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**BANK CREDIT AND FINANCIAL PERFORMANCE OF LISTED MANUFACTURING FIRMS IN  
NIGERIA**

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**Abstract**

The epileptic view of the growth of the economy tends to also feature an unsustainable performance of the sectors of the economy bearing it. It is also assumed that unsustainability of the sectoral performance could be interpreted to mean that the lending power of the Banks amongst others is questionable. Therefore, this study investigated bank credit and financial performance of selected listed manufacturing firms in Nigeria: between 2015 -2020. In order to carry out this study, objectives were posed, which are to investigate the relationship between loan and return on asset (ROA) of listed manufacturing firms in Nigeria and to ascertain the relationship between banks' overdraft (BO) and net profit margin (NPM) of listed manufacturing firms in Nigeria. The research design adopted was the quasi-experimental design. The population was all manufacturing companies listed in the Nigerian stock exchange and sample for the study is made up 20 selected manufacturing companies using the purposive/judgmental non-probability sampling technique, secondary data was used and standard econometric procedure was adopted to analyze the relationships between the variables under study with the aid of E-view. The study found that bank loans have no significant relationship with Return on assets of listed manufacturing firms in Nigeria and overdraft have significant relationship with return on assets of listed manufacturing firms in Nigeria. Based on the findings of the study, the researcher recommended among others: The Federal Government should focus more of its attention on the manufacturing sector since the analysis show a positive growth and performance feature in the application of financial resources for attractive returns and profit generation. There is need for the CBN to reappraise the exiting procedure to get loan, as the high interest rate applicable on loans are disincentive to the financial performance of the manufacturing firms in Nigeria.

**Introduction**

The epileptic view of the growth of the economy tends to also feature an unsustainable performance of the sectors of the economy bearing it. It is also assumed that unsustainability of the sectoral performance could be interpreted to mean that the lending power of the Banks amongst others is questionable. These positions postulated above, are

reasons necessitating the study on Bank credit and financial performance of listed manufacturing firms in Nigeria stretching from 2015-2020. Taking queue from the documentation of Chete (2016), the Nigerian economy was viewed in concept as an underdeveloped economy”.

The need to maintain sustainable sectoral performances is inevitable given the obvious threat of a drop in performance in the oil and gas sector, given that over the decades greater dependence on the economy has depended on this sector.

Diran Fawibe, president of International Energy Services Limited (IES), pronouncing his opening speech on the seventh anniversary of the Nigeria News Direct newspaper, specifically stated that "whether we like it or not, we can say we want to diversify oil and gas", the industry is the only sector that supports the Nigerian economy in the near future. "The country has no impact on the agricultural and mining sector. He therefore suggested that a programme be put in place that will enable Nigerian National Petroleum Corporation (NNPC), the oil and gas sector, to be sustainable for the long term and help us get out of the economic mess we find ourselves especially through the antics of politicians.

Nigeria today records a high level of unemployment, poverty rate, low life expectancy, wide gap between the rich and the poor, kidnapping, militancy and currently the ugly incidence of inconclusive electoral exercise. This is quite revealing. From the foregoing, it is obvious that little or no impact is being made by the rest sectors of the Nigerian economy that can create a balance in the effective sustainability of the economy in case a lag is experienced in the oil and gas sector. Invariably, it is this systemic failure trend in the Nigerian economy, a seeming neglect on the sectoral performance and the obvious dependence on the oil and gas that have prompted this scholarly research on Bank credit and financial performance of listed manufacturing companies in Nigeria. It is an attempt to obtain empirical facts that will encourage a paradigm shift from the current penury.

### **Statement of the Problem**

Nigeria is still making no headway in the industries, technologically seeking support from the Western nations yet saddled with corruption and looting of our common resources. Despite government huge and growing expenditure sourced from our natural endowment the condition is not better than before. Nigeria is engrossed with terrible vices ranging from, kidnapping, Boko-haram terrorist, Herds men killing, Illegal bunker and refining- “Kpofire” unknow gun man, etc causing serious environmental pollution. The black soot in south south and the destruction of the ecological life are typical examples. These scenarios mentioned above are a serious distraction on government’s effort to stand.

Bank credit refers to the total borrowing capacity banks provide to borrowers. Corporate organizations and government avail themselves of this facility to enhance their spending and productive capacity. Credit leads to an increase in spending, thus raising income levels in the economy. This in turn leads to higher GDP (gross domestic product) and thereby foster productivity level. If credit is used to purchase productive resources, it helps in economic growth and adds to income.

According to Kirti (2017), “the importance of credit in the economic development can be judged by its usefulness to the state. If the government budget is deficit, it can be met by selling the bonds and receiving the credit. Even in case of emergency, war, credit is very beneficial for the state. In the other hand, if the government spends the borrowed money lavishly, the citizen will lose confidence on the credit-ability of the state” Knowing the theoretical usefulness of banks’ credit in an economy, the researcher aims at examining the effect of banks loan and advances on the financial performance of listed manufacturing

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companies leading to the economic development of Nigeria with specific investigations of periods covering 2015-2020. It becomes quite worrisome that despite several national plans (1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>, 4<sup>th</sup>, etc), demonstrated in the background to the study, and the numerous isolated studies reviewed on banks' credit and related areas of economic performance the story is the same. Today as ever, the precarious economic condition in Nigeria is still inviting scholarly investigation in this field, to be able to proffer an empirically proven solution for posterity.

The empirical reviews of various studies on banks' credit have analysed bank loans on an aggregated form. There are few studies that have separated loans into long and short term approach. In this study, the researcher considers this as a gap and wishes to handle bank loans separately into long term and short term analysis and thus express empirical revelations for future research reference and adoption.

**Objectives of the study**

The main aim of the study was to investigate the effect of bank credit on the financial performance of selected listed manufacturing firms in Nigeria: between 2015 -2020. The following are specific objectives of the study: To

1. To investigate the relationship between loan and return on asset (ROA) of listed manufacturing firms in Nigeria.
2. To ascertain the relationship between loan and net profit margin (NPM) of listed manufacturing firms in Nigeria.
3. To evaluate the relationship between banks' overdraft (BO) and return on asset(ROA) of listed manufacturing firms in Nigeria.
4. To ascertain the relationship between banks' overdraft (BO) and net profit margin (NPM) of listed manufacturing firms in Nigeria.

**Hypotheses**

**Ho<sub>1</sub>:** There is no significant relationship between loan and return on asset of listed manufacturing firms in Nigeria.

**Ho<sub>2</sub>:** There is no significant relationship between loan and net profit margin of listed manufacturing firms in Nigeria.

**Ho<sub>3</sub>:** There is no significant relationship between banks' overdraft (BO) and advances and return on asset of listed manufacturing firms in Nigeria.

**Ho<sub>4</sub>:** There is no significant relationship between banks' overdraft (BO) and net profit margin of listed manufacturing firms in Nigeria.

**Review of Related Literature**

**Conceptual Review**

**Bank credit**

Bank credit constitutes a source of financial mitigation and leverage in any economy. It includes lending money for the purpose of business and social development from one individual to other entities. Loans are typically not given free of charge, but they include interest due plus the lent principal sum.

Banks' credit role improves investors' ability to take advantage of desired profitable projects. "Credit creation for banks, is the primary income-generating activity" (Kargi, 2011). Banks as suppliers with massive financial capacity to the public and private institutions are continuously open to credit exposures. "Not only do they promote the viability and profitability of their own undertakings through the effective management of their credit

exposure banks, they also contribute to systemic stability and efficient allocation of capital in the economy" (Psillaki, Tsolas & Margaritis, 2010).

### **Dimensions of the Bank Credit**

#### **Loan**

Conceptual Review Loan Management Pandlev (1995) defined loan management to involve the process, of making decisions relating to the investment of funds. Such decisions should be carefully analyzed as they are characterized by an element of uncertainty. Bessis (1998) defined financial performance as a management initiative to upgrade the accuracy and timeliness of financial information to meet required standards while supporting day to day operations. Lymon and Carles (1978) also defined it as the operational strength of a firm in relation to its revenue and expenditure as revealed by its financial statements in any organization deposit money banks in particular, financial performance is affected by loan risk. The role of bank remains central in financing economic activity and its effectiveness could exert positive impact on overall economy as a sound and profitable banking sector is better able to withstand negative shocks and contribute to the stability of the financial system (Athanasoglou, 2005).

**Non-Performing Loan (NPL)** A nonperforming loan is any loan that can reasonably be expected to enter default. Often, if the loan isn't already in default, the borrower has failed to make a number of payments within a specified period. Most commonly, no payments have been made within 90 days, though a loan can still qualify even if that time has not yet elapsed. These can also be defined as credits which the bank perceives as possible losses of funds due to loan default.

**Loan to Deposit Ratio (LTD)** The loan-to-deposit ratio (LTD) is a commonly used statistic for assessing a bank's liquidity by dividing the bank's total loans by its total deposits. This number is expressed as a percentage. If the ratio is too high, it means that the bank may not have enough liquidity to cover any unforeseen fund requirements, and conversely, if the ratio is too low, the bank may not be earning as much as it could be.

#### **BankOverdraft**

ACCA, (2019) Business overdrafts are a very common way of financing small and medium-sized enterprises (SMEs), and are ideal for those with fluctuating finance requirements. They are either provided over a fixed period of time or as a rolling facility with no end date.

Overdrafts can be authorized or unauthorized. The former is a pre-agreed facility and will be offered at a lower rate than unauthorized overdrafts. The use of unauthorized overdrafts will often incur charges for the business, so it is wise to agree an authorized facility if a need for funds is anticipated. Larger facilities will often need to be secured, depending on the lender and the business's level of risk. Overdrafts are often used to ease pressures on working capital and as a back-up for unexpected expenditures. They are a form of finance for businesses that experience fluctuations in working capital.

The timeframe for arranging an overdraft will vary, depending on the stage of readiness of the business and the size of the facility. Unsecured overdrafts can be available immediately or in up to two weeks, whereas secured overdrafts can take between one to three months to arrange. Timings will also depend on whether new security, new valuations or legal advice are required.

### **Return on Asset (ROA)**

ROA indicates how firm management is using its assets (or resources) to generate income. According to Marshall (2019), “return on asset (ROA) is an indicator of how profitable a company is relative to its total assets”. ROA reveals to manager, investor, or analyst how efficient a company’s management is at using its assets to generate earnings. It is best used when comparing similar companies or comparing a company to its previous performance.

Businesses survival is ultimately about efficiency: squeezing the most out of limited resources. Comparing profit to revenue is a useful operational metric, but comparing them to the resources a company used in generating those profits to the very feasibility of that company’s existence? Return on assets (ROA) is the simplest of such corporate bang-for-buck measures. ROA is calculated by dividing a company’s net income by total assets. As a formula it would be expressed as:

$$\text{Return on Assets} = \frac{\text{Net Income}}{\text{Total Asset}} \times \frac{100}{1}$$

Higher ROA indicates more asset efficiency. Bank credit to manufacturing outfits will improve and enhance their ability in the acquisition of assets and other resources for the operations of the firm’s activities. The study is aimed at establishing a true effect of long/short term loans and advances and lending interest (as a moderator) on the performances of manufacturing firms measured in terms of ROA and other measures.

### **Net Profit Margin**

Net profit margin (NPM) is a measure of profitability based on revenue generation. It is therefore calculated by finding the net profit as a percentage of the revenue.

As a formula it would be expressed as:

$$\text{Net profit margin} = \frac{\text{Net income}}{\text{Revenue}} \times \frac{100}{1}$$

Calculating net profit margin provides a useful way of comparing the performance of a business across several years. It is also a way of comparing the performance of one business with that of another.

The main purpose of a business unit is to make profit. “The profitability analysis is done to throw light on the current operating performance and efficiency of business firms,” Tulsian (2014). The word profitability is composed of two words, namely profit and capacity. The term benefit has been explained above and the term capacity indicates the power of a business entity to obtain benefits. The capacity of a company also indicates its purchasing power or operational performance. Profitability can be defined as the ability of a given investment to obtain a return on its use.

The operational conceptual framework, depicts what this study wants to achieve and that is, to ascertain the relationship between banks’ loans and return on asset (ROA) of listed manufacturing firms in Nigeria, ascertain the relationship between banks’ loans and net profit margin (NPM) of listed manufacturing firms in Nigeria, evaluate the relationship between banks’ overdrafts and return on asset (ROA) of listed manufacturing firms in Nigeria and ascertain the relationship between banks’ overdrafts and net profit margin (NPM) of listed manufacturing firms in Nigeria.

### **Theoretical framework**

### **Dependency Theory**

The dependency theory advocates, see bank credits on loan and advances as the advanced guard for a new diplomacy of economic development imperialism, (Hejidra, 2012). To them investors' on the manufacturing sector, mining and quarrying sector, and construction and transportation sector penetration into a host economy would result in 'disarticulated development'. They also believe that the integration of developing countries' economy into the world of capitalist system result in their underdevelopment in a sort of what, referred to as dependence causes underdevelopment.

In the same vein, the dependency theorists have also focused on how enterprise distorts developing nation economy. "In the view of these scholars, distortions include the crowding out of national firms, rising unemployment related to the use of capital-intensive technology, and a marked loss of political sovereignty", (Umah, 2017). It is also argued that "bank credits are exploitative and imperialistic in nature, thus ensuring that the host country absolutely depends on the home country and her capital", (Anyanwu, 2013). From the forgoing, dependency theories believe that the participation of developed countries into developing nations via their merchandizing activities any other means cannot be expected to produce beneficial result on the developing economies.

"Economic models of endogenous growth have been applied to examine the effects of bank sectoral allocation on economic development through the diffusion of technology", (Barrel and Pam, 2017). Bank sectoral allocation also promotes economic growth through creation of dynamic comparative advantages that lead to technological progress. Romer, (1990) have calibrated Romer's (2016) model and assumed that endogenous technological progress is the main engine of economic development. Romer, (2016) argues that sectoral allocation accelerates GNI through strengthening human capital, the most essential factor in R&D effort; while Grossman and Helpman, (2011) emphasized that an increase in competition and innovation will result in technological progress and increase productivity and, thus, promote economic growth in the long-run.

### **Empirical Review**

Extant literature revealed shows that several related studies have been conducted that deals with the relationship between Bank credit and Sectoral performance. References shall be made on few of those to draw credence to this study.

Olanrewaju, et al (2020), investigated the effect of bank credit on the performance of manufacturing sector in Nigeria. Based on ex post facto research design, they formulate an econometric model where manufacturing output is the dependent variable while bank credit, interest rate and exchange rate are the explanatory variables. Annual time series data from 1981 to 2017 sourced from the Central Bank of Nigeria Statistical Bulletin and was analyzed using the dynamic ordinary least square (DOLS) technique. they find that bank credit and interest rate show a significant positive effect on manufacturing sector performance while exchange rate shows a significant negative effect on manufacturing sector performance in Nigeria. It is evident from the result that bank credit has a significant positive effect on the performance of manufacturing sector in Nigeria. It becomes imperative for the monetary authorities to introduce policy that will bring down lending rate to stimulate borrowers and make deposit rate attractive to encourage savings.

Oluitan (2012) studied the significance of real bank credit in stimulating real output growth in the case of Nigeria. The study observes that "credit granger causes output. In testing the factors that mobilise credit, it finds that exports in general are negatively related to credit. However, while oil exports are negatively related to credit, non-oil export has

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positive relationship with credit. Credit is also positively linked to capital inflows and imports. These findings suggest that bank credit is inextricably linked to the opening of the economy to international trade and capital flows in non-oil”

Ogunmuyiwa, et al (2017), studied the “impact of bank credit on growth of the manufacturing sector in Nigeria”. The data relating to the historical series of the return to democratic government in the period 1999-2014 have been adapted to the regression model. Econometric techniques have been applied; in particular the enhanced Dickey-Fuller test (ADF) and the distributed autoregressive delay (ARDL) in time series data. The empirical results show that “bank credit to the private sector has a positive impact on the manufacturing sector. Based on the results of this research work, the study recommends that it is necessary to develop the financial market to encourage more credits to the private sector in others to stimulate economic growth.

Although a significant impact has been found between bank credit and manufacturing production, the political implication of this finding is that the monetary policy instruments must still be aimed at assigning more credits to the private sector with particular reference to Micro, Small and medium-sized enterprises (MSME)) in order to fully achieve the desired incentive objectives for manufacturing in the manufacturing sector, as well as providing a guiding way to achieve the desired economic growth and development.

Iwedi, et al (2015) has studied "the impact of domestic bank loans on Nigeria's economic growth". Using data from Nigerian time series for the thirty-three (33) year period (1980-2013), private sector credit, public sector credit and potential liabilities were used as proxies for domestic bank credit, while Gross domestic product represents economic growth. The results of the increased Dickey-Fuller unit root test indicate that “the data sets have reached stationarity after the first difference in the order 1 (1). The relative statistics of the estimated model show that credit to the private sector and credit to the public sector are positively and significantly correlated with GDP in the short term. The analysis revealed the existence of a bad long-term relationship between the banks' domestic credit indicators and the gross domestic product in Nigeria”

Akujuobi and Nwezeaku (2015), evaluated the “effect of bank lending activities on economic development in Nigeria, covering the period, 1980-2013”. In models 1 and 2, the human development index and industrial gross domestic product were used respectively as representatives of human development and industrial development, while commercial bank credit for general trade, production, services and other sectors components of bank lending activities. Applying the stationary test with the Ordinary Minimum Square (MCO) and the cointegration procedures, the hypothesis was verified that there are no significant relationships between bank lending activities and economic development. The results revealed “a significant relationship between bank lending activities and economic development in Nigeria. While in model 1, both general trade credit and productive sectors were statistically significant and met expectations in advance, model 2 showed that only the credit to the service sector had the wrong sign and at the same time it was statistically insignificant”

Nteegah (2017), assessed the possible effects of banking sector consolidation-credit allocation to selected sectors on the growth of Nigerian economy. utilising time series data on growth rate of GDP, banking sector credit distribution to the agriculture, manufacturing, oil and gas/mining, commercial (export financing) sectors and bank size (number of Deposit money bank branches) for the period 1981 -2015 and employing Vector Error Correction Model (VECM). The results indicated that only banking sector credit allocation to the

manufacturing sector is positive and significant. Banking credit to agriculture, oil & gas/mining, commercial and bank size were all insignificant. This result revealed that funds allocated to the manufacturing sector spurred economic growth in Nigeria. Other finding of study shows that the manufacturing sector has higher propensity for increasing investment, job creation and value addition hence attracts funds from the banks than other sectors.

Belinga, et al. (2016) investigated “the causal relationship between bank credit and economic growth in Cameroon by considering the domestic credit to the private sector by banks (DCPSB) and bank deposit (BD) as proxies for bank credit development and gross domestic product per capita (GDPPC) for economic growth. Time series data from 1969-2013 were fitted into the regression equation using various econometric techniques such as stationarity test Augmented Dickey Fuller (ADF) and Johansen Multivariate Co-Integration Test. Vector Error Correction Model (VECM) was used to analyse the relationship between bank credit and economic growth. VECM outcomes showed that there is a unidirectional causal relationship flowing from DCPSB and BD to GDPPC”

Using a data from a cross-section of Bulgarian firms Gatti and Love (2008) estimate the impact of access to credit, as proxied by indicators of whether firms have access to a credit line or overdraft facility, on productivity. To overcome potential omitted variable bias of Ordinary Least Squares (OLS) estimates. These authors find credit to be positively and strongly associated with TFP.

Augier, Dosis and Gasiorek (2010) focus on the role of the business environment in understanding differences in the performance of Moroccan firms. The evidence on the relationship between credit and productivity is strongly indicative of credit resources misallocation in Morocco.

Kasseeah (2011) studies the link between firm performance and firm characteristics of small and medium-sized enterprises (SMEs) in Mauritius. This author observes that the growth of SMEs in Mauritius depends mainly on access to finance and firm size. Access to finance is captured through access to overdraft facilities, line of credit and self-reported measures of access to finance.

Butler and Cornaggia (2011) study the relation between access to finance and productivity. These authors exploit an exogenous shift in demand for a product to expose how producers adapt their productivity in the presence of varying levels of access to finance. These authors find that production increases the most over the sample period in areas with relatively strong access to finance. Using a panel of Chinese manufacturing firms over the period 2001-2007,

Chen and Guariglia (2011) find that, especially for illiquid firms, productivity is strongly constrained by the availability of internal finance. Furthermore, these authors find higher sensitivities of productivity to cash flow for private exporters, but lower sensitivities for foreign exporters.

Clarkea, Cullb and Kisunkoc (2012) study how country and firm characteristics affected firms’ financial constraints and their likelihood of survival during the early phase of the recent global financial crisis in Eastern Europe and Central Asia (ECA). These authors find that financial constraints during the crisis were less severe in countries with well-established foreign banks, and that changes in the severity of financial constraints were more pronounced for large firms than others during the crisis. Controlling for other relevant characteristics, firms were more likely to survive the crisis if they had access to external credit.

Ehikioya and Mohammed (2013) studied “the impact of commercial bank credit accessibility and sectoral output performance in Nigerian economy for the period which



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spanned between 1986 and 2010". An augmented growth model was estimated via the Ordinary Least Square (OLS) techniques to ascertain the relationship between various commercial bank credits and sectoral output growth.

The variables were tested for stationarity and co-integration analysis was also carried out using the Augmented Dickey-Fuller test. Also error correction test was performed. The study found that "the various commercial bank credit supply and other included variables has a long run relationship with sectoral output performance i.e. agricultural, manufacturing and services sector output and the main demand for credit facility in Nigeria is the manufacturing sector. The study also reveals that commercial bank credit has direct and insignificant impact on sectoral output performance but cumulative supply and demand for credit in the previous period has direct and significant impact on the growth of agriculture, manufacturing and the services sectors output"

Fapetu and Adefemi (2015) evaluated "the impact of the sectoral allocation of loans and advances of money deposit banks on economic growth in Nigeria during intensive regulation, deregulation and guided deregulation regimes". Regression analysis of the ordinary least squares method is performed for each of the three regimes. The results showed that "only the credit assigned to the government, personal and professional has significant positive contributions to economic growth during intense regulation. However, bank loans generally do not contribute significantly to economic growth during deregulation. The introduction of guided deregulation seems to be a success, as commercial bank loans and advances in production and other subsectors are positive and significant in determining growth"

Ihemeje and Ikwuagwu (2016) evaluated "the effect of bank deposit credits (DMB) on various sectors on Nigeria's economic growth in the periods from 1985 to 2014". Annual data was obtained from the CBN statistical bulletin. The study adopted a rigorous empirical analysis to analyze the data using the root test of the unit, cointegration, ordinary least squares and the error correction model. The results of the analysis reveal that "bank deposit credits for both the agricultural and manufacturing sectors have shown a positive relationship with real GDP. While bank deposits, trade credit and trade show an inverse relationship with real GDP"

Udoka, Mbat and Duke (2016) determined "the effect of commercial bank credit on agricultural production in Nigeria". The ex post facto research project was adopted for the study. The data for the study were obtained from published articles and from the statistical bulletin of the Central Bank of Nigeria. The estimated results showed that "there was a positive and significant relationship between the fund of the agricultural credit guarantee system and agricultural production in Nigeria. This means that an increase in the fund of the agricultural credit guarantee system could lead to an increase in agricultural production in Nigeria; There was a positive and significant relationship between the credit of commercial banks to the agricultural sector and agricultural production in Nigeria.

This result has meant that an increase in commercial bank credit to the agricultural sector has led to an increase in agricultural production in Nigeria. Once again, there was a positive and significant relationship between public spending on agriculture and agricultural production in Nigeria and a negative relationship between the interest rate and agricultural production also confirmed theoretical postulations"

Bakare (2015) studied "the extent to which bank credit affects economic growth in Nigeria". The data used were obtained from the statistical bulletin of the Central Bank of Nigeria for a period of 24 years, from 1990 to 2013. They used credit for the private sector,

credit for the public sector and inflation to represent the credit of the commercial bank, while the Gross domestic product represents the growing economy. The enhanced Dickey Fuller test (root unit) was used to test the stationarity that reveals that all the independent variables and dependent variables were stationary in the first difference, the trace statistics and the maximum eigen value test were used to test the cointegration. The result shows that “the delayed value of credit to the private sector is positively and significantly affecting economic growth in Nigeria, while the delayed value of credit to the public sector shows a positively insignificant relationship with GDP. The delayed value of inflation shows a significant negative relationship with economic growth”

Olowofeso, et al (2017) investigate “the relationship between agricultural credit and agricultural production in Nigeria” using the non-linear self-regressive distributed delay model (NARDL) using time series data from 1992 to 2015 to 2015. The results show no asymmetry in the impact of credit on the growth of the agricultural product (positive and negative changes) in the short term, but there are several long-term equilibrium relationships. “Dynamic adjustments show that the accumulated growth of agricultural production is mainly attracted by the impact of positive changes in agricultural credit with a delay of four quarters in the forecast horizon. This requires the need for a moratorium policy in the administration of credit to the agricultural sector”

### Methodology

In the course of this study, the quasi-experimental design is adopted in generating data based on time series data obtained from secondary sources. The study population consists of the total number of manufacturing firms that are listed on the Nigerian Stock Exchange which is presently 42. The manufacturing sector is further classified into three: consumer goods (21), industrial goods (13) and healthcare (8) subsectors. The sample size for this study was twenty (20) selected listed manufacturing firms in Nigeria. The data presented in this study was generated from secondary sources of data. Specifically, the data were derived from the annual reports of the selected listed manufacturing firms in Nigeria. Standard econometric procedure was adopted to analyze the relationships between the variables under study in a bid to realize the objectives of the study. Panel Least Square Regression was adopted using E-view.

### Model Specification

The assumption of this study is that manufacturing sector financial performance is influenced by bank credit. In this study, financial performance is measured by return on assets (ROA), and net profit margin (NPM) as expressed in equations 1-3.

$$ROA = f(LN, BO) \quad (\text{eqn. 1})$$

$$NPM = f(LN, BO) \quad (\text{eqn. 2})$$

These are further expressed mathematically as follows:

$$ROA = \beta_0 + \beta_1 LN + \beta_2 BO + \mu \quad (\text{eqn. 3})$$

$$NPM = \beta_0 + \beta_1 LN + \beta_2 BO + \mu \quad (\text{eqn. 4})$$

**Where:** ROA = Return on asset (Net Profit/Total Assets X 100)

NPM = Net Profit Margin (Net Profit/Revenue X 100)

LN = Loans

BO = Bank Overdraft

$\beta_0$  = Intercept

$\beta_1, \beta_2,$  = Regression Coefficients

$\mu$  = Error term

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The apriori expectations are:  $\beta_1, \beta_2, > 0$

The implication of the above is that the coefficients:  $\beta_1$ , and  $\beta_2$  are expected to have positive signs, which imply positive relationship financial performance. Thus, commercial bank credit, in the form of loan and bank overdraft has positive effects on financial performance.

**Data Analysis**

The data obtained by the researcher are presented in Appendix I. It is presented in a tabular form in order to enhance interpretation and analysis The data were analyzed, using various analytical techniques; and the results obtained are presented below.

**Descriptive Statistics**

This seeks to determine the basic characteristics of the data collected.

**Table 4.2 Descriptive Statistics**

	LN	BO	ROA	NPM
Mean	7.198918	2.969700	6.475047	9.036700
Median	2.394766	0.538632	5.297248	6.400125
Maximum	60.74887	25.36295	27.95954	86.40693
Minimum	0.000000	0.000000	-25.68939	-52.75414
Std. Dev.	10.88178	4.903111	8.455930	16.36860
Skewness	2.199284	2.215285	-0.194049	1.464015
Kurtosis	8.334049	7.932266	4.844836	10.82129
Jarque-Bera	238.9974	219.7860	17.77019	348.7299
Probability	0.000000	0.000000	0.000138	0.000000
Sum	863.8701	356.3640	777.0056	1084.404
Sum Sq. Dev.	14091.17	2860.819	8508.827	31883.80
Observations	120	120	120	120

**Source:** Researcher’s Computation using E-views 9.5

The result above indicates that the mean loans and overdraft constitute 7.2% and 2.97% of the total assets of the selected listed firms, whereas mean values of ROA and NPM are given as 6.48%, and 9.04%, respectively. All the variables are positively skewed except ROA.

**Correlation Statistics**

The correlation statistics gives an indication of the association that exist between the variables of the study, as shown in table 4.2.

**Table 4.3 Correlational Statistics**

	LN	BO	ROA	NPM
LO	1.000000	0.164270	-0.162209	-0.137122
BO	0.164270	1.000000	-0.227162	-0.170065
ROA	-0.162209	-0.227162	1.000000	0.813405
NPM	-0.137122	-0.170065	0.813405	1.000000

**Source:** Researcher’s Computation using E-views 9.5

The result in table 4.3 reveals that all the independent variables have positive correlations, whereas ROA and NPM have negative correlations.

**Panel Least Square Regression (Fixed Effect)**

In order to determine the cause and effect relationship between the variables, the fixed effect least square technique was adopted, and the results are presented in tables 4.4 and 4.5.

**Table 4.4 Panel Regression Result (Model 1)**

"Sample: 2015 2020

Periods included: 6

Cross-sections included: 20

Total panel (balanced) observations: 120"

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LN	0.079749	0.230532	0.345933	0.7302
BO	-0.592774	0.196730	-3.013129	0.0034
C	27.67610	5.029568	5.502679	0.0000

  

Effects Specification				
Cross-section fixed (dummy variables)				
Period fixed (dummy variables)				
"R-squared	0.743347	Mean dependent var	6.475047	
Adjusted R-squared	0.660648	S.D. dependent var	8.455930	
S.E. of regression	4.925910	Akaike info criterion	6.239213	
Sum squared resid	2183.813	Schwarz criterion	6.936086	
Log likelihood	-344.3528	Hannan-Quinn criter.	6.522216	
F-statistic	8.988571	Durbin-Watson stat	1.899429	
Prob(F-statistic)	0.000000"			

Source: Researcher's Computation using E-views 9.5

The result in table 4.4 indicates that the independent variables determine 66.06% of the changes in ROA. The F-statistic of 8.989 and p-value of 0.000 also reveal that the model has a good fit while the t-statistics indicate that is significant at 5%. On the other hand, the Durbin Watson of 1.899 indicates absence of serial correlation in the level series.

**Table 4.5 Panel Regression Result (Model 2)**

"Sample: 2015 2020

Periods included: 6

Cross-sections included: 20

Total panel (balanced) observations: 120"

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LN	0.200855	0.333741	0.601827	0.5488
BO	-0.540648	0.284807	-1.898297	0.0609
C	38.91504	7.281305	5.344514	0.0000

  

Effects Specification				
Cross-section fixed (dummy variables)				
Period fixed (dummy variables)				
"R-squared	0.856450	Mean dependent var	9.036700	
Adjusted R-squared	0.810195	S.D. dependent var	16.36860	
S.E. of regression	7.131239	Akaike info criterion	6.979165	
Sum squared resid	4576.911	Schwarz criterion	7.676038	
Log likelihood	-388.7499	Hannan-Quinn criter.	7.262168	
F-statistic	18.51588	Durbin-Watson stat	2.315857	
Prob(F-statistic)	0.000000"			

Source: Researcher's Computation using E-views 9.5.

The result in table 4.5 indicates that the independent variables determine 81.02% of the changes in NPM. The F-statistic of 18.52 and p-value of 0.000 also reveal that the model has a good fit and are significant at 5%. On the other hand, the Durbin Watson of 2.316 indicates absence of serial correlation in the level series.

### **Test of Hypotheses**

In this study, four hypotheses were formulated, and these were tested using the t-test – computed using the fixed effect panel least square model as well as the vector error correction model (VECM) techniques. The decision rule is to reject the null hypothesis if the p-value (probability of the t-statistic) is less than 0.05; otherwise accept. The result of the hypotheses tests are reported below.

#### **Hypothesis One:**

In the first hypothesis, it was hypothesized that loan have no significant relationship on the ROA of listed manufacturing firms in Nigeria. The t-test was employed in determining the validity of the above hypothesis as shown in table 4.4. Thus, given the t-statistic of 0.346 and p-value of 0.730, the null hypothesis is accepted. Consequently, bank loans have no significant relationship with Return on Assets of listed manufacturing firms in Nigeria.

#### **Hypothesis two:**

The second hypothesis states that loan have no significant relationship on the NPM of listed manufacturing firms in Nigeria. Given the t-statistic of 0.602 and p-value of 0.549, in table 4.5, the null hypothesis is accepted; implying that banks' loans have no significant relationship with Net profit margin of listed manufacturing firms in Nigeria.

#### **Hypothesis Three:**

In the third hypothesis, it was hypothesized that overdraft have no significant relationship on the ROA of listed manufacturing firms in Nigeria. The t-test was employed in determining the validity of the above hypothesis as shown in table 4.4. Thus, given the t-statistic of -3.013 and p-value of 0.003, the null hypothesis is rejected. Consequently, overdrafts have significant relationship with return on assets of listed manufacturing firms in Nigeria.

#### **Hypothesis Four:**

The fourth hypothesis states that overdraft have no significant relationship on the NPM of listed manufacturing firms in Nigeria. From tale 4.5, given the t-statistic of -1.898 and p-value of 0.061, the null hypothesis is accepted; implying that overdraft have no significant relationship with net profit margin of listed manufacturing firms in Nigeria.

### **Discussion of Findings**

From the results obtained in Tables 4.4 and 4.5, loan has a positive sign on all the dependent variables, which concurs with the expected apriori sign. This implies that loan positively affects the financial performance of manufacturing firms in Nigeria. However, it was found not to be significant only on return on assets and net profit margin. This is similar to the results obtained by Ogunmuyiwa et al. (2017) as well as Akujuobi and Nwezeaku (2015), who found that bank credit has significant impact on manufacturing and production sectors, respectively, in Nigeria. However, it contravenes Olokoyo et al (2016), whose study established an inelastic relationship between bank credit and industrial output in the long run. The reason is that the industrial is critical in stimulating growth in an economy, especially

as it accounts for the bulk of employment. Since the sector is intensively capital driven, bank credit provides the cushion for its efficient performance.

The results also show that overdraft is negatively signed in all two models, which is a deviation from the expected apriori; but only significant on ROA at 5% level of significance, but not significant on net profit margin. This also implies that overdraft has negative effect on the financial performance of manufacturing firms. Thus, increase in overdraft will lead to lower performance for the listed firms. This seems to uphold the result of Ojeaga, Odejimi, Okhiku, and Ojeaga (2013) as well as Tobechei, Agbanike and Onwuka (2016), who study showed that commercial bank lending has negative effect on real sector growth but deviates from Ehikioya and Mohammed (2013), whose study revealed that commercial bank credit has direct and insignificant impact on sectoral output performance.

The probable reason for the negative effect of short term loans and advances is that it is much more costly and requires a very short repayment period. For instance, in most of the firms, overdraft facilities cost as much as 25% and above. However, manufacturing firms are compelled to acquire short term financing in order to bridge their working capital financial requirements.

### **Summary of findings.**

After the analysis of the data, the following findings were made;

- i. Loan has no significant relationship with return on assets of listed manufacturing firms in Nigeria.
- ii. Loan has no significant relationship with net profit margin of listed manufacturing firms in Nigeria.
- iii. Overdraft have a significant relationship with return on assets of listed manufacturing firms in Nigeria
- iv. Overdraft has no significant relationship with net profit margin of listed manufacturing firms in Nigeria.

### **Conclusions**

Bank credit plays an essential function in manufacturing sector as it aids them with capital to boost or carry out more investments. The study showed that some bank credit proxies have mixed effects on the selected proxies of financial performance of the sampled manufacturing firms in Nigeria. The study demonstrated that while Loans have no significant relationship with return on assets of listed manufacturing firms in Nigeria, Overdrafts have a significant relationship with return on assets of listed manufacturing firms in Nigeria

### **Recommendations**

- The Federal Government should focus more of its attention on the manufacturing sector since the analysis show a positive growth and performance feature in the application of financial resources for attractive returns and profit generation.
- There is need for the CBN to reappraise the exiting procedure for get loan, as the high interest rate applicable on loans are a disincentive to the financial performance of the manufacturing firms in Nigeria.
- Management should seek cheap ways of meeting their working capital financing requirement to avoid being compelled to acquire loan.
- Manufacturing firms should strategically watch their financing mix to avoid dampening the earnings (NPM)

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### Appendix I

#### Commercial Bank Credit Allocation and Selected Macroeconomic Indices

COMPANY	YEAR	LO	BO	ROA	NPM
CHAMPION BREWERIES	2015	0.00	0.00	-12.89	-52.75
	2016	0.00	0.00	-7.87	-22.86
	2017	0.00	0.00	0.75	2.20
	2018	0.00	0.00	5.32	13.71
	2019	0.00	0.00	5.13	10.84
	2020	0.00	0.00	-2.52	-5.54
DANGOTE CEMENT	2015	9.13	0.00	25.59	56.59
	2016	4.81	0.00	19.29	50.01
	2017	2.79	1.70	18.96	54.77
	2018	4.94	3.14	24.51	86.41
	2019	0.00	1.12	15.80	46.10
	2020	0.00	0.59	27.96	77.87
DANGOTE SUGAR	2015	1.06	0.00	15.54	13.21
	2016	2.45	0.00	12.24	12.66
	2017	0.00	0.00	11.87	12.65
	2018	1.14	0.02	8.07	8.48
	2019	0.75	0.04	19.29	19.09
	2020	0.80	0.03	14.47	17.63

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DANGOTE FLOUR MILLS	2015	0.00	8.36	-17.50	-19.46
	2016	17.40	4.47	-11.46	-15.21
	2017	0.00	4.86	-25.69	-26.40
	2018	0.00	2.48	13.38	9.99
	2019	0.42	0.00	9.75	10.07
	2020	0.31	0.00	-0.96	-1.03
FIRST ALUMINIUM NIGERIA PLC	2015	0.19	5.09	1.16	1.18
	2016	0.00	0.84	0.58	0.36
	2017	0.00	17.72	1.37	1.08
	2018	0.00	20.33	1.77	1.80
	2019	14.24	3.35	2.12	2.24
	2020	5.23	2.62	-1.20	-2.25
CADBURY NIGERIA	2015	0.00	0.00	13.95	16.84
	2016	0.00	0.00	5.25	4.96
	2017	0.00	0.00	4.06	4.14
	2018	0.00	0.53	-1.04	-0.99
	2019	0.00	5.97	1.06	0.91
	2020	0.00	3.04	2.99	2.29
NIGERIA BREWERIES	2015	3.56	0.00	17.04	16.04
	2016	7.06	0.07	12.16	15.96
	2017	0.84	0.05	10.67	12.95
	2018	0.00	0.24	7.72	9.05
	2019	4.44	0.12	8.62	9.02
	2020	2.06	0.38	4.99	5.54
NESTLE	2015	7.46	0.00	20.57	16.72
	2016	8.46	1.17	20.96	15.51
	2017	4.59	0.26	19.91	15.69
	2018	2.34	0.09	4.67	4.36
	2019	12.27	2.53	22.97	13.81
	2020	3.45	0.86	26.49	16.15
BERGER PAINTS	2015	3.61	0.19	7.11	9.52
	2016	3.46	0.19	4.09	4.83
	2017	2.28	0.10	8.47	10.92
	2018	3.02	0.09	5.46	8.61
	2019	10.53	1.69	5.71	8.16
	2020	8.09	2.43	7.08	9.51
BETA GLASS	2015	0.00	3.54	5.43	10.46
	2016	0.00	0.00	8.88	14.37
	2017	0.00	0.56	7.33	12.48
	2018	0.00	0.55	11.45	19.90
	2019	0.00	2.00	10.77	18.55
	2020	0.00	2.38	10.97	19.20
GUINNESS NIGERIA PLC	2015	0.00	3.10	9.80	9.69
	2016	16.32	3.54	7.23	8.77
	2017	9.11	1.16	6.38	6.58
	2018	3.54	2.14	1.47	1.98
	2019	14.44	5.16	1.32	1.53
	2020	5.30	0.00	4.38	4.70
HONEYWELL	2015	38.33	0.61	5.13	6.22
	2016	39.05	0.00	5.25	6.09
	2017	38.53	0.00	1.65	2.28
	2018	35.49	0.01	-3.98	-5.94
	2019	25.64	0.68	3.80	8.09
	2020	27.98	0.12	3.55	6.19
INTERNATIONAL BREWERIES	2015	20.84	10.51	10.10	13.38
	2016	15.82	3.17	8.64	11.39
	2017	16.24	16.54	6.45	9.42
	2018	14.99	10.93	7.93	11.40
	2019	29.41	8.51	0.60	3.82

	2020	60.75	9.15	-1.25	-3.21
NATIONAL SALT COMPANY OF NIGERIA	2015	0.34	0.04	23.62	24.91
	2016	0.31	0.04	14.87	16.59
	2017	0.24	0.00	12.92	13.02
	2018	0.16	0.00	9.82	13.20
	2019	0.13	0.00	17.74	19.75
	2020	0.13	0.00	14.60	17.15
PORTLAND PAINTS	2015	18.57	3.33	2.75	2.09
	2016	30.68	0.00	6.54	5.33
	2017	11.90	0.00	-12.27	-10.75
	2018	7.98	0.00	0.51	0.46
	2019	6.88	0.00	2.85	2.50
	2020	1.95	0.00	9.20	7.32
UNILEVER NIGERIA PLC	2015	1.85	6.86	10.80	7.87
	2016	2.67	25.36	5.27	4.33
	2017	2.23	7.97	2.38	2.01
	2018	1.06	6.90	4.24	4.40
	2019	0.70	0.00	5.84	8.30
	2020	0.42	0.00	6.93	9.83
VITA FORM	2015	9.35	7.35	4.21	2.53
	2016	6.95	9.64	5.98	4.25
	2017	8.24	12.72	1.68	1.30
	2018	5.27	14.42	3.15	3.38
	2019	5.64	13.58	1.47	1.20
	2020	17.34	6.41	3.21	2.76
PZ INDUSTRIES	2015	0.00	0.00	4.42	3.11
	2016	0.00	0.00	7.72	5.47
	2017	0.00	0.00	-2.04	-1.34
	2018	0.00	0.00	-0.69	-0.56
	2019	0.00	0.00	3.06	4.08
	2020	0.00	0.00	2.19	2.79
FLOUR MILLS OF NIGERIA PLC	2015	15.05	2.94	3.98	3.94
	2016	9.67	12.95	4.74	4.25
	2017	12.31	17.72	1.05	1.08
	2018	32.26	2.85	4.47	4.21
	2019	33.07	9.99	2.86	2.62
	2020	22.74	5.10	2.87	2.37
LAFARGE AFRICA	2015	6.15	0.00	17.53	28.84
	2016	3.04	0.21	8.25	26.79
	2017	1.85	0.64	7.83	26.05
	2018	1.64	2.87	3.86	23.83
	2019	9.71	2.44	-1.20	-4.17
	2020	10.43	2.92	-1.28	-3.96

Source: Company Annual Reports (2015-2020)