THE INTERNATIONAL JOURNAL OF BUSINESS & MANAGEMENT

Return on Assets of Listed Manufacturing Companies and Government Spending on Power in Nigeria (1999-2015)

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Abstract:
The focus of this study was on how macro spending of the government on power infrastructure affected the Return on Assets of the manufacturing companies in Nigeria between 1990 and 2015. The study adopted ex-post facto research design. A sample size of 20 was purposively selected from the population of 83 manufacturing companies in the country as at 2016. Secondary data were obtained from published financial statements of listed manufacturing companies in Nigeria, publications of government and the World Bank. Validity and Reliability of the data were based on the reports of external auditors and other regulatory agencies. The data were analyzed using descriptive and inferential statistical methods. The study found that government spending on Power did not have significant effect on the financial performance of the manufacturing firms. Government spending on Power had positive but insignificant effect on ROA (β_1=0.418, t=0.772, p>0.05)

Keywords: ROA, government spending on power, manufacturing, accountability, transparency

1. Introduction

Public sector accountants are responsible for the efficient management of public funds ensuring accountability and transparency in the utilization of such funds (Mauritius government publication, 2013). According to Lusha and Mziu (2015), this function is very critical to the allocation of funds to projects and individual areas of responsibilitysuch as education for human capital development, roads, air and sea ports, power, security and health care system. These infrastructures are particularly crucial to the development of manufacturing industry. Countries all over the world now focus more on the development of manufacturing sector as a key driver of change in the economy (Zalk, 2014). This in the findings by Zalk (2014); is because this sector plays very prominent roles in the areas of export earnings, employment generation and contribution to national output. It is therefore very important that government provide good infrastructures needed for their long run survival (Akekerem, Oniore, Oghenebrume&Stephen, 2017). Gorton (2017) said, ability of a manufacturing company to continue in business is evaluated through the financial ratios that provide stakeholders with necessary information for critical decision. It was in the light of this that this study was carried out focusing on Return on Assets and government spending on power infrastructure in Nigeria.

1.1. Statement of the Problem

Infrastructural facilities are the products of agencies of government and public corporations established for the purpose of performing strategic functions in the process of development(Nurre,2012). Infrastructures stimulate performance of manufacturing companies, reduce cost of operations and increase their profitability level. However, poor development of infrastructures has been a great challenge to the manufacturing sector in Nigeria (Ogwo&Agu, 2016). Over the years electricity which plays very crucial role in the capacity utilization of manufacturing sector have not been regular and stable (Onuaha, 2010). The World Bank enterprise survey (2017), shows that average number of times of power outage in a month in Nigeria is 33 and that most of the time this last for upward of 12 hours in a day. The percentage of income lost to total sales as a result of this was on the average about 16%. About 78% of manufacturing companies operating in the country experience this power outage, the survey revealed further that 71% of these companies own their generators with about 59% of electricity required coming from this source. This is the basis of our study of the significant effect of government spending on electricity in Nigeria on the Return on Assets of the manufacturing sector.

1.2. Objective of the Study

Objective of this study was to examine how government spending on power in Nigeria has impacted on Return on Assets of listed manufacturing companies.

1.3. Research Question

How has the government spending on power in Nigeria impacted on Return on Assets of listed manufacturing companies?

1.4. Hypotheses

Government spending on power has no significant impact on Return on Assets (ROA) of listed manufacturing companies in Nigeria.

1.5. Model Specification

$ROA = \beta_0 + \beta_1 POWEXPit + \varepsilon$

1.6. Method of data analysis

The study adopted ex-post facto research design. Secondary data obtained from published financial statements of listed manufacturing companies in Nigeria, publications of government and the World Bank were analyzed using descriptive and inferential statistical methods.

2. Literature Review

2.1. Theoretical Framework: The Normative Theory of Accounting

Normative theory of accounting developed by MacNeal in 1939 is based on a priori concepts and deductive reasoning that prescribe the accounting procedures and policies that should be followed rather than describing those that are followed in practice. Normative theory of accounting in the public sector therefore, attempts to prescribe the best practices for accounting for government spending in the public sector (Schick, 1998). Meyers (1996), proposed ten best practices to answer question on normative approach to public spending. Public spending according to him should be comprehensive to include all uses of the government's financial resources. A comprehensive budget is essentially concerned with the efficient allocation of government funds to allow for comparison of different ways government uses financial resources (Meyers, 1996).

Comparing the various uses to which government apply the public funds require that budget documents report on non-traditional or relatively complex methods of spending, so that those that are relatively inefficient will be determined and discontinued (Wildavsky, 1975). Best practices in this regard require consolidated reporting of governmental finances, using appropriately-varied accounting principles, in both financial statements and budgets (Strachota, 1994). Meyers (1996) also proposed that Budget process should be honest. Honesty was defined in terms of unbiased projections; this promotes accountability and solvency. Government should be transparent in the revenue and expenditure projection so that public perception of actual fiscal condition is not distorted.

The early budget theory of the progressives emphasized four criteria for spending government funds and these are; honesty, economy, efficiency, and proportion (Meyers,1996). The fundamental requirement was honesty in government. Honesty is required to address and to prevent looting, plunder, and less flamboyant types of graft. The second requirement which is economy, is concerned with keeping the tax rate and government receipts low. A lowtax rate is important but it is more important to see that the taxpayer gets full value received for the amount of money expended by the government (Walker, 1930). Efficiency emphasized prudential management of public money by the technocrats in the public sector (Walker, 1930), he attributed efficiency to two motivations: Penuriousness and the desire to expand civic functions. Proportion is the final progressive value. Proportion means achieving a balance in the government's affairs that it currently pursues (Meyers, 1996). This concept of balance is central to budgets, particularly with regard to the problem of expenditures. For Walker, applying theory in systematic research about government activities, particularly expenditures, was one way to provide guidance to achieve proportion.

Normative theory of accounting therefore contains criteria for determining what ought to be in the budget (Wildavsky, 1961). It is a budget theory detailing what the government's activities ought to be at a particular time. A normative theory of accounting when fully applied would mean the end of conflict over the government's role in society, this is because government spending would be comprehensive enough focusing on all areas of needs that enhance the welfare of the public (Meyers, 1996). By implication this will mean that public fund is expended on what the expectations of the society are. Normative theory of accounting also viewed government spending as a short-term and long-term phenomenon because it considers how the current actions affect long-term finances (Forrester, 2002).

Thus, giving the managers of public fund, the opportunity to make decisions that would enhance the welfare of the future generations and at the same time reducing their fiscal burdens. In this way the theory recognizes expenses and income that occur over time through accrual accounting methods (Redburn, 1993). It encourages allocation of funds to non-current assets using discounting and taking life-cycle operating costs into account (Mikesell, 1995). In this study we attempted to answer the question on whether the public spending in Nigeria was guided by the best practices prescribed by the normative theory.

2.2. Empirical Review

Manufacturing industry in Nigeria is a very important sector which has witnessed a lot of changes limiting its ability to play the role it is expected of it in the economy over the last five decades. Among the numerous challenges of this sector is deteriorating power supply. The inadequate power supply over the years has been a major factor influencing production cost in the sector (Chinedum and Nnadi, 2016). The lingering of this problem without appropriate solution

coming from the government has resulted in the shutdown of many manufacturing plants in the country (Adenikinju, 2003). More than 800 companies which were both local and multinational have closed down due to erratic power supply in the country (Chinedum and Nnadi, 2016). As at 2003, the demand for electricity in the manufacturing sector was 2,500 Megawatt (MW) while the Power Holding Company of Nigeria (PHCN) was only able to supply267 MW, as at 2015, demand of the manufacturing sector for power has increased above this level without corresponding increase in the supply coming from PHCN.   The manufacturing sector as a whole operates on more than 70% of energy it generates using generators; and operating these generators greatly increases the cost of manufacturing goods in the country (NACCIMA, 2012).

The cost of generating power which is about 35% of the production cost has made the selling price of the goods manufactured in Nigeria to be above the competitive price level in the international market (MAN Survey, 2009), the cost is between 5% and 10% for other countries (Yahaya, Salisu, & Uma, 2015). This high cost of production makes it practically impossible for the firms to compete with other firms in the international market. According to Adenikinju (2003), cost of manufacturing a unit of product in Nigeria is about nine times the cost of producing the same product in China and four times in Europe, South Africa and two times the cost in Ghana. However, it should be noted that even in Ghana, the country has been witnessing energy crisis. The poor electricity supply in the country has continued to cause a rise in production cost per unit thus curtailing rapid level of industrialization. The crisis he said further led to loss of about 140 billion cedi in revenue coming from manufacturing sector.

By implication production for export in Nigeria is impaired as a result of the high cost of power infrastructure. Nigerian power sector is characterized by diverse problems which has made it to be one of the most challenging electricity sectors in the world. The sector has installed electricity generation capacity of 8,644 MW, and available capacity of only approximately 3,718MW, to take care of the electricity needs of over 180 million people including corporate organizations (IER, 2014). South Africa which has a population of about 50 million people has installed electricity generation capacity of over 52,000 MW.

Among all the countries in Africa, Nigeria ranked lowest in terms of electricity KWh available to a consumer with countries like Gabon, Ghana, Cameroon and Kenya far ahead of Nigeria (IER, 2014). There has always been so much variance between the demand for electricity and the actual supply. This difference has been the basis of so much money expended by individual and corporate organization in Nigeria on power generation by industrial and household consumers (Ayanruoh, 2013). Reports of the Manufacturers Association of Nigeria (MAN) and the National Association of Small-Scale Industries (NASSI) revealed that an estimated of about N2billion per week is spent on self-power generation. This has been a very critical limiting factor to private investment in Nigeria (Ayanruoh, 2013). The power sector in the country is beset with diverse problems which are in the areas of power generation and distribution (Iwayemi, 2008). In spite of the large deposit of gas in the country, gas required to generate electricity have never been in stable supply (Adenikinju, 2003).

In 2003 the demand for electricity in the manufacturing sector was 2,500 Megawatt (MW) while the Power Holding Company of Nigeria (PHCN) was only able to supply 267 MW, this requirement by the manufacturing sector has continued to increase without corresponding increase in supply. This inadequate supply resulted in importation of petroleum product to the country over the years with all its shortcomings. Incidentally 70% of electricity generated in Nigeria is gas-fired while the remaining 30% comes from hydro power. The installed capacity for power generation in Nigeria is about7000mega watts while capacity utilization is between 3500mw and 4500mw, in 2013 it went down to 2,200mw (NPC, 2015). Nigeria is blessed with gas reserves enough to generate over 50,000mw but with only installed capacity of 5000mw and yet the supply to electricity generation has been grossly inadequate. Annual average expenditure of the government on the sector is $2billion with little service improvement (NPC, 2015). The Thermal plants are faced with shortages of gas supply, high level of unpaid bills, outdated and poorly maintained transmission network (NPC, 2015).

The World Bank enterprise survey (2017), shows that average number of times of power outage in a month in Nigeria is 33 and that most of the time this last for upward of 12 hours in aday. The percentage of income lost to total sales as a result of this was on the average about 16%. About 78% of manufacturing companies operating in the country experience this power outage, the survey revealed further that 71% of these companies own their generators with about 59% of electricity required coming from this source. This was the basis of our study of the significant effect of government spending on electricity in Nigeria on the financial performance (ROA) of the manufacturing sector.

3. Data Analysis

*3.1. Return on Assets of Manufacturing Companies and Government Expenditure on Power Descriptive Statistics*

Years	Return on Assets%	PowerSpending % of Total Expenditure
1990	9.5	3
1991	9	4
1992	11	3
1993	11	1
1994	13	1
1995	13	1
1996	11	0.03

Years	Return on Assets%	PowerSpending % of Total Expenditure
1997	10	0.02
1998	7	0-06
1999	8	0.07
2000	9	0.05
2001	13	8
2002	10	7
2003	9	4
2004	4	4
2005	6	5
2006	6	4
2007	5	4
2008	3	4
2009	21	3
2010	10	5
2011	7	2
2012	4	2
2013	8	1
2014	6	1
2015	9	0.02

Table 1: Return on Assets of Manufacturing Companies and Government
Expenditure on Power Descriptive Statistics
Source: Researcher's Field Survey 2018

Manufacturing Return on Assets (ROA) is a financial ratio that shows the percentage of profit a company earns in relation to its total assets. The ratio is used to determine how profitable a company is when the profit is related to the assets. Government spending on infrastructures such as power, roads, security and human capital development is expected to provide a good environment for the reduction of operating expenses of manufacturing companies, increase their profit margin and of course the Return on Assets. In this section our focus was on the Return on Assets of the manufacturing companies under study; and its relationship with government spending on Power in Nigeria. This component of government spending is shown as percentages of total expenditure of the government. In Table 4.2.1, ROA of the manufacturing companies in 1990 was 9.5%, it rose to 13% in 1994 and fell to 11% in 1996. From 1996 to 2009 the fluctuation was between 10% and 21%. It thereafter began to decline and finally in 2015 it was only about 9%.

In the same way the percentage of government spending on Power to total expenditure dropped from 3% in 1990 to 1% in 1995 and ultimately to 0.02% in 2015 this decline may be attributed to the privatization of the sector. The Table also shows that percentage of government spending on Roads fluctuated between 1% In order to ascertain extent of this impact of government spending on the Manufacturing companies Return on Assets, regression analysis was carried out on the variable. Our Hypothesis was tested as shown in the regression model
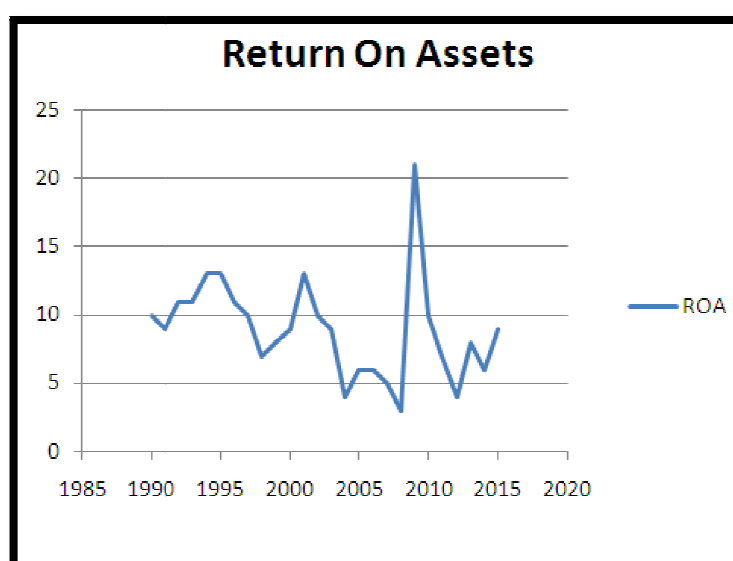
Figure 1
Source: Researcher's Field Survey, 2018

Chart 4.2.1 shows that ROA was about 10% in 1990, it rose to 13% in 1994 and then went down to 9% in 2000. Between 2001 and 2008, it fluctuated between 13% and 3%. The peak was attained in 2009 when it was 21% of the total

assets. After the year 2009, there was a remarkable decline in this profitability index of the manufacturing companies. As at 2015 it was only about 9% of the total assets. Incidentally government spending on power within this period also fell to a lower level of almost zero percent of the total expenditure.
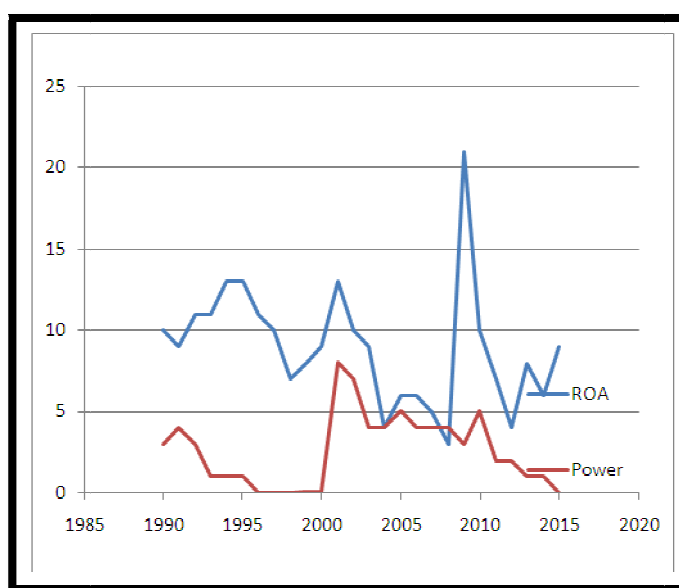

Figure 2: Return on Asset and Government Spending on Power
Source: Researcher's Field Survey 2018

Figure 2shows the trend in the percentage of government spending on power infrastructure between 1990 and 2015 as it relates to ROA in the manufacturing sector. The chart shows that percentage of government expenditure directed to this sector in 1990 was only 3%, it rose to 4% in 1991and then began to decline. The increase of 1% in government expenditure on power from 1990 to 1991 resulted in decrease in ROA by 0.5%, when the expenditure fell to only 0.02% in 1997, ROA rose to 10%. The curve shows that government spending on power between 1997 and 2000 was close to 0% of the total government spending for those years. The decrease resulted in marginal fall in ROA from 10% to 9%.

In 2001 government expenditure on power rose to 8% of the total government spending and began to fall consistently for the rest of the years. However, ROA in 2001 rose to 13%. Government spending fell from 4% in 2006 to 3% in 2009; Incidentally ROA within this period rose from 6% to 21% but thereafter began to fall from 21% in 2009 to 9% in 2015. Government spending however rose to 5% in 2010 and began to fall again. In 2011 it was only 2%, fell to 1% in 2013 and to almost zero percent in 2015. It can be seen from this chart that the percentage of government expenditure allocated to this sector is very small in relation to the total expenditure of the government. It also established the relationship between the government spending on power and return on Assets. This again corroborates our regression result showing that government expenditure on power did not have a significant effect on manufacturing companies Return on Assets.

3.2. Regression Results

Model1	Correlation	Unstandardized Coefficients		Standardized Coefficient	t-statistics	Sig.
		B	Std. Error	Beta		
(Constant)		12.995	2.982		4.358	0.000
POWEXP	0.097	0.418	0.541	0.193	0.772	0.449

Table 2: Regression Results
a. Predictors: (Constant), Power
b. Dependent Variable: ROA

Results of the regression show that government spending on Power exhibited movement in the same direction with ROA that is positive correlation; the correlation of Power Expenditure to ROA was 0.097. These results show that as the government spending on this independent variable increased, ROA also increased. In the analyses table the value of constant for the model was 12.99 representing the value of Manufacturing ROA when Government Expenditure is zero. Coefficient of the independent variable; Power is 0.418, The t-statistics associated with this coefficient as shown in the table was; 4.358 for constant with 0.000 significant level, 0.772 for Power with 0.449 significant level, thus results of model revealed that government expenditure on power has no significant relationship with the Return on Assets. The results are in agreement with previous studies findings that power supply has been a major constraint to the performance of manufacturing sector in Nigeria.

4. Conclusion

The findings in this study negate the normative theory of accounting which prescribes best practices for accounting for government spending in the public sector and what should be in the budget, particularly those activities that impact positively on sectors of the economy including manufacturing.The study therefore concluded that government spending on Power did not have significant effect on Return on Assets of manufacturing companies in Nigeria.

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