A STUDY ON INVENTORY MANAGEMENT

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ABSTRACT:

There exits an inseparable relationship between finance on the one hand and production, marketing and other functions on the other. Almost all kinds of business activities, directly or indirectly, involve the acquisition and use of funds. For example, responsibility of the production department; but it requires payment of wages and salaries and other benefits, and thus, involves finance. Similarly, buying a new machine or replacing an old machine for the purpose of - -increasing productive capacity affects the flow of funds. Sale promotion policies come within the purview of marketing, but advertising and other sales promotion activities require outlays of cash, and therefore, affect financial resource.

Where then is these preparation between production and marketing functions and the finance function of making money available to meet the costs of production end and marketing operations?Where do production and marketing functioned and the finance functions begin? There are no clear-cut answers to these questions. The finance function of raising and using money although has a significant effect on other functions, yet it needs not necessarily limit or constraint the generalrunning of the business. A company in a tight financial position will, of course, give more weight to financial considerations, and devise its marketing and production strategies in the light of the financial constraint. On the other hand, management of a company, which has regular supply of funds, will be more flexible in formulating its production and marketing policies. In fact, financialpolicies will be devised to fit production and marketing decisions of a firm in paretic.

INTRODUCTION:

Every enterprise needs inventory for smooth running of its activities. It serves as a link between production and distribution process. There is, generally, a time lag between the recognition of a need and its fulfillment. The greater the time lag, the higher requirements for inventory. It also provides a cushion for future price fluctuations.

In a complex industry Limited it studied clearly of how the things are being performed and what is the real impact of these on industry and how effectively the inventory is utilized is interested to be known by researcher because of its great significance in the research.

Meaning and Nature of Inventory:

In accounting language, inventory may mean the stock of finished goods only. In a manufacturing concern, it may include raw materials, work- in – progress and stores etc.

Definition:

The term inventory refers to assets, which will be sold in future in the normal course of business operations. The assets, which the firm stores as inventory in anticipation of need, are raw material, working progress, and finished goods.

The investment in inventories constitutes the most significant part of current assets / working capital in most of the undertakings. Thus, it is very essential to have proper control and management of inventories.

The purpose of inventory management is to ensure availability of materials in sufficient quantity as and when required and also to minimize investment in inventories.

Meaning and Nature of Inventory:

In accounting language, inventory may mean the stock of finished goods only. In a manufacturing concern, it may include raw materials, work- in – progress and stores etc.

Inventory includes the following things:

a)   **Raw Material**: Raw material form a major input into the organization. They are required to carry out production activities uninterruptedly. The quantity of raw materials required will be determined by the rate of consumption and the time required for replenishing the supplies. The factors like the availability of raw materials and Government regulations etc., to affect the stock of raw materials.

b)   **Work in progress**: The work in progress is that stage of stocks which are in between raw materials and finished goods. The quantum of work in progress depends upon the time taken in the manufacturing process. The greater the time taken in manufacturing, the more will be the amount of work in progress.

c)   **Consumables**: These are the materials which are needed to smoother the process of production but they act as catalysts. Consumables may be classified according to their consumption add critically. Generally, consumable stores does not create any supply problem and form a small part of production cost. There can be instances where these materials may account for much value than the raw materials. The fuel oil may form a substantial part of cost.

d)   **Finished goods**: These are the goods, which are ready for the consumers. The stock of finished goods provides a buffer between production and market, the purpose of maintaining inventory is to ensure proper supply of goods to customers.

e)   **Spares**: The stock policies of spares differ from industry to industry. Some industries like transport will require more spares than the other concerns. The costly spare parts like engines, maintenance spares etc., are not discarded after use, rather they are kept in ready position for further use.

All decisions about spares are based on the financial cost of inventory on such spares and the costs that may arise due to their non – availability.

Objects of Inventory Management

Definition of Inventory Management: Inventory Management is concerned with the determination of optimum level of investment for each components of inventory and the operation of an effective control and review of mechanism.

The main objectives of inventory management are operational and financial.

The operational objective mean that the materials and spares should be available in sufficient quantity so that work is not disrupted for want of inventory.

The financial objective means that inventory should not remain idle and minimum working capital should be locked in it.

The following are the objectives of inventory management:

1.   To ensure continuous supply of materials, spares and finished goods so that production should not suffer at any time and the customers demand should also be met.

2.   To avoid both over – stocking and under – stocking of inventory.

3.   To maintain investment in inventories at the optimum level as required by the operational and sales activities.

4.   To keep material cost under control so that they contribute in reducing the cost of production and overall costs.

5.   To eliminate duplication in ordering or replenishing stocks. This is possible with the help of centralizing purchases.

6.   To minimize losses through deterioration, pilferages, wastages and damages.

7.   To ensure perpetual inventory control so that materials shown in stock ledgers should be actually lying in the stores.

8.   To ensure right quality goods at reasonable prices. Suitable quality standards will ensure proper quality of stocks. The price – analysis, the cost analysis and value – analysis will ensure payment of proper prices.

9.   To facilitate furnishing of data for short – term and long – term planning and control of inventory.

RESEARCH METHODOLOGY

- **Need for the study**
- **Scope of the study**
- **Objectives of the study**
- **Collection of the data**
- **Limitation of the study**

NEED FOR THE STUDY

Every industry on average spends 70% on raw materials (inventory). Therefore, there is a need to know the raw material cost and also there is a great importance to understand the inventory management system of this industry.

Large scale industries ltd like Ultratech Cement Limited have been facing lot of ups and downs in the profitability inventory levels etc.. for the past 12 to 15 years. Hence the researcher felt the need for the analysis of inventory management Ultratech Cement Limited for the past at last 7 years. Hence the study has been undertaken.

SCOPE OF THE STUDY:

The main aim of the study is to control the inventory management system of the firm by implementing the control methods of inventory and the suggestions that are given for the moderate level of inventory ratio for the better profit maximization.

OBJECTIVES OF THE STUDY:

1.   To study the present inventory management practices and procedures.

2.   To discuss pattern, levels and trends of inventories.

3.   To analyze the records of stock levels.

4.   To analyze the inventory turnover ratio

Collection of the study:

Primary data:

The data which collected from the respondents for the first time. The Primary data was collected by the method of interviewing from responsible officers of finance department and production department in the company. Some information was also collected by observation.

Secondary data:

The data which is already exists in the form of books, reports etc. The secondary data was collected from various reports such as annual reports Documents, Charts, etc.

The analysis sought during the personnel discussions with the concerned people and perception during the visits to the important areas of services.

In making observations, identifying problems and suggesting certain remedies, much emphasis was given on the basis of opinion gather during the personnel discussion and with the personnel experience gained during the Academic Study of the MBA Course.

Limitations of the study:

The study has the following limitations:

The study is limited only for a period of 5 years i.e., from 2018- 19 to 2023-24.

- The limitations of ratio analysis can be applicable of the study.

- There may be approximation in calculating ratios and taking the figures from the annual reports.

- Time constraints is one of the major limitations of the study

- Using only two techniques for analysis due to time constraints.

REVIEW OF LITERATURE

- Grzegorz Michalski (2009) The basic financial purpose of an enterprise is maximization of its value. Inventory management should also contribute to realization of this fundamental aim. The enterprise value maximization strategy is executed with a focus on risk and uncertainty. This article presents the consequences for the recipients firm that can result from operating risk that is related to delivery risk generated by the suppliers. The present article offers a method that uses portfolio management theory to chose the suppliers.

- Grzegorz Michalski(2013) The basic financial purpose of a firm is to maximize its value. An inventory management system should also contribute to realization of this basic aim. Many current asset management models currently found in financial management literature were constructed with the assumption of book profit maximization as basic aim. However these models could lack what relates to another aim, i.e., maximization of enterprise value.This article presents a modified value-based inventory management model.

- Özalp Özer(2013) The success of a product in today's global marketplace depends on capabilities of firms in the product's supply chain. Among these capabilities, effective inventory management is a capability necessary to lead in the global marketplace. The chapter provides a discussion of four fundamentals of effective inventory management. First, it requires managers to know how best to use available information. Second, managers need to quantify the value of information. Third, they need to coordinate decentralized inventory operations. Finally, effective inventory management requires decision tools that can be embraced by their users. The chapter's emphasis is on the use of information, and the role of new information technologies in inventory management. Previous research on inventory management played an important role in the advancement and development of new technologies and processes. Today more research is needed because new technologies (such as RFID Radio-Frequency Identification) and new management methods (such as collaborative forecasting and planning) are emerging and evolving faster than ever before. Inventory management and research will continue to playa central role in the success of a product and the firms in its supply chain. The chapter brings together separate but inherently related streams of research in inventory management. By doing so, we highlight potential research opportunities that lie on the boundaries.

- Abramovitz and Modigliani (1957) They highlighted the relationship between capacity utilization and

inventory investment. Existing stock of inventories was expected to adjust to the desired levels. Thus the variable, ex- listing stock of inventories, was essential to be negatively related with the desired stock. The result was that there is positive relation among the ratio of inventory to sales and inventory investment. High ratio of stocks to sales in the past suggests requirement of high levels of inventories in the past and promising high investment in inventories in the current period also.

➢ R.S. Chadda (1964) Study had been made on inventory management practices of Indian companies. The analysis suggested application of modern scientific inventory control techniques like operations research. These modern scientific techniques furnish opportunities for the companies, Companies can minimize their in- vestment in inventory but there is continuous flow of production. He argued that industrially advanced countries, like, USA, were engaged in developing highly sophisticated mathematical models and techniques for modernizing and redefining the existing tools of inventory investment.

➢ National Council of Applied Economic Research (NCAER) (1966) Conducted a study in 1966 regarding working capital management of three industries namely cement, fertilizer and sugar. This study mainly devoted to ratio analysis of composition, utilization and financing of working capital for the period of 1959 to 1963. The study reveals that inventory constituted a major portion of working capital i.e. 74.06 per cent in the sugar industry followed by cement industry (63.1%) and fertilizer industry (59.58%). It was observed that inventory had not managed properly. So far as the utilization of working capital was concerned, cement and fertilizer industry had better implementation of working capital. The sugar industry had huge accumulation of stocks so there was inefficient utilization of working capital heavily.

➢ Krishnamurty and Sastry (1970) It is the most comprehensive study on manufacturers' inventories. They used the CMI data and the consolidated balance sheet data of public limited companies published by the RBI, in order to analyse each of the major components, like the raw materials, goods-in-process and finished goods, for 21 industries over the period ranging from 1946-62. The study was a time series one although there were some interindustry cross section analyses that were carried out in the analysis. The Accelerator represented by change in sales, bank finance and short-term interest rate was found to be an important determinant. The utilization of productive capacity and price anticipations was also found to be relevant in the study.

➢ Farzaneh (1997) Presented a mathematical model, to assist the companies in their decision to switch from EOQ to JIT purchasing policy. He defines JIT as "to produce and deliver finished goods just in time to be sold, sub-assemblies just in time to be assembled in goods and purchased material just in time to be transformed into fabricated parts". He highlights that the EOQ model focuses on minimizing the inventory costs rather than minimizing the inventory. Un- der the ideal condition where all the conditions meet, it is economically better off to choose the JIT over the EOQ because it results in purchase price, ordering cost.
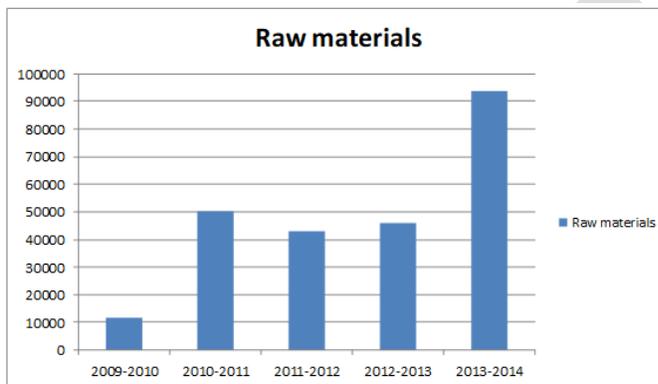
DATA ANALYSIS

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INTERPRETATION

1. **Investment on Raw Materials:**

| Year	Investment on Raw Material (in crores)
2009– 2010	11690.67
2020-2021	49950.88
2021-2022	42950.66
2022-2023	46087.45
2013-2014	93605.78

Interpretation:

From the above graph it can be understood that the inventory was recorded at 11,690.67 during the year 2019-20 and it is increased to 93605.78 during the year 2013 – 14.

2. **Trend Analysis:**

Trend Analysis:

| Year	Raw Material (in Lakhs)	Trend %
2019-2020	11690.67	87%
2020-2021	49950.88	373%
2021-2022	42950.66	315%
2022-2023	46087.45	344%
2023-2024	93605.78	699%
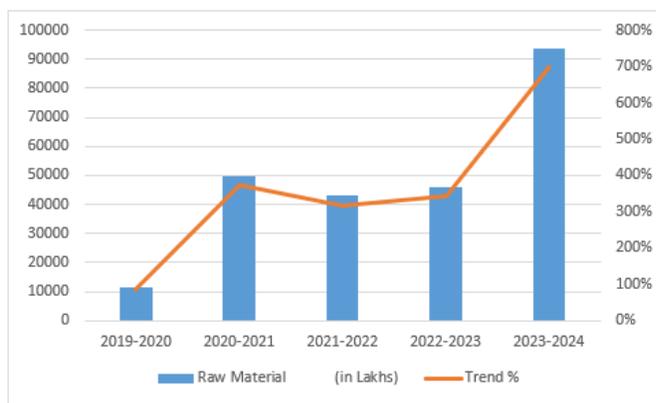
Interpretation:

The investment on inventory has increased in the year 2021–22. And the last year investment has decreased continuously. The percentage in 2019–20 was 315% as compared to years 2019-20 to 2023–24. The investment in inventories has shown fluctuating trend is initial years and then it raised to 699% and again showing fluctuating trend.

3.   **Inventory Turnover Ratio:**

$$\text{Inventor turn over ration} \quad = \quad \frac{\text{Cost of goods sold}}{\text{Average inventory}}$$

Inventory turnover ratio:

Year	Cost of goods sold (in crores)	Avg. Inventory	Ratio
2019-2020	59021.41	37975.30	1.55
2020-2021	121551.71	95065.28	12.79
2021-2022	127533.58	12390.06	10.29
2022-2023	130392.68	1333.8.01	9.78
2023-2024	311636.92	160035.93	1.32
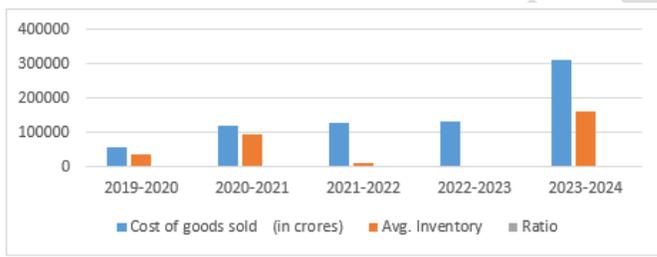
Interpretation:

From the above graph it can be observed that (1) inventory turnover ratio is 8.13 and it gradually decreased to 1.55 during 2019-2020 In the year 2023–24 clear that the ratio is very less i.e., stock is not turned into sales quickly.

FINDINGS, SUGGESTIONS
&
CONCLUSION

<u>**Findings**</u>

- The inventory turnover ratio is gradually increasing and the inventory turnovers in number of days are in low level. This indicates that the stocks are fast moving and get converted into sales quickly.

- The study of inventory and changes in sales inventory is improved and sales are also improved continuously.

- The inventory conversion period was 232 days, which indicates that the stock has been very quickly converted into sales, which mean the company is managing the inventory efficiently, the lowest inventory conversion period was recorded at 28 days and the highest inventory conversion was recorded at 232 days in the year.

- The trend has to compare to above 2 years it is increasing. The lowest inventory over total assets ratio was recorded at 13.36% and the highest inventory ratio was recorded at 43.43%. The average inventory to total assets ratio was recorded at 32.81% during the review period

SUGGESTIONS

1) Though the production is higher is the year 2019-20 and the sales were very high i.e., as per inventory conversion period it took 272 days. This shows that there is demand for Cement and the funds unnecessarily tied up. So, proper demand forecasting should be done and according to that it may be manufactured.

2) The investment on raw material should be made as per the requirement. Unnecessary investment may block up the funds.

3) Neither too high nor too low inventory turnover ratios may reduce profit and liquidity position of the industry. So, proper balance should be made to increase profits and to ensure liquidity.

4) The raw material should be acquired from the right source at right quality and at right cost.

CONCLUSION

The production during 2019-20 was 7,47,436 and 7,77,092 respectively which is higher as compared to 2021-2022 which is 6,87,373 and 7,27,447. Investment on raw material is 93605.78 lakhs which is very high as compared to 2023-24 which is only 460870.45 lakhs. The inventory turnover ratio shows that the stock has been converted into sales is only 1.32 times.

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