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Impact of Commercial Bank Lending on Performance of Manufacturing Sector Output in Nigeria

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ABSTRACT: This study investigates the impact of commercial bank lending on performance of manufacturing sector output in Nigeria for the period of 2018-2023. The specific objective of this research was to: Determine the impact of bank credit to private sector on performance of manufacturing sector output in Nigeria, Evaluate the impact of lending rate on performance of manufacturing sector output in Nigeria, and examine the impact of savings on performance of manufacturing sector output in Nigeria. Secondary sources of data were used in this study; they were soured from the annual report of the selected deposit money bank in Nigeria stock exchange. Statistical tools employed on this were unit root test, co-integration and regression. Ordinary Least Square method of data analysis were used in this study. Bank credit to private sector has a positive effect and statistically insignificant on manufacturing sector output. Savings has positive effect and statistically significant on manufacturing sector output. Lending rate has negative and insignificant effect on manufacturing sector output. The study concludes that banks are important in stimulating manufacturing sector output in Nigeria. The study recommends that Commercial banks should be further empowered, so as to be able to grant long-term loan that would boost manufacturing sector's performance, Saving should be encouraged by establishing more commercial banks in the rural area to ensure mobilization of rural saving for industrial sector's development. Interest rate must be allowed to operate through market mechanism to ensure that interest rate is determined by demand for loanable fund and the supply of loanable fund.

Keywords: Commercial bank lending, manufacturing sector output, credit to private sector, lending rate, savings

INTRODUCTION

Commercial bank lending constitutes a vital channel through which financial resources are mobilized and allocated to various sectors of the economy, including the manufacturing sector, which is often regarded as the engine of industrialization and sustainable growth (Abu, 2024).. In Nigeria, the manufacturing sector has long been identified as a key driver of economic diversification, employment generation, and value addition (Ohanyere,

Arinze, & Atueyi 2025; Nduka, Okolie & Ngangah, 2025). However, the sector has persistently struggled with inadequate financing, infrastructural bottlenecks, high production costs, and limited access to affordable credit. Against this backdrop, commercial bank lending emerges as an indispensable tool for stimulating manufacturing activities and enhancing overall industrial performance (Adeyemo, and Olateju, 2023; Ogunewe, Ananwude & Nduka, 2020).

Deposit money banks, in their role as financial intermediaries, mobilize savings from surplus units and extend them as loans and advances to deficit units, including manufacturers who require substantial capital to procure raw materials, expand operations, adopt new technologies, and improve productivity (Ashiru Lukman & Anas 2021; Monogbe, Omotayo, Achugbu & Nduka, 2016). The availability of affordable and accessible credit is therefore fundamental to the survival and competitiveness of the manufacturing sector. In most developed economies, robust credit delivery by commercial banks has supported industrialization and economic transformation. In Nigeria, however, lending to the manufacturing sector has historically been limited, volatile, and sometimes misaligned with the long-term financing needs of manufacturers (Nwangwu, Ohanyere, Nwangwu, & Atueyi, 2025; Nduka, Ananwude & Osakwe, 2019).

The performance of Nigeria's manufacturing sector has been constrained by high interest rates, short loan tenures, and stringent collateral requirements imposed by commercial banks (Uyo, Ihuoma & Nsonwu, 2024; Ekwunife, Nduka & Ogini, 2022). These conditions often make it difficult for manufacturers, particularly small and medium-sized enterprises (SMEs), to access adequate credit for expansion and innovation (Ifechukwu-jacobs, & Atueyi, 2024; Aniefor, Nduka, Ananwude & Ezeaku, 2021). Consequently, the sector continues to operate below its potential, contributing relatively modestly to the nation's gross domestic product (GDP) compared to its role in peer economies. The situation is further complicated by macroeconomic challenges such as inflation, exchange rate volatility, and infrastructural deficits, which increase the risk of loan default and, in turn, discourage banks from extending credit to manufacturers (Ifechukwu-Jacobs, Arinze, & Nwangwu, & Atueyi, 2025; Anusi & Nduka, 2022).

Over the years, the Nigerian government and the Central Bank of Nigeria (CBN) have introduced various policies and intervention funds aimed at encouraging banks to increase lending to the manufacturing sector. Initiatives such as the Manufacturing Intervention Fund, the Real Sector Support Facility (RSSF), and the Differentiated Cash Reserve Requirement (DCRR) are designed to channel low-cost credit into productive sectors. Despite these efforts, commercial bank lending to manufacturing remains relatively low compared to other sectors such as oil and gas or commerce, raising concerns about its adequacy and effectiveness in driving manufacturing growth (Onya, Dr Arinze, & Atueyi, 2025).

The relationship between commercial bank lending and the performance of the manufacturing sector in Nigeria is, therefore, a subject of critical importance. On the one hand, adequate bank lending can provide manufacturers with the financial muscle to expand operations, improve capacity utilization, and adopt modern technology, thereby boosting productivity and competitiveness. On the other hand, limited or costly access to bank credit constrains performance, leading to under-utilization of

resources, weak value chain integration, and poor contribution to export earnings. This makes it imperative to investigate the extent to which commercial bank lending has influenced the growth and performance of Nigeria's manufacturing sector.

1.2 Research Objectives

The broad objective of this study is to evaluate the impact of commercial bank lending on performance of manufacturing sector output in Nigeria. Specifically, the study shall

i. Determine the impact of bank credit to private sector on performance of manufacturing sector output in Nigeria.
ii. Evaluate the impact of lending rate on performance of manufacturing sector output in Nigeria.
ii. Examine the impact of savings on performance of manufacturing sector output in Nigeria

LITERATURE REVIEW

Wicksell Theory of Lending and Economic Growth

As posited by Weise (2006) this theory was postulated by a Swedish economist called Knut Wicksell in 1901 with strong influence from the quantity theory of money. Wicksell based his theory on a comparison of the marginal product of capital with the cost of borrowing money. The theory by Wicksell therefore took a monetary approach to economic growth.

Wicksell (1901) argued that if the interest rate of borrowing money of was below the natural rate of return on capital, entrepreneurs would borrow at the money rate to purchase capital goods. This would lead to increased demand for all types of resources and, in turn, their prices. Conversely, if the interest rate of borrowing money of was above the natural rate of return on capital entrepreneurs would sell the capital goods and hold money. This would lead to a higher demand for money and in turn the cost of borrowing. Wicksell connected the rate of interest with the production gap. The production gap represented the variance between what ought to be produced and what is produced.

This theory is important to this study since it give a direct connection between the demand for and the cost of money and output in a country. It shows how interest rates affect borrowing, which in turn affects the purchase of capital goods and how production is affected. If interest rates are higher than the natural rate of return, borrowing will reduce therefore reducing economic growth as a result of low investment. On the contrary, if the rate of interest is lower that the natural rate of return, then more borrowing will take place and this will spur economic growth through more investment (Weise, 2006).

2.2 Empirical Review

Chituru, Kpekpe, & Amadi (2024) examined the effect of commercial banks credit on the performance of the manufacturing sector. The objective was to investigate the extent to which commercial bank credit affect the performance of the manufacturing sector. The study made use of secondary data sourced from Central bank of Nigeria statistical bulletin and financial statement of commercial banks from 2000-2023. The study had manufacturing Gross Domestic Product as the function of Commercial Banks Overdraft, Term Loans Lease, Short Term Loans and Term Credit Facility. Multiple regressions with the aid of econometric view statistical package were use as data analysis method. R2 cointegration, Durbin Watson, F-statistics were used to examine the extent to which the independent variables impact on the dependent variable. Co integration and Augmented Dickey Fuller Test were used to

determine the long and the short run relationship that exist between the dependent and the independent variables. The study found that 75.4 of changes in contribution of industrial sector gross domestic product of Nigerian were due to joint variation in credits to the different segments of the industrial sector. The F-statistic which determines if the changes in the dependent variable are significant or not shows that the aforementioned magnitude of changes in MGDP was significantly (less than 0.05)explained by credit to the industrial sector:

Oniore, Akpan and Eziokwu (2023) examined the impact of bank rates on manufacturing sector performance in Nigeria from 1986 to 2023;focusing on banking lending rates such as, prime lending rates, maximum lending rates and savings rate. Using the Dynamic Ordinary Least Squares (DOLS)Regression, results revealed that two out of the three explanatory variables have statistically significant influence on manufacturing sector performance in the long run. Specifically, over time, a one percentage increase in prime lending rates to a decrease in manufacturing sector performance by -0.05 percent in the long run. However, the estimated impact of maximum lending rates on manufacturing sector performance is positive and statistically significant in the long run.

Chilokwu, Egor, Ise; Obodagu, Gwunyenga Odo & Lebechukwu (2023) examined bank credit and Nigeria manufacturing subsector performance nexus using secondary data obtained from the Statistical Bulletin of Central Bank of Nigeria (CBN) and National Bureau of Statistics (NBS) annual reports and publications. The objectives of the paper are to: determine the effect of bank demand deposit on manufacturing subsectors; ascertain the effect of bank lending rate to mass on manufacturing subsectors; evaluate the effect of interest rate on manufacturing subsectors; examine the effect of exchange rate on manufacturing subsectors; determine the effect of workers incentives on manufacturing subsectors and ascertain the effect of employment generation on manufacturing subsectors. Ordinary Least Square techniques were applied after determining stationarity of the variables using the ADF Statistic, as well as the cointegration of variables using the Johansen approach.

El-Yaqub, Ibrahim, & Sule (2024), investigate the impact of commercial banks' credit (CBC) on manufacturing sector output (MSO) from 1992 to 2021. The approach utilised is Ex-Post Facto Research Design. The study's findings indicated that CBC has a beneficial and substantial influence on MSO. The long-term value of CBC has a positive and substantial impact on MSO. A 1% rise in Credit to Small and Medium Businesses (CSM) led to a 0.1866% increase in MSO. Conversely, a unit increase in deposit interest rate (DINR) resulted in a 0.0081% fall in MSO. In the long run, a unit increase in Government Capital Expenditure (GOV) caused a 0.1482% increase in MSO. Therefore, through its monetary authority, the Government makes an efficient policy that allows the manufacturing sector and small and medium enterprises to access bank credit at low interest rates

Ogbonna, Anaemena, Okechukwu, and Ibenyenwa, (2023) examined bank credit to the different segments of the industrial sector in the economic development of Nigeria. The specific objectives are to examine the impact of bank credit on agriculture, mining, quarrying, manufacturing, and government on economic development (HDI) in Nigeria. The study was anchored on the pecking order theory and Central Bank of Nigeria (CBN) statistical bulletin and World Bank Data Atlas report of various years from the data source which were subjected to the Auto Regressive Distributed Lag (ARDL) technique to test the

interaction between independent variables and the dependent components in human development index at 5% level of significance. The findings revealed a short and long-run relationship. However, the individual short-run impact showed bank lending to the agriculture and government segment of the industrial sector showed a negative insignificant relationship with HDI.

3. METHODLOGY

The study is adopted ex-post facto research design, this because the researcher has no control over the variables and cannot manipulate the variables.

Model Specification

An economic model is a re-presentation of the basic features of an economic phenomenon; it is an abstraction of the real world (Fonta, Ichoku and Anumudu, 2003). The specification of a model is based on the available information relevant to the study in question. This is to say, the formulation of an economic model is dependent on available information on the as embedded in standard economic theory and other major empirical works or else, the model will be theoretical. The functional form of the model can be specified as follows;

MSO = F (BCPS, LR, SAV)
Where;
MSO =Manufacturing Sector Output
BCPS=Bank Credit to Private Sector
LR=Lending Rate
SAV=Savings
F=functional notation

The econometric form of the model can be expressed as;
$MSO = Bo + B_1BCPS + B_2 LR + B_3SAV + ECM\text{-}1 + \mu$
Where; Bo is the constant intercept
B1=coefficient of parameter BCPS
B2= coefficient of parameter LR
B3=coefficient of parameter SAV
ECM-1 = Error correction model
μ = the stochastic error term or disturbance variable.

Method of Analysis

The estimation procedure adopted in this study is the ordinary least square method (OLS). This method will show whether the variables are statistically significant or not. Thus the best OLS estimator posses the BLUE properties of best linear, unbiased estimators which are consistent and significant.

Evaluation Technique

An evaluation of the model enables the researcher to determine where the estimated coefficients are theoretically meaningful and statistically satisfactory. The variables in this work will be tested with the economic test, first order statistical test and second order econometric test.

Data Sources

Data for the survey were sourced from the secondary methods. The secondary sources of

data or information are with respect to existing literature, research reports, and government documents etc. These secondary sources of data for this study were sought through the following sources, including Central Bank of Nigeria(CBN) statistical Bulletin, various years, Time series and Economic and financial. The variables uses were on total saving, lending rate, bank credit to private sector as well as real gross domestic product from the period of 1981-2023.

4. RESULTS AND DISCUSSION

4.1. Stationarity Test

The prerequisite for co-integration test is the stationarity of each individual time series over the same time period. Hence, before turning to the analysis of the long-run relationships between the variables we check for the unit root properties of the single series, as non-stationary behavior is a prerequisite for including them in the co-integration analysis. If the time series are stationary in their first differences, then they are said to be integrated of order one, i.e., I (1); if stationary in their second differences, then they are integrated of order two, i.e., I (2). The order of integration of the variables is investigated using the Augmented Dickey-Fuller (ADF) unit root tests for the presence of unit roots. The results of the unit root tests are provided in Table 4.1 below:

TABLE 4.1 Unit Root Rsult

VARIABLES	ADF	ORDER	SIG
RGDP	-3.693673	I(1)	1%
BCPS	-4.058221	I(1)	1%
SAV	-6.224490	I(2)	1%
INT	-4.880433	1(1)	1%

SOURCE; author's computation from E-VIEW 12

In this study, the results of the unit root test, using ADF tests, showed that there was no presence of unit root in the series at levels, but there exist an indication of stationary after first differencing of the variables at order one I(1). While only savings is stationary at difference 1(2) Therefore, we concluded that all the variables were stationary and integrated of order one and two.

4.2 Co-integration Test

Having established that interested variables are stationary, we continued to assess the potential long run relationship between commercial bank lending and economic growth of Nigeria. In this case, we test whether commercial bank lending and economic growth of Nigeria are co-integrated. This is because stationary of the variables of interest has satisfied the prerequisite of using the econometric technique of analysis. Doh-Nani (2011), also argued that stationary of the variables is a necessary condition for testing sustainability of variables. We apply the Johansen step procedure of co-integration. Table 4.2 below presents the results of the co-integration

.

4.2 Co-integration Results Tables

Unrestricted Cointegrated Rank Test (Trace)

HYPOTHESIS NO OF CE(S)	EIGENVALUE	TRACE SATTISTIC	0.05 CRITICAL VALUE	PROB**
None *	0.736635	75.94048	55.24578	0.0003
At most 1	0.426797	34.57987	35.01090	0.0556
At most 2	0.270220	17.32791	18.39771	0.0701
At most 3	0.216475	7.562515	3.841466	0.0060

Source: Author's computation using e-view version 12

Trace test indicates 1 co-integrating equ(s) as 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)	Eigenvalue	Max-Eigen Statistic	0.05 Critical	Prob.**
None *	0.736635	41.36061	30.81507	0.0018
At most 1	0.426797	17.25196	24.25202	0.3190
At most 2	0.270220	9.765393	17.14769	0.4193
At most 3	0.216475	7.562515	3.841466	0.0060

Source: Author's computation using e-view version 12

Max-Eigen value test indicates 1 co-integrating equ(s) at the 0.5 level* denotes rejection of the hypothesis at the 0.05 level **mackinnon-Haug-michelis (1999) P-values.

The results of both Trace test and the Max-eigenvalue test shown in table 4.2. Specifically, the result of the co-integration test suggests that the variables have long-run equilibrium relationship with each other. The evidence of co-integration among the variables rules out spurious correlations and applies that one directions of influence is established among the variables. It is important to note that the existence of co-integration vectors among a group of variables may not imply that there is causal influence between pairs of variables in the model of co-integration test. The presence of a co-integrating relation forms the basis of the error correction specification. The co integration term is known as the error correction term since the deviation from long-run equilibrium is corrected gradually through a series of partial short-run adjustments Granger and Engle (1987).

4.3 Error Correction Model (ECM).

Error correction model is used for obtaining short run relationship among variables, it has the features that if the current state is deviate from its long run position than such deviation will feed into short run dynamics. With ECM the disequilibrium of one period is adjusted in the next period, hence it is a way to settle the

long run and short run dynamics for given time span. VECM is the restricted VAR model and designed for non-stationary variables that are supposed to be co-integrated

Tables 4.3 Error Correction Model Result

Variables	Coefficient	Std. Error	T-test	Prob
C	11.04461	0.425447	25.96003	0.0000
BCPS(-2)	0.048104	0.058742	0.818896	0.4195
SAV(-1)	0.130418	0.062126	2.099262	0.0446
LR(-1)	-0.001707	0.001691	-1.009306	0.3212
ECM(-1)	-0.570801	0.097331	-3.946841	0.0000

Source; author's computation from e-view 12

R-square 0.931273
Adjusted R^2 0. 920070
F-statistics 123.5465
Prob(f-statistic) 0.000000
Durbin Watson stat 1.526036

4.4 Interpretation of the Result.

The R-Squared which is the co-efficient of determination or measure of goodness of fit of the model, test the explanatory power of the independent variables in any regression model. It test for the goodness of fit from our result R^2 = 93%. This shows that our model displayed a good fit because the closer the R^2 is to 100% the higher the goodness of fit of the model. Hence, the explanatory variables can affect up to 93% out of the expected 100%, leaving the remaining 7% which would be accounted for by other variables outside the model as captured by the error term.

The f-statistics measures the overall significance of the explanatory parameters in the model. From our table 4.3 above the calculated value of the f-statistics is 123.5465, its probabilities is 0.0000 which is less than 0.05. We accept alternative hypothesis and state that there is a significance relationship between the variables. This means that the parameter estimates are statistically significant in explaining the relationship in the dependent variable.

The a'priori criteria is determined by the existing economic theory and states the signs and magnitude of the variables from the result report. In table 4.3 above and from the coefficient column we find out that bank credit to private sector and savings have a positive sign, However their values is 0.048104 and 0.130418 respectively, this implies that increase in the variables increase the manufacturing sector output at 4% and 13% meanwhile they conform to a'priori expectation respectively. Lending rate is negative given its values as 0.001707; this implies that decrease in lending rate increases the manufacturing sector output by 1%.

The t-statistics helps in measuring the individuals' statistical significance of the parameters in the model from the result report in table 4.3 above and using the probability test we find out that bank credit to private sector and interest rate is statistically insignificant because of their high probability value (0.4195). While savings is statistically

significant at 5%, this implies that it contribute to manufacturing sector output

The ECM coefficient for the models are statistically significant and negatively signed, this further lend credence to the co-integration among the variables under investigation. The Error Correction Mechanism coefficient is about -0.570801 for the model. These suggest that about 57% of last year disequilibrium for model is corrected in the current year. Hence, when growth rate is above or below its equilibrium level, it adjusts by approximately 57% within the first year to ensure full convergence to their various equilibrium levels. The speed of adjustment is thus high for the model. The result indicates that in the short run, changes in commercial bank lending have significant impact on the manufacturing sector output.

i) Autocorrelation Tests

The Durbin-Watson is used to measure the presence or otherwise of auto-correlation in the model. If there is auto-correlation in the model, it implies that it has lost its predictive power. From the report in table 4.3 above, our Durbin-Watson statistics is 1.5. This implies that there is no positive serial auto-correlation between the explanatory parameters of the model because the closer our DW estimates is to 2 than zero, the absence of auto correlation in our model. Consequently our estimates can be relied upon for making predictions and inferences.

4.5 Hypothesis Testing

$H_0$1*:* Bank credit to private sector has no significant effect on manufacturing sector output.

From the result report of our test in the table 4.3 above, we find out that the value of our t–test for BCPS is 0.818896 with a probability of 0.4195; this probability value is greater than the desired level of significance (0.05). We reject the alternative and accept the null hypothesis, which says that Bank credit to private sector has no significant effect on manufacturing sector output

Hypothesis Two

$H_0$2*:* Lending rate has no significant effect on manufacturing sector output

We find out the value of our t–test for lending rate is 1.009306 with a probability of 0.3212, this probability value is greater than the desired level of significance (0.05). We reject the alternative and accept the null hypothesis, which says that Lending rate has no significant effect on manufacturing sector output

Hypothesis Three

H0: savings has no significant effect on manufacturing sector output

Form the regression result it was observe that the value of t-statistics is 2.099262, this implies that it is statistical significant. The probability values is 0.0446, this show a low probability value which will lead us to the acceptance of alternative hypotheses, which say that savings has significant effect on manufacturing sector output

5. CONCLUSION

The empirical results of this study reveal that banks in Nigeria exhibit a low level of activities and a weak capacity to funds to the Nigerian economy. Another conclusion that can be drawn from the findings of this study is banks are important in stimulating manufacturing sector output in Nigeria. Specifically, bank lending contributed about 93.1% variation in the growth of manufacturing sector output during the period under review (1981-2015). From the results of the test of hypotheses and interpretation, this

study found the followings; Firstly, there is a statistically insignificant relationship between aggregate bank lending and manufacturing sector output in Nigeria. The implication of this finding is that the banking sector in Nigeria showed a weak capacity and low level activities of banks to finance the manufacturing sector output. Secondly, there is a statistically significant relationship between savings and manufacturing sector output in Nigeria. Lastly, on the overall, this study found that there exist a 93.1% degree of variation between aggregate bank lending and manufacturing sector output in Nigeria for the period 1981-2023, which implied that aggregate bank lending account for 93% variation in the growth of manufacturing sector output. The implication of this finding is that for the manufacturing sector output to grow it depends to a greater extent on the banking sector to finance the activity sectors in Nigeria.

From the foregoing, this study recommends the followings:

i.) Commercial banks should be further empowered, so as to be able to grant long-term loan that would boost manufacturing sector's performance.
ii.) Saving should be encouraged by establishing more commercial banks in the rural area to ensure mobilization of rural saving for industrial sector's development.
iv) Interest rate must be allowed to operate through market mechanism to ensure that interest rate is determined by demand for loanable fund and the supply of loanable fund.

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