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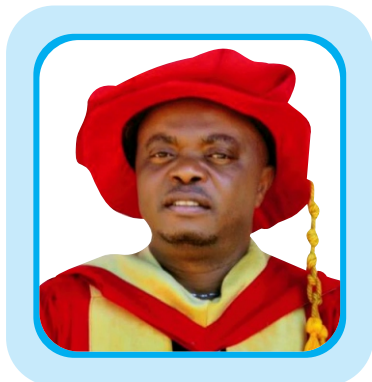
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Fluctuations of Macroeconomic Variables and Manufacturing Output: Issues, Challenges and Prospects of the Growth of Manufacturing Output in Nigeria.



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Abstract

The study examined the impact of fluctuations of macroeconomic variables such as exchange rate, lending rates and inflation rates on the manufacturing output in Nigeria. The paper used descriptive analysis to investigate the relationship between manufacturing output and macroeconomic stability in Nigeria. The findings revealed that macroeconomic instability impacted negatively on the manufacturing output. The paper therefore recommended that policies that will streamline the multiple and volatile exchange rates, interest rate and inflation control should be designed and implemented to ensure their predictability to aid planning and attract both domestic and foreign investors to the, manufacturing sector. This is expected to increase manufacturing output in Nigeria

Key Words; Fluctuations, Macroeconomic Variables, Manufacturing Output, Issues and Challenges, Nigeria

1.0 Introduction

Nigeria has in the past adopted several policy reforms by various political dispensations in an attempt to strengthen the manufacturing sector and one of such policy reforms is the Structural Adjustment Programme (SAP) which was introduced in 1986 (Oyinbo and Emmanuel, 2012). A key component of the reform is the exchange rate deregulation.

The nation's currency, the naira, was considered to be overvalued and that helped to cheapen imports and made exports expensive, hence the deregulation of the currency. Cheap imports also increased their demand, put pressure on foreign exchange and worsened balance of payments. Thus, Nigeria moved away from fixed to flexible exchange rate regime allowing for significant depreciation of the naira aimed at enhancing local production, making Nigerian goods cheaper and boosting exports (Shittu, Ashaolu and Phillip, 2007). The study adopted the descriptive methodology technique to review and examine the effect of Fluctuations of Macroeconomic Variables and Manufacturing Output in Nigeria: Issues, Challenges and Prospects for the growth of the Manufacturing Output in Nigeria.

1.2 Statement of Problem

Empirical evidence reveals that an overvalued exchange rate makes import cheaper and damps inflation by controlling price rise for an import dependent country but the export led industries were not favorable especially manufacturing industries by increasing the cost of exports which caused reduction in inflow of foreign capital leading

to unsustainable balance of payments deficits (Achugamonu, Okorie, Taiwo and Okoye, 2017). On the other hand, evidence from literature also shows that constant devaluation of the naira increased the cost of imported production input thereby fueling inflationary pressures (Tams-Alasia, Olokoyo, Okoye and Ejemeyovwi (2018).

The manufacturing sector in Nigeria has over several decades exhibited low-capacity utilization and this has led to the low contribution to Gross Domestic Product (Ojo, 1970). The low level of capacity utilization has also led to low level of manufacturing output and development which has over the years been attributed to over dependence on the external sector for the importation of most of the inputs required for the manufacturing in the sector (Okigbo, 1993).

Importation of inputs was also affected by the scarcity of foreign exchange which had over the years resulted in low productivity in the manufacturing sector. The introduction of Structural Adjustment Programme (SAP) created a challenge for the sector most especially the deregulation of exchange rate. The deregulation consequently led to unstable and rising exchange rates over the years (Ochei, Areghan and Tochukwu, 2016).

In literature it is noted that devaluation of currency makes exports cheaper and imports costlier so with fairly inelastic demand foreign exchange earnings from exports will increase and imports bills reduced and thereby improving the viability of balance of payments position.

Due to conflicting result of empirical studies

carried out on the effect of macroeconomic variables on manufacturing output in Nigeria, this work therefore aims at investigating the impact of fluctuations of macroeconomic variables on the manufacturing output, specifically it's issues, challenges and prospects for the development of manufacturing output is evaluated. It is important to know the effect of exchange rate deregulation which resulted to massive devaluation of the Nigerian naira, on manufacturing output in Nigeria. The role that interests rate and price level play in the interaction with exchange rate on the output of manufacturing sector in Nigeria.

2.0 Stylized Facts on Macroeconomic instability and Manufacturing output Growth in Nigeria

The manufacturing sector is dominated by a handful of industrial groups namely; beverages (beer, soft drinks and spirits), textiles, tobacco, and coal products. Over 90% of total output are consumer items. There are hardly any productions of capital or intermediate goods. In the fourth National Development Plan in Nigeria, over 60% of total raw materials consumed in the manufacturing sector was imported. What is painful is that Nigeria has the potential to be self-sufficient in some of the hitherto imported items like food and dairy products, cereals, etc. Approximately 2% of the labour force in industry is made up of foreigners who dominate the technological and managerial expertise in this sector. Because of the over dependence on imported raw material the price of locally manufactured product is very high and not competitive with imported ones and also the quality is suspicious. In the face of FEM and the high exchange rate of the

Naira, cost of foreign exchange for the firms that cannot afford adequate capital to import sufficient raw materials operated far below maximum rate of capacity utilization. This causes retrenchment and increases unemployment. The industries in Nigeria are dominated by small and medium scale enterprises. Most of these firms are owned by sole proprietors or operates as family businesses with questionable characters.

Another feature of the industrial sector is its lopsided development. This has led to the efforts of the Federal Government to restructure the entire economy especially the industrial sector to make it more competitive to face the challenges of reviving our depressed economy. Export-oriented industries are given priority because it is believed they will export and earn some foreign exchange and in the long run enable the country to earn sufficient foreign exchange to liquidate her outstanding external debt.

Secondly, the special location of industries in Nigeria is not conducive to balanced economic development. Industries are clustered round few areas particularly, Lagos, Port Harcourt, Ibadan, Kano, Kaduna, Onitsha, Nnewi, Aba, Enugu. Although Industrialization was accorded an important place in the 4th National development plan (1981-1985).

3.0 Literature Review

3.1. Conceptual Literature Review

3.1.1 Review of Exchange Policy Regimes in Nigeria

The exchange rate policy regime in Nigeria has undergone substantial transformation since post-independence era owing from

when the country operated a fixed exchange rate system from 1960 to 1986 to when a market-based exchange rate regime was introduced in the context of the Structural Adjustment Programme (SAP) (Tamunonimim and Reginald, 2013). He further observes that before 1973, Nigeria's exchange rate policy was in consonance with the International Monetary Fund (IMF) par value or fixed exchange system. The Nigerian currency has its exchange rate largely subjected to administrative management because it was not a traded currency. The exchange rate was dictated by the fortunes or otherwise of the British Pound Sterling up to 1967 when the Pound was devalued and thereafter, the country switched to the dollar. The Naira was adjusted in relation to the dollar following the breakdown of the International Monetary Fund (IMF) par value system in December 1971. In 1978, the Naira was pegged to a basket of 12 currencies comprising Nigeria's major trading partners. Throughout the 1970s except 1976 and 1977, the nominal exchange rate appreciated every year. The policy encouraged heavy reliance on imports which ultimately led to balance of payments problems and depletion of external reserve. Nevertheless, up to the time of SAP, exchange rate policy encouraged the overvaluation of the Naira as reflected in real exchange appreciation particularly in the 1970s (Obadan, 1993b, 1994 and 1995).

Obaseki (2001) opines that because the exchange rate control system was unable to evolve an appropriate mechanism for foreign exchange allocation in consonance with the goal of internal balance, it was discarded on September 26, 1986 while a new mechanism was evolved under the Structural Adjustment

Programme (SAP) introduced in 1986. According to Anyanwu, Oyefusi, Oaihenan, and Dimowo, (1997), The main objectives of the exchange rate policy under SAP was to preserve the value of the domestic currency, maintain a favorable external reserve position and ensure balance without compromising the need for internal balance and the overall goal of macroeconomic stability.

A transitory dual exchange rate system was adopted in September, 1986, but metamorphosed into the Foreign Exchange Market (FEM) in 1987 (Bamidele, 2005). Bureau de Change was introduced in 1989 with a view to enlarging the scope of the FEM. In 1994, there was a policy reversal, occasioned by the non-relenting pressure on the foreign exchange market. Further reforms such as the formal pegging of the Naira exchange rate, the centralization of the foreign exchange in the CBN, the restriction of the Bureau de Change to buy foreign exchange as agent of the CBN, etc, were introduced in the Foreign Exchange Market in 1994 as a result of volatility in exchange rates (Soludo, 1993).

There was another policy reversal in 1995 to that of 'guided deregulation'. This necessitated the institution of the Autonomous Foreign Exchange Market (AFEM) which later metamorphosed into a daily, two-way quote Inter-Bank Foreign Exchange Market (IFEM) in 1999. The Dutch Auction system (DAS) was reintroduced in 2002 as a result of the intensification of the demand pressure in the foreign exchange market and the persistence in the depletion of the country's external reserves. The DAS was conceived as a two-way auction system in

which both the CBN and the authorized dealers would participate in the foreign exchange market to buy and sell foreign exchange (Obaseki, 2001).

The official exchange rate in Nigeria is determined by the monetary authority (that is the Central Bank of Nigeria) calculated on an annual average based on monthly averages relative to the US dollar. In the early 1970's the official exchange rate of the naira to the US dollar ranged from 0.5-0.7naira to one US dollar. When the Structural Adjustment Program was initiated in 1986, there was inconsistency in the exchange rate regime in Nigeria. Nigeria moved from a pegged exchange rate regime to flexible exchange rate regime which aided the government to keep the exchange rate at a relatively stable level of 0.89naira to the US dollar in 1985 (Soludo, 1993).

Despite various efforts by the government to maintain a stable exchange rate, the inconsistency in policies and lack of continuity in exchange rate policies has aggravated the unstable nature of the naira which rose rapidly in year 2000 to a rate of 102.11naira to the one US dollar. The rate has since been increasing consistently and up to 2018 when it attained the rate of 306.08naira to one US dollar (CBN Statistical Bulletin, Various Years). In the foreign exchange market, there exist not one unique exchange rate, but different rates depending upon the instrument used in the transfer function. The major types of exchange rates are as follows:

- a) **Spot Rate:** Spot rate is the rate at which foreign exchange is made available on the spot. According to Obadan (2006),

the spot foreign exchange rate is the market where currencies are bought and sold for immediate delivery or delivery within a few working days.

- b) Forward Rate:** Forward rate of exchange is the rate at which the future contract for foreign currency is made. The forward exchange rate is settled now but the actual sale and purchase of foreign exchange occurs in future (Obadan, 2006). The forward rate is quoted at a premium or discount over the rate.
- c) Long Rate:** Long rate of exchange is the rate at which a bank purchases or sells foreign currency bills which are payable at a fixed future date. The basis of the long rate of exchange is the interest on the delayed payment (Jhingan, 2005).
- d) Fixed Rate:** Fixed or pegged exchange rate refers to the system in which the rate of exchange of a currency is fixed or pegged in terms of gold or another currency (Pugel and Lindert, 2002).

There are various exchange rate regime options available to countries for adoption. These range from floating exchange rate regime at one extreme to fixed exchange rate regime at the other extreme, called bi-polar system with the remaining regimes falling on a continuum in between. These include pegs, target zones and fixed but adjustable rates (Udoye, 2009).

- i. Fixed Exchange Rate Regime is a system in which the exchange rate of a country remains constant or stays within some small margin of fluctuation around a

constant par value and the government or the monetary authorities will participate in the foreign exchange market to sustain it (Sanusi, 2004).

- ii. Floating Exchange Rate Regime is a system in which the exchange rate is determined by forces of demand and supply of foreign currencies. It is said to be self-correcting as any differences in demand and supply will automatically be corrected in the market (Sanusi, 2004). However, the degree of government participation and market forces determination may vary among countries. Therefore, in practice, no exchange rate is pure float, fixed or completely determined by market forces, rather, the prevailing system is the managed float type, whereby there is periodic intervention by monetary authorities in the foreign exchange market to attain strategic objectives (Mordi, 2006). Since the adoption of the Structural Adjustment Programme in 1986, a managed float exchange rate regime remains dominant in Nigeria.

3.1.2 Review of the concept of Manufacturing Output in Nigeria

The manufacturing sector is a sub-sector of the industrial sector which involves the conversion of raw materials into finished consumer goods or intermediate or producer goods. The manufacturing sector creates an avenue for employment, helps to diversify the economy, increase foreign exchange earnings, boost agricultural production through backward linkage and helps to fully utilize the nations resources. The output of the manufacturing sector in Nigeria consists

of the total output of all industries producing goods and services in the country. The output of the sector is measured by the index of manufacturing production. The production growth rates have been generally low and sometimes negative particularly since the 1980s following the global economic crises which seriously affected Nigeria foreign exchange earnings from the sale of crude oil (Udo, 2014).

The output of manufacturing industry measured by the index of manufacturing output was 24.1 in 1970 increased to 128.6 in 1982. There was a decline in manufacturing output from 1983 to 1986 from 94.8 to 78.2. The index of manufacturing was only 78.2 in 1986. This decline was as a result of the downturn in the Nigerian economy, caused by the fall in world prices of crude oil, which culminated into the adoption of Structural Adjustment Programme (SAP) in July, 1986 (Simbo, Iwuji and Bagshaw, 2012). The various SAP-induced industrial policies and incentives adopted helped to boost manufacturing output for a short while (Udo, 2014). The index of manufacturing production rose to 130.8 in 1987 and reached its peak of 178.1 in 1991. Because there was no in-built mechanism to sustain the growth, it declined to 145.2 and 133.1 in 1993 and 1998 respectively. Between 1999 and 2003, there was a marginal increase in manufacturing production. The index of manufacturing production stood at 137.1 in 1999 and 147.1 in 2003. It declined abruptly to about 145.7 in 2004 and 2005 (CBN Annual Report and Statement of Accounts (Various Issues) as cited in Udo, 2014).

Consequently, the index of the manufacturing output exhibited declining trend from 2006 to 2010 with an average output of 91.2 and has been relatively stable from 2011 till date with an average output of 93.2 (NBS, 2018).

3.2 Empirical Literature Review

Tams-Alasia, Olokoyo, Okoye, Ejemeyowwi (2018) examined the impact of exchange rate deregulation on manufacturing output performance in Nigeria over the period 1980-2016. The normalized cointegration technique, the granger causality and the error correction model (ECM) were employed in the study. The empirical findings revealed that high exchange rate affects the manufacturing industry output. The study thus recommends the use of appropriate monetary policy and other programs by the monetary authorities to stabilize exchange rate and attain the mandate of exchange rate management.

Ochei, Areghan and Tochuchwu (2016) evaluated the deregulation of foreign exchange market and its effect on industrial produce in Nigeria from 1970 to 2013 using Ordinary Least Squares Econometric Techniques, and their findings reveals that labour and capital has a positive impact on industrial output with inflation exerting a negative effect. The study recommends prioritization of education sector and provision of long-term funds for the growth of the manufacturing sector. The method of estimation looks too simplistic to capture the dynamics of the interrelationship amongst the variables concerned, the recommendation has no relationship with the findings of the work and the finding of the study deviated from its objectives.

Akinlo and Lawal (2015) examines the impact of exchange rate on industrial production in Nigeria over the period 1986 to 2010. Using the Vector Error Correction Model (VECM), the study indicated that there is a long run relationship between industrial production index, exchange rate, money supply and inflation rate and in the short run exchange rate deregulation has no perceptible impact on industrial production but in the long run there is a positive impact. The result of the study also showed that money supply explains a very large portion of variation in the industrial production in Nigeria.

Onyeizugbe and Umeagugesi (2014) examined how devaluation of the naira affects the survival of the industrial subsector in Nigeria during the period 1990 to 2013, using Ordinary Least Square (OLS) regression method. The result showed that exchange rate and export have a positive effect on manufacturing capacity utilization. The study thereby recommended that manufacturing firms should embark on production of quality goods and the Government should encourage the development of local industrial subsector. The recommendations of research study are not specific (what are quality goods). Harry and Steven (2010) examined the performance of Nigerian manufacturing sector. Their study identified and analyzed the major problems and limitations manufacturing sector and concluded that it is important to work towards resolving these problems in order to rejuvenate the Nigerian manufacturing sector so it can play its role of driver of economic development.

Musa and Sanusi (2013) carried out a study on the aggregate industrial output to relative change in prices and exchange rate in Nigeria between 1970- 2011, using a Vector Error Correction (VEC) model. The study shows that there is a long run relationship between the exchange rate and the industrial sector. The study further recommended that proper policy management of the exchange rate and inflation should be encouraged.

Bakare (2011) also carried out a study on effect of foreign exchange rate policy reforms on domestic investment in Nigeria. The study adopted the OLS estimation technique using the ordinary least square multiple regression analytical method. The findings revealed that there is a negative relationship between the different foreign exchange rate regimes and domestic investment in Nigeria.

Magda, Hakan and Nergiz (2006) examined the Effect of Exchange rate fluctuation on economic activity in Turkey. They adopted the Granger Causality technique to analyse the asymmetric effects of exchange rate shocks on relevant macroeconomic variables. Their study reveals that anticipated appreciation of the exchange rate, current and lagged has a negative effect on output growth in Turkey. Also, the unanticipated appreciation is not significant in explaining real output growth. However, their study shows that lagged unanticipated depreciation has a positive effect on output growth. The variable used for regression is lumped up and this will lead to difficulty in use of the recommendations of this research work by the government.

Kandil (2004) examines the effect of exchange rate fluctuation on real output growth and price inflation in a sample of twenty-two countries. The model demonstrates the effects of demand and supply channels on the output and price responses to changes in the exchange rate. The study concludes that exchange rate depreciation both anticipated and unanticipated decreases real output growth and increases price inflation.

Obaseki (2001) carried out a study on the issues in exchange rate policy design and management. After a brief review of models of exchange rate determination and exchange rate mechanisms, the findings revealed that exchange rate adjustment is required to correct flow balance of payment deficit, while reserves drawn down, in addition to demand management, could prove efficacious in reversing a temporary or stock balance of payment deficit.

3.3 Theoretical Framework

The theoretical framework on which this study is built, is the International Fisher Effect (IFE) theory which traces the links among interest rate, inflation rate and exchange rate. This theory states that an appreciation or depreciation of one currency against another currency might be neutralized by a change in the interest rate differential. According to the theory, if the US interest rate for example exceeds Nigeria's interest rate, then the US dollar should depreciate against the Nigeria Naira by an amount that prevents arbitrage. The future exchange rate is reflected in the forward exchange rate stated today. In the

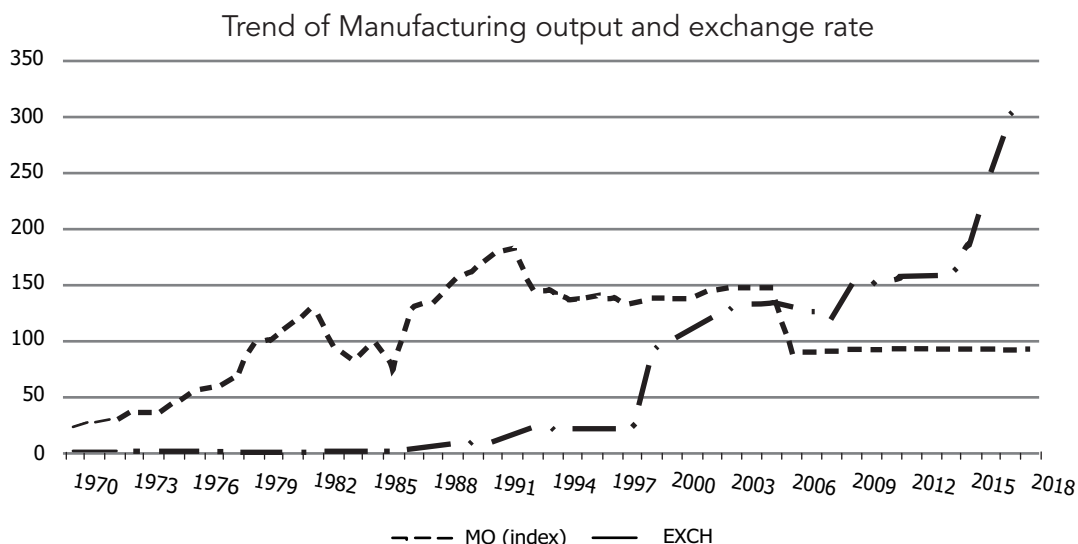
example above, the forward exchange rate of the dollar is said to be at a discount because it buys fewer Nigerian Naira in the forward exchange rate than it does at the spot rate, the naira is said to be at a premium. Therefore, following the International Fisher Effect there will be a tendency for countries with relatively high nominal interest rate (which generate inflationary pressure) to have depreciating currencies (depreciating exchange rate) and those with relatively low nominal interest rates to have appreciating currencies (Madura, 2010). This can be seen during the deregulation of the exchange rate in Nigeria in the year 1988, when the interest rate stood at 16.62% and the exchange rate 4.53 to 1 US dollar, but this was inflationary with 34.24% inflation rate. Import of raw materials became very expensive while export was cheap, but Nigeria products faced fierce competition from other international products and were invariably expensive. This adversely affected the performance of manufacturing output in Nigeria.

4.0 Effects of changes in Macroeconomic variables on Manufacturing output in Nigeria.

4.1.1 Trend Analysis of the Variables

A trend analysis enables us to observe the behaviour of the variables over the years, this could help in the ability to predict or forecast future behaviour.

Figure 4.1: Trend of Manufacturing Output and Exchange Rate

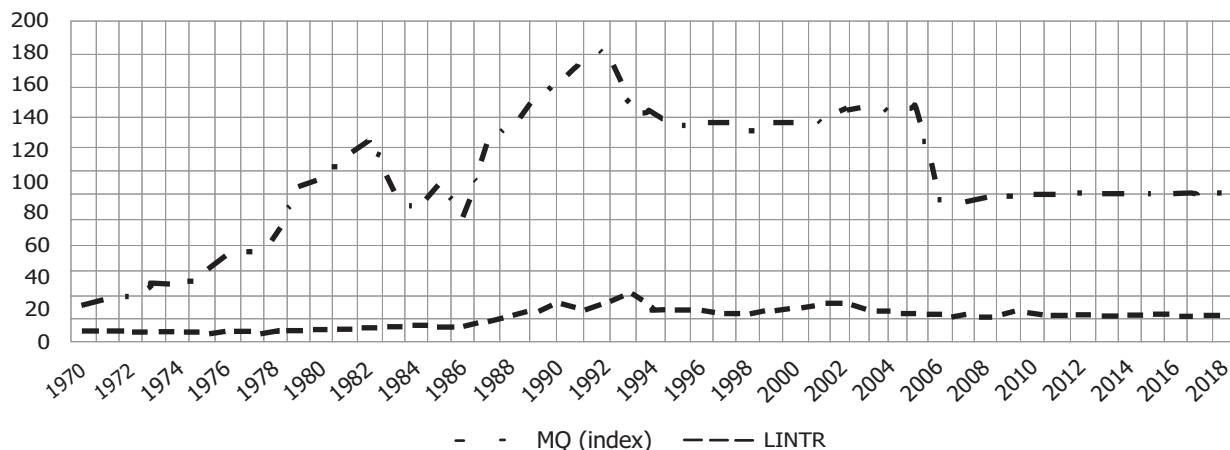


Source: Author's Computation 2020

Figure 4.1 shows the trending pattern of manufacturing output and exchange rate during the period 1970 to 2018. It shows a relatively stable pattern of movement in exchange rates during the 1970 to 1998 periods and a steady rise between the 1999 and 2018 periods with a slight drop in 2008. The pattern of the manufacturing output index shows a relatively stable rise between the period 1970 to 1992, this was the period when the exchange rate was low. The manufacturing output index shows a steady low trend between 1992 to 2005, which was the period of rise in exchange rate. The exchange rate and manufacturing output

were in equilibrium in the year 2005, this was the period when the manufacturing output was declining rapidly. Since the rapid decline in manufacturing output between the period 2005 to 2006, the manufacturing output has been relatively low from the period 2006 to 2018. The decline between the 2006 to 2018 periods can be attributed to the recessionary pressure on the economy and the inherent volatility associated with foreign exchange rates during the period, making it difficult for manufacturers to maintain the supply of essential raw materials necessary for manufacturing production process.

Figure 4.2: Trend of Manufacturing Output and lending Interest Rate

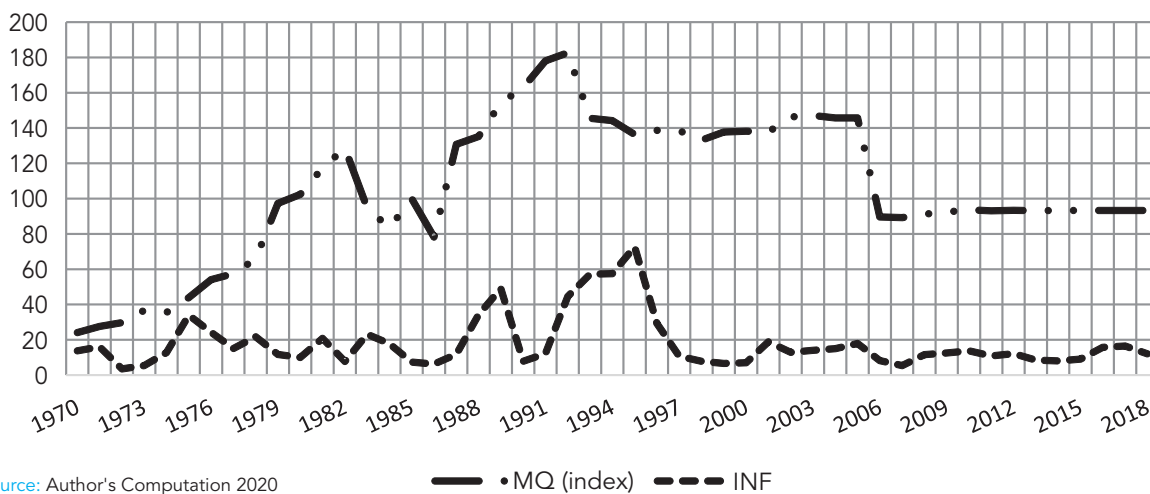


Source: Author's Computation 2020

Figure 4.2 shows the trend pattern of manufacturing output and lending interest rate during the period 1970 to 2018. The trend pattern shows a relatively stable pattern of movement in lending interest rates during the 1970 to 1987 periods and a slight rise between the 1986 and 1994 periods. However, the lending interest rate has been relatively stable from the period 1995 to 2018. The manufacturing output in the period of low and stable lending interest rate was rising and reached its peak in the period 1982 and began to drop between the period 1983 and 1985, with a sharp drop in the period 1986. This period of sharp drop in the manufacturing output coincides with the

period when the lending interest rate began to rise. From the period 1986 to 1992, the manufacturing output has been rising and had a sharp drop in 1993 which also coincide with the peak of the lending interest rate in the 1993 period, from this period of sharp decline, the manufacturing output has been fluctuating between the period 1994 to 2005 with a sharp drop again in the period 2006 and has been relatively stable till the period 2018. The pattern of movement between the aforementioned variable shows that there is an economic relationship between them, that is lending interest rate influences the trend of manufacturing output.

Figure 4.3: Trend of manufacturing output and Inflation Rate



Source: Author's Computation 2020

Figure 6.3 shows the trend pattern of manufacturing output and inflation rate during the period 1970 to 2018. The trend pattern shows an unstable pattern of movement in inflation rates during the 1970 to 2018 periods which is made up of varying degrees of ups and down with its highest peak in the 1995 period and lowest in the 1972 period. These periods of very high manufacturing output are complemented with a low inflation rate signifying that

inflation rate determines the trend of manufacturing output.

5.0 Findings, Conclusions and Policy Recommendations.

1. From the graphical illustration, it was observed when exchange rate was low, manufacturing output was on the rise. But with a slight increase in exchange rate led to a sharp fall in manufacturing output, this fall lasted for a period but picked up in the

succeeding period. But with the continuous rise in exchange rate, manufacturing output was experiencing a continuous decline. This pattern of movement between exchange rate and manufacturing output shows that there is a negative relationship between them but other factors aside exchange rate affect the fluctuation of manufacturing output.

2. In the second graphical illustration, the trend between lending rate and manufacturing output can be seen as one with insignificant effect on the other, as the lending interest rate insignificantly affect manufacturing output. That is an increase in the lending interest rate has little or no effect on manufacturing output, this implies that during the time period under review lending rate does not sufficiently affect and determine manufacturing output but includes other factors inherent in the economy.

3. Finally, it was observed in the last graphical illustration that the trend pattern of manufacturing output and inflation rate during the period 1970 to 2018 was unstable. The unstable pattern of movement in inflation rates had an impact on manufacturing output. The periods of very high manufacturing output complimented with a low inflation rate signifying that inflation rate affects and determines the trend of manufacturing output. That is high inflation rate impedes the growth of manufacturing output which signifies a negative relationship between inflation rate and manufacturing output.

5.1 Conclusion

Since independence successive government have recognized the vital role of

industrialization in the Nigerian economy. The slow pace of industrialization in Nigeria is not due to lack of recognition of the need for industrialization but that of the political will to implement policies and programmes that can move the country forward. Therefore, the government should rise up to the challenges and assume a commanding height in the effective and efficient management of resources and implement policies to grow the Nigerian economy.

5.2 Policy Recommendations

1. Considering the role of manufacturing sector in the development of any nation, it is important for the Nigeria to formulate informed and deliberate policies that will stabilize the fluctuations of the macroeconomic variables to the actual needs of the manufacturing sector.

2. The Federal Government through the Central Bank of Nigeria should reduce interest rate to a single digit in order to stimulate production in of Manufacturing sector.

3. Provision and maintenance of critical infrastructures such as stable and uninterrupted power, good Road network, affordable Rail transportation among others. All these will reduce the high cost of doing business and will further enhance the productivity of the manufacturing firms in Nigeria.

4. Fiscal measures especially in the area of tax cut and removal of double taxation where it exists, could further stimulate t production and enhance manufacturing output in Nigeria.

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