EFFECT OF BANKS LENDING RATE ON THE OUTPUT OF THE MANUFACTURING SECTOR IN NIGERIA

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Abstract

This study investigated the effects of bank lending rate on the performance of the manufacturing sectors in Nigeria. The study covered the period between 2007-2017. Using the t-statistics of the Parsimonious Error Correction mechanism the study find out a significant relationship between nominal leading rate and the manufacturing output in Nigeria. The study thus recommended that deposit money banks should give credit facilities to manufacturing outfit at concessionary interest rate.

Keywords: Lending rate, Interest rate, Nominal lending rate, Prime lending rate

Introduction

Manufacturing sector plays significant role in a modern economy and has many dynamic benefits importance for economic growth and transformation. One of the key real functions of the sector is that it creates investment capital at a faster rate than any other sector of the economy while promoting wider and more effective linkages among different sectors (Ogar, Nkamare and Charles, 2014). Before Nigeria gain her independence and immediately after independence agricultural sector dominated the productive sector in Nigeria. Before independence, initially, inadequate capital investment permitted only modest expansion of manufacturing activities. Early efforts in manufacturing sector were oriented towards the adoption of an import substitution strategy in which Light Industry and assembly related manufacturing ventures were embarked upon by the formal trading companies up to about 1970, the main mover in manufacturing activities was the private sector which established some agro-based light manufacturing units such as vegetable product, tobacco processing, etc. The plan for light and assemblage manufacturing changed to heavy industries during the period between 1975-1980 during which government got involved to establish key Core Industrial Plants to provide basic imports for the downstream industries (Adolphus and Deborah, 2014). In this regard, industrialization formed an important opportunity to attaining the lofty and desirable conception and goals of improved quality of life for the populace. Thus, in a supportive mood, Lovis (1967), stated that in any economy, one or more sectors serve as a prime mover moving the rest of the economy forward. The essence of growth in the manufacturing sector has played a tremendous role during the industrialization strategy.

Industrialization in any country involves extensive technology based development of the productive (manufacturing) system of an economy. The development of the industrial sector represents the deliberate application and combination of suitable technology, management techniques and other resources to move the country from the traditional low level of production to technological and efficient system of mass production of goods and services. Emanating from the foregoing, affirmed centrality of industrialization as a tool of economic transformation and development. Industrialization process seems to be the main hope of most-developing countries such as Nigeria with a large population and a larger labour force (Ogar, Nkamare and Charles, 2014). In spite of these aspiration industrialization processes in an economically conducive productive environment, most of these results as reflected in the performance of the manufacturing sector remain socio-
economically undesirable. In recognition of these pertinent roles of the sector, successive governments in Nigeria have continued to articulate strategies and policies to achieve industrial growth incentive and adequate finance. The cardinal goal of government policy was to promote growth in the manufacturing sector of the economy.

Statement of the Problem

There has been mountain concern about the decline of the productivity of the manufacturing sector in Nigeria in recent times, despite government embarking on several strategies aimed at improving manufacturing sectors performance (Tomola, Adebisi and Olawale 2013). numerous lending rate policies by both the Central Bank and Deposit money banks have been unable to attract sufficient credits to the manufacturing sector. Despite the introduction of the Structural Adjustment Program (SAP) in 1986, credit administration to manufacturing firm has a proportion of total bank credits. It average 15.7% between 1990 and 1994 and 25.8% between 1995 and 2000.

This has translated to negative consequences on the Nigerian economy such as unemployment level and loss of valuable foreign exchange earnings to foreign competitors. And this has reduced the productivity of the manufacturing sector thereby reducing the level of economic output (Davis and Emercimini, 2015).

Objectives of the Study

The broad objective of this research is to empirically study the Effect of Bank’s Lending Rate on Manufacturing Industry’s Output in Nigeria. The sub objectives include:

1. To evaluate the association between nominal lending rate and manufacturing output in Nigeria
2. To ascertain the association between prime lending rate and manufacturing output in Nigeria

Research Questions

The following research questions are considered relevant for the purpose of this research work.

1. What is the association between nominal lending rate and manufacturing output in Nigeria?
2. What is the association between the prime lending rate and manufacturing output in Nigeria?

Hypotheses

The following hypotheses will be tested for this study

1. Ho: There is no significant relationship between nominal lending rate and manufacturing output in Nigeria
2. Ho: There is no significant relationship between prime lending rate and manufacturing output in Nigeria

Review of Related Literature

Conceptual Review

Interest rate is the amount paid per unit expressed as a percentage of the amount borrowed. (Olomide, Frances &Akongule, 2013). Interest rate can either be nominal or real. Nominal interest rate can be measured in currency terms, not in terms of goods. Real interest rate is corrected for inflation and is calculated as the nominal interest rate minus the rate of inflation (Pardey, 1999).Cost of credit is important in the loanable funds market because it is key to mobilization and efficient allocation of financial resources in an economy. According to Harvey (2003), interest rate is associated with borrowing money. Thus, deposit rate is the interest cost or interest expense a financial institution must incur for the use of credit. The lending interest rate however is the yearly price charged by a lender to a borrower in order for the borrower to obtain credit facilities, usually expressed as a percentage of the total amount loaned. It is the cost a borrower needs to pay to access credit, and the return a creditor enjoys for deferring his consumption or parting with such liquidity. (Harvey, 2003).
Monetary and fiscal policy are the two principal means government used in regulatory market in the economy to influence the pattern of economic activity. It is a Central Banks mandate to influence the availability and the cost of credit in the economy. Apart from the Open Market Operations in the money market by the Central Bank of Nigeria, occasioned by the need to attain the necessary level of money supply in the economy, and also to raise money for development purposes (as mostly experienced in the less developed countries), the Central Bank of Nigeria lends to the banks that desire to borrow money at its stipulated lending rate (the MRR), now replaced with the Monetary Policy Rate (MPR). The banks are expected to maintain low cash reserves ratio. (Olomide, Frances & Akongule, 2013).

Overview of the Nigerian Manufacturing Sector

The history of manufacturing sector in Nigeria can be traced to pre-colonial times. In village based societies of the Igbo, Hausa, Bini and the Yoruba among others, small-scale manufacturers of goods for trade, social and other purposes prevailed. West African manufacturing was based on activities such as metal working, food processing and clothing among a variety of others. The Nigerian manufacturing sector is still very small, and dominated by a wide range of light consumer goods. It remains heavily import dependent by a wide range of light consumer goods, despite decades of growth sustained by import substituting policies.

Initial efforts in the manufacturing sector were geared towards the adoption of an import substitution strategy where light industry and assembly related manufacturing activities were embarked upon by the previous trading companies. Up to the 1970’s the prime mover in manufacturing activities was the private sector which established some agro-based light manufacturing (Margaret, 2012) Uzaoga (1981), stressed that the few manufacturing industries established by foreign trading companies focused on the production of light industrial commodities, that relied largely on external inputs. These alterations hindered the capacity of the industrial sector in terms of its contribution to the gross domestic product and capacity utilization which are indices for accessing the performance of the manufacturing sub-sector.

Contributions of Deposit Money Banks to Manufacturing Sector in Nigeria

Manufacturing sector plays significant role in a modern economy and has many dynamic benefits importance for economic growth and transformation. In developed countries, the manufacturing sector is key sector in many perspectives. It increases productivity for import replacement and export promotion, hence, increasing foreign exchange earnings and thus increasing the level of employment, capital income, standard of living and economic growth. (Anyanwu, 2003). Prior to independence, agricultural sector dominated Nigeria’s market and accounted for the major share of its foreign exchange earnings. At the beginning, inadequate capital investment led to limited expansion of the manufacturing sector. Initial efforts in revamping the manufacturing sector were oriented towards the adoption of an import replacement strategy where Light Industry and assembly related manufacturing ventures were embarked upon by the formal trading companies till 1970. The main mover in manufacturing activities was the private sector which established few agro-based light manufacturing units. Soyode, (2014). Basically, industrialization constitute an important means for improving the standard of living. Hence Udoka, Anyingang, & Tapang, (2012), posited that in any economy, one or more sectors serve as a prime mover to moving the rest of the economy forward.

Effects of Bank Lending Rate on the Manufacturing Sector

The manufacturing sector of the economy today is mostly affected with increase bank lending rate. According to Perez, (2011), the manufacturing sector often source fund to facilitate production of goods. A slight increase on the lending rate of banks in the opinion of Perez, normally affects the manufacturing sector adversely for obvious reasons. This situation according to Perez cannot be comfortable to the regular seekers of bank funds for production and other monetary and economic services. In substituting this, Nampewo, (2013) noted that “in the industrial sector, the most critical failure in official policy is the neglect of manufacturing industries which are intimately linked with daily life of the ordinary citizen in towns and villages to meeting their needs. They are the cradle of our technological self-reliance. Their development should be the centre piece of government support of private industry, such support should include bank loan with a reduced lending rate. Regrettably, Ikhide, (2009) noted that the opinion as expressed by Ikhide above cannot work out in the above dispensation, when the central bank of Nigeria (CBN) policy of #25 billion recapitalization for deposit money banks has introduced a serious deregulation in the banking sector. According to Ikhide (2009), this development coupled with the galloping inflation has equally affected bank-lending rate to all borrowers of money from banks. He further noted that the
manufacturing sector that sources for bank loan is adversely affected. And that unlike the large scale industries that can turn in much foreign exchange, most of them are under foreign ownership. The indigenous small and medium scale industries that need the bank financial assistance seem to be trapped by this unpleasant development.

Interest Rate Spread and the Performance of Nigerian Banking Industry

The price which borrowers pay for the use of money they borrow from a lender/financial institution is known as Interest rate. In other words it is a cost paid on borrowed assets (Crowley, 2007). Interest rate is a macroeconomic variable that banking industry uses for effective resource allocation in an economy. This however is made possible through the intermediation role played by these financial intermediaries in the economy. The Central Bank of Nigeria regulates the activities of these intermediaries in Nigeria with a view to achieving sets of monetary policy targets. One of the ways they do this is by setting a Monetary Policy Rate (MPR) which is the minimum rate in which Deposit Money Banks (DMBs) otherwise known as commercial banks lend to their customers. It is also the rate at which DMBs borrow from the Central bank of Nigeria. However, the difference between MPR and the maximum lending rate by the Deposit Money Banks is called Interest Rate Spread (IRS). On the other hand interest rate spread can also be measured as the difference between bank deposit rate and that of lending rate. For the purpose of this work, we will be viewing interest rate spread as the difference between deposit rate and that of lending rate. Interest rate spread is seen as a measure of profitability between the cost of short term borrowing and the return on long term lending. Financial institutions are established to provide financial services with a view to make profit.

The survival and sustainability of any profit oriented business relies on the level of profit they make. Banks however, as financial institutions provide financial services to their clients with a view to make profit. Banks give loan to their customers as part of the intermediation role they play in an economy and in return, charge interest for the use of money borrowed. Meanwhile, Ngugi (2001), noted that charging of interest on the use of money borrowed is important because the effect of time may erode the value of the amount of money borrowed. Therefore, interest rate which is a price paid for the use of borrowed assets reflects the market information regarding expected change in the purchasing power of money or future inflation. Financial institutions enhance mobilization of savings, diversification and pooling of risk as well as allocation of scarce resources. Since the receipt for deposit are not always synchronized with that of loan, intermediaries like bank incur certain cost (Ngugi, 2001). Hence, banks charge a fee for the intermediation services offered under uncertainty, and set the interest rate level for both deposit and loan.

According to Rasheed (2010), the difference between the gross cost of borrowing and the net return on lending defines the intermediation cost (information cost, transaction cost, administration cost, default cost, and operational cost). However, the rate at which each bank charges for the borrowed assets depends on the level of risk they are ready to shoulder. Meanwhile risk-averse banks operate with small interest spread due to the level of risk they are ready to undertake. This however is due to the fact that risk aversion raises the banks optimal interest rate and reduces the amount of credit supply. Folawewo (2008), asserts that actual spread which incorporates the pure spread is in addition influenced by macroeconomic variables including monetary and fiscal policy activities. Another factor that affects banks interest spread is the market structure in which the banks operate. According to Ng’etich and Schildbach (2012), noted that depending on the market structure and risk management, the banking industry is assumed to maximize either the expected utility of profit or the expected profit. They also assert that, depending on the assumed market structure the interest rate spread component varies. For instance, assuming a deposit rate and market power in the loan market, the interest rate spread is traced using the variation in loan rate. But with market power in both markets, the interest rate spread is defined as the difference between the lending rate and the deposit rate.

In an independent study conducted by Gropp, & Lichtenberger (2007), identified several reasons that are responsible for high interest rate spread, these include among other things, lack of adequate competition, scale diseconomies due to small size of the market, high fixed and operating cost, high transportation cost, increased communication cost, existence of regulatory controls and perceived market risk.

Empirical Review

Tomola, Adebisi and Olawale (2013), investigated the impact of bank’s lending rate on the performance of the manufacturing sector in Nigeria. The study covered the period between 1973 and 2009. The VECM was used to analyze
the data. The result shows that manufacturing capacity utilization and bank lending rate significantly affect manufacturing output in Nigeria. Interest rate however, had a negative impact on manufacturing output. Obadeyi, Akigonola, and Afolabi (2013) evaluated interest rate targeting as a tool for economic growth in Nigeria, using a stake holder’s perspective. The study span the period between 1970 and 2010. The Error Correction Mechanism (ECM) was used. The result revealed evidence and indicated that larger proportion of borrowing by the Nigerian government, which are majorly financed by the CBN has led to uncontrollable excess liquidity and inability of locally manufacturing firms and small enterprises to raise loanable funds from banks.

The study by Obadeyi (2013), focused on the impact of interest rates on the development of an emerging market in Nigeria. The study covered the period between 1970 and 2010 and adopted the ECM. The result showed that both interest rate and inflation rate had negative impact on economic growth. The contribution of Deposit Money Banks credits to manufacturing sectors in Nigeria formed the focus of the investigation by Ogar, Nkamare and Charles in (2014). Using ordinary least squares, the result revealed that Deposit Money Banks Credit had a significant impact on manufacturing output. Nwosa, Oseni and Olasunkanmi (2013), assessed the effect of banks loan to small and medium enterprises on manufacturing output in Nigeria. Using data covering 1992 to 2010 and the Error Correction Modeling technique, the result showed that banks loan to SME sector had insignificant impact on manufacturing output both in the long and short run. Chris and Anyingang (2012), evaluated the impact of interest rate fluctuation on economic growth of Nigeria.

Using data covering the period between 1970 and 2010 and the Ordinary Least Squared technique, the result showed negative relationship between interest rate and economic growth. Acha and Acha (2011), investigated interest rate in Nigeria. The study used Pearson’s Correlation, coefficient and Regression Technique. Evidence from the result showed that interest rate is a core determinant of savings and investments and they added that bank credits are mostly not used for productive purpose. Davis and Emerenini (2015), assessed the impact of interest rate on investment in Nigeria. Adopting the Multiple Regression Technique the result revealed that high interest rate negatively affected investment in Nigeria. Olamide, Frances and Akongwale (2013), analyzed policy option for low and sustainable lending rates in Nigeria. They adopted descriptive statistics and found that high interest rates are driven by high sunk costs due to paucity of infrastructure.

Theoretical Framework

Keynes’s Liquidity Preference Theory of Interest

The liquidity preference theory was postulated by John Meynard Keynes (1936). He defines the rate of interest as the reward of not hoarding but the reward for parting with liquidity for the specified period. Liquidity preference is the desire to hold cash. According to Keynes, interest rate is the “price” which equilibrates the desire to hold wealth in the form of cash (demand for cash or money) with the available cash (supply of cash). In the Keynesian sense therefore, interest rate is influenced by the demand for and the supply of money. This theory is characterized as the monetary theory of interest as distinct from the real theory of the classical economists. The supply of money (Ms) though a function of interest rate, to some degree is considered fixed by the monetary authorities and thus has a perfectly inelastic curve. The demand for money (Mp) is a function of the transactions, precautionary and speculative motives for holding money. This could be represented as:

\[ Mp = M_1 + M_2 + M_3 \]

Where

\[ M_1 = \text{Transaction demand for money} \]
\[ M_2 = \text{Precautionary demand for money} \]
\[ M_3 = \text{Speculative demand for money} \]

The transactions motive relate to the need of cash for the current transactions of personal and business exchanges while the precautionary motive relates to the desire to provide for contingencies requiring sudden expenditures and for unforseen opportunities of advantage purchases. Keynes holds that both the transactions and precautionary motive are relatively
interest inelastic but are highly income elastic. On the basis of the above assumption, he chose to denote the amount of money held under these two motives as $M_1$.

$$\text{The } M_1 = I_1 (Y)$$
$$\text{Where } I_1 = \text{Constant function}$$
$$Y = \text{Level of income}$$

On the one hand, speculative motive related to money held for securing profit from “knowing better than the market what the future will bring forth”. Money held for speculative purposes is a liquid store of value, which can be invested in an opportune moment in interest bearing bonds or securities. Similarly, if we denote the speculative demand or motive for money as $M_2$.

$$\text{The } M_2 = L_2 (I/r)$$
$$\text{Where } L_2 = \text{Constant function}$$
$$r = \text{Interest rate.}$$

It is to be noted from the above expression or relationship that the speculative demand for money is not only interest elastic but is a decreasing function (inverse relation) of the rate of interest.

From the liquidity preference theory therefore, the total demand for money, $M$ is the summation of the three motives.

Thus, $M = M_1 + M_2 = L (Y.I/r)$

**Methodology**

The design used for the study is ex-post facto research design. This is because the data for the study which are time series data are historical in nature. The regression analysis, specifically the cointegration components of the least squares will be used to analyze the data which will cover the period 2007 and 2017.

**Model Specification**

The model used for the study is stated functionally below:

$$\text{MNQ} = F(NLR, PLR) \dotsc \dotsc \dotsc \dotsc \text{ eq. 1}$$

This could be stated linearly expresses as:

$$\text{MNQ} = b_0 + b_1PLR + b_2NLR + U_t \dotsc \dotsc \dotsc \text{ eq. 2}$$

Where:
- $\text{MNQ} = \text{Manufacturing output}$
- $\text{PLR} = \text{Prime Lending rate}$
- $\text{NLR} = \text{Nominal lending rate}$
- $U_t = \text{Error theme}$

**Test of Hypotheses and Research Questions**

Although various tests will be conducted, the parsimonious ECM will be specifically used to test the relevant hypotheses and analyze the research questions. Specifically, the t-statistic in the parsimonious ECM result will be used to test the various hypotheses. The decision rule will be to reject the particular null hypotheses and gives an affirmative response to the research question if the t-calculated is greater than the t critical. The reverse is the case if the t-calculated is less than the t-critical in absolute term.

**Nature and Sources of Data**
The data to be used are secondary in nature and will be collected from the Central bank of Nigeria’s statistical bulletin, (various Issues) and the World Bank Indicators for Nigeria (Various Issues). The data which will include those on manufacturing output, nominal lending rate and prime lending rate will cover the period between 2007 and 2017.

Table 1: Descriptive Statistics Result

<table>
<thead>
<tr>
<th></th>
<th>LMQ</th>
<th>LNLR</th>
<th>LPLR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>8.977705</td>
<td>2.328003</td>
<td>623728.7</td>
</tr>
<tr>
<td>Median</td>
<td>9.523129</td>
<td>2.420368</td>
<td>85880.00</td>
</tr>
<tr>
<td>Maximum</td>
<td>11.58871</td>
<td>3.292126</td>
<td>5048710.0</td>
</tr>
<tr>
<td>Minimum</td>
<td>5.743003</td>
<td>1.609438</td>
<td>2.717340</td>
</tr>
<tr>
<td>Std. Dev.</td>
<td>1.346067</td>
<td>0.444128</td>
<td>1342915.0</td>
</tr>
<tr>
<td>Skewness</td>
<td>-0.752502</td>
<td>0.125715</td>
<td>2.253582</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>3.609772</td>
<td>2.099950</td>
<td>6.594096</td>
</tr>
<tr>
<td>Jarque-Bera</td>
<td>3.735550</td>
<td>1.237186</td>
<td>47.07876</td>
</tr>
<tr>
<td>Probability</td>
<td>0.154467</td>
<td>0.538702</td>
<td>0.000000</td>
</tr>
<tr>
<td>Sum</td>
<td>305.2420</td>
<td>79.15209</td>
<td>21206775</td>
</tr>
<tr>
<td>Sum Sq. Dev.</td>
<td>59.79260</td>
<td>6.509235</td>
<td>5.95E+13</td>
</tr>
<tr>
<td>Observations</td>
<td>34</td>
<td>34</td>
<td>34</td>
</tr>
</tbody>
</table>

Source: Author’s computation, E.View 9

The mean of the manufacturing output is 8.98 and the standard deviation which is the variability of the data and gives an appreciation of the data spread is 1.35 indicating a marginal deviation. The maximum value for manufacturing output is 9.52 and the minimum value is 5.74. The mean of the nominal lending rate is 2.33 which is not far from the standard deviation of 0.44. The highest value for nominal lending rate is 3.29 while the lowest value is 1.61. The mean for overdraft lending rate is 3.00 and the standard deviation is 0.30 indicating a low spread. The peak value for overdraft lending rate is 3.58 while the lowest value is 2.30. The mean for prime lending rate is 623728.7 and the standard deviation is 21342915. The maximum value for prime lending rate is 5048710 while the minimum value is 2.72. The mean value for sub-prime lending rate is 54851.41 and the standard deviation is 72648.16. The highest value for sub-prime lending rate is 249220.6 and the minimum value is 1322.80. The skewness which measures the asymmetry of the data series indicate that the series is skewed to the right. The Kurtosis which measures the peak and flatness of the series with an expected value of 3 indicates that the manufacturing output, overdraft lending rate, and sub-prime lending rate satisfied the condition. The result of the Jarque-bera normality test indicates that with the exception of the prime lending rate, the residuals in all the other variables are normally distributed.

Test of Hypotheses

The hypotheses and research questions will be analyzed with the t-statistic

Test of Hypothesis one and Research Question one

The first hypothesis and first research questions are briefly restated below:

Ho 1: There is no significant relationship between nominal lending rate and manufacturing output

The absolute value of the t-calculated which is -3.07 is greater than the t-critical value of 1.96. This is an indication of the validation of the alternative hypothesis that there is a significant relationship between nominal lending rate and manufacturing output in Nigeria and a rejection of the null hypothesis. This gives an affirmative answer to the research question that in Nigeria nominal lending rate matters for manufacturing productivity.

Test of Hypothesis Two
Ho 2: There is no significant relationship between prime lending rate and manufacturing output in Nigeria.

The result indicates an acceptance of the alternative hypothesis of a significant relationship between prime lending rate and manufacturing output in Nigeria and gives an affirmative response to the research question that prime lending rate matters for manufacturing output in Nigeria since the absolute value of the t calculated of -3.62 > t critical value of 1.96.

Conclusion

Drawing from the Keynesian and financial theories of investment amongst others the research investigate the effect of banks lending rate on the output of the manufacturing sector in Nigeria. Interest rates have been used as an important tool in generating the desired level of manufacturing productivity in both the emerging and developed countries of the world.

Recommendations

The following recommendations are therefore made for policy purpose:

1. The Deposit Money Banks should give credit facilities to manufacturing outfit at concessionary interest rate. Interest rate target by the Deposit Money Banks should be moderated. This will increase the output of the manufacturing sector
2. The Nigerian Deposit Insurance Corporation should do more to guarantee loans granted by Deposit Money Banks to the manufacturing sector to prevent the bank from the problem of non-performing loans

References


