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Government Expenditure in the Manufacturing Sector and Economic Growth in Nigeria

1981 - 2010

Ishola Saheed Ademola

Abstract— The contribution of the manufacturing sector of the economy cannot over emphasized when considering its role in building grounds for development, its employment potentials and impacts on the economy. This study is set forth to explore the average contribution of the manufacturing sector to the national earning of Nigeria over the years, using a time series data from 1981 to 2010 sourced from the Central bank of Nigeria. The empirical perspective of this paper applied the unit root test and co integration, relying on the theoretical backing posited by Solow. It was found that a significant relationship exist between government expenditure in the manufacturing sector and the economic growth of Nigeria.

1 Introduction

Industrialization acts as the catalyst that accelerates the pace of structural transformation and diversification of the economy, enabling the country to fully utilize its factor endowment, depending less on foreign supply of finished goods or raw materials for its economic growth, development and sustainability.

The contribution of the manufacturing sector of the economy cannot be over emphasized when considering its role in building grounds for development, its employment potentials and financial impacts on the economy. Apart from laying solid foundation for the economy, it also serves as import substituting industry, providing ready market for intermediate goods. Thus, putting it in Aderibigbe's (2004) idea; the manufacturing industry contributes significantly to the nation's economic development by: increasing government revenue through tax; improving the standard of living; infrastructural growth; contribution to Gross National Products (GNP);employment generation; enhance manpower development; etc.

So far, it has been argued that the faster trend through which a nation can achieve sustainable economic growth and development is neither by the level of its endowed material resources, nor that of its vast human resources, but technological innovation, enterprise development and industrial capacity.

In the Nigerian experience, the downturn of the global oil market of the early 1980s and the sharp decline in foreign exchange earnings have adversely affected economic growth and development in Nigeria coupled with the global financial crisis that rocked the world economies. Problems particular to the economy of Nigeria include; excessive dependence on im-

ports for consumption and capital goods, dysfunctional social and economic infrastructure, unprecedented fall in capacity utilization rate in industry and neglect of the agricultural sector, among others. These have resulted in fallen incomes and devalued standards of living amongst Nigerians (Anyanwu, 2004). Although the structural adjustment programme (SAP) was introduced in 1986 to address these problems, no notable improvement has taken place. From a middle income nation in the 1970s and early 1980s, Nigeria is today among the 30 poorest nations in the world.

In view of this, the question is; does the manufacturing sector 'cateris paribus' has impact in the economic growth of the nation in view of the Vision 20;2020. The statement to be set to test in this paper is to examine whether there is a significant relationship between manufacturing and economic growth.

This study, hence, is set forth, using a time series data from 1981 to 2010 sourced from the Central Bank of Nigeria, to explore the average contribution of the manufacturing sector to the national earning of Nigeria over the years, say cateris paribus, what will be the fortune of the manufacturing sector in Nigeria. The empirical perspective of this paper applied unit root test and co integration, relying on the theoretical backing posited by Solow.

2 LITERATURE REVIEW

2.1 Introduction

The structure of manufacturing production has been a derivative of the various development plans (Alao, 2006). The First National Development Plan (1962-1968) emphasized light

industry and assembling activities. The second plan (1970-1975) had a somewhat similar thrust and focus, but the emphasis shifted in the third plan (1975-1980) towards heavy industries. Major projects were initiated in the steel and petroleum refinery sector. For the fourth plan (1980-1985), the broad direction was in consonance with the third: it retained the stress on heavy industries. But several of the grandiose plans were short changed with the onset of the profound economic crisis in the early 1980s. Players in the Nigerian industrial and manufacturing sector can be classified into four, namely: (a) Multinational (b) National (c) Regional (d) Local groups. Apart from the multinational operators, most of the other players have disappeared in the last two decades, due to unpredictable government policies, lack of basic raw materials, most of which are imported.

The development of the Nigerian industrial policy involved through two key stages as concurred by (Alao, 2006). They are as follows:

(a) The first period (1970 – 1985): The period covers the stateled import substitution industrialization strategy. The main focus is on the economic role of government through direct investments, administration of a protectionist trade regime, and the introduction of schemes such as indigenization and preferential credit to nurture indigenous entrepreneurs. It is argued that the roles assumed by the government, gave it a leadership role in the economy and direct control over the welfare of individual private businesses.

The government's strategy during this period simply involved attracting and encouraging foreign capital to engage in manufacturing activities.

(b) The second period (1986 – Present): The period lays emphasis on the economic liberalization policies that replaced the state-led import substitution industrialization strategy and nationalization policy. Government's policy in this period focuses on privatization, deregulation of foreign investments, trade liberalization, and deregulation of credit policy and the introduction of the Foreign Exchange Market (FEM). Privatization and deregulation has resulted in the reliance of market, rather than state regulation, and is reducing the role and power of government relative to the private sector.

Onayemi (2003) put forward that the economy of Nigeria is too dependent on oil and it is not progressing significantly due to inconsistency in macroeconomic policies for the growth of different sectors in the economy. When the government only works to safeguard the oil companies' interests, the price of oil does not remain at an affordable level and the manufacturers have to pay more for the energy resources they consume in the manufacturing process. When there is news about the discovery of more crude oil wells in the country, foreign

investors start paying attention towards it, resulting in the rise of foreign direct investment (FDI) as well as the employment rate. In this way, the economy of Nigeria is determined by oil production and oil prices. It is therefore evident that Nigeria remains highly dependent on oil, which accounts for 80% or more of its foreign exchange during the last four decades. This policy has proved to be quite harmful to the country because oil price fluctuation has a negative impact on the economy, causing a certain level of instability and uncertainty. The government neglected the non-oil sectors including manufacturing industry which has made Nigeria the least industrialized country in the region.

Eedes (2003) studied the economic conditions of Nigeria and observed that since Nigeria is one of the least industrialized countries of the sub-Saharan African region, this resulted in some major weaknesses in the economic structure of the country. These varying levels of negligence contributed to the collapse of the country's basic infrastructure as well as its social services in 1980s. The fluctuation in oil prices further contributed to the economic instability of the country and poverty was widespread, especially in the rural areas.

Though the Nigerian manufacturing sector cannot support economic development in its present condition, it has great potential since Nigeria is one of the most attention-grabbing markets of the region by having over 140 million consumers and millions more consumers in the neighbouring countries. The importance of the manufacturing sector is also realized from the fact that private consumption expenditures are significantly increasing in the country up to the rate of 15 to 20% per year. However, many problems are hindering the growth of the manufacturing sector in Nigeria and as a result the country is progressing very slowly towards economic diversification.

Dipak and Ata (2003) summed up the economic scenario in Nigeria and the role of the manufacturing sector by identifying the main hurdles that mostly and historically affect its development and growth. These barriers include insecurity, political instability, market-distorting, state-owned monopolies, weak infrastructure and unavailability of finance while Adenikinju (2003) added excessive bureaucracy and rampant corruption.

Alli [2003] reviewed more current performance of the Nigerian manufacturing sector by surveying the results of a study conducted in 2007 by the Manufacturers Association of Nigeria (MAN). The report disclosed that during the last few years many of the manufacturing companies in the country have, as the past studies predicted, faced bad times. It was discovered that only a meagre percentage of manufacturing companies (10%) are operating at a sustainable level, whereas as much as 60% are going to shut

down or have already shut down after facing several series of financial and other kinds of crises. Many factors were identified by MAN to be the root cause of the problem. The reasons behind the low growth and performance of the Nigerian manufacturing sector during the last few years include "high production costs caused by energy, high interest and exchange rates, influx of inferior and substandard products from other nations, multiplicity of taxes and levies, poor sales partly as a result of low purchasing power of the consumers, bogged down with delay in clearing consignments due to existence of multiple inspection agencies at the ports, etc". However, according to Mazumdar and Mazaheri, despite this uncertainty in the business environment some Nigerian companies are successfully operating in the country and getting high returns on their investments through superior competitive performance. The researchers analysed the strategies and management planning of two Nigerian firms that have achieved a high level of performance in the business sector. They then highlighted the main factors that contributed towards the success of these organisations. Some of these factors were the introduction of transparent management policies, proactiveness in competitive strategies, among others.

Dipak and Ata (2003) argue that the main problems facing the Nigerian manufacturing sector are the ongoing advancements in technology, as these are taking the international manufacturing market towards higher levels of competition. When there is less protection for companies, these unprotected companies have to focus more and more towards the quality of their products and do so by increasing their expenditure on research and development. In Nigeria however, the research and development work is not being done at a good enough level required for the constituents to even see a steady growth in the performance of manufacturing organizations. It becomes necessary then, for the Nigerian government and the private sector partners to intervene in order for the situation to improve.

Malik et al (2004) discloses, in a survey report administered under UNIDO's Centre for Study of the African Economy, that the skills and technology usage levels in the Nigerian manufacturing sector are not very satisfying. Not only that, the report also revealed that the Nigerian manufacturing sector is not even open towards the usage and adoption of the new technologies and skills; thus stagnating and even negatively affecting the efficiency of the firms. The reason behind giving less importance to new technologies and skills is traced back to the deficiency of adequate investment in the sector. Only half of the companies that participated in the survey disclosed that they made investments in technology during the period under study, this alone shows the trend in technology investment in the sector. The survey also divulged that the lack of financial facilities is exacerbated by the unwillingness of the investors to give their money to the manufacturing companies.

When firms invest less in technology, they also invest less in the skilled labour needed for these; and with no other sources for capital for investment they are not in a position to remedy the situation. With barely any advanced machinery and techniques of production, the firms are rendered unable to compete in a larger scale. And as all of these issues continue to result in the low level of competitiveness of the Nigerian manufactured products, the overall efficiency and productivity of the sector will always remain on a lower scale.

Ojowu (2003), with his analysis of the situation of the Nigerian manufacturing sector, came to the point that capacity utilization is an important issue that must be properly addressed in all discussions and all measures to be taken in the future. The researcher argues that the sector is progressing very slowly due to low capacity utilization. Issues associated with capacity utilization such as capacity decline, capacity expansion and capacity mortality are essential discussion points in the issue of bringing quality into the performance of the Nigerian manufacturing sector. On top of these issues, the burden of external debt is also affecting the sector's performance. The researcher also argues that the government is not giving enough attention towards the policies related to the manufacturing sector as compared to those of other sectors. To contend with Ojowu's last point though, reforms must also be applied to different sectors that are associated with the manufacturing sector and not just the manufacturing sector itself; as the high or low performance of one sector can affect the progress of the others. For example, if the government works to improve infrastructure then the manufacturing of products will also be improved.

Enebong (2003) predicts that the level of the Nigerian manufacturing organizations' performance will continue to see a decline because as it is now, the manufacturers will have even more problems in accessing raw materials due to stiff competition from foreign firms. He theorizes that many of the policies implemented by the government in the late 1990s are still acting as barriers to manufacturing sector growth. Some of these policies include backward integration and the inward orientation strategies towards import substitution. The private sector also failed to play a significant role in the manufacturing industry; and there are certain reasons behind this such as import barriers, tariffs, licenses and other policies that resulted in raw materials unavailability.

Alli (2003) however, points out that the government plays a very important role in the entire scenario of bringing improvements into the Nigerian manufacturing sector. The researcher observed some positive signs from the present Nigerian government and identified some of the major strategies that are being adopted with the intention of 18 improving manufacturing sector performance. According to Alli, the government has realized that the manufacturing sector can act as the

backbone of the economy and as it progresses in a positive direction, the country will consequently grow and prosper also. In this regard, the government has decided to make sure that the manufacturing sector will receive access to the domestic, regional and international markets. This is of course after adding value to the companies' products; and for this, the sector will need to take advantage of the country's oil and gas sector. The Nigerian government also seeks to apply the Public Private Partnership (PPP), wherein the government will invest in the development of infrastructure and will become a facilitator to the manufacturing sector. In effect, the manufacturing industry will gain great advantages from the improved infrastructure and the private sector will also be encouraged to invest in different productive manufacturing industries. Moreover, the government is also considering the cluster concept suitable for the economic condition of the country, keeping in view the geographical proximity and other ground realities.

Obasanjo administration improved performance of manufacturing sector through National Economic Empowerment and Development Strategy (NEEDS), State Economic Empowerment and Development Strategy (SEEDS) and Local Economic Empowerment and Development Strategy (LEEDS) at Federal level, State and Local Government levels which spannedbetween2003 and 2007, while Yar'Adua administration incorporated and priotized manufacturing sector in his Seven-Point Agenda (NEEDS, 2004).

Thus, According to President Jonathan, "the manufacturing sector is key to the realization of the nation's Vision 20/2020 aspiration, hence a team of technocrats from MAN, NACCIMA and related bodies as well as key government officials will constitute a special committee to be coordinated by the Chief Economic Adviser to the President, that will deliberate regularly on policies that will improve the nation's economy."

MAN president, Chief Kola Jamodu, Speaking, "commended the Jonathan administration for various intervention funds granted the textile and agricultural sectors as well as the small and medium scale enterprises, noting that the grants have helped in no small way to revive and expand the sectors."

Manufacturing activities have significant impact on the economy of a nation. In developed economies, for instance, they account for a substantial proportion of total economic activities. This sector is divided into conceptual and theoretical framework:

2.2 Conceptual Framework

Public expenditure policy is one of the most important instruments of public sector policy. Traditionally, the normative theory of public finance starting with Musgrave, identifies three functions of fiscal policy as: allocation, distribution and stabilization of resources. By means of fiscal policy, any government attempts to ensure effective utilization of limited resources, equitable distribution of income and stability of economic development (Musgrave and Musgrave 1984)The nature of relationship between public expenditure and economic growth via industrial sector performance has stimulated series of theoretical and empirical studies. Major theoretical work was done by Barro (1988), Barro and Sala i-martin (1995), Devarajan,(1996). In his seminar work, Barro develops a simple endogenous growth model of government spending. In this model, he finds a non-linear relationship between public expenditures which are complementary inputs to private production and a negative relationship between government consumption and growth of the economy.

2.3 Theoretical Framework

There has being several theories which had been developed to study economic development. Each of these has its strength and weaknesses with different ideological, theoretical and empirical conclusions. They include; the classic theories of economic development and the endogenous growth model.

The Classic theories have four approaches:

- a. The Linear-stages theories was expanciated by; the Rostow's stages of growth and the Harrod-Domar Growth Model.
- b. Structural Change Models was administered by the Lewis theory of development and structural change.
- c. The international dependency revolution includes the Neoclassical Dependence Model, false paradigm model and the Dualistic-Development Thesis.
- d. The traditional neoclassical growth model

The motivation for the endogenous growth model stems from the failure of the neoclassical theories to explain the sources of long-run economic growth. The neoclassical theory does not explain the intrinsic characteristic of economies that causes them to grow over extended period of time. The neoclassical theory focuses on the dynamic process through which capital-labour ratios approach long-run equilibrium. In the absence of external technological change, which is not clearly explained in the neoclassical model, all economies will converge to zero growth.

The neoclassical theory see rising GDP as a temporary phenomenon resulting from technological change or a short-term equilibrating process in which an economy approaches its long run equilibrium. The neoclassical theory credits the bulk of economic growth to a completely independent process of technological progress. According to neoclassical theory, the low capital-labor ratios of developing countries promise exceptionally high rates of return on investment. Based on this premise, it was expected that the freemarket reforms imposed

on highly indebted countries by the World Bank and the International Monetary Fund should have prompted higher investment, rising productivity, and improved standards of living. Yet even after the prescribed liberalization of tradeand domestic markets, many LDCs experienced little or nogrowth and failed to attract new foreign investment or tohalt the flight of domestic capital. The anomalous behavior of developing-world capital flows (from poor to rich nations) helped provide the impetus for the development of the concept of endogenous growth or, more simply, the new growth theory.

The new growth theory represents a key component of the emerging development theory. The new growth theory provides a theoretical framework for analyzing endogenous growth, persistent GNP growth that is determined by the system governing the production process rather than by forces outside that system. In contrast to traditional neoclassical theory, these models hold GNP growth to be a natural consequence of long-run equilibrium.

The principal motivations of the new growth theory are to explain both growth rate differentials across countries and a greater proportion of the growth observed. In particular, endogenous growth theorists seek to explain the factors that determine the rate of growth of GDP that is left unexplained and exogenously determined in the Solow neoclassical growth equation (that is, the Solow residual).

Models of endogenous growth bear some structural resemblance to their neoclassical counterparts, but they differ considerably in their underlying assumptions and the conclusions drawn. The most significant theoretical differences stem from discarding the neoclassical assumption of diminishing marginal returns to capital investments, permitting increasing returns to scale in aggregate production, and frequently focusing on the role of externalities in determining the rate of return on capital investments.

By assuming that public and private investments in human capital generate external economies and productivity improvements that offset the natural tendency for diminishing returns, endogenous growth theory seeks to explain the existence of increasing returns to scale and the divergent long-term growth patterns among countries.

models, it is no longer necessary to explain long term growth. A useful way to contrast the new (endogenous) growth with traditional neoclassical theory is to recognize that many endogenous growth theories can be expressed by the simple equation Y = AK, as in the Harrod-Domar model. In this formulation, A is intended to represent any factor that affects technology, and K again includes both physical and human capital.

3.0 Model Specification

There are several researches which have been carried out on the role of industrialization in the actualization of economic growth and development. Thus, there seems to be no consensus among these studies on the empirical form the specification of model qualifying the impact of the manufacturing sector can take or follow.

Agreeably, empirical specification of growth oriented model often follows the Solow growth model, which was subsequently modified by Mankiw et al (1992) and is termed the "Augmented Solow growth model. Solow (1956) postulated that economic growth resultant from the accumulation of physical capital and an expansion of the labor force in conjunction with an "exogenous" factor, technological progress, that makes physical capital and labor more productive (Udah2010).

For the purpose of this research work the above will be adopt and build upon, proxing economic development with Gross Domestic Products (GDP); industrialization (proxy by manufacturing sector output); and government expenditure to check government commitment on the provision of infrastructural facilities that will attract investor. With this adjustment incorporated into the model, it can therefore be specified in the form expressed below:

Harrod-Domar model Y = F(K,L)

GDP = f(M, GEXP)

 $GDP = a_0 + a_1M + a_2GEXP + U$

Where:

GDP = Real Gross Domestic Product

M = manufacturing sector output

GEXP = Government Expenditure (General);

Parameters = a_0 , a_1 , a_2

U = Error term

And whereas technology still plays an important role in these

Ishola Saheed Ademola is currently pursuing PhD degree program in Economics in Covenant University, Ota, Nigeria, 2348023240306. E-mail: ademola2010@yahoo.com

From the specified model equation above, endogenous variable is GDP while the exogenous variables are manufacturing sector output, and government expenditure.

The A prior expectation is a_0 , a_1 , $a_2 > 0$

3.1 Parameter Estimate

FIGURE 1

Variables	ADF test @	95% ADF critical	DW statistics
	level	level	
GDP	-0.2125	-2.9750	1.8504
М	0.7700	-2.9750	1.5182
GEXP	-0.6594	-2.9750	1.8841

FIGURE 2

Variables	Eigenval-	Likelihood	5% critical	Hypothesized
	ue		value	number of CE
GDP – M	0.2346	7.5984	15.41	None
ODI - WI	0.2340	7.5904	13.41	At most 1
GDP –	0.4980	21.5454	15.41	None**
GEXP				At most 1

FIGURE 3

Dependent Variable: GDP Method: Least Squares Sample: 1981 2009 Included observations: 29

Variable	Coefficient	Std. Error	t-Statistic	
С	206558.527533	6433.47758647	32.106823216	
M	0.945871006114	0.0496300975334	19.0584152183	
GEXP	-0.0115581520712	0.009904331017	-1.1669795821	
R-squared	0.976222080232	Mean dependent var		
Adjusted R-squared	0.97439300948	S.D. dependent var		
S.E. of regression	24840.7866906	Akaike info criterion		
Sum squared resid	16043681768.6	Schwarz criterion		
Log likelihood	-333.052851699	F-statistic		
Durbin-Watson stat	0.454687580888	Prob(F-statistic)		

 $GDP = a_0 + a_1M + a_2GEXP + U$

GDP = 206558.528 + 0.9459M - 0.0116GEXP

 $(6433.478) \qquad (0.0496) (0.0099)$

4 ITERPRETATION

The results obtained from the equation estimated show that the explanatory variables explain about 97.62 per cent of the variations in the GDP which is the dependent variable and the proxy of the economic growth. This is judged by the value of the co-efficient of determination (R-squared), more so, the R² adjusted confirms the R² at 0.9743, taking into consideration the degree of freedom and the inclusion or exclusion of a variable. In addition, the results depict no serial auto-correlation

problems as reflected in the value of Durbin-Watson statistics of 0.454 (Table 3), thus this depicts the presence of positive auto-correlation, which will permit to reject the null hypothesis. However, there is a joint statistical significance of the variables has revealed by the joint test of significance (F-Statistics), to be added to the explanation of the dependent variable at 1%.

Total output in the manufacturing sector conforms to the apriori expectation, but government expenditure in the manufacturing sector shows a negative relationship. It is discovered that a unit change in total output in the manufacturing sector increases GDP by the marginal change of 0.9459, the student t statistics shows that total output of the sector is significance statistically different from zero. However, there is a negative relationship between GDP and government expenditure in the manufacturing sector such that GDP will reduce by 0.01156, this may be subject to government's non sumptuous spending in the sector geared toward economic growth. Thus, it exhibits been significant in explaining the variation in GDP.

5 RECOMMENDATION

It is recommended in the light of this study that, for any nation, to growth, especially Nigeria, the focused expenditure on the manufacturing sector should not be underestimated, thus, by all available means, the government should improve and encourage the output of the manufacturing sector.

5.1 Summary and Conclusion

This Stridy has investigated the importance of the manufacturing sector and government effort in the operation of the sectors 1000 ards the expansion of the economy. The study used the **HittlesToo and co integration test to compliment the ordinary areas squares in evaluating the significance or non-significance of the manufacturing sector to the economic growth of the economy (Nigeria).

The result shows that, though there is a significant relationship between the exogenous and endogenous variables, while total output complied with the A Prior expectation, there exists a negative relationship between government expenditure in the sector.

Thus, it is recommended that government should improve and encourage manufacturing outputs and improve its expenditure in the manufacturing sector geared towards economic growth.

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