IMPACT OF STOCK VALUATION ON PROFITABILITY OF MANUFACTURING INDUSTRIES

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Abstract: *This study was carried out to ascertain the effect of stock valuation on profitability of manufacturing industries. A survey research design was adopted in which twenty five workers of a typical manufacturing company were used and data were collected using questionnaire. Three research hypotheses were raised and tested; while the demographic information of the respondents were analysed using simple percentage, the hypotheses were tested using t-test statistic at a significant level of 5%. The testing of the hypotheses revealed that:*

- *Proper checking of good purchased to ensure conformity with purchase order in terms of quality, quantity, price and description is important even though the suppliers are known;*
- *High stock cost affects profit negatively;*
- *Stock out will affect the company's profit.*

Based on the findings it was recommended that effective stock valuation and control should be emphasised by all manufacturing companies to ensure profit maximisation at all time so as to be able to satisfy the stakeholders.

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1.1   INTRODUCTION

Stocks or inventory is one of the largest and most valuable current assets of any trading or manufacturing concern. They are items of value held for use or sale by an enterprise and include goods awaiting sale, sometimes called finished good stocks; goods in the course of production, also called work in progress or process and goods to be consumed in the course of production, called raw material stocks. Conversely, it excludes long term assets subject to depreciation, called fixed assets and those subject to amortisation, called intangible or fictitious assets.

Nonetheless, inventory of manufacturing concerns constitutes the second largest item after fixed assets in the balance sheet in terms of monetary value, hence it is paramount to attach importance to the control of the stock and its usage by the management.

Valuation is a measurement process, hence by stock valuation we refer to the assignment of monetary value to stock. The value attached to stock at the end of every financial year would go a long way to determine the level of profitability for that particular year.

In view of the above, this study is out to make critical review and analytical demonstration of stock as it affects companies and in pursuance of this objective a general analysis of method of stock valuation and their associated problems would be considered.

1.2 LITERATURE REVIEW

Pandey (1966) considers stock as "product that a manufacturing company manufactures for sale and the components that make up the product". He went further by classifying stocks into three groups viz:

- Finished goods: These are fully manufactured goods which are ready for consumption. Wheldon (1998) described finished goods as goods awaiting sales or delivery to customers, especially at the time of bad market when all manufactured goods may not be sold;

- Raw Materials: These are inputs to be converted into finished goods through manufacturing processes;

- Work in Progress: These are partially manufactured goods, which are held in intermediate stage of completion and which require further processing before use, sales or distribution.

The Canadian Institute of Chartered Accountants in its bulletin in 1974 defined stock as

"goods awaiting sales" (the merchandise of a manufacturing company) and goods to be consumed directly in production (raw materials and supplies). It can therefore be concluded from this definition that what is finished good for a particular industry may be regarded as raw material for another industry or company. For instance, leather sheets which are finished good for a leather industry are regarded as raw materials for a leather bag manufacturing company.

Stanwell et al (1990) defined stock as articles, items, goods or materials kept in a special place, usually called a stock room ready to be taken out when needed, and that the nature of stock, the purpose for which it is held and therefore the way it is controlled differ in various types of organisation such as factories, shops and offices.

Love (1979), defined stock as "quantity of goods in the control of an enterprise and held for a time in relatively idle or on productive state, awaiting its intended use or sale". He is also of the view that stock can be finished goods or raw materials temporarily held pending when decision on processing further (raw materials) or disposing it (finished goods) will be undertaken.

But the American Institute of Accounting research bulletin no 43 of 1972 refers to inventory to designate the aggregate of those items of tangible property which are held

- For sales on the ordinary course of business;
- In process of production for such sale or
- To be currently consumed in the production of goods or services to be available for sale.

Omolehinwa (1991) takes stock or inventory as the current asset represented by goods owned by the business at a particular point in time and held for the purpose of future sales or for the manufacturing of goods for sale. He emphasised further that, the classification of an item into inventory and fixed assets would depend on the company's nature of business, for example, while equipment will be regarded as an item of stock for a company manufacturing it for sale, it is a fixed asset for another company using it to manufacture goods for sale.

Above all emphasises are to be placed on control of stock in the store as it represents investment that has not been fully utilised, which brings us to the problem of pricing and control of inventories. David et al (1993) defined stock control as a system used to ensure

that the volume of stock and cost of holding it are reduced to the minimum without any interruption or stoppage to production

Terry Lucey (2009) identified two main objectives of material pricing to be:

- a charge to production on a consistent and realistic basis, the cost of materials used and

- to provide satisfactory basis for valuation of inventory at hand.

Robert Igben (2009) put it succinctly that pricing and valuation of stocks deserve special attention for the following reasons:

- Cost of production is directly affected by the prices at which stocks of raw material are issued, it is therefore essential that the pricing be realistic and consistent;

- A reliable issue pricing system provides a satisfactory basis for stock valuation.

But the stock valuation is useless if the materials in stock are not adequately controlled and to ensure adequate control of materials, we have to focus such issue as to what to store, where to obtain it and how to buy it, hence the management primary concern with inventory should be summed up by the phrase "the right goods, in the right condition, at the right place, at the right price and at the right time" Gill C et al (1993), which would only be achieved through purchasing (procurement) and quality control techniques. To do this, management needs to know what goods are in hand, what their values are, what their states and conditions are and the details of their movement. The control should be such that inventory is maintained at appropriate levels, adequately safeguarded against losses or misuses, properly applied in the operations of the business and duly accounted for. To ensure this, there is every need for effective procedures for checking out goods dispatched, arranging for the keeping and control of records of goods transferred internally (ie for processing or sales outlets), arranging for periodic or continous check for physical inspections and procedures for identifying obsolete, slow moving or damaged items. Though some stocks are subject to deterioration and obsolescence, if held for a long time, Umeaka (2004)

Omolehinwa (1991) said that "material management is concerned basically with the planning and control of materials". He further stressed that control is a process by which events ar**e** made to conform with a plan, therefore to control materials, there must be a plan of action. Planning focusses on such issues as to what to store; where to buy and how

much to buy. The items to be stored will be determined by the basic functions of the firm and the customers it serves.

Adedeji and Kajola (1998) identified the underlisted as factors having influence on stock holding decision:

- Amount of cash available;
- Storage space available;
- Storage cost (insurance, interest on capital etc)
- Delivery delays;
- Risk of stock losses (wastages, obsolescence etc);
- Minimum ordering quantities imposed by the multiplier;
- Purchase ordering cost (clerical, transportation etc);
- Required service level to workers or customers.

One of the most important controls over inventory is adequate record keeping which involves continous recording of inventory movement appropriate to the circumstances and needs of individual business. Some of the commonly used documents to control stock items are:

- Bin card;
- Material requisition note;
- Material returned note;
- Material transfer note;
- Store issues vouchers;
- Good received notes;
- Stores reciept note.

Nevertheless, some costs, which directly influence inventory are notable and Jegede (1992) classified the costs as follows:

- Holding cost: cost incurred for holding or keeping the stock, sometimes referred to as carrying cost, which tend to increase as the size of the stock increases. Such cost includes, but not limited to, interest on capital invested in stock; storage charges; stores staffing; insurance and security; deterioration and obsolescence; pilferages and damages. It is normally expressed on an annual basis and as a percentage of

average inventory. Stocks can be held for transactionary, speculative or precautionary reasons, but Keown et al (1999) saw it differently by saying that the purpose of holding stock is to make business function independent of each other so that production and sales would not be affected by delays and shut downs in any of the function.

- Ordering cost: cost incurred when an order is placed until the goods are physically received into store which includes: loss of contribution through loss of sale; loss of customer goodwill; loss of future sale due to customer's intention to go elsewhere; labour frustration over stoppages; extra cost associated with urgent procurement;

- Purchase cost: this is the cost of inventory itself which includes cost of production.

But there are some critical stock control levels that an organisation must establish so as to work efficiently and avoid stock loss, carrying excessive stock or having inadequate stock at any point in time. Whatever the case is, the degree of sophistication of methods to be used would rely on a cost benefit analysis of the sysem being contemplated. Basically, the stock level can be classified into four groups namely:

- Maximum stock level: Lucy (2009) defined maximum stock level as the level beyond which it is not economical to allow stock to exceed. Omolehinwa (1991) said it is the level which stock should not be allowed to rise. It is more or less the predetermined level based on anticipated usage. It is expressed as Re-order level + Reorder Quantity (EOQ) minus Minimum anticipated usage in Lead time

- Minimum Stock level: often referred to as the buffer stock, it is the lowest level which stock would not be allowed to fall. It guides the management against stock out as it is a reserve held to prevent undesirable effect of fluctuations in usage and delivery time. It is expressed as Reorder level minus average usage in average lead time;

- Reorder level: this is the level when it is time to reorder inventory. It is the level at which the store keeper will raise a requisition to the purchasing department for the procurement of additional stock. It lies between maximum and minimum stock level. It is calculated by multiplying usage per day by maximum lead time. According to Umeaka (2004), if reorder level is higher than the maximum stock level, the organisation must be tieing down working capital in unwanting inventory.

Conversely, stock out occurs if reorder level is lower than the minimum stock level.

- Economic Order Quantity: Lucey (2009), Economic Order Quantity or Economic Batch Quantity is the calculated re-order quantity which minimises the balance of cost between the carrying cost and ordering cost and mathematically expressed as the square root of 2(Annual Demand for stocks multiplied by Ordering cost) divided by Carrying cost per holding.

1.3   STATEMENT OF PROBLEM

Most companies, especially manufacturing companies, now operate at lower capacity, hence they find it extremely difficut to control stock. Quite often management is faced with stock problems such as inadequate raw materials; obsolute materials; high storage cost etc. Each individual within a management group will answer the questions from his own point of view, what he thinks about inventory in isolation from other operation forgetting that inventory is not an end in itself but only a means to an end. From the above, it is apparent to management of manufacturing companies that efficient management of inventory is an important move in ascertaining profitability in the chain of business operations requiring exercise of considerable commercial and managerial skills and judgement.

1.4 RESEARCH QUESTIONS

The study was guided by the following research questions:

- Is there need for management inventory level?
- Does cost of transportation, storage and delivery charges include the purchase price to be used in stock valuation?
- Does rapidly changing prices for bought in stock affects stock valuation method adopted?
- Does high stock cost reduce profit?
- Is proper checking of good purchases order done in terms of quantity, price and description?
- Are there inadequacies in the stock control system?

1.5 RESEARCH HYPOTHESIS

For the purpose of analysing the data, the following hypotheses were tested:

- Ho_1:   Proper checking of good purchased ensure conformity with purchase order in

terms of quality, quantity, price and description is important even though suppliers are known with certainty;

- Ho2: High stock cost will bring about a reduction in the profit of manufacturing companies;

- Ho3: Stock out does not affect profit.

1.6   METHODOLOGY

The study employed descriptive research design of the ex-post facto type. The method was chosen because it helped to describe record, analyse and interpret the condition, prevailing practices, belief, attitudes and ongoing process that exists in the survey (Ndagi, 1984).

1.7   POPULATION, SAMPLE AND SAMPLING TECHNIQUE

The population comprised all workers of Nestle Nigeria Plc. From the population, a sample of 25 workers (15 Stores department and 10 Accounts department) was obtained through the simple random selection technique.

1.8   INSTRUMENT

The instrument used to gather information in this study is a self-designed questionnaire. The questionnaire consists of two sections. Section A elicits demographic information like gender, working experience, while Section B contained structured items relating to the research questions that necessitated this research.

1.9   VALIDITY AND RELIABILITY OF THE INSTRUMENT

To ensure the validity of this research, the instrument was subjected to criticism by specialist in the areas of educational management aside from peer review conducted by the researcher. The reliability of the instrument was obtained through a test-retest techniques to analyse the data collected.

2.0   RESULTS

Table 1:   Does proper checking of good purchased ensure conformity with purchase order in terms of quality, quantity, price and description important since suppliers are known with certainty.

Subject	No	%	T-calculated	Table value	Decision
Agreed	2	8.0			
Disagreed	23	92.0	5.6569	1.73	Reject

Level of significance – 0.5

Since t-calculated is greater than the table value (i.e. 5.6569 > 1.73), then the null hypothesis is rejected, while the alternative hypothesis is accepted and conclude that proper checking of good purchased to ensure conformity with purchase order in terms of quality, quantity, price and description is important even though the suppliers are known with certainty.

Table 2:   Does high stock cost affect profit?

Subject	No	%	T-calculated	Table value	Decision
Agreed	3	12.0			
Disagreed	22	88.0	4.3333	1.73	Reject

Level of significance – 0.5

Since t-calculated is greater than the table value (i.e. 4.3333 > 1.73), then the null hypothesis is rejected, while the alternative hypothesis is accepted and conclude that high stock cost affect profit negatively.

Table3: Will stock out have any effect on the company's profit?

Subject	No	%	T-calculated	Table value	Decision
Agreed	15	60.0			
Disagreed	10	40.0	2.25	1.73	Reject

Level of significance – 0.5

Since t-calculated is greater than the table value (i.e. 2.25 > 1.73), then the null hypothesis is rejected, while the alternative hypothesis is accepted and conclude that stock out will affect the company's profit.

2.1   DISCUSSION

Finding of hypotheses tested and direct interview conducted on the personnel of the company reveals the followings

- There are no inadequacies in the stock control system, hence the valuation and value of stocks used in the financial statement are not materially affected;
- There is a significant relationship between purchased price used in stock valuation and the profitability and growth of manufacturing companies;
- High stock cost will not bring about a reduction in the profit of manufacturing companies;

- Physical count of stock should be undertaken regularly even when adequate stock record are kept;

- Overstocking only gives rise to pilferages and obsolescence;

- Proper checking of goods purchased should be carried out to ensure conformity with purchase order in terms of quality, quantity, price even when suppliers are known.

2.2 CONCLUSIONS

It is evident from the study that effective stock valuation and control by manufacturing companies is very important. It is being viewed critically now than before because of its significant effect on the performance and profitability of the company. It is of great importance to note that the survey carried out indicates that there are inadequacies that flow through the stock account. Consequently, the hypotheses tested show positive results from the responses obtained from the questionnaires used in the analysis of the research work. Hence from this point of view, it is necessary that most organisations should pay more attention to the various methods of stock valuation so that the financial statements, as at when due, may give true and fair picture, which is meaningful and reliable.

Also, despite the importance of effective inventory system, manufacturing companies have not reaped the full gains of effective inventory control due to their continous application of crude methods. Hence the need to employ more scientific techniques of stock valuation and control, needs not be over-emphasised. These techniques have been tested and found very useful in the industrialised and developed nations of the world. The need to apply them are much more relevant now than ever because of high cost of raw materials. These techniques will assist management to control stock in a better way and promote cost reduction and enhance profit. It is through this that most organisations can formulate optimum stock control levels and on the long run achieve the primary objective of ever going into business, that is, maximisation of wealth.

2.3 RECOMMENDATIONS

Based on the finding of this study, it is recommended that:

- Management should at all time solve replenishment problems associated with importation of goods, while options should be available for locally sourced ones;

- Detailed investigation should be undertaken before approval is given on any

adjustment of stock balance;

- To enable better result from the computerisation of the stocks, audit trail should be sent to store on daily basis;

- Before valuation is carried out both reorder level and reorder quantity should be considered, there should be no crude determination of when to reorder without the check;

- To ensure objectivity in allocating purchase order to suppliers, there is need to introduce suppliers' performance review. Reward and punishment should follow to ensure seriousness of the process with a view to promote efficiency in procurement;

- Material planning will be better enhanced if the preparation of annual report in form of ratios, showing key indicator of performance, is regiously adhered to. Trend analysis of such ratio as inventory turnover; number of times out of stock as a percentage of times requisitioned; stores handling cost as a percentage of total value of stores receipts and issues; production losses due to non-availability of materials as a percentage of annual production etc.

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