

Impact of Commercial Banking on Nigeria Industrial Sector

Onwuteaka, Ifeoma Cecilia¹ PhD, Molokwu, Ifeoma Mirian², Aju Gregory. C.³

¹Department of Economics, Chukwuemeka Odumegwu Ojukwu University,

¹Igbariam Campus, Anambra State, Nigeria

²Department of Accountancy, Anambra state polytechnic, Mgbakwu, Anambra State, Nigeria

³Department of Economics, Nnamdi Azikiwe University (NAU), Awka, Nigeria

How to cite this paper: Onwuteaka, Ifeoma Cecilia PhD | Molokwu, Ifeoma Mirian | Aju Gregory. C. "Impact of Commercial Banking on Nigeria Industrial Sector" Published in International Journal of Trend in Scientific Research and Development (ijtsrd), ISSN: 2456-6470, Volume-3 | Issue-3, April 2019, pp.752-759, URL: <https://www.ijtsrd.com/papers/ijtsrd23140.pdf>



IJTSRD23140

Copyright © 2019 by author(s) and International Journal of Trend in Scientific Research and Development Journal. This is an Open Access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0) (<http://creativecommons.org/licenses/by/4.0>)



INTRODUCTION

Commercial banking in Nigeria is a subsector of the financial sector. According to Sanusi (2012), the financial system is more than just institutions that facilitate payments and extend credit. It encompasses all functions that direct real resources to their ultimate user. It is the central nervous system of a market economy and contains a number of separate, yet co-dependent components, all of which are essential to its effective and efficient functioning. These components include financial intermediaries such as banks and insurance companies which act as principal agents for assuming liabilities and acquiring claims. The second component is the markets in which financial assets are exchanged, while the third is the infrastructural component, which is necessary for the effective interaction of intermediaries and markets. The commercial banks have been described to play the role of financial intermediation between the surplus and the deficit economic units of the economy (Adebayo, 2003). Unlike specialized banks (merchant banks, development bank etc) commercial banks intermediates in all business areas of the economy including the industrial sector. According to Sanusi (2012), the banking system functions more efficiently and effectively when there is a robust and efficient payments systems infrastructure. Moreover the concern to ensure a sound banking system by the Central Bank is underscored by the

ABSTRACT

This study examines the impact of commercial banking on Nigeria industrial sector using secondary data covering the period of 1980-2018 that were obtained from the Central Bank of Nigeria. The model's estimates were estimated via multiple econometric model of the ordinary least square to determine the effect of commercial bank credit to industrial sector, inflation, infrastructure, exchange rate, interest rate, labour force and bank capital on industrial sector proxied by industrial output. The results show that commercial bank credits to industrial sector, infrastructure, inflation, labour and bank capital have a positive impact on industrial sector while exchange rate has a negative impact on industrial sector but conforms to the a priori expectation. The study also found out that only commercial bank credits to industrial sector and infrastructure were significant in explaining industrial sector growth while other variables used in the study were all found to be non-significant in explaining the growth rate of the industrial sector. The study concludes that adequate commercial banks credit intermediation in the industrial sector and government expenditure on the needed infrastructure will enhance the sector performance.

KEYWORDS: Commercial Bank Credit, Industrial Sector, Inflation, Infrastructure, Exchange Rate, Interest Rate, Labour Force

critical role of banks in national economic development. Banks for instance, mobilizes savings for investment purposes which further generates growth and employment. The real sector, which is the productive sector of the economy, relies heavily on the banking sector for credit.

Ekpenyong and Acha (2011) noted that banks as financial intermediaries are expected to provide avenue for people to save incomes not expended on consumption. It is from the savings they so accumulate that they are expected to extend credit facilities to entrepreneurs and other industrialists. Despite the vital role of the commercial banks in Nigeria, the Nigeria industrial sector has not been a success story when juxtaposed with the Nigeria industrial sector. According to Udoh and Ogbuagu (2012), the contribution of the manufacturing component has on average been below 5.0 percent in the last two decades. Even the relatively high contribution of the petroleum oil sector to the industrial sector is being driven largely by crude petroleum extraction and not by the associated 'core industrial' components like refining and petrochemicals. The contribution of wholesale and retail trade and services has more or less remained stable while that of building and construction rose sharply from 5.3 percent in the 1960s to 8.3 percent in the 1970s, but fell consistently, thereafter, to 1.8 percent during 2001-

2009. This shortfall of the Nigeria industrial sector has continued to nose down till date (Adeyefa & Obamuyi, 2018; Olorunfemi, Obamuyi, Adekunjo and Ogunleye, 2013). Yet industrialization is perceived to be the major force that drives modern economy in both developed and developing countries. In most economies, industrial/manufacturing sector serves as the medium for the production of goods and services, the generation of employment and the enhancement of incomes. Hence, the sector is often described as the hub of every economy. Unfortunately, the situation is different in Nigeria, as the contribution of the secondary sector (manufacturing, building and construction) to total gross domestic product (GDP) has been comparatively frail when compared to the other sectors of the economy in Nigeria (Adeyefa & Obamuyi, 2018).

Government effort at addressing the conundrum and improving industrial production and capacity utilization of the Nigeria industrial sector has yielded no significant result so far. For example, during the First National Development Plan (1962-1968), Nigeria adopted the import substitution industrialization strategy aimed at reducing the volume of imports of finished goods and encouraging foreign exchange savings by producing locally; during Second National Development Plan period (1970-74), Nigeria consolidated her import substitution industrialization strategy. But it fell within oil boom era. Between 1982 and 1984 respectively, the Nigerian government adopted stabilization policy measures of 1982, the restrictive monetary policy and stringent exchange control measures of 1984, all proved abortive. Then came the Structural Adjustment Programme (SAP) of 1986 (CBN, 2003; Olorunfemi, Obamuyi, Adekunjo and Ogunleye, 2013). According to Olorunfemi et al (2013), one of the main reasons for the introduction of SAP was to reduce the high dependence of the economy on crude oil as the major foreign earner, by promoting non-oil exports, particularly manufactured goods. But the contribution of the manufacturing sub-sector to GDP has declined steadily, due to a number of factors. As a result, government introduced many other economic policies. Despite these efforts of the government, the performance of the manufacturing sectors is still not clear, thus warranting an empirical probing.

Statement of the Problem

This study was informed by the declining performance of the Nigeria industrial sector. Scholars have attributed the declining performance to massive importation of finished goods and inadequate financial support for the manufacturing sector, which ultimately has contributed to the reduction in capacity utilization of the manufacturing sector in the country (Adeyefa & Obamuyi, 2018; Obamuyi, Edun and Kayode, 2012). According to Obamuyi, Edun and Kayode (2012), despite the fact that the government embarked on several strategies aimed at improving industrial production and capacity utilization of the sector, performance has continued to fluctuate. In the literature, it has been justified that industrialization is a pathway to economic development and growth (Adeyefa & Obamuyi, 2018; Olorunfemi, Obamuyi, Adekunjo & Ogunleye, 2013; Udoh and Ogbuagu, 2012). However, a well developed banking sector is not unconnected to the success story of any industrialized economy. Whereas linkage between financial development and economic growth has long been a subject of intense scrutiny, not much has been done to examine the link between financial development and industrial growth. While the volumes of previous studies are attempting to

reach a theoretical consensus on financial development and economic growth, it will be of interest to examine in the same vein the pathway of industrialization in the wake of financial development. This study therefore seeks to determine the impact of commercial banking on Nigeria industrial sector, since the banking sector is expected to extend credit facilities for industrial development.

Objectives of the Study

The main objective of this study is to examine the impact of commercial banking on Nigeria industrial sector. Specifically, the study intends to determine the effect of commercial bank credit to industrial sector, inflation, infrastructure, exchange rate, interest rate, labour force and bank capital on industrial sector, proxied by industrial output.

RELATED EMPIRICAL LITERATURE

Adeyefa and Obamuyi (2018) investigated the effect of financial deepening on the performance of manufacturing firms in Nigeria from 1970 to 2016 using data sourced from the Central Bank of Nigeria Statistical Bulletin and the National Bureau of Statistics. The model was specified, and the hypotheses were tested with the Autoregressive Distributed Lag model and Mann-Whitney U Test test. The Augmented Dickey-Fuller, Phillips-Perron and Breusch-Pagan-Godfrey tests were carried out to ensure robust regression results. Results obtained from the study revealed that broad money supply has direct and significant impact on index of manufacturing production (p-value= 0.0039) in Nigeria, credit to private sector has indirect and insignificant impact on index of manufacturing production (p-value= 0.1167) in Nigeria and market capitalization has an indirect and significant impact on index of manufacturing production (p-value= 0.0051) in the long-run and a direct and insignificant impact (p-value= 0.1596) in the short-run. The study also discovered that financial deepening impacted more on the manufacturing sector performance in the post-financial reforms period. Ojo & Sola (2018) examined the determinants of output growth in the Nigerian formal manufacturing sub-sector using fifty (50) formal manufacturing firms listed in the Nigerian Stock Exchange. Data for the formal manufacturing firms were sourced from the Nigeria Stock Exchange (NSE) Fact Book and the Central Bank of Nigeria Statistical Bulletin 2014. The study employed the dynamic panel data analysis (the dynamic models of the Generalized Method of Moments (GMM) and the Systemic Generalized Method of Moments (SYSGMM)) for the Nigerian formal manufacturing sub-sector. The study showed that the coefficient of operating efficiency in the GMM&SYSGMM estimate, i.e. -0.0349214 and -0.0199787 respectively showed a negative relationship between OPREF and firms' growth. Also, the study showed that exchange rate, bank efficiency and managerial efficiency have significant positive relationship with output growth of firms. Also variables such as degree of financial development, energy infrastructural facilities and government regulations and policy have significant negative impact with output growth of firms in Nigeria. Doumbe and Zhao (2017) examined financial sector development and Industrialization in Cameroon (1970-2014) using aggregate production framework and Autoregressive Distributed Lag (ARDL) co integration technique for Cameroonian time series data from 1970-2014, Findings revealed that financial development impacts the investment, hence the industrialization. Nominal deposit rate influences the industrialization both in the short run and in the long, while the impact of bank deposits is just

seen in the short run. Ebi and Emmanuel (2014) investigated the impacts of commercial bank credit on Nigeria industrial subsectors between 1972 and 2012. Econometric Error Correction Model (ECM) was employed to estimate the output response of the three subsectors namely: the manufacturing; mining and quarry; and real estate and construction subsectors to commercial bank credits, as well as the response of aggregate output of the entire industrial sector to subsector's output and their commercial bank credits. The results of estimation indicate the following: commercial bank credits impacted positively and significantly on the manufacturing sub-sector in Nigeria, commercial bank credits to mining and quarry is a positive and significant determinant of the current year Mining and Quarry output in Nigeria, previous year bank credits to real estate and construction is a positive determinant of the current year real estate and construction output, bank credits to manufacturing, mining and quarry as well as bank credits to real estate and construction correlated positively with aggregate industrial output with bank credits to real estate and construction having greater and a significant impact on industrial output. Interest rate was not an important determinant of industrial sector and industrial sub-sectors outputs, exchange rate is a negative and significant determinant of industrial sector's outputs in Nigeria. Ojo and Ololade (2014) carried out an assessment of the contribution of manufacturing sector to economic growth in Nigeria in the era of globalization. Ordinary Least Square (OLS) econometric technique was used on time series data of relevant variables of manufacturing Output, Trade openness and Current Account Balance. The a priori expectation is that manufacturing output would increase as globalization strives. The study found that though Nigeria manufacturing sector benefited from globalization process, the level of the development in the sector was found to be highly negligible. Meaning that globalization exerts little impact on economic growth via manufacturing sector of the economy. The study recommended that efforts should be geared toward strengthening the macroeconomic, socio-infrastructure and institutional environment of the nation, thus bringing a good linkage between domestic and external institutions with the ultimate aim of properly harnessing funds so mobilized towards productive manufacturing sector of the economy. Adekunle, Salami and Adedipe (2013) examined the impact of financial sector development and economic growth in Nigeria. It seeks to know the impacts of the sector in the Nigerian economy and whether the sector has been able to achieve its main objective of intermediation as a result of the inability of the sector to assist the real sector despite the huge profits declared yearly & also the short term lending of the banks instead of long term investment that can boost the economy. The OLS method of the regression analysis was employed; the financial development was proxied by ratio of liquidity liabilities to GDP (M2GDP), real interest rate (INTR), ratio of credit to private sector to GDP (CPGDP) while the economic growth was measured by the real GDP (RGDP). The study finds that only the real interest rate is negatively related. All the explanatory variables are statistically insignificant. Though the overall statistic shows that the independent variables were able to explain 74 percent variation in the dependent but contrary to a priori expectation, it is statistically insignificant. The link between the financial and real sector still remains weak and could not propel the needed growth towards the vision 2020. There is therefore the need for consistent, transparent, fair policy, and also a resilient&

strong institutional development of the sector. Onodugo, Kalu and Anowor (2013) assessed the specific contribution of financial intermediation to economic growth in Nigeria. The study employed econometric method to construct a multiple regression model to analyze the long-run relationships among variables. The results showed that three out of the five coefficients are statistically significant at 5% level. CEPS and PLR conformed to the theoretically expected signs, while FS/RGDP, RGDP and DUM did not. Heteroscedasticity test carried out suggests that OLS assumption of constant variances over time was not violated. Ramsey Reset test indicates that the model is well specified. The findings indicate that although some progress is noted, much is remained to be done to ensure enabling environment conducive for investment growth and expansion of domestic capacity. Olorunfemi, Obamuyi, Adekunjo and Ogunleye (2013) examined manufacturing performance for sustainable economic development in Nigeria. Panel data analysis was used on secondary data from 1980-2008 that was extracted from CBN Statistical Bulletin. The results indicate positive relationship between manufacturing and each of capacity utilization and import as 1 percent change in capacity utilization and import lead to 43081 and 3.8 percent change in manufacturing respectively. However, there is a negative relationship between manufacturing and each of investment, exchange rate, and export. The t-values for investment, capacity utilization and import were used to test the hypothesis that each coefficient is different from 0. This is rejected; since the t-value are lower than 1.96 (at 95% confidence level). This showed that investment, capacity utilization and import were major determinants of manufacturing performance for the period. The study concludes that the key to reversing the poor performance of Nigerian manufacturing is to provide incentives for firms to become more export oriented. Obamuyi, Edun and Kayode (2012) investigated the effect of bank lending and economic growth on the manufacturing output in Nigeria. Times series data covering a period of 36 years (1973-2009) were employed and tested with the co integration and vector error correction model (VECM) techniques. The findings of the study show that manufacturing capacity utilization and bank lending rates significantly affect manufacturing output in Nigeria. However, the relationship between manufacturing output and economic growth could not be established in the country. These results, therefore, call for concerted effort by the government, manufacturers and the lending institutions to reviewing the lending and growth policies and provide appropriate macroeconomic environment, in order to encourage investment-friendly lending and borrowing by the financial institutions. Sangosanya (2011) analyzed the dynamics of manufacturing firm's growth in Nigeria using panel analysis. The panel regression model employed emanated from the neo-classical, managerial, and optimum firm's size theories and the Gibrat's Law of Proportionate Effect. Multi-stage sampling technique was used to survey 45 manufacturing firms quoted under the Nigerian Stock Exchange (NSE) between 1989 and 2008. The estimated dynamic panel model revealed that the manufacturing firms finance mix, utilization of assets to generate more sales, abundance of funds reserve and government intervention as indicated by Tobin's Q, operating efficiency, capital reserve and government policies are significant determinants of manufacturing firms' growth and dictated their dynamics in Nigeria. Also, that the Gibrat's component enhanced the growth rate of manufacturing firms' sales, profit and capital

employed dynamically in the manufacturing sector. Kehinde and Olanrewaju (2010) investigated the role of industrial sector in the economic growth and development of Nigerian economy. The data set covers from 1980 to 2009. The use of E-view statistical package is employ for the tests. The findings suggest that there exist a very strong relationship between industrial sector and economic development. Guryay, Safakli and Tuzel (2007) examined the relationship between financial development and economic growth in Northern Cyprus using Ordinary least Squares Estimation Method (OLS) and found that there is a negligible positive effect of financial development on economic growth. However, the Granger causality test showed that financial development does not cause economic growth; rather, the evidence supports causality from economic growth to the development of financial intermediaries. In the final analysis, the commercial bank is a profit-seeking business firm, dealing in money and credit. It is a financial institution dealing in money in the sense that it accepts deposits of money from the public to keep them in its custody for safety. So also, it deals in credit, i.e., it creates credit by making advances out of the funds received as deposits to needy people. It thus, functions as a mobiliser of saving in the economy. A bank is, therefore like a reservoir into which flow the savings, the idle surplus money of households and from which loans are given on interest to businessmen and others who need them for investment or productive uses.

From the literature reviewed, linkage between financial development and economic growth has been a subject of intense scrutiny, not much has been done to examine the link between financial development and industrial growth. While the volumes of previous studies are attempting to reach a theoretical consensus on financial development and economic growth, much has not been done to examine in the same vein the pathway of industrialization in the wake of financial development. This study therefore seeks to determine the impact of commercial banking on Nigeria industrial sector, since the banking sector is expected to extend credit facilities for industrial development.

METHODOLOGY

This research will examine the impact of commercial banking on Nigeria industrial sector. Since the data to be employed are time series data, an ordinary least square (OLS) method will be used to estimate the model parameters. In order to facilitate time series analysis, secondary data covering the period from 1980-2018 will be obtained from Central Bank of Nigeria (CBN) statistical bulletin of various issues.

Model Specification

Description of Variables

The following variables are modelled:

Commercial Bank Credit and Firms' Performance: This refers to commercial bank credit to the industrial sector that supports investment and growth process. They act as channels linking the two ends in the financial tunnel. This variable mirrors the degree of involvement of the commercial banking system in the extension of credit facilities for the promotion of investment activity. The relationship between commercial banking and firm's performance is a positive one. It represents the banks' total credit to the industrial sector of the economy. Commercial banking improves the business performance by providing funds meant for investment purposes and operational

expansion to the industrial sector of the economy. Thus, an increase in this variable increases helps to boost firms' performances. In the literature, this variable is measured as ratio of private credit to GDP.

Inflation and Firm Performance (index of manufacturing productivity): The rate of Inflation provides information about the general price level, and it is included among the list of explanatory variables to capture the effect of macroeconomic instability on firm performance. Moreover, inflation has a negative relationship with performance because the higher the rate of inflation, the slower the pace of economic activities. For instance, given a high rate of inflation rate, this erodes the purchasing power of the naira; discourages savings and thus leading to upsurge of the market interest rate. These effects affect performances negatively.

Infrastructure and Performance: Infrastructure means the capital equipment used to produce publicly and privately available services, including transport facilities, water supplies, electricity, etc. (Black, 2002). Infrastructure has a positive relationship with firm's performance because it increases the productivity, competitiveness, and economic efficiency of a firm if adequately provided. This is a key determinant affect most firms' performance. In measuring this variable, the researcher has employed per capital electricity consumption as a proxy.

Exchange rate and Performance: This variable also takes care of macroeconomic instability. A country's exchange rate affects the domestic firm's performance. It is argued that exchange rate affect performance from both directions, which depends on the trade composition of the country. A weak exchange rate enhances export of goods; however, it increases the cost of obtaining foreign inputs, vice versa. Thus, an export-oriented manufacturing sector stands the chance of benefiting from this perspective, provided there is an inward-sourcing of resources.

Interest Rate and Firms' Performance: This measures the cost of securing investment capital and serves also as a proxy to capture the effect of economic policies (monetary and fiscal policies), because these policy mostly affect firm' performances via the rate of interest. It relation to performance is inverse; high interest rate discourages investment, hence, hampered productivity.

Thus, from the foregoing relationship, the growth function can be stated as;

$$IND = f(CBC, INF, INFRA, EXC, INT, LAB, BCAP).....(1)$$

Where:

IND = Industrial sector proxied by industrial output
 CBC= commercial bank credit to industrial sector
 INF = inflation
 INFRA = infrastructure
 EXC = exchange rate
 INT= interest rate
 LAB = Labour proxied by labour force
 BCAP = Bank Capital
 Mathematically, the model is specified as:

$$IND = \beta_0 + \beta_1 CBC + \beta_2 INF + \beta_3 INFRA + \beta_4 EXC + \beta_5 INT + \beta_6 LAB + \beta_7 BCAP..... (2)$$

The econometric form of the model can be express, thus

$$IND = \beta_0 + \beta_1 CBC + \beta_2 INF + \beta_3 INFRA + \beta_4 EXC + \beta_5 INT + \beta_6 LAB + \beta_7 BCAP + \mu_i \dots \dots \dots (3)$$

In other to analyze the growth rate in IND given absolute changes in the explanatory variables, the model is further specified in its linear-log form as:

$$\ln IND = \beta_0 + \beta_1 \ln CBC + \beta_2 \ln INF + \beta_3 \ln INFRA + \beta_4 \ln EXC + \beta_5 \ln INT + \beta_6 \ln LAB + \beta_7 \ln BCAP + \mu_i \dots (4)$$

Where

- β_0 = intercept
- β_1 to β_7 = partial slope coefficients
- ln = natural log
- μ = error term, which is normally distributed.

DATA PRESENTATION AND ANALYSIS

The data are analyzed by OLS using E-view. The summary of the various analysis in this study is presented in the tables below.

Summary of Stationary Unit Root Test

Establishing stationarity is essential because if there is no stationarity, the processing of the data may produce biased result. The consequences are unreliable interpretation and conclusions. We test for stationarity using Adjusted Dickey-Fuller (ADF) tests on the data. The ADF tests are done on level series and first order differenced series. The result of regression is presented in table 1 below.

Table 1: Summary of ADF test results

Variables	ADF Statistics	Lagged Difference	1% Critical Value	5% Critical Value	10% Critical Value	Order of Integration
IND	3.846973	1	-3.653730	-2.957110	-2.617434	I(1)
CBC	-3.945111	1	-3.661661	-2.960411	-2.619160	I(1)
INF	-5.813439	1	-3.646342	-2.954021	-2.615817	I(1)
INFRA	4.422654	1	-3.653730	-2.957110	-2.617434	I(0)
EXC	-5.229408	1	-3.653730	-2.957110	-2.617434	I(1)
LAB	-7.011363	1	-3.661661	-2.960411	-2.619160	I(1)
BCAP	-4.258225	1	-3.653730	-2.957110	-2.617434	I(1)

Source: Researchers computation

From table 1, above shows that only one of the variable is stationary in its level difference, that is, I(0) while other variables used in the study are stationary at their first differences, that is, I(1). The table shows that industrial sector is integrated at level difference while other variables like commercial bank credit to industrial sector, inflation, infrastructure, exchange rate, labour and bank capital are integrated at their first differences.

Since the ADF absolute value of each of these variables is greater than the 5% critical value, they are all stationary at their level and first differences as in table 1 above. The parameters are therefore stationary at the order of integration as indicated in the table 1 above. They are also significant at 1%, 5% and 10% respectively.

Since some of the variables are integrated at level form and some at first difference, we go further to carry out the co integration test. The essence is to show that although all the variables are stationary, whether the variables have a long term relationship or equilibrium among them. That is, the variables are co integrated and will not produce a spurious regression.

Summary of Johansen Co integration Test

Co integration means that there is a correlation ship among the variables. Co integration test is done on the residual of the model. Since the unit root test shows that the some variables are stationary at level difference, I(0) while others at first difference I(1), we therefore test for co integration among these variables. The result is summarized in the 2 below for Trace and Maximum Eigen value co integration rank test respectively.

Table 2: Summary of Johansen Cointegration Test Result

Unrestricted Co integration Rank Test (Trace)				
Hypothesized No. of CE(s)	Eigen value	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.853136	201.2990	125.6154	0.0000
At most 1 *	0.800351	139.9150	95.75366	0.0000
At most 2 *	0.612556	88.35678	69.81889	0.0008
At most 3 *	0.520970	58.01487	47.85613	0.0042
At most 4 *	0.474904	34.46312	29.79707	0.0135
At most 5	0.270585	13.84953	15.49471	0.0872
At most 6	0.110669	3.753150	3.841466	0.0527
Trace test indicates 5 co integrating eqn(s) at the 0.05 level				
* denotes rejection of the hypothesis at the 0.05 level				
**MacKinnon-Haug-Michelis (1999) p-values				

Unrestricted Co integration Rank Test (Maximum Eigen value)				
Hypothesized No. of CE(s)	Eigen value	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.853136	61.38405	46.23142	0.0007
At most 1 *	0.800351	51.55821	40.07757	0.0017
At most 2	0.612556	30.34192	33.87687	0.1248
At most 3	0.520970	23.55175	27.58434	0.1511
At most 4	0.474904	20.61359	21.13162	0.0589
At most 5	0.270585	10.09638	14.26460	0.2057
At most 6	0.110669	3.753150	3.841466	0.0527
Max-eigenvalue test indicates 2 co integrating eqn(s) at the 0.05 level				
* denotes rejection of the hypothesis at the 0.05 level				
**MacKinnon-Haug-Michelis (1999) p-values				

Source: Researchers computation

Table 2 indicates that trace have only 5 co integrating variables in the model while Maximum Eigen value indicated only 2 co integrating variables. Both the trace statistics and Eigen value statistics reveal that there is a long run relationship among the variables. That is, the linear combination of these variables cancels out the stochastic trend in the series. This will prevent the generation of spurious regression results. Hence, the implication of this result is a long run relationship between industrial sector and other variables used in the model.

Presentation of Regression Result

The result of the regression test is shown in table 3 below.

Table 3: Summary of regression results

Dependent Variable: IND Sample: 1980 2018 Included observations: 39				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	29.16526	1.876912	15.53896	0.0000
CBC	2.503407	0.003708	6.918801	0.0015
INF	0.017388	0.013327	1.304665	0.2030
INFRA	1.800568	0.000307	4.848055	0.0050
EXC	-0.025076	0.014364	-1.745683	0.0922
LAB	0.302288	0.001831	1.249244	0.2223
BCAP	0.110506	0.001753	0.288511	0.7752
R-squared 0.828709		F-statistic 21.77107		
Adjusted R-squared 0.790644		Prob(F-statistic) 0.000000		
S.E. of regression 1.292268		Durbin-Watson stat 2.161288		

Source: Researchers computation

To analyze the regression results as presented in table 3, we employ economic a priori criteria, statistical criteria and econometric criteria.

Discussion based on economic a priori criteria

This subsection is concerned with evaluating the regression results based on a priori (i.e., theoretical) expectations. The sign and magnitude of each variable coefficient is evaluated against theoretical expectations.

From table 3, it is observed that the regression line have a positive intercept as presented by the constant (c) = 29.16526. This means that if all the variables are held constant (zero), IND will be valued at 29.16526. Thus, the a-priori expectation is that the intercept could be positive or negative, so it conforms to the theoretical expectation.

From table 3, it is observed that commercial bank credit to industrial sector, inflation, infrastructure, labour and bank capital have a positive relationship with industrial sector.

This means that when commercial bank credit to industrial sector, inflation, infrastructure, labour and bank capital are increasing, the increases will bring about more growth in the industrial sector. On the other hand, exchange rate was observed to have a negative sign, although exchange rate was expected to have either a positive or negative sign in the

study. This means that if exchange rate is falling, there will be increase in industrial sector.

From the regression analysis, it is observed that only inflation did not conform to the a priori expectation of the study as it was expected that it will be have a negative impact. On the other hand, other variables of the study conform to the a priori expectation.

Discussion based on statistical criteria

This subsection applies the R^2 , adjusted R^2 , the S.E, the t-test and the f-test to determine the statistical reliability of the estimated parameters. These tests are performed as follows:

From our regression result, the **coefficient of determination (R^2)** is given as 0.828709, which shows that the explanatory power of the variables is very high and/or strong. This implies that 83% of the variations in the growth of the CBC, INF, INFRA, EXC, LAB and BCAP are being accounted for or explained by the variations in IND. While other determinants of agricultural sector not captured in the model explain just 17% of the variation in growth of industrial sector in Nigeria.

The **adjusted R^2** supports the claim of the R^2 with a value of 0.790644 indicating that 79% of the total variation in the dependent variable (industrial sector is explained by the independent variables (the regressors)). Thus, this supports the statement that the explanatory power of the variables is very high and strong.

The **standard errors** as presented in table 4.3 show that all the explanatory variables were all low. The low values of the standard errors in the result show that some level of confidence can be placed on the estimates.

The **F-statistic**: The F-test is applied to check the overall significance of the model. The F-statistic is instrumental in verifying the overall significance of an estimated model. The F-statistic of our estimated model is 21.77107 and the probability of the F-statistic is 0.000000. Since the probability of the F-statistic is less than 0.05, we conclude that the explanatory variables have significant impacts on agricultural sector in Nigeria.

Summary of Findings

This study attempted to examine the impact of commercial banking on industrial sector of Nigeria using secondary time series data collected from Central Bank of Nigeria (CBN) statistical bulletin from 1980-2018. The study adopted the ordinary least square (OLS) in executing its analysis after determining stationarity of our variables using the ADF Statistic, as well as the co integration of variables using the Johansen approach and was discovered that only one variable is integrated at level difference while other variables are stationary at their first difference and were all stationary and also, that there is a long term relationship among the variables in the model. From the empirical reviewed work, some authors argued that commercial banking is negatively related to industrial sector growth; while some authors argued that it is positively related. Others have a reversed view about the result. However, from empirical analysis of this study, it was found that commercial banking is positively related to industrial sector growth in Nigeria. Again, from our analysis so far, this study discovered that the F-statistic conducted was found that there is significant impact between the dependent and independent variables in the model. It is also observed that some of the variables did not conform to the theoretical or a priori expectation of the study. Commercial bank credits to industrial sector, infrastructure, inflation, labour and bank capital have a positive impact on industrial sector, exchange rate has a negative impact on industrial sector but conforms to the a priori expectation. The study also found out that it is only commercial bank credits to industrial sector and

infrastructure were significant in explaining its impacts on industrial sector growth while other variables used in the study were all found to be non-significant in explaining the growth rate of the industrial sector. Finally, both R^2 and adjusted R^2 show that the explanatory power of the variables is very high and strong in explaining the variations of the industrial sector by the variables of the model. Also, the standard errors show that all the explanatory variables were all low. The low values of the standard errors in the result show that some level of confidence can be placed on the estimates.

Recommendations

Based on the findings of this paper, the study recommends that:

1. The Central Bank of Nigeria should ensure that commercial banks intermediates in the industrial sector and the government should also step up expenditure on the needed infrastructure to enhance the industrial sector performance.
2. Stabilization policy should be put in place by the monetary authority to control inflation.
3. For any loan given to the industrial sector to be effective, there should be reasonable long-term loans to industrial sector and also lending scheme which is targeted at infant industries and small scale industries. This should be monitored to ensure that such loans are channelled to their proper purpose. There is the need also for more enlightenment campaign which will serve as an avenue to know how loans are sought from banks.

REFERENCES

- [1] Adekunle, Salami and Adedipe. (2013). Impact of Financial Sector Development on the Nigeria Economic Growth, *American Journal of Business and Management*, 2(4), 347-356.
- [2] Adeyefa, F. A. Obamuyi Tomola Marshal (2018). Financial Deepening and the Performance of Manufacturing Firms in Nigeria. *Canadian Social Science*, 14 (6), 87-96.
- [3] Ebi, B. O. & Emmanuel, N. (2014). Commercial Bank Credits and Industrial Subsector's Growth in Nigeria. *Journal of Economics and Sustainable Development*, 5(10), 1-13.
- [4] CBN, (2003). Contemporary economic policy issues in Nigeria. Abuja, Nigeria: CBN Publication.
- [5] CBN, (2013). Central bank of Nigeria statistical bulletin publication. Available from www.cenbank.org [Accessed 30th September 2013].
- [6] Doumbe, D. E. & Zhao, Z. (2017). Financial Sector Development and Industrialization in Cameroon (1970-2014). *Journal of Business and Economics*, 8(1), 105-114.
- [7] Ekpenyong, D. B. and Acha, I. A. (2011), "Banks and Economic Growth in Nigeria", *European Journal of Business and Management*, 3(4), 155-166.
- [8] Guryay, E.O.V, Safakli, and B. Tüzel, (2007). Financial development and economic growth: Evidence from Northern Cyprus. *International Research Journal of Finance and Economics*, 8, available at :<http://www.eurojournals.com/finance.htm>.

- [9] Obamuyi, T. M., Edun, A. T., & Kayode, O. F. (2012). Bank lending, economic growth and the performance of the manufacturing sector in Nigeria. *European Scientific Journal*, 8(3), 19-36.
- [10] Ojo, R. O. & Sola, O. (2018). A Dynamic Panel Analysis of Drivers of Output Growth in the Nigerian Manufacturing Firms. *European Scientific Journal*, 14(19), 222-236.
- [11] Ojo, A. S. & Ololade, O. F. (2014). An assessment of the Nigerian manufacturing sector in the era of globalization. *American Journal Of Social And Management Sciences*, 5(1): 27-32
- [12] Olorunfemi, S., Obamuyi, T. M., Adekunjo, F. O. & Ogunleye, E. O. (2013). Manufacturing Performance in Nigeria: Implication for Sustainable Development. *Asian Economic and Financial Review*, Asian Economic and Social Society, 3(9), 1195-1213.
- [13] Onodugo, V. A., Kalu, I. E. & Anowor, O. F. (2013). Financial Intermediation and Private Sector Investment in Nigeria. *Research Journal of Finance and Accounting*. 4(12), 47-54.
- [14] Sangosanya, A. D. (2011). Firms Growth Dynamics in Nigeria's Manufacturing Industry: A Panel Analysis. *Journal of Applied Econometric Review* 1(1), 19-26.
- [15] Sanusi, L. S. (2012). *Banking reform and its impact on the Nigerian Economy*. A paper presented by the Governor of the Central Bank of Nigeria, at the University of Warwick's Economic Summit, Warwick, 17 February 2012.
- [16] Udoh, E., & Ogbuagu, U. R. (2012). Financial Sector Development and Industrial production in Nigeria. *Journal of Applied Finance and Banking*, 2(4), 49-68.

