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NON-PERFORMING LOANS IN THE NIGERIAN BANKING SYSTEM AND MANUFACTURING SUB-SECTOR PRODUCTIVITY

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ABSTRACT

Rising levels in Non-Performing loans (NPLs) which has remained an area of vast and diverse concerns contributed to the issues of declining manufacturing activities in Nigeria in the 1990s and thereafter. The study examined the relationship between NPLs and Manufacturing sub-sector productivity in Nigeria. Time series data obtained from CBN were analysed using exponential trend, Granger causality test, and simple regression model. Descriptive and inferential analyses revealed that, NPLs exhibited a negative exponential growth rate of -5.89%; while manufacturing sub-sector productivity declined at the rate of 6.60% during the study period. Empirical results from the regression analysis indicated an inverse significant relationship between NPLs and Manufacturing sub-sector productivity in Nigeria. Policy on intensive strategy for increased loans and advances to the sub-sector coupled with pragmatic reforms in the banking system as to accelerate investments in manufacturing sub- sector is recommended.

Keywords: Non-performing loans, manufacturing productivity, manufacturing sector, Banking system loans, Causality, Nigeria.

INTRODUCTION

High and rising non-performing loans in the banking system in several economies had caused bank crises and failure to the financial sector in the early 1990s and beyond. In fact, increasing levels of NPLs constitute a critical threat to the existence of the banks due to their toxic impacts on banks' profitability, income and public confidence in the sub-sector. In many of the emerging economies such as India, Pakistan, Ghana, Cameroun, Nigeria and others, the banking system plays vital roles which predominantly include the provision of loans and advances to agriculture,

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manufacturing industrial, services and other sectors. However, huge proportion of these loans are usually not repaid as when due. These non- repayments of loans over a prolonged period of time ranging from 90 days to 360 and beyond constitute non-performing loans (NPLs) (Umoren, 2015; Badar and Javid, 2013, CBN1991). Many literature maintain that the major causes of NPLs include,: excessive credits creation by the banks, insider abuses, relaxed credit conditions and poor loan recovery strategies, business cycles, volatility in specific macroeconomic and banks' variables which are gross domestic products, inflation, interest rate and liquidity; and loans/advances to the economy((Umoren, 2015; Hou and Dickson, 2007). NPLs in the banking system are becoming one of the critical issues for regulatory authority specifically after the occurrence of the recent global financial crises of 2008. The upswing trend in non-performing loans in the banking system triggered increasing amount of banks' loans loss provisions thus reducing regulatory capital. This diminished banking system's lending capability to grant loans/advances to economic agents in all sectors of the economy. The existence of NPLs affects lending to various economic agents in manufacturing industrial and other sectors. In fact, Nanita, Anu, and Baljeet, (2011) maintain that the high level of NPLs remain an area of great concern. These seem to contribute to the problem of declining manufacturing industrial activities (CBN, 2003) which persisted in economies of many Subs –Saharan countries including Kenya; Ghana; Nigeria in the 1990s which was documented by Fofack, (2005). He maintained that these declining manufacturing activities had negative effects on these economies. The collapse and shutting down of many manufacturing industries, agro- industries were believed to be attributed to the increasing levels of NPLs which created unavailability of funds in the banks (Umoren,2015). Consequently, the banking system could no longer grant enough loans and advances to manufacturing industrial and other sectors whose major sources of finances were loans and advances (Dipak and Ata, 2003; CBN, 2003). This seems to constrain financial intermediation and strangulated economic activities in manufacturing industrial and other sectors in many developing economies including Nigeria

In Nigeria, one of the greatest challenges in the banking environment is increased levels of NPLs. The increase proportion of Non-Performing Loans (NPLs) to total loans and advances in the banking system was believed to be the major cause of financial crises in the 1990s which were experienced both in developing and developed countries (Badar and Javid, 2013). For example, in Indonesia, over 60 banks collapsed during the period. Also, the East Asian financial and banking crisis that affected large population of Sub-Saharan African nations in the same period is another example (Fofack, 2005, Elegbe, 2013; Hou and Dickson, 2007).

Arising from these developments, the manufacturing sub-sector which was expected to achieve 15 per cent value added contribution to GDP, registered dismal output performance. In the Central Bank of Nigeria's Annual Report and Statement of Accounts(2005), banks' allocation of

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credit to various sectors in the economy: showed that Agriculture had 2%, Solid minerals was allocated 9%; Exports had 1%; Manufacturing was allocated 18%; while other unclassified activities had 70%. Nigeria's manufacturing sub-sector consists of wide range of industrial activities which include large to medium and small -micro scale manufacturing enterprises which include cottage and hand-craft units in the informal sector, using simple technology (CBN 2013)..The ownership of Nigeria's manufacturing sub sector is shared between the public and private sectors of the economy

NIGERIAN MANUFACTURING INDUSTRIAL SECTOR (1980-2015)

Manufacturing sector as one of the components of the real sector was adjudged as one of the priority sectors in Nigeria's economy since early 1960s. The contribution of the sector to the nation's Gross Domestic Product (GDP) was at peak in 1982 with 7.82 per cent but there after it declined. Among the major factors attributed to the decline included the vulnerability of the sector due to global economic pressures associated with the effects of macroeconomic policies on restructuring the sector (Hou and Dickson.2007). During this period, injections of resources with the corresponding productivity were relatively high. However, the trends in these variables declined in the mid- 1970s due to the influence of oil boom and the Dutch disease. Interest in manufacturing industrial production was low as Government expenditure in infrastructural development in the sector was relegated to the background. One of the challenges that affected the sector was unavailability of loans/advances. The Federal Government financial interventions initiated several credit policies, schemes and programs, to improve the manufacturing production using the provision of cheap financial resources to manufacturers at a concessionary interest rate (Akpan, Obot and Ubon, 2012). In furtherance of the Federal Government interest in manufacturing industrial growth, various policy instruments were initiated to ensure the realization of the credit policy. In spite of these incentives in the sector, loan defaults' rate was high among beneficiaries of these schemes and projects. These contributed to aggravation of NPLs in the Nigeria's economy.

The manufacturing sub-sector of the Nigerian industrial sector is a vital component of the economy because of the provision of food, income, employment and raw materials (Okuneye, 2002). The industrial sector consists principally of solid mineral, coal mining, metal ores, quarrying and manufacturing while the manufacturing sub-sector consists of crude oil refining, cement and others (CBN, 2013). Over the years, the productivity of the manufacturing sub sector has been declining. For instance, Nigeria is currently a net importer of grains and palm oil products. Many analysts have attributed the declining productivity in the sub-sector to poor access to financial resources among others. Given the role of the banking system in the provision of loans and advances to the economy, it seems that the performance of the sub-sector has a

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relationship with the activities in the banking environment through the interplay of Non-Performing Loans (NPLS). Investigating the relationship between Non-Performing Loans and manufacturing sub-sector's productivity will help to fine-tune credit policies which will reposition the manufacturing sub-sector to create more employment opportunities and enhance the national income of the country..Based on this issue, the study specifically determines the relationship between NPLs and Manufacturing sub -sector productivity in Nigeria.

CONCEPTUAL FRAMEWORK

Non-Performing Loans (NPL) is defined as the credit facility for which the interest and or instalment of principal has remained unpaid or past due over a specified period of time ranging from 90 days and beyond. NPLs are a classification adopted by financial institutions which refers to a loan facility which is in default. At a particular time, due to unforeseen circumstance, or deliberate intent, the loan beneficiary may fail in meeting his/her loan repayment obligation either in interest or principal or both for 90 days, the loan facility is considered as NPL. NPLs in the banking system are seen as challenges and serious threats to survival of the banking system. This is because the banking system depends on the interest incomes. The cause of loan default may arise from crises in the economy and this can lead to upswing in NPLs which may result in massive banking system loan losses provision, a practice that reduces the profitability of banks because of huge write-offs. The adoption of 90 days for the identification and classification of NPLs is the international standard as stipulated in Basel 11 Accord of 2004. This is to ensure increase transparency and uniformity and accountability. According to Basel 11 Accord (Basle.2004), NPLs are identified and classified as NPLs where loans/advances with interest and / or instalment of principal remain overdue for a period of more than 90 days; for a term loan where the account remains unpaid for a period of more than 90 days; for the case of overdraft/cash credit; the bill remains overdue for a period of more than 90 days. In the case of bills purchased and discounted where interest and /or instalment remains overdue for two harvest seasons. However, for a period not more than two half years for a given advance granted for agricultural purposes; and **a**ny amount to be received remains overdue for a given duration of more than 90 days for other accounts. In light of the above, banks are enjoined to classify NPLs into these three (3) categories on the basis of duration for which the facility has remained NPL and the prospects for the recovery of these loans remains bleak . These are: sub-standard, doubtful and lost loans. These standards are adopted in Nigeria. The sub-standard loans are allotted 10%; doubtful loans are also allotted 50% while lost loans are allotted 100% of the banks' reserve.(CBN,, 1991; CBN, 2010)

LITERATURE REVIEW

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Although the issue of NPLs in the banking system elicited interests among researchers globally yet in Nigeria not much had been identified and documented on the effects of NPLs on manufacturing activities. Some of the studies on NPLs in Nigeria used static approach and their results were usually spurious. More so models linking NPLs to economic activity are not new in economic literature. Theoretical as well as empirical studies developing business cycle models in which the financial sector is introduced provides a link between NPLs in the banking system and economic activity. The classical studies that linked financial sector with business activity include debt-deflation theory by Irving Fisher (1933). This school of thought argued that deflation was the main cause of non-performing loans in the financial sector. In the financial instability perspective, the relationship between NPLs and economic activities showed that NPLs were influenced by instability of macroeconomic variables. This might indicate that instability of macroeconomic variables was the main reason behind the increase/growth in NPLs in banks. Bubble economy and deflation are the most significant factor for the growth of NPLs. As the economy upswing, firms become more ambitious and ready to invest in the production of manufacturing outputs/services. Their aggregate demand for capital would grow. The banking system would lower their loan conditions and fast track the process as well as speed up loan acquisition. This would create inflation in loan creation hence loan inflation culminating to inflation and economic bubble. After a period of time, the economy would adjust itself leading to slow speed in loan acquisition and NPLs would grow. Inflation decreases overall operating efficiency of the firms and the economy culminating to increase in the growth of NPLs. The banking system would create more stringent credit conditions resulting in less availability of credit (that is capital) from the banks. This would exacerbate the pessimistic expectation of NPLs. Studies showed that loans and advances can promote economic growth. (Dabwor, 2010; Umoren, 2008).The maxim of the indicator of credit/GDP pointed to the promoting function of bank loans to the growth of the economy. As shown above, NPLs are linked with economic fluctuation albeit low economic growth in many literature. Relevant theories on economic crises such as debt-deflation theory by Fisher, (1933), financial instability hypothesis by Minsky, (1992); all these directly or indirectly point to the relationship between NPLs ratio and low economic growth as well as economic crisis. They argue that NPLs have close association with low economic growth, economic recession and financial crises. According to Hou and Dickson, (2007) the high level of NPLs weaken many banks' aspirations to lending to the economic sectors such as manufacturing industries and this constrained the sectors' capacity to raise funds to operate their activities. NPLs increase credit risk and inflation (Jimenez and Saurian, 2005; Salas and Saurian, 2002).

In Nigeria, like any other emerging economy many economic studies have pointed out that the manufacturing sub-sector is the heart of the national economy as it drives the industrialization process and also contributes significantly to economic growth and development over time (CBN,

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2011; CBN, 2003). According to Mkpado, (2013) the manufacturing sub-sector's share of the nation's gross domestic products declined since 1991 from 8.5% to 5.9% in 1998; and 4.16% in 2011. These performances appeared poor in comparison with the amount of foreign exchange and other resources channelled into the sub-sector for importation of capital goods. The productivity in manufacturing sub- sectors might be crucial to the growth and development process of the economy and could be influenced by the availability of loans and advances from the banking system. The dismal performances of these sectors were believed to be linked with poor performance of the banking system as evidenced by the existence of high NPLs (Elegbe, 2013 Saba, Kouser, and Azeem ,2012;Dipak and Ata, 2003; CBN, 2003).

The empirical literature on the link between performance of financial sector and the business conditions are vast and diverse. A common result from various findings depicts a positive relationship between NPLs and economic activity. However, the measure of NPLs in many of these studies differs which might be ascribed to the variation in analytical frameworks. Though the existence of high NPLs ignited deep interest with diverse views among scholars in different parts of the globe, yet in Nigeria, not many studies had been conducted as regards evaluating NPLs and their relationship with manufacturing sub- sector's productivity. More so, many of these studies on NPLs conducted used static techniques for their analyses which did not provide sufficient time path for robust inferences, prediction and reliable empirical findings. For instance, studies by Kanu and Isu 2014; Bebeji (2013); Inekwe (2013) and Udegbunam (2001) adopted static analytical techniques as regards banks' loan performances. However, the novelty in the current study is the adoption of dynamic approach in evaluating the incidence of high NPLs in the banking system and their relationships with manufacturing sub-sector productivity.

This paper contributes to current literature on evaluating the relationship between NPLs and manufacturing sub-sector productivity by utilizing time series data collected from the CBN. Exploiting banking system NPLs and contribution of manufacturing sub-sector GDP trends is likely to yield more robust results than analysis of individual banks as well as unit manufacturing factory since NPLs are usually short term covering at most ten(10) years of annual data (Beck, Jakubik and Pilou,2013).

METHODOLOGY

Materials and Methods

Study Area and Data Source: The study was conducted in Nigeria; the country is situated on the Gulf of Guinea in the sub Saharan Africa. Nigeria lies between 4^0 and 14^0 North of the Equator and between longitude 3^0 and 15^0East of the Greenwich. The country has a total land area of about 923,769km^2(or about 98.3 million hectares) with 853km of coastline along the

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northern edge of the Gulf of Guinea and a population of over 140 million people (National Population Commission, 2006). Study used secondary data collected from the statistical bulletins and Annual Statement of Accounts of the Central Bank of Nigeria.

Analytical Techniques

The study employed trend analysis, Granger causality test and linear regression model to explore the relationship between the Non-Performing Loans and manufacturing productivityin Nigeria. Since all the variables involved in the analyses are time series data characterizes with unit root processes, their stationary status was investigated using Augmented Dickey –Fuller unit root tests(Dickey-Fuller,1981;Engle and Granger,1987).

The trend Analysis of Non-performing loans and Manufacturing sub-sector productivity in Nigeria (1980 – 2015)

The study investigated the nature of relationship, movement and growth rate in Non-performing loans and manufacturing **sub-sector** productivity. An exponential trend equation was specified as thus:

$$log_e MFP_t = b_0 + b_1 T + U_t \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (1)$$

$$log_e NPLP_t = b_0 + b_1 T + U_t \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (2)$$

Where 'T' is the time expressed in year; MFP is the manufacturing sub- sector productivity proxy by the percentage share of manufacturing sub- sector in total GDP in Nigeria in time 't' expressed in percentage, and NPLs is the Non-Performing Loans expressed in percentage in time t. The exponential growth rate is given as:

$$(r) = (e^{b1} - 1) * 100 \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (3)$$

Note, the trend equation was also estimated for the non-performing loan (NPLs).

Bilateral Granger Causality Test on Non-Performing Loans and manufacturing sub-sector productivity.

The primary models in the Vector Autoregressive Regression forms are represented as shown below::

$$\begin{Bmatrix} \Delta LnMFP_t = \beta_0 + \beta_1 \sum_{i=1}^{n} \Delta LnMFP_{t-1} + \beta_2 \sum_{i=1}^{n} \Delta Ln\, NPL_{t-1} + \varepsilon_{1t} \ldots .(4) \\ \Delta LnNPL_t = \delta_0 + \delta_1 \sum_{i=1}^{n} \Delta Ln\, NPL_{t-1} + \delta_2 \sum_{i=1}^{n} \Delta LnMFP_{t-1} + \varepsilon_{2t} \ldots .(5) \end{Bmatrix}$$

From the above specification, there is bilateral Granger causality from NPLs to manufacturing sub –sector productivity (MFP), if $\beta_2 \neq 0$ and $\delta_2 = 0$. Similarly, there is Granger causality from the manufacturing sub-Sector productivity to NPLsif $\beta_2 = 0$ and $\delta_2 \neq 0$. The causality is considered as bi-directional if $\beta_2 \neq 0$ and $\delta_2 \neq 0$. Finally, there is no link between Manufacturing sub-Sector productivity (MFP) to NPLsif $\beta_2 = 0$ and $\delta_2 = 0$. (Gujarati D.N. and Sangeetha, 2007)

Linear Regression Analysis between NPLs and MFP in Nigeria

Ordinary Least Squares estimation method was used to investigate the relationship between NPLs and MFP in Nigeria. Based on the result of unit root test, the variables were differenced to achieve stability in regression estimates. Explicitly, the dynamic relationship between NPLs and MFP is expressed as shown below:

$$\Delta logMFP_t = \delta_0 + \delta_1 \Delta logNPLs_t + \mathbf{trend} + \varepsilon_t \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots .(6)$$

RESULTS AND DISCUSSION

Augmented Dickey Fuller Unit Root Test

The stationarity of the variables were examined by the use of Augmented Dickey Fuller (ADF) unit root test. The results represented in Table 1 closely followed our prediction.

Table 1: Result of the unit root test for Manufacturing Sub- sector's Productivity and Non-Performing Loans in the Nigerian Banking System

Logged Variables	With Constant			With constant			With constant + trend		
	Level	**1st diff.**	**OT**	**Level**	**1st diff.**	**OT**	**Level**	**1st diff.**	**OT**
NPLs	-0.966	-6.374**	1(1)	-1.002	-6.402**	1(1)	-2.793	-6.491**	1(1)
MFP	-1.329	-5.199**	1(1)	-1.463	-5.222**	1(1)	-0.645	-5.416**	1(1)
ADF test on residual specified in equation 3									
Residual	-1.680	-	-	-1.662	-	-	-0.965	-	-

Note: OT means order of integration. Critical value (CV) is defined at 1% significant level and asterisk ** represents 1% significance level.

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The results revealed that; Non-Performing Loans and Manufacturing Sub-sector's Productivity were not stationary at level but stationary (at 1% significance level) at first difference for all ADF equations specified. The result implies that, both NPLs and MFP have instability issues at level, hence regression estimates generated at level might show sign of spurious or any econometric problems. Based on this result, we conducted Engle Granger two-step co-integration test for the presence of co-integration for variables specified in equation 6. The result revealed that, there was no evidence of co-integration. Following this result, variables specified in the model were analysed at the logarithm difference level.

Exponential Trend Analysis of Non-performing loans and manufacturing Sub -sector Productivity in Nigeria (1980 to 2015)

The exponential trend equations for Non-Performing Loans and Manufacturing sub Sector Productivity is presented in Table 2. The regression estimates for each of the variables is followed by the calculated exponential growth rate derived from the respective long run exponential trend equation. The result revealed that, trend in NPLs showed negative significant association with time in Nigeria. This implies that, a change in NPLs is negatively influenced by time. NPLs have average exponential growth rates of -5.89% from 1980 to 2015 in Nigeria. This means that, growth in NPLs reduces over time in Nigeria. This could be as a result of various reforms strategies adopted in the banking system to minimize growth in NPLs. Similarly, manufacturing sub-sector productivity (MFP) exhibited negative significant relationship with time. This may indicate that, manufacturing sub-sector productivity decreases over time in Nigeria. This could be as the result of faulty industrial policies implemented in the country. The structure of the economy system can also give reason for the decline of manufacturing sector's productivity in Nigeria. For instance, for some years now, the country valued and depends heavily on importation of industrial goods, in addition to insufficient incentives to domestic producers. The collapse of some prominent industrial policies such as indigenization policy and export promotion centers also contributed to the decline in the sector's productivity. The result revealed that, about 6.60% of annual decline occurs in manufacturing sub –sector productivity in the country. This means that, both variables decline over the period 1980 to 2015.

To further verify the above result graphically; the linear trend in MFP and NPLs are shown in figure 1. Movements in both graphs are in agreement with the trend equations. However, pattern of fluctuations in the two variables were remarkably different over time. It is suggested that, fluctuations in both variables are consistent with various policies and interventions implemented in the banking system in the country. For instance, the banking consolidation and other reforms might have helped to shape up the undulated nature of NPLs in Nigeria. Also, the workability

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and sustainability of industrial policies and programs implemented determined the orientation of the Manufacturing Sub-sector's productivity trend in Nigeria.

Table 2: Exponential Trend Analysis of NPL and Manufacturing sub-Sector Productivity in Nigeria (1980 to 2015)

Variables	MFP Equation	NPL Equation
Constant	3.5653 (20.931)***	4.0616 (22.484)***
Time	−0.0656 (-8.183)***	−0.0589 (-6.927)***
F- cal.	66.9669***	47.9802***
R-square	0.6632	0.5853
Exponential GR (%)	**-6.60**	**-5.89**

Note: Values in bracket represent t-values. The asterisk *** represent 1% significance level. Variables are as defined in equation 1.

The graphical representation of the trend in the two variables suggests that, there may be inverse relationship between the NPLs and Manufacturing sub-sector productivity in Nigeria. Fluctuations were undulated in NPLs with distinct crests and troughs in the trend. This also suggests that NPLs reacted to various monetary and financial sector reforms implemented in the country. On the one part, the manufacturing sub-sector productivity trend showed a consistent downward fluctuation with intermittent peaks and troughs throughout the period. From 1981 to 1989, manufacturing sub-sector productivity showed a sharp consistent recession trend. This period coincided with the period of increasing volatility in macroeconomic variables in the country. This period was also marked with increasing food import and collapse of import substitution policy in Nigeria. The rather stagnated growth in manufacturing sub-sector productivity trend connotes the nature of manufacturing system prevalence in the country. From 1990 to 1995, the influence of liberalization and adoption of structural Adjustment programmes perhaps stimulated growth in the sector. Thereafter, sub- sector productivity trend in the country was undulated reflecting the extent of the implementation of economic and industrial policies in Nigeria.

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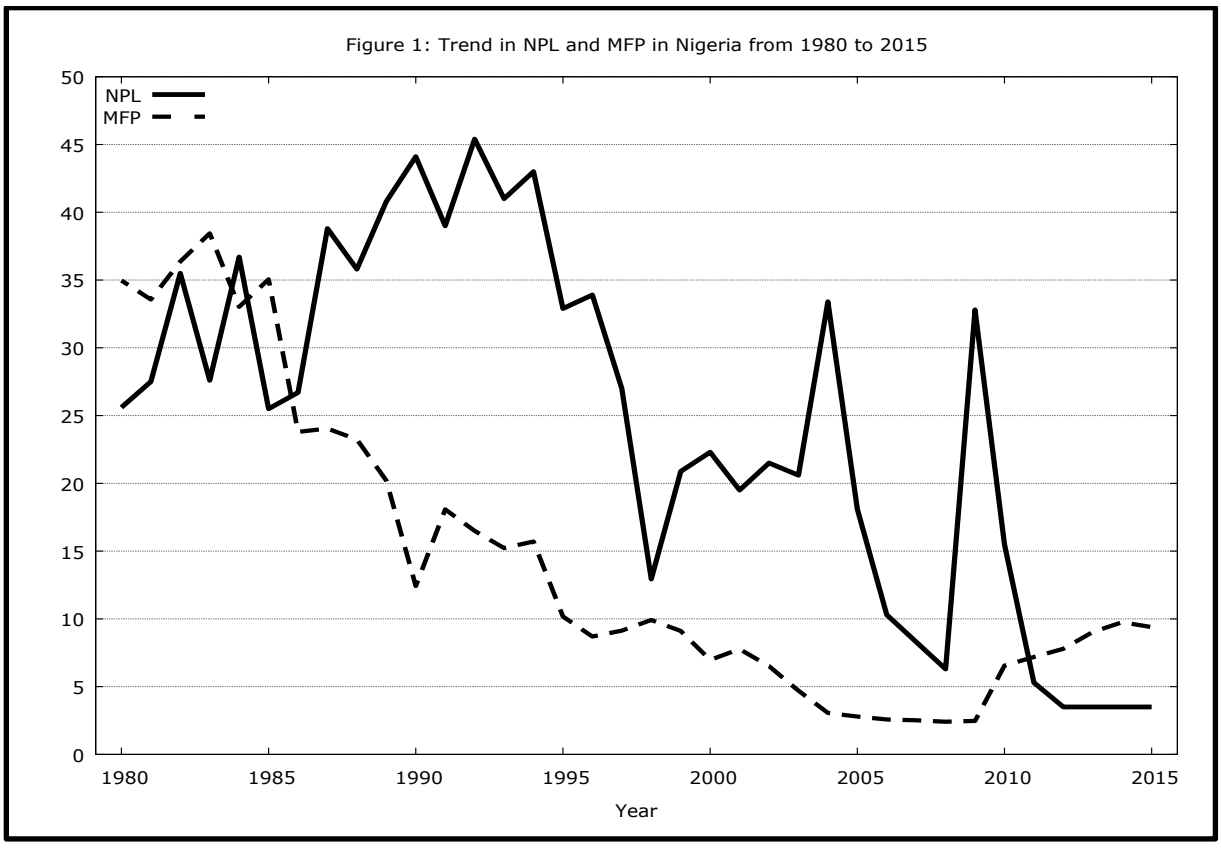

Bilateral Granger Causality Test for Non-performing loan and Manufacturing Sub sector Productivity in Nigeria

The Granger causality relationship between Non-Performing Loans and Manufacturing Sub sector productivity is shown in Table 3. The result presented revealed that, there is evidence of unilateral Granger causality between the two variables. The null hypothesis was rejected for the second hypothesis as showed in Table 3.

Table 3: The Vector Autoregressive Regression Granger Causality Estimates

Hypotheses	Lag	Sample size	F-Statistic	Prob.	Decision
ΔLnNPLs does not Granger Cause ΔLnMFP	1	35	0.03122	0.8609	Accepted
ΔLnMFP does not Granger Cause ΔLnNPLs	1	35	3.25085	0.0808*	Rejected

Note: Estimated by authors using Eview software. The asterisk * represent 10% significance level. Variables are as defined previously.

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The analysis revealed that, there was unilateral causality relationship between NPLs and manufacturing sub sector productivity. Alternatively, it implies that, MFP does Granger- cause NPLs. This means that, the MFP is weakly endogenous to NPLs. The result indicated that; weak mutual relationship existed between NPLs and the manufacturing sub sector's productivity in Nigeria. However, the result suggests that the relationship was caused by MFP or it ran from MFP to NPLs. This also implies that NPLsis weakly exogenous variable to MFP. Furthermore, in testing the relationship between the NPLs and the Manufacturing sub- sector productivity, a simple log linear regression model was estimated. The result is presented in Table 4. The diagnostic tests revealed reliable regression estimates. The empirical result relates NPLs with MFP negatively. The negative result implied that, increase in NPLs deteriorated the size of MFP in the country. This satisfied the priori expectation, as increase in NPLs constrained credit availability to the manufacturing sub- sector. The coefficient of trend was positive which represented the technological development however, it was not statistically significant.

Table 4: Linear Regression Estimates on impact of Non-Performing Loanson Manufacturing Sub-sector Productivity in Nigeria (1980-2015)

Variable	**Coefficient**	**standard error**	**t-value**	**p-value**
Constant	−0.12978	0.0658	−1.9734	0.0571*
ΔlogNPLs	−0.1547	0.0677	−2.2861	0.0290**
Trend	0.0044	0.0041	1.0734	0.2911
R^2	0.1238	Durbin Watson	1.8359	
F-Cal	3.3713**	Reset Test	4.0709*	
Normality test	11.126***			

Source: Note; Variables are expressed in log difference and the result estimated using gretl software.

The relationship between NPLs and MFP as showed in the linear regression result is an indication of the negative impact of NPLs' accumulation on the development of the manufacturing sub-sector in Nigeria. This means that, the growth in the manufacturing sub-sector over the years was stunted partly due to the accumulated NPLs in the country. The result presented in the analysis showed a consistent pattern. It is in line with oura *priori* expectation. The result indicates the resultant effect of various monetary policies implemented by the monetary authority in order to minimize accumulated NPLs on manufacturing productivity in the country. Studies by (Umoren,2015; Elegbe, 2013 and Kwan,2010) have also shown that unnecessary credit expansion is among the root causes of NPLs accumulation. The results indicated that, NPLs and Manufacturing sub-sector productivity exhibited significant causation relationship in Nigeria.

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DISCUSSION AND POLICY IMPLICATION

The challenge of Non-Performing Loans in the Banking System of Nigeria exhibited significant positive relationship with the Manufacturing sub sector's productivity..An increase in NPLs in the Banking system did not significantly increase activities in the Manufacturing sub sector rather it distorted the performance of the banks and manufacturing sub-sector's contribution to Gross domestic product hence NPLs retarded economic growth. Therefore, increase in NPLs decelerated financial intermediation thus reducing the availability of the loanable funds to the various economic agents in the sub-sector. The result has several inferences and implication. Firstly, it could be inferred that most of the loans disbursed in the sub-sector were not adequately appraised and monitored for recovery by the banks. Collateral offered by the loan beneficiaries might have been of lower value hence economic agents became relaxed with adherent to strict repayment plans. Secondly, it could be that, interest rate on loans and advances in the sub-sector was high with no incentive related packages for timely loan repayments hence the existence of high NPLs. Thirdly, it could be that the expansionary credit policies with no concomitant enabling environment coupled with dismal macroeconomic factors discouraged economic agents from repaying their loan obligations. Therefore the ultimate implication of increasing NPLs is low contribution of the manufacturing sub-sector to gross domestic product. With low manufacturing activities, unemployment and inflation dampened the potential and prospects for financial intermediation. NPLs may hinder allocation efficiency functions of the banking system which may lead to credit crunch and debt forbearance there by distorting the monetary policy transmission mechanism.

CONCLUSION AND RECOMMENDATIONS

The result showed an inverse significant relationship between NPLs and Manufacturing sub-sector productivity in Nigeria. NPLs exhibited irregular negative trend as opposed to almost steady Manufacturing sub-sector's productivity trend during the study period. The, bivariate causality and simple regression estimation, all pointed to a strong significant relationship between the NPLs and manufacturing sub sector's productivity. With high level of NPLs in the banking system, banks might have been more adverse to grant loans and advances to the sub-sector because of increased risk of high defaults among other reasons.

Policy on intensive strategies for increased loans and advances to the manufacturing sub-sector and adequate and sufficient recovery framework coupled with effective reforms packages by the monetary authority should be institutionalized as to minimize growth of NPLs. Credit risk management platforms should be emphasized in the country. The monetary authority should

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intensify strategies that will strengthen its monetary policy transmission mechanism that would enhance credit flow to the manufacturing sub-sector in Nigeria.

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