Inventory Funding Of Small And Medium Scale Manufacturing Organisations: The Nigeria Experience

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ABSTRACT

The funding of inventory is crucial to the effective operation of any manufacturing organisation whether large or small. In most cases the issue of funding of working capital of SMEs has not been given much attention in the financing of inventory by various initiatives aimed at funding the SMEs . Two hundred and fifty SMEs were selected for this study in Lagos, Oyo and Ondo states of Nigeria. Two hundred and twenty one returned the questionnaire. It is established in this study that inadequate funding of working capital has contributed to low capacity utilisation and low growth rate of SMEs. It is recommended that funding of inventory should be given more attention in various government initiatives in enhancing the growth of SMEs. Also SMEs should explore other sources in financing inventory rather than rely mainly on formal banking sector for the financing of their inventory

Keywords: Small and Medium Scale Enterprises, Inventory, Organisation, Capacity Utilisation, Operating Cycle, Working Capital

1.0 Introduction

The availability of funds to finance inventory is necessary for efficient performance of any industrial organisation whether large or small. Inventory is necessary for the uninterrupted production in any manufacturing organisation because inventory is very important for capacity building. In Nigeria provision of funds for small and medium scale enterprises has been mainly for procurement of fixed assets while the funding of working capital of which inventory is the major component has been left to the entrepreneur who in most cases find it difficult to source the required fund for adequate inventory from the commercial banks.that could guarantee uninterrupted production.

1.1 Statement of the Problem

Financing of inventories is very vital to the success of any manufacturing outfit. Without investment in inventory, the manufacturing organisation could not be able to plan its capacity utilisation . For efficient performance, capacity utilisation and satisfaction of customers, a manufacturing organisation requires funding for it inventory such as raw materials and spare parts as well as finished goods inventory. Lack of funding for inventory for many Small and Medium Scale (SMEs) manufacturing firms had led to either low capacity utilisation or stoppage of operations or low profitability. There are number of questions in relation to inventory management in small and medium scale manufacturing enterprises that require answers. The principal questions this paper will attempt to answer and which forms the basis of the paper are: What approach is being used by small and medium manufacturing enterprises in financing inventory? and what is the impact of inadequate inventory funding on the capacity utilsation of the SMEs?

1.2 Objectives of the Study

The objectives of this study was to asses the different modes of funding inventory in the small and medium scale manufacturing organizations and assess the impact of lack of proper funding of inventory on capacity utilisation of the SMEs'.

2.0 Materials and Methods

There is no consensus in the definition of SMEs as the term SMEs are relative and they differ from industry to industry and country to country. According to Ogunleye (2004) the difference in the definition of SMEs could be ascribed to difference in capital requirement in each business among industries whilst those among countries could arise as a result of differences in industrial organisation of countries at different stages of economic development. Therefore, what can be defined as SMEs in a developed country can be regarded as large scale enterprises in a developing country, In Nigeria presently a Small and Medium Scale Industry is

defined as any enterprise with a maximum asset base of ₦200 million excluding land and working capital and with the number of staff not less than 10 and not more than 300. This definition was used for the purpose of this study. Nnanna (2004) stated that the take off and efficient performance of any industrial enterprise be it small or large will require the provisions of funds for its capitalization, working capital and rehabilitation needs as well as for creation of new investment. In Nigeria, provisions of funds to the industrial sector particularly SMEs has been of prime interest to the policy makers. Successive governments in Nigeria had employed both monetary and fiscal policies to encourage SMEs. The policies had been geared mainly to the provision of fixed assets like machinery leaving the organizations to souce their working capital, of which inventory is the major item from the banks. The stringent conditions of the banks coupled with prevailing high interest rate has always made it difficult for the SMEs to get required fund from the banks.   Inventory is the major lubricant in any manufacturing organization which need proper funding. Without adequate inventory any manufacturing organization cannot be able to increase profitability. Akintoye (2004) stated that inventories form a link between production and sale of a product. A manufacturing company must maintain a certain amount of inventory for production, without it, a company will exist on a hand- to-mouth basis, buying material in keeping with its schedule production and this may not allow efficient servicing of its customers. Forgionne (1986) claimed that inventory serves general important business and economic functions of which some are related to product or service demand, which can be erratic. The basic issues are how much and when to order (or produce) since inventory expenses are substantial costs of doing business. Inventory plays a very important role in capacity management. Jegede (1992) stated that the necessity of keeping stock arises because of the time lapse between purchasing, production and eventual sale to customers. The major concern is how inventory can be controlled to minimise waste and cost. . Thus, an efficient inventory policy is always an important requirement for the successful management of manufacturing and distributing enterprises. Orlicky (1975) identified the main purpose of a basic material requirement planning as to control inventory level, assign operating priorities for items, and plan capacity to load the production system as well as to order the right part, order the right quantity and order at the right time. In their contribution to importance of inventory Plane (1994) observed that if inventory levels are low, the cost associated with keeping inventory on hand is small, but orders are place more frequently to replenish items, to avoid running out of stock always. If inventory levels are very high, maintaining these inventories is expensive but there may be benefits from obtaining larger lot sizes from suppliers.

Funding is major ingredient for successful operation of a manufacturing organisation. The modes of financing by Development Banks to SMEs have been the loans for the financing of machinery and equipment. The SMEs are required to source for working capital from the conventional commercial bank. This has created problems for most SMEs because of their inability to borrow in good and affordable terms from commercial banks. The high interest rates have even crippled the operations of some SMEs. Chima (1992) stressed that for such small enterprises to contribute significantly to the economic growth, they should not only be provided with term and equity loans to finance capital investment but they should also be provided with working capital to finance inventories. Whatever the level of assistance to small manufacturing companies in terms of financing equipment and machinery, nothing could still be achieved if funds are not available to finance inventory which is the major component of an organisation operating cycle**.** The funding requirement of any organisation most especially manufacturing firms depends largely on the operating cycle**.** Manufacturing Business Operating Cycle (MBOC) can be expressed as follows:

MBOS = ART – CTS + PTT + FGT + CTP   ……………1

Where

ART = the average time that raw materials remain in stock,

CTS = the credit time taken from suppliers

PTT = the time taken in producing the good

FGT = the time the goods remain in the finished inventory

CTP = the time taken by customers to pay for the goods**.**

The model above indicates that if CTS can be increased, it would improve the working capital of an organization while the reduction in ART, PTT, FGT and CTP time would also improve the working capital situation of an organization. For efficient management of inventory, organization must strive to increase their CTS while good policies should be in place to reduce the ART, PTT, FGT and CTP. time.

Many organizations spend a lot of time developing sales projection and budget for expenses but unfortunately few organizations make budget and projection for what is probably their largest asset (inventory). It is critical to the success of inventory management system to develop a budget for the value of stocked inventory maintained in each warehouse. According to Schreibfeder(1997b) this budget is referred to as the target inventory investment (TII) which can be calculated as

$$TII = \frac{Pr\,ojected \quad annual \quad \cos t \; of \; goods \; sold \; from \; stock \; sales}{T \arg et \; inventory \; turn \; over} \quad \dots \dots \dots .2$$

This model shows that higher inventory turnover will reduce inventory investment and funding. If an organization needs to reduce its overall inventory investment to meet turnover goals, a good place to start is to look at the dead inventory and slow moving items that are in the warehouse. There may be reasons to hold non-moving items but it must also indirectly contribute to the current or future profit. For example, non moving items might be for repairs, these items might also be stocked to handle customers' emergency needs. It is necessary for an organisation to calculate its TII in order to know the level of funding that is required. Repairs and maintenance inventory are very important in manufacturing organizations in order to ensure that production is not disrupted due to lack of repair parts. Many organizations have too much inventory in their maintenance and repairs inventory. Unlike inventory for resale, maintenance and repair inventory is not an investment; it is an expense of doing business. Most often, companies will have spare parts for machinery that is no longer in service. When the equipment is sold no one bothers to remove the spare parts from stock, thus occupying space and incurring cost unnecessarily. Schreibfeder (2002) stated that maintenance and repair inventory can be categorised as (i) continual use items - These are maintenance items and other products that are continually used (ii) specific need inventory - Though not continually used, these items are used on a regularly scheduled basis. (iii) emergency repairs parts – These are parts whose sporadic usage cannot be predicted. It is important to make necessary provision for funding of repairs and maintenance inventory for effective operation of a manufacturing organisation. The proper management of maintenance and repair inventory can make an organization maintain an outstanding level of productivity at the lowest possible overall cost. Schreibfeder (2004) stated that in many organizations more than 50% of stock products have sporadic usage; that is, they are not sold or used on a regular predictable basis. The organization has no idea when they will be sold or used. Inventory base for sporadic items usage should be based on a multiple of the normal or typical order quantity. For example if an organization normally sells or uses two of the items in a transaction, the 'target' stock level will be equal to two pieces. Because sporadic inventory is not sold on recurring basis, an organization must carefully monitor the value of any amount of sporadic inventory in excess of the target stock level. Schreibfeder (2004) put the planned excess of sporadic inventory
items as follows:

$$ESI = TSL - NOQ + VPQ \quad \dots \dots \dots .3$$

Where:
ESI is Planned excess sporadic inventory
TSL is Target stock level
NOQ is Normal order level quantity
VPQ is Vendor package quantity

To minimise the funding of the planned excess inventory, order should be close to the normal order quantity even if the organization has to use higher price or discontinue the product from inventory and order only as and when necessary to fill specific requirement

Research Methodology

The study was carried out in Lagos, Oyo and Ondo states of Nigeria. The three States were chosen because of the existence of a good concentration of Small and Medium Scale Industries within the Southwestern region of Nigeria. The sample size consist of 250 selected SMEs within the three states . In view of the relative sizes of

the states, the purposive sampling method was adopted for the study in order to include dominant industries. The data collected were subjected to statistical analysis. Simple percentage (%) and. Correlation and regression analysis was used to test the relationship between production time lost due to stock out and investment in inventory.

3.0 Results and Discussions

The study covered 250 organisations from which a response rate of 88.4% (228 organisations) was obtained. Table 1 shows the percentage of working capital invested in inventory. Majority of the SMEs (66.29%) invested just 0 - 20% of their working capital in inventory. Thus, inventory funding level is relatively low. However this might be indicative of the inventory strategy being used by the organizations. The sources of financing working capital in the organizations are shown in Table 2. Equity was used by 21.27% of the SME, long term loan (17.65%), medium term loan (37.52%), short term loan (40.27%), and other sources including credit purchases and customer deposits (61.09%). The rating indices show that other sources (3.69) is the most highly rated source, followed by equity (2.5) and long term loan (2.21). The rating indices for equity and long term loan were below average which is an indication that there was low permanent fund for inventory financing in SMEs. This is not healthy trend, more permanent fund should be available for SMEs for inventory funding to promote and enhance their contribution to national productivity. The adequacy of the inventory items of SMEs was assessed using a 5 – point Likert rating in Table 3. It revealed that the inventory items of the SMEs were all below average. The rating index were raw materials (2.82) finished goods (2,78) and spares parts (2.22). This implies that the capacity utilization will not be at optimum and the supplies to customers were not met in some cases due to lack of inventory of finished goods. The inventory of spares part was grossly inadequate at a rating of 2.2 thus, spare parts were not available for repairs of machinery as and when necessary.The study further revealed that the four years (2009 – 2012) mean production time lost due to shortage of inventory was about 9%. The relationship between the average percentage of working capital invested on inventory and average percentage of production idle time for the organisations that returned their questionaire and for the period covered by the study , 2009 to 2012 were subjected to correlation analysis, the result showed that investment in inventory was negatively correlated to production idle time (r = -0.3529, p< 0.05). This revealed that if inventory was well funded it would lead to reduction in production idle time.

Conclusion and Recommendations.

SMEs cannot contribute meaningfully to the economic development without adequate funding of inventory. The ability of SMEs to provide employment opportunities depend to a large extent on the availability of these category of firms to muster sufficient fund for their inventory to ensure continuous production.

Based on the findings of this study in respect of the problems identified, the following suggestions and recommendations will be important to Small and Medium Scale manufacturing industries in order to enhance the needed contributions of this sector to the Nigerian economy:

(i)   Working capital guarantee loan fund should be created for inventory financing of SMEs
(ii)   Necessary policies should be put in place to encourage SMEs to raise more permanent fund for working capital from capital market.
(iii)   In view of the identified problems of access to fund, SMEs should endeavour to use suppliers financing for inventory to improve the capacity utilisation ratio.

It is expected that these recommendations would provide the requisite policy framework for effective inventory funding of SMEs and enhance their contributions to national development.

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Table 1: Percentage of Working Capital Invested in Inventory

% of Working Capital invested inventory	2009 Response (%)	2010 Response (%)	2011 Response (%)	2012 Response (%)	4 Year Average%
0 - 20%	150 (67.87%)	148 (66.97%)	144(65.16%)	144 (65.16%)	66.29%
21 - 40%	25 (11.31%)	27 (12.22 %)	31(14.03%)	27 (12.22%)	12.45 %
41 - 60%	27 (12.22%)	31 (14.03%)	34(15.38%)	37 (16.74 %)	14.59%
61 - 80%	19 (8.60%)	15 (6.79%)	12(5.43%)	13 (5.88 %)	6.68 %
81 - 100%	-	-	-	-	-

Table2: Sources of financing Working Capital

Source of Finance	Proportion from each Source						
	Very low	Low	Average	High	Very High	Total	Rx
	(0 -20%)	(21 -40%)	(41 -60%)	(61-80%)	(81 -100%)	(% of 106)	
	1	2	3	4	5		
Equity	6(6)	15(30)	19(57)	7(28)	-	47(21.27%)	2.57
Long Term Loan	15(15)	9(18)	10(30)	2(8)	3(15)	39(17.65%)	2.21
Medium Term Loan	38(38)	34(68)	9(27)	2(8)	-	83(37.52)	1.70
Short Term Loan	42(42)	22(44)	16(48)	2(8)	7(35)	89(40.27%)	1.99
Other Sources	8(8)	14(28)	35(105)	33(132)	45(225)	67(63.21%)	3.69

Rx = Rating index (Weighted average

Table 3: Adequacy of Inventory Items

	5	4	3	2	1			
	Very Adequate	Adequate	Fairly/Just Adequate	Inadequate	Grossly Inadequate	Total Response	Weighted Score	Rx
Inventory								
Raw Materials	14(70)	42(168)	77(231)	67(134)	21(21)	221		2.82
Finished Goods	17(85)	26(104)	101(303)	46(92)	31(31)	221	2.78	
Spare Parts	16 (80)	8(32)	38(114)	105(210)	54(54)	221	2.22	

Rx = Rating index (Weighted average)

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