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THE EFFECT OF RISING INTEREST RATES ON THE PERFORMANCE OF THE NIGERIAN MANUFACTURING SECTOR

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Abstract: **The performance of the manufacturing sector in Nigeria has been abysmal over the years, and this could be attributed to the inadequacy of available funding windows to support the manufacturing sector, which ultimately has contributed to the reduction in capacity utilization of the manufacturing sector in the country. Three major factors that have contributed to the poor performance of the sector are: First, the continued deterioration in infrastructural facilities, second, lack of access to finance and third, rising interest rate. The study, therefore, examines the effect of rising interest rates on the performances of the Nigerian manufacturing sector. Data for the study spans eighteen years (18) years covering 2000 to 2017. The ordinary least square was used to analyse the models. Findings from the study show that the rising interest rate in Nigeria affects the performances of the Nigerian manufacturing sector. Given these findings, the study recommends that aside from trying to manage interest rate for enhanced economic growth, the Nigerian Government should strive to provide infrastructural facilities particularly power and possibly rail transportation to reduce the high cost of production.**

Keywords: **Interest Rate; Capacity Utilization; Manufacturing Sector; GDP.**

1. INTRODUCTION

Over the years, interest rates have remained a subject for critical assessment with diverse implications for savings mobilisation and investment promotion. Generally, interest rates are the rental payments for the use of credit by borrowers and return for parting with liquidity by lenders (CBN, 1997). In the Nigerian economy, the minimum rediscount rate (MRR) now monetary policy rate (MPR) is the official interest rate of the Central Bank of Nigeria (CBN), which anchors all other interest rates in the money market and the economy (Ogunbiyi and Ihejirika, 2014)

The manufacturing sector contributes mainly to the transformation of the Nigerian economy. For example, it is an avenue for increasing productivity related to import replacement and export expansion, creating foreign exchange earning capacity; and raising employment and per capita income which causes unique consumption patterns (Imoughele and Ismaila, 2014). Furthermore, Ogwuma (1995) opines that the manufacturing sector creates investment capital at a faster rate than any other sector of the economy while promoting broader and more effective linkages among different sectors. Loto (2012) argued that the Structural Adjustment Programme (SAP) introduced in May 1986 was partly designed to revitalise the manufacturing sector by shifting emphasis to increased domestic sourcing of inputs through monetary and fiscal incentives. The deregulation of the foreign exchange market was also affected to make non-oil exports especially manufacturing sector more competitive even though this also resulted in a massive escalation in input costs (Loto, 2012).

Examining the growth of the manufacturing sector over the years in Nigerian, the share of the manufacturing sector in the gross domestic product has not been impressive.

Over the eighteen (18) years of this study, the percentage of the manufacturing sector in GDP has been poor. On capacity utilisation, the manufacturing sector average capacity utilisation as at 1986 stood at 38.8% and increased to 40.3% in 1990.

Thus, this study, therefore, examines the effect of rising interest rates on the performances of the Nigerian manufacturing sector.

2. STATEMENT OF THE PROBLEM

The problem under study is the impact of rising interest rate on the manufacturing sector.

3. OBJECTIVE OF THE STUDY

(I) To identify if there is a relationship between interest rates and the performance of the manufacturing sector in Nigeria.

(II). To proffer solutions to the problems of the Nigerian manufacturing sector

4. REVIEW OF RELATED LITERATURE

4.1. Conceptual Framework:

Capital plays a critical role in the economic growth and development process in any economy, and without doubt, nation across the globe still emphasise capital accumulation by stressing the need for raising the level of investment to output. This emphasis is traceable to the short-term fiscal policies and national development plans of both the developed and the developing economies over the past four decades. One significant trend in the developmental process which has remained consistent since civilisation is that, all developed Nations are industrialised (Udoka, Roland, and Tapang, 2012). Industrialisation is associated with massive investments financed through capital accumulation. Rapid and sustainable real economic growth is a necessary condition for economic development. Meanwhile, for growth to occur there is the need for a relatively stable macroeconomic environment which is an indicator for low risk and a condition for attracting investment and boosting entrepreneurial activities. Even though a certain level of lending interest rate and inflation may be necessary for attracting investment. There is, therefore, the need to keep lending interest rate and inflation at a manageable limit in order to propel economic growth. The macroeconomic policy formulation challenge confronting many developing countries today is how to achieve single digit inflation, manageable trade and balance of payments deficits and higher savings and investments rates to finance long-term economic growth (Udoka, Roland, and Tapang, 2012).

In Nigeria, interest rate is determined by the following factors: i. The investment demand: The higher the level of investment demand the higher the level of interest rates. On the other hand, the lower the investments demand, the lower the level of interest rates. ii. The level of savings (or conversely the level of consumption): The higher the level of savings the lower the interest rate while, the borrower the level of savings, the higher the level of interest rates, iii. Demand for money or the liquidity preference: The higher the money demand, the lower the interest rate while the lower the money demand, the higher the interest rates, iv. The quantity of money or money supply: In the Keynesian parlance as we increase money supply the interest rate will reduce (Udoka and Roland, 2012). Capacity utilisation is a concept in Economics, which refers to the extent to which an enterprise or a nation uses its installed productive capacity (Adeyemi and Olufemi, 2016). Thus, it refers to the relationship between actual output produced and potential output that could be produced with installed equipment if capacity was fully used. Capacity utilisation in the industry is described as the level of utilisation of an industry's installed productive capacity. An industry would be said to be performing optimally when its installed production capacity is fully utilised. By contrast, in the cost approach, the capacity output is an optimum level of output at which an additional unit of output would well exceed the output range Adeyemi and Olufemi, 2016).

4.2. Theoretical Framework:

Macroeconomists have established the theoretical relationship between real output and monetary policy measures. In contrast to Keynesian policy prescription, McKinnon (1973) and Shaw (1973) in there hypothesis of finance-led growth advocated that market force induce higher interest rate would enhance more investment by channelling savings to productive investment and stimulate real output growth such as the manufacturing sector (Imoughele and Ismaila, 2014).

(Udoka, Roland, and Tapang, 2012) Notes that there is a large body of literature on interest rate management. The important ones are the classical, the loanable funds, the Keynesian and the modern theory of interest. The classical theory posits that the rate of interest is determined by the supply and demand for capital by the expected productivity of capital. Both time preference and productivity of capital depend upon waiting or saving or thrift. The theory is also known as the supply and demand theory of savings (Udoka and Roland, 2012). The Keynesian liquidity preference theory determines the interest rate by the demand for and supply of money in a stock theory. It emphasises that the rate of interest is purely a monetary phenomenon. It is a stock analysis because it takes the supply of money as given during the short run and determines the interest rate by liquidity preference or demand for money. On the other hand, the loanable funds' theory is a flow theory that determines the interest rate by the demand for and supply of loanable funds. It involves the linking of interest rates with savings, dishoarding and bank money on the supply side. However, this work is anchored on the

Keynesian theory (Udoka, Roland, and Tapang, 2012). According to the Keynesians school of thought, a discretionary change in money supply permanently influences real output by lowering the rate of interest and through the marginal efficiency of capital, stimulate investment and output growth (Athukorala, 1998).

4.3 Empirical Review:

Imoughele and Ismaila (2014) examine the impact of monetary policy on Nigeria's manufacturing sector performance for the period 1986-2012. Data were collected from the Statistical Bulletin and Annual Report and Statement of Accounts of the Central Bank of Nigeria as well as the Annual Abstracts of statistics (various issues) of the National Bureau of Statistics (NBS). Results of the study after ensuring data stationarity and cointegration show that the individual variables: external reserve, exchange rate and inflation rate were statistically significant to manufacturing sector output while broad money supply and interest rate were not statistically significant to manufacturing sector output in the previous and current year. However, interest rate, exchange rate and external reserve impacted negatively on the sector output, but broad money supply and inflation rate affect the sector positively. The pair-wise Granger Causality results suggest that real exchange rate and external reserves granger cause Nigeria's manufacturing output to each other unidirectional. Imoughele and Ismaila (2014) also found that the manufacturing sector contributes insignificantly to the Nigerian economy.

Obamuyi, Edun and Kayode (2010) investigate the effect of bank lending and economic growth on the manufacturing output in Nigeria. Times series data covering 36 years (1973-2009) were employed and tested with the cointegration and vector error correction model (VECM) techniques. The findings of the study show that manufacturing capacity utilisation and bank lending rates significantly affect manufacturing output in Nigeria. However, the relationship between manufacturing output and economic growth could not be established in the country. These results, therefore, call for a concerted effort by the government, manufacturers and the lending institutions to reviewing the lending and growth policies and provide the appropriate macroeconomic environment, in order to encourage investment-friendly lending and borrowing by the financial institutions Obamuyi, Edun and Kayode (2010).

Udoka and Roland (2012) investigate the effect of interest rate fluctuation on the economic growth of Nigeria. To this end, two hypotheses were formulated to investigate the relationship between interest rate and economic growth and the difference in economic growth before and after interest rate deregulation regime in Nigeria. Data were analysed and tested using the ordinary least square multiple regression analysis, and the result of the findings revealed that there existed an inverse relationship between interest rate and economic growth in Nigeria. This implies that an increase in interest rate will decrease GDP of the country, thus retarding the growth of the real sector.

Ayanwale (2013) noted that the Central Bank of Nigeria (CBN) has not formulated a model that will reduce interest rate, inflation and stabilize the exchange rate and as such set out to examine the impact of interest rates on the development of an emerging market using a time series analysis of 40 years (1970- 2010). The Error Correction Modelling (ECM) was adopted to reconcile fluctuations or changes both in the short and long run between the variables, and the result shows that due to the ability to estimates the parameters of Error Correction Mechanism (ECM), which is generally consistent, sufficient, significant and negative. The non-zero coefficient of changes in interest rate and exchange rate in both ways been statistically significant indicates a short-run causality from interest rate to the gross fixed capital formation as well as from changes in inflation to the gross domestic product. Thus the paper recommends that pragmatic approach need to be adopted to ensure that the lending rates are reduced to single digit in order to reduce production cost, high unemployment rate and encourage Foreign Direct Investment (FDI).

Adeyemi and Olufemi (2016) investigated the determinants of capacity utilisation in the Nigerian manufacturing sector between 1975 and 2008. The study used capacity utilization as the dependent variable while its determinants such as Real Manufacturing Output Growth Rate (MGDP), Real Interest Rate (INTR), Consumer's Price Index (CPI), Fixed Capital Formation in Manufacturing Sector (CPF) and Electricity Generation on Rate (EGR) (Proxy for energy) were used as independent variables. Cointegration and Error Correction Model (ECM) were employed as the estimation techniques to study the time series properties of the variables and to ascertain the existence of a long-run relationship between capacity utilisation and its determinant indicators. A structured questionnaire was administered to assess the operational materials and the performance of the selected firms. The findings of the study revealed that there is a positive relationship between the consumer's price index, fixed capital formation in the manufacturing sector and capacity utilisation. The study also showed that there is a negative relationship between electricity generation, real manufacturing output growth rate and capacity utilisation which resulted in low manufacturing productivity growth rate in Nigeria. Odior (2013) investigates the impact of macroeconomic factors on manufacturing productivity in Nigeria over the period 1975-2011. The analysis starts

with examining stochastic characteristics of each time series by testing their stationarity using Augmented Dickey-Fuller (ADF) test and estimate error correction mechanism model. The findings were reinforced by the presence of a long-term equilibrium relationship, as evidenced by the cointegrating equation of the VECM.

Odior (2013) found that credit to the manufacturing sector in the form of loans and advances and foreign direct investment can sharply increase the level of manufacturing productivity in Nigeria, while broad money supply has less impact. The study, therefore, recommends that government must create ''enabling environment'' for manufacturers in the area of infrastructure, financial, legal and property rights. The high cost of borrowing is due to high-interest rate spread. Therefore, this paper advocates a cut in the margin between lending and deposit rates.

Idoko and kpeyol (2012) assessed the impact of interest rate deregulation on economic growth in Nigeria. Using an autoregressive model, GDP growth rate (G) was regressed against lending rate (LR), savings rate (SR), Inflation rate (IF), exchange rate (X), financial deepening (FD) and lagged G (G-1) for two separate periods; the regulation era (1970-1986) and deregulation era (1987–2009). The result showed that the deregulated interest rate (represented by LR) has an insignificant impact on economic growth. However, inflation rate and exchange rates were found to have a positive and significant impact on economic growth.

Ojo and Ololade (2014) assessed the contribution of manufacturing sector to economic growth in Nigeria in the era of globalisation. Ordinary Least Square (OLS) econometric technique was used on time series data of relevant variables of manufacturing output, trade openness and current account balance and the study found that though Nigeria manufacturing sector benefited from globalisation process, the level of the development in the sector was found to be highly negligible. Thus implying that globalisation exerts little impact on economic growth via the manufacturing sector of the economy.

Okonkwo, Egbulonu, and Mmaduabuchi (2015) examined the impact of monetary policy variables on manufacturing in Nigeria from 1981 – 2012. The theoretical relationship between monetary policy variables and manufacturing sector (that is, the real sector) was critically examined and established in this study using the Johansen cointegration test in order to establish long-run equilibrium relationship between the explained and the explanatory variables. The error correction model (ECM) was employed to estimate the model, and the study revealed that money supply and credit to private sector exert tremendous influence on manufacturing in Nigeria. Macroeconomists have established the theoretical relationship between real output and monetary policy measures thus reiterating that the finance-led growth advocated that market force induces higher interest rate would enhance more investment by channelling savings to productive investment and stimulate real output growth such as the manufacturing sector (Imoughele and Ismaila, 2014). Thus the crucial role of capital in the economic growth and development process had been recognised such that Industrialization is associated with heavy investments financed through capital accumulation. Meanwhile, for growth to occur there is a need for a relatively stable macroeconomic environment characterised by low risk and a condition for attracting investment and boosting entrepreneurial activities. There is, therefore, the need to keep lending interest rate and inflation at a manageable limit in order to propel investments in the manufacturing sector and by implication, economic growth. This can only be achieved through the management of interest rate. Thus, interest rates were adjusted through the "invisible hand" in order to promote increased level of investment in the various preferred sectors (manufacturing) of the economy

5. METHODOLOGY

This study adopts the ex-post facto research design to examine the effect of rising interest rate on the performances of the Nigerian manufacturing sector. The data used are secondary data and spans for a period of eighteen years covering 2000 to 2017. The data were obtained from the Central Bank of Nigeria 2017 statistical bulletin. The model was specified to show the effect of rising interest rate on the performances of the Nigerian manufacturing sector and was estimated using the ordinary least squares after ensuring the stationary properties of the dataset. Thus the study hypothesises that rising interest rate has a negative effect on the performances of the Nigerian manufacturing sector. The functional relationship is expressed as: AMCU = f (MLR,INFr)…… ..(1)

Where: AMCU = Average Manufacturing Capacity Utilization MLR = Maximum Lending Rate.

INFr=Inflation rate

The functional relationship is stated below

AMCU=β0+ β1MLR+ β2INFr+Ui----------2

A priori expectation

B0, β2>0,and β1<0

6. FINDINGS

The estimation outputs of the model are reported in table 1 below. Table 1 below shows the regression analysis determining the effect of rising interest rate on the average capacity utilisation of the Nigerian manufacturing sector.

Dependent Variable: AMCU

Variable	Coeffiient	Std. Error	t-Statistic	Prob.
C	39.87903	8.813307	4.524865	0.0004
INF	0.526678	0.325773	1.616702	0.1268
MLR	0.339092	0.384432	0.882061	0.3917
R-squared	0.224383	Mean dependent var		53.72889
Adjusted R-squared	0.120967	S.D dependent var		5.463924
S.E. of regression	5.122799	Akaike info criterion		6.256291
Sum Squared resid	393.646	Schwarz criterion		6.404686
Log likelihood	-53.30662	Hannan-Quinn criter		6.276752
F-statistic	2.169715	Durbin-Watson stat		0.459899
Prob(F-Statistic)	0.148716			

Source: Author's Computation from Stata

Table 1 shows the sign of the coefficient of 0.339092 to be positive. This thus implies that the rising interest rate in Nigeria has a positive effect on the average capacity utilisation of the Nigerian manufacturing sector. This implies that the rising interest rate in Nigeria does not impede the activities and the performances of the Nigerian manufacturing sector. This result does not conform to the a priori expectation. The result also shows that inflation (INF) has a positive relationship with AMCU within the period of our study. The result shows that a unit change in inflation rate will lead to 0.526678 changes in AMCU. This finding conforms to a priori expectation.

7. CONCLUSION AND RECOMMENDATION

The regulations and deregulations of interest rate in Nigeria were all in a bid to manage the country's capital allocation through the financial sector to encourage economic growth primarily through the preferred sectors. Prominent among the preferred sectors were the agricultural, manufacturing and solid mineral sectors which were accorded priority and deposit money banks were directed to charge preferential interest rates on all loans to encourage the upsurge of small-scale industries which acts as a catalyst for economic development. Thus, this study, therefore, examines the effect of rising interest rates on the performances of the Nigerian manufacturing sector. Findings from the study shows that rising interest rate in Nigeria has a positive effect on the contribution average capacity utilisation of the Nigerian manufacturing sector. This implies that the rising interest rate in Nigeria does not impede the activities and the performances of the Nigerian manufacturing sector. Given these findings, the study recommends that aside from trying to manage interest rate for enhanced economic growth, the Nigerian Government should strive to provide infrastructural facilities particularly power and transportation to reduce the high cost of production. In other words, Government should closely manage monetary and fiscal policies in a way that they engender the need growth of the Nigerian economy

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APPENDIX - A

YEAR	AMCU	MLR	INF
2000	36.1	21.55	6.3
2001	42.7	21.34	6.9
2002	54.9	30.19	18.9
2003	56.5	22.88	12.9
2004	55.7	20.82	14
2005	54.8	19.49	15
2006	53.3	18.7	17.9
2007	53.38	18.36	8.2
2008	53.84	18.7	5.4
2009	55.14	22.62	11.6
2010	56.22	22.51	11.5
2011	56.44	22.42	13.7
2012	55.79	23.79	10.8
2013	55.05	24.69	12.2
2014	56.38	25.74	8.5
2015	56.22	26.3	8.1
2016	57.32	26.7	9
2017	57.34	27.5	15.7