative and Rural Development Bank (NACRDB) and the Bank of Industry (BOI) (Elegham 2012).
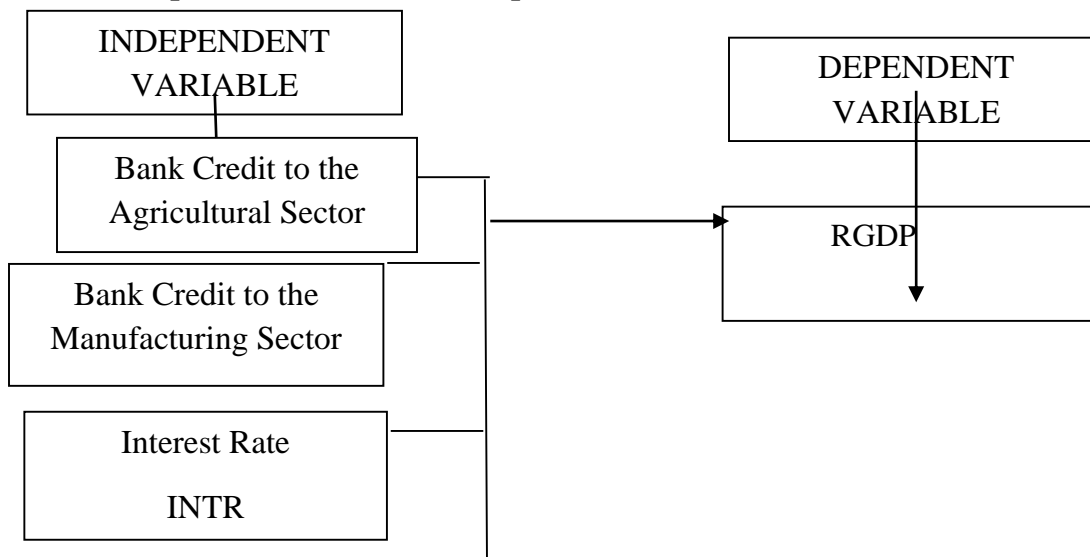
Interest Rate

Interest rate is the rate at which interest is paid by a borrower (debtor) for the use of money they borrow from a lender (creditor). Higher interest rates reduce private investment, thereby reducing economic growth. Conversely, it may attract foreign capital inflows, resulting in an increase in debt (Okafor 2020). Interest rate policy in Nigeria is a major instrument of monetary policy in relation to its role in mobilizing financial resources with the aim of promoting economic growth and development. The interest rate is the price people pay for borrowing money. This is the opportunity cost of borrowing money from a lender. It can also be defined as the return paid to the provider of financial assistance. This is an important economic value. This is because whether viewed as the cost of capital or the opportunity cost of money, the interest rate has a fundamental effect on the economy, either by impacting the cost of capital or by increasing the availability of credit by increasing savings (Okafor 2020). Interest rate is an economic variable that reflects the cost of obtaining credit for investments in an economy.

Real Gross Domestic Product

According to Elegham (2012), the real gross domestic product deals with total goods and services produced through the combined utilization of raw materials and other production factors such as labor land and capital in a country; it is the total output from the real sector. Economic growth therefore forms the main driving force of any economy and the engine of economic growth and development. Economic growth is made up of agriculture, industry, building and construction, and services. Agriculture can be further divided into crop production, livestock, forestry, and fishing, while industry comprises crude petroleum and mineral gas, solid minerals, and manufacturing. Services include transportation, communication, utilities, real estate and business services, education, and health.

Conceptual framework

Diagrammatic representation of the conceptual framework

```
┌─────────────────────┐                    ┌─────────────────────┐
│    INDEPENDENT      │                    │     DEPENDENT       │
│     VARIABLE        │                    │     VARIABLE        │
└──────────┬──────────┘                    └──────────┬──────────┘
    ┌───────────────────┐                       ┌──────────────┐
    │ Bank Credit to the│───────────────────▶   │    RGDP      │
    │ Agricultural Sector│                      │              │
    └───────────────────┘                      └──────┬───────┘
    ┌───────────────────┐                              ▼
    │ Bank Credit to the│
    │ Manufacturing Sector│
    └───────────────────┘
    ┌───────────────────┐
    │   Interest Rate   │
    │      INTR         │
    └───────────────────┘
```

Source: Researcher's Design, 2023

Theoretical Framework

The Solow Economic Growth Model

This concept was developed by Robert Solow in 1956 and attempts to explain long-run economic growth resulting from capital accumulation labor inputs, ideas and new technology. It is based on the assumptions that capital is subject to diminishing returns and that a steady-state growth path is reached when output, capital, and labor all grow at the same rate. This theory is relevant in this study because commercial banks' credits are assumed to provide capital needed to improve productivity in a country. The Solow growth model provides a connection between capital, other factors of production, and the national output level given a level of technology

Empirical Literature Review

Nwabuisi, Oke-Bello, Oyewole, Toriola, Folami, and Afolabi (2021) examined the impact of bank credit on the performance of the manufacturing sector in Nigeria. Based on the post-facto research design, we design an econometric model where manufacturing output is the dependent variable and bank credit, interest rates, and exchange rates are the explanatory variables. Annual time series data from 1981 to 2017 were obtained from the Central Bank of Nigeria Statistical Bulletin and analyzed using the dynamic simple least squares (DOLS) technique. We find that bank credit and interest rates have a significant positive effect on the performance of the manufacturing sector, whereas the exchange rate has a significant negative impact on the performance of the manufacturing sector in Nigeria. It is clear from the results that bank credit has a significant positive impact on the performance of the manufacturing sector in Nigeria. It becomes imperative for monetary authorities to

introduce a policy that will lower the lending rate to encourage borrowers and make the deposit rate attractive to encourage savings.

Okere, Okere, and Navaneto (2020) examined the effects of bank credit on manufacturing sector output in Nigeria from 1981–2018. The data for this study were taken from the Statistical Bulletin of the Central Bank of Nigeria (CBN). This study adopted the auto-regressive distributed lag (ARDL) bound coalescence testing approach and error correction. The ARDL post-bound testexamined whether the variables of interest placed in the model were bound together eventually and whether the error correction term displayed a negative and statistically significant value. A negative value indicates a correction movement from short-run imbalance to long-run equilibrium. Looking at the error correction instrument results, the study showed that bank credit displayed an optimistic and significant relationship with the presentation of the manufacturing sector in Nigeria.

Asukwo, Owui, Olugbemi and Ita (2020) examined "The effect of commercial banks lending on the growth of the agricultural sector in Nigeria" (1986-2019). A multiple regression statistical technique was employed to examine 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 rates, liquidity, and bank assets on agricultural output. The study recommended that banks try to grant agricultural loans at the appropriate time. Also, recommended that the rate of lending should not exceed a single digit and adequate funds should be available to commercial banks.

METHODOLOGY

Research Design

Research design is a kind of blueprint that guides the researcher in his or her investigations and analyses. The research design adopted for this study is the *ex-post facto* research design. This is a type of research in which the researcher cannot manipulate the data that has been used. Kerlinger (1970) describes the *ex-post facto* research design, which is also called causal comparative research, as a design used when the researcher intends to determine the cause– effect relationship between the dependent and independent variables with a view to establishing a causal link between them. This also led to the adoption of this research design for this study.

Area of study

The study area of this research is Nigeria, which is a country in West Africa. It is the most populous country in Africa, geographically situated between the Sahel to the north and the Gulf of Guinea to the south in the Atlantic Ocean, covering an area of 923,769 square kilometers (www. Wikipedia.com 2021)

Sources of Data

Annual time series data of the variables were used, including commercial bank credit to the agricultural sector, commercial bank credit to the manufacturing sector, and interest rate and real gross domestic product, which were sourced from World Bank National Accounts Data and Central Bank of Nigeria - Statistical Bulletin (various issues) and Federal Office of Statistics for the period 2000 - 2022.

Model Specification

To examine the effect of commercial bank credit on Nigeria's economic growth (2000-2022), Nigeria's economic growth (peroxided by Real Gross domestic Product), served as dependent variables, while bank lending peroxided by (Commercial bank credit to Manufacturing Sector, Commercial bank credit to Agricultural Sector) and interest rate served as independent variables. Given the above considerations, we adopted the model specified as follows:

$Y = f(X)$

$Y = X_{1, +} X_2 + X_3$

$Y = \beta_0 + \beta_1 X_1, + \beta_{2i} X_2, + \beta_{3i} X_3 n + \varepsilon$

Where;

Y = Dependent variable

$X_1, X_2 X_3$ -------------- X_n = explanatory or independent variables

B_1, β_2, β_3 and δ -------------- β_n = the coefficient of the parameter estimate or slope

e = Error or disturbance term

t = Time

In relating this to the study,

RGDP= f (BCM, BCA, INTR) ----------------------- 3.1

RGDP = $\beta_0 + \beta_1$ BCM + β_2 BCA + β_3 INTR-------------U_t -------------- 3.2

Relating to the econometric form and the variables log linearized, it will appear as

LRGDP = $\beta_0 + \beta_1$ LBCM + β_2 LBCA + β_3 LINTR-------------U_t --------------- 3.3

Where;

LRGDP = Real gross domestic product

LBCM= Bank credit to the manufacturing sector

LBCA = Bank credit to the agricultural sub-sector

LINTR = Interest rate

B_0 = intercept (Constant term)

U_{t} =error term

3.4.1   Test for the Hypothesis

Hypothesis One

However, in writing the model equations in line with the hypotheses stated

RGDP = $\beta_0 + \beta_{1i}$ BCM $_{t-1} + \beta_{2i}$ BCA $_{t-1} + \beta_{3i}$ INTR $_{t-1}$ ----U_t --------- 3.4

Relating to the econometric form and the variables log linearized, it will appear as

LRGDP = $\beta_0 + \beta_{1i}$ LBCM $_{t-1} + \beta_{2i}$ BCA $_{t-1} + \beta_{3i}$LINTR $_{t-1}$ ----U_t --------- 3.5

Where;

LRGDP = Real gross domestic product

LBCM= Bank credit to the manufacturing sector

LBCA = Bank credit to the agricultural sub-sector

LINTR = Interest rate

B_0 = intercept (Constant term)

U_{t} =error term

β_0 =   Intercept

β_1- β_4 =   short-run dynamic coefficients of the model's adjustment long-run equilibrium

Hypothesis Two

However, in writing the model equations in line with the hypotheses stated

RGDP = $\beta_0 + \beta_{1i}$ BCA $_{t-1} + \beta_{2i\,i}$ BCM $_{t-1} + \beta_{3i}$ LINTR $_{t-1}$----U_t --------- 3.6

Relating to the econometric form and the variables log linearized, it will appear as

LRGDP = $\beta_0 + \beta_{1i}$ LBCA $_{t-1} + \beta_{2i}$ LBCM $_{t-1}$ β_{3i} LINTR $_{t-1}$----U_t --------- 3.7

Where;

LRGDP = Real gross domestic product

LBCM= Bank credit to the manufacturing sector

LBCA = Bank credit to the agricultural sub-sector

LINTR = Interest rate

B_0 = intercept (Constant term)

U_t =error term

β_0 =   Intercept

β_1- β_4 =   Short-run dynamic coefficients of the model's adjustment long-run equilibrium.

Hypothesis Three

However, in writing the model equations in line with the hypotheses stated

$RGDP = \beta_0 + \beta_{1i} INTR_{t-1} + \beta_{2i} BCM_{t-1} + \beta_{3i} BCA_{t-1} + \beta_{4i} BCO_{t-1} ---- U_t$ --------- 3.10

Relating to the econometric form and the variable log linearized it will appear as follows:

$LRGDP = \beta_0 + \beta_{1i} LINTR_{t-1} + \beta_{2i} LBCM_{t-1} + \beta_{3i} LBCA_{t-1} + \beta_{3i} BCO_{t-1} ---- U_t$ --------- 3.11

Where;

LRGDP = Real gross domestic product

LBCM= Bank credit to the manufacturing sector

LBCA = Bank credit to the agricultural sector

LINTR = Interest rate

B_0 = intercept (Constant term)

U_t =error term

β_0 = Intercept

β_1- β_4 =   Short-run dynamic coefficients of the model's adjustment long-run equilibrium

DATA PRESENTATION AND ANALYSIS

Data Presentation

Table 4.1 shows the data on commercial banks' lending to the economic sectors, which includes manufacturing, agricultural, and interest rates.

ALLOCATION OF BANKS' CREDIT TO REAL ECONOMIC SECTORS

Year	LnRGDP	LnBCA	LnBCM	LnINTR
2000	25.17	41.03	141.29	17.98
2001	26.66	55.85	206.89	18.29
2002	30.76	59.85	233.47	24.85
2003	33.00	62.10	294.31	20.71
2004	36.06	67.74	332.11	19.18
2005	38.39	48.56	352.04	17.95
2006	40.70	49.39	445.79	17.26
2007	43.39	149.58	487.58	16.94
2008	46.32	106.35	932.80	15.14
2009	50.04	135.70	993.46	18.99
2010	54.61	128.41	987.64	17.59
2011	57.51	255.21	1,053.21	16.02
2012	59.92	316.36	1,068.34	16.79
2013	63.22	343.70	1,179.69	16.72
2014	67.15	478.91	1,647.45	16.55
2015	69.02	449.31	1,736.19	16.85
2016	67.93	525.95	2,215.74	16.87
2017	68.49	528.24	2,171.37	17.56
2018	69.79	610.15	2,230.15	19.33

2019	71.38	772.38	2,622.54	15.53
2020	70.01	1,049.68	3,191.37	12.32
2021	72.39	1,457.82	4,089.29	11.61
2022	74.55	1,605.66	4,300.52	12.00

Source: World Bank National Accounts Data and CBN Statistical Bulletin (2000-2022)

Where

LRGDP = Real Gross Domestic Product

LBCM= Bank credit to the manufacturing sector

LBCA = Bank credit to the agricultural sector

INTR = Interest Rate

Table 4.1 contains real gross domestic product, commercial bank credit to the manufacturing sector, commercial bank credit to the agricultural sector, and interest rate as collected from the CBN Bulletin and World Bank national accounts data covering from 2000 to 2022. The data is a set of annualized time series required for the empirical analyses that would apply the models specified in chapter, which would answer the research questions and test the hypotheses.

Preliminary Tests

A key preliminary test in this study is the Augmented Dickey– Fuller (ADF) unit root test. The ADF unit root test is very necessary since it would enable us to ascertain the stationarity of our series and therefore guide us on the appropriate estimation technique to apply. In addition, we conducted descriptive statistics with the sole aim of understanding the statistical characteristics and trends of our series.

Descriptive Statistics

We conducted descriptive statistics for our set of variables, as presented in Tables 4.1.

Table 4.2   Descriptive Statistics of Variables

	LnRGDP	LnBCA	LnBCM	LnINTR
Mean	3.931450	5.392789	6.852426	2.824902
Median	4.051959	5.542087	6.959598	2.829678
Maximum	4.311470	7.381290	8.366491	3.212858
Minimum	3.225653	3.714304	4.950815	2.451867
Std. Dev.	0.347602	1.180870	1.004208	0.169968
Skewness	-0.667053	0.090024	-0.269095	-0.466821
Kurtosis	2.116367	1.692688	1.947064	3.868924
Jarque-Bera	2.453954	1.668920	1.340060	1.558938
Probability	0.293178	0.434109	0.511693	0.458649
Sum	90.42336	124.0342	157.6058	64.97275
Sum Sq. Dev.	2.658199	30.67798	22.18556	0.635563
Observations	23	23	23	23

Source: E-views 9 output, 2023

Descriptive statistics in Table 4.2 show that real gross domestic product (RGDP) attained a mean of 3.931450 between 2000 and 2022, with the highest level at 4.311470 and lowest at 3.225653. Bank credit to the

manufacturing sector (BCM) stood on a mean of 6.852426 at a maximum of 8.366491 and a minimum of 4.950815 over the period. Bank credit to the agricultural sector (BCA) attained a mean of 5.392789 having a maximum of 8.366491 and a minimum of 4.950815, and interest rate attained a mean of 2.824902, a maximum of 3.212858, and a minimum of 2.451867. We observed from the results that our variables are normally distributed ($p > 0.05$) and are statistically different from zero. The normality in the variable description is based on the skewness of the variables, all of which are negatively skewed, ($S<0$) except BCA which was positively skewed.

Unit Root Test

It is not econometrically appropriate to perform a regression analysis on time series data that are not stationary. Such an operation is likely to produce spurious regression results. To address this problem, the Augmented Dickey Fuller (ADF) unit root test was employed to determine the stationarity of the data, as shown in Table 4.3

Table 4.3 Unit Root Test Results

Variables	ADF-Stat	5% critical value	P-value	Inference
LRGDP	-3.791023	-2.951125	0.0004	I(0)
LBCM	-3.768840	-2.960411	0.0077	I(1)
LBCA	-6.712459	-2.951125	0.0000	I(1)
LINTR	-4.015043	-2.948404	0.0037	I(1)

Source: Author's compilation 2022

The result of the unit root test in table 4.3 reveals the presence of stationarity at 5% critical level. Moreover, all our variables are not integrated of the same order. In other words, while the dependent variables LRGDP attained stationarity at level I(0), the independent variables attained stationarity at the first difference I(1). In both instances, the calculated ADF value is more negative than the critical values for all the variables tested, which confirms that our series has no unit root. Moreover, to confirm the reliability of this result, the p-value of the calculated ADF values for each of the variables is less than 5% level of significance.

Test of the Hypotheses

The hypotheses stated earlier in this study were tested using the ordinary lease square (OLS) regression model. Given that this study is an impact study, the OLS technique will, among other things, enable us to ascertain both the direction and magnitude of the effect between the dependent variables and the regressors. To achieve this aim, the following steps will be taken:

i)   The hypotheses were restated in the null and alternate forms,

ii)   The decision rules are stated,

iii)   The results were analyzed and interpreted , and

iv)   the decision rule is applied to reject or accept the null or alternate hypotheses

Test of Hypothesis One

Hypothesis one is restated in null and alternate form as follows:

H_{01} Commercial bank credit to the manufacturing sector does not have a positive and significant effect on the real gross domestic product of Nigeria

H_{I1} Commercial bank credit to the manufacturing sector has a positive and significant effect on the real gross domestic product of Nigeria

Decision Rule

The decision rule is based on a 5% probability value and is expressed as follows:

$$H_0: \theta = \theta_0 \text{ versus } H_a: \theta \neq \theta_0$$

Reject null hypotheses if p-value < 0.05

Accept alternative hypotheses if p-value > 0.05

Table 4.4: OLS regression model estimation results

Dependent variable: LRGDP

Method: Least Squares

Date: 07/12/23   Time: 16:05

Sample: 2000 2022

Included observations: 23

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LBCM	0.383038	0.059246	6.465243	0.0000
LBCA	0.010424	0.050439	1.206662	0.0385
LINTR	0.296302	0.142140	2.084575	0.6708
C	0.525901	0.526093	0.999636	0.3300

R-squared	0.954304	Mean dependent var	3.931450
Adjusted R-squared	0.947089	S.D. dependent var	0.347602
S.E. of regression	0.079956	Akaike information criterion	-2.057898
Sum squared resid	0.121468	Schwarz criterion	-1.860420
Log likelihood	27.66582	Hannan-Quinn critter.	-2.008233
F-statistic	132.2653	Durbin-Watson stat	1.652412
Prob(F-statistic)	0.000000		

Source: E-view 9 output, 2023

Based on table 4.5 , the coefficient of the constant is 0.525901. This implies that when the independent variables are held constant, the value of the real gross domestic product (RGDP) will be 0.525901. It can be observed that LBCM has positive and significant effects on Nigeria's RGDP. This was explained by the positive coefficient value (0.383038) of the LBCM and its corresponding probability value (0.0000), which is less than 0.05 significant levels.

From the model above, R^2, which is the coefficient of determination, is 0.954304. This entails that 0.95% LBCM of was explained by changes in the RGDP. The adjusted R^2 takes into account a greater number of regressors included in our model. The F-value (132.2653), with a probability value 0.000000 < 0.05 is an indicative that the overall regression is significant. The Durbin –Watson statistic (DW) is 1.652412, which is greater than the R^2 shows signs of no serial autocorrelation.

Decision

The coefficient of LBCM is positively signed with a p-value 0.0000 < 0.05. Thus, we reject the null hypothesis and accept the alternate hypothesis that commercial bank credit to the manufacturing sector has a significant effect on RGDP in Nigeria.

Test of Hypothesis two

Hypothesis one is restated in null and alternate form as follows:

H_{01} Commercial bank credit to the agricultural sector has no significant effect on the real gross domestic product of Nigeria

H$_{I1}$ Commercial bank credit to the agricultural sector has a positive and significant effect on the real gross domestic product of Nigeria

Decision Rule

The decision rule is based on a 5% probability value and is expressed as follows:

$$H_0: \theta = \theta_0 \text{ versus } H_a: \theta \neq \theta_0$$

Reject null hypotheses if p-value < 0.05

Accept alternative hypotheses if p-value > 0.05

Table 4.5: OLS regression model estimation results

Dependent variable: LRGDP

Method: Least Squares

Date: 07/12/23   Time: 16:05

Sample: 2000 2022

Included observations: 23

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LBCM	0.282068	0.059246	6.465243	0.0000
LBCA	0.010424	0.050439	1.206662	0.0385
LBCM	0.383038	0.059246	6.465243	0.0000
LINTR	0.296302	0.142140	2.084575	0.6708
C	0.525901	0.526093	0.999636	0.3300

R-squared	0.954304	Mean dependent var		3.931450
Adjusted R-squared	0.947089	S.D. dependent var		0.347602
S.E. of regression	0.079956	Akaike information criterion		-2.057898
Sum squared resid	0.121468	Schwarz criterion		-1.860420
Log likelihood	27.66582	Hannan-Quinn critter.		-2.008233
F-statistic	132.2653	Durbin-Watson stat		1.652412
Prob(F-statistic)	0.000000			

Source: E-view 9 output, 2023

Based on table 4.5 , the coefficient of the constant is 0.525901. This implies that when the independent variables are held constant, the value of the real gross domestic product (RGDP) will be 0.525901. It can be observed that LBCA has a positive and significant effect on Nigeria's RGDP. This was explained by the positive coefficient value (0.010424) of LBCA and its corresponding probability value (0.0385), which is less than 0.05 significant levels.

From the model above, R^2, which is the coefficient of determination, is 0.954304. This entails that 0.95% LBCA of was explained by changes in the RGDP. The adjusted R^2 takes into account a greater number of regressors included in our model. The F-value (132.2653), with a probability value $0.000000 < 0.05$ is an indicative that the overall regression is significant. The Durbin –Watson statistics (DW) approximate value of 1.652412, which is greater than the R^2 shows signs of no serial autocorrelation.

Decision

The coefficient of LBCA is positive signed with p-value $0.0385 < 0.05$. Thus, we reject the null hypothesis and accept the alternate hypothesis that commercial bank credit to the agricultural sector has a significant effect on RGDP in Nigeria.

Test of Hypothesis three

Hypothesis one is restated in null and alternate form as follows:

H_{04} Interest rate has no significant effect on the real gross domestic product of Nigeria

H_{04} Interest rate has a positive and significant effect on the real gross domestic product of Nigeria

Decision Rule

The decision rule is based on a 5% probability value and is expressed as follows:

$$H_0: \theta = \theta_0 \text{ versus } H_a: \theta \neq \theta_0$$

Reject null hypotheses if p-value < 0.05

Accept alternative hypotheses if p-value > 0.05

Table 4.6: OLS regression model estimation results

Dependent variable: LRGDP

Method: Least Squares

Date: 07/12/23   Time: 16:05

Sample: 2000 2022

Included observations: 23

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LBCM	0.383038	0.059246	6.465243	0.0000
LINTR	0.296302	0.142140	2.084575	0.6708
LBCM	0.383038	0.059246	6.465243	0.0000
LBCA	0.010424	0.050439	1.206662	0.0385
C	0.525901	0.526093	0.999636	0.3300

R-squared	0.954304	Mean dependent var	3.931450
Adjusted R-squared	0.947089	S.D. dependent var	0.347602
S.E. of regression	0.079956	Akaike information criterion	-2.057898
Sum squared resid	0.121468	Schwarz criterion	-1.860420
Log likelihood	27.66582	Hannan-Quinn critter.	-2.008233
F-statistic	132.2653	Durbin-Watson stat	1.652412
Prob(F-statistic)	0.000000		

Source: E-view 9 output, 2023

Based on table 4.6, the coefficient of the constant is 0.525901. This implies that when the independent variables are held constant, the value of the real gross domestic product (RGDP) will be 0.525901. It can be observed that LINTR has a positive and no significant effect on Nigeria's RGDP. This was explained by the positive coefficient value (0.296302) of LNTR and its corresponding probability value (0.6708), which is greater than the 0.05 significance level.

From the model above, R^2, which is the coefficient of determination, is 0.954304. This entails that 0.95% LINTR of was explained by changes in the RGDP. The adjusted R^2 takes into account a greater number of regressors

included in our model. The F-value (132.2653), with a probability value $0.00000 < 0.05$ is an indicative that the overall regression is significant. The Durbin –Watson statistics (DW) approximate value of 1.652412, which is greater than the R^2 shows signs of no serial autocorrelation

Decision

The coefficient of LINTR is negative signed with p-value $0.6708 > 0.05$. Thus, we reject the alternate hypothesis and accept the null hypothesis that the interest rate has no significant impact on the RGDP in Nigeria.

Discussion of the findings

The main objective of this study is to evaluate the effect of commercial bank lending on the economic growth of Nigeria (2000-2022). The specific objectives are to ascertain the effect of commercial bank credit to the manufacturing sector on real gross domestic product in Nigeria, determine the effect of commercial bank credit to the agricultural sector on real gross domestic product in Nigeria, and finally examine the effect of interest rate on real gross domestic product in Nigeria. These findings were made in line with their hypotheses and discussed according to these objectives.

Objective One: To ascertain the effect of commercial bank credit on the manufacturing sector on real gross domestic product in Nigeria

The results of our analysis revealed that LBCM has a negative and no significant effect on Nigeria's real gross domestic product. This was explained by the positive coefficient value (0.383038) of LBCM and its corresponding probability value (0.0000), which is less than 0.05 significant levels.

Objective Two: Determine the effect of bank credit on the agricultural sector on real gross domestic product in Nigeria

The results of our analysis revealed that LBCA has a positive and significant effect on Nigeria's RGDP. This was explained by the positive coefficient value (0.010424) of LBCA and its corresponding probability value (0.0385), which is less than 0.05 significant levels.

Objective Three: To examine the effect of interest rates on real gross domestic product in Nigeria

The results of our estimation revealed that LINTR has a positive and no significant effect on Nigeria's RGDP. This was explained by the positive coefficient value (0.296302) of LNTR and its corresponding probability value (0.6708), which is greater than the 0.05 significance level.

SUMMARY OF THE FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

5.1   Summary of the Findings

The following are the findings from the specific objectives of the study:

1.   Commercial bank credit to the manufacturing sector has a positive and significant effect on Nigeria's Real Gross Domestic Product.

2.   Commercial bank credit to the agricultural sector has a positive and significant effect on Nigeria's Real Gross Domestic Product.

3.   Interest rate has a positive and no significant effect on Nigeria's Real Gross Domestic Product.

Conclusion

The data analyzed above relate to the effect of commercial bank credit on the economic growth of Nigeria. Economic growth is proxied by real gross domestic product (dependent variable), while commercial bank credit to agriculture and manufacturing are independent variables. Interest rate is included in the model because loans are granted based on the interest rate. The higher the interest rate, the lower the demand for loans and vise versa. The results above found a significant positive relationship between credits and the manufacturing and agricultural sectors and real gross domestic product in Nigeria. The implication is that loans to the manufacturing and agricultural sectors will assist in the development of the economy.

The above result agrees with some recent studies conducted by Oladapo & Adefemi (2015) Courage & Leonard (2019) that investigated the effect of commercial bank sectorial credit to the manufacturing and agricultural sub-sectors on economic growth in Nigeria with time series data from 1981 to 2015. Furthermore, it may be concluded that bank credits to some sectors in Nigeria will improve the real sector output, thereby improving the economic status.

Recommendations

Based on the findings and conclusions of our study, the following recommendations are made:

1.   The government should strengthen institutions that are responsible for granting loans and advances to the manufacturing sector because of its attendant benefit not only to the banks but also to the economy at large.

2.   Commercial banks in Nigeria should as a matter of urgency create an enabling business environment and credit services for farmers to access cheap funds to enhance agric   business growth and innovation.

3.   The interest rate for the agriculture, manufacturing, and oil sectors should be reduced to a single digit to encourage these sectors to grow.

REFRENCES

Adekanya, F. (1986). Frauds in Banking Transaction. *The Nigerian Banker Paper,* .(6) 1,

Asukwo, Owui, Olugbemi and Ita (2020) *"The effect of Commercial Banks Lending on the Growth of the Agricultural Sector in Nigeria" (1986-2019)*

Ebele and Iorember (2016) the impact of commercial bank credit on manufacturing in Nigeria, covering the period from 1980 to 2015.

Ebi, B. O.& Emmanuel, N. (2014). Commercial Bank Credits and Industrial Subsectors Growth in Nigeria. *Journal of Economics and Sustainable Development,* vol. 5, No. 10, pp. 4-10.

Germidis, A. (1991). Financial system and development: What role for the formal and informal sector? *OECD Development Centre Paris,*

Granger, (1988). A critical review of rural credit policy in pakistan. *The Pakistan Development Review*, 31(4),

Hall (1983) *Analysis of Economic Efficiency of Nigerian Small Farmers: A Parametric Frontier Approach.* Journal of Economics 2(2).

Nwanyanwu, O.J. (2008), An Analysis of Banks' Credit on Nigerian Economic Growth, Jos *Journal of Economics*

Lyndon and Ayaundu (2020) examined the effect of foreign investment inflows on economic growth of Nigeria International Journal of Quantitative and Qualitative Research Methods (.8)1,1-14, January 2020 Published by ECRTD-UK ISSN 2056-3620(Print), ISSN 2056-3639(Online)

Mesgan, Olunkwa and Youssef (2018) the development of the financial sector and manufacturing performance in Nigeria over the period 1981 to 2015.

Muftau, A.I. (2003*). Commercial Bank Credit to the Agricultural Sector and the Nigerian Economy.* An Analysis of the Future Trend. *A Journal of Department of Business Administration .* Vol.28, No.32.

Nnamocha and Charles (2015) the effect of bank credit on only agricultural output in Nigeria,

Nwabuisi, Oke-Bello, Oyewole, Toriola, Folami, and Afolabi (2021) t*he impact of bank credit on the performance of the manufacturing sector in Nigeria economics journal (3) 2021*

Nwaru, N. M. & Okorontah, C. F. (2014). *Banks Credit as an Instrument of Economic Growth in Nigeria. Internal Journal of Bureau and Law Research, vol. 2, No. 2.*

Nzotta, S. M. (2002). *Money, banking and finance: Theory and practice.* (2ndEd). Owerri: Hudson Jude Nigerian Publishers.

Okafor (2020) International Journal of Business & Law Research 8(3):89-99, July-Sept., 2020, © Seahi Publications, 2020 www.seahipaj.org ISSN: 2360-8986

Okere, Okere, & Navaneto (2020) the effects of bank credit on manufacturing sector output in Nigeria from 1981–2018.

Olarenwaju, Aremo and Aiyegbusi (2015) the effect of banking sector reforms on the output of manufacturing sector in Nigeria.

Sunny, O.I. (2013). The impact of commercial banks" credit toagriculture on Agricultural development in Nigeria: econometric analysis. *International Journal of business, humanities and technology*

Spencer, H.M. (1977), *Contemporary Macroeconomics* (3rd Ed). New York: Worth Publishers.

Udoka, Mbat and Duke (2016), *the effect of commercial banks" credit on agricultural output in Nigeria covering the period Central Bank of Nigeria Economic and Financial Review,*

Ukwu, (2002). Credit rationing-with market imperfect information. *American Economic Review,* 71 (3).

Ume, Obasikene, Oleka, Nwadike and Okoyeuzu (2017) the impact of banking sector reforms on manufacturing sector output in the Nigerian economy