

A study of efficiency of inventory management using financial ratios

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ABSTRACT

Inventory is one of the most valued assets in any organization be it construction, manufacturing, retails or *inventory-intensive sectors. It is equally important for business of any size. Excess or shortages of inventory can prove detrimental to the business. It is defined as the process of receiving, storing and consumption of stock. These include the management of raw materials, materials in process, spare parts / components, and finished products as well as warehousing and processing such items. Hence it becomes very essential to track and manage inventory for the business to improve upon the cash flows and profitability. Key Performance Indicators (KPI) are defined for inventory management as a quantitative measure to track and measures the performance in inventory function. The research paper aims to study few of the critical KPIs using financial ratios as a metrics to evaluate and track the performance. The research paper will take a closer look, what are the indicators of performance which can be viewed from the financial statements, which will help the organization to make better decision that will positively impact the business.*

Keywords: Inventory, financial statements, cash flows and profitability.

INTRODUCTION

In any particular business unit or entity, we can see connection and interlinking of activities all functions. Inventory, logistics and supply chain management form the backbone of any manufacturing business concern. Hence these functions are critical and important to both finance, commercial and marketing and distribution managers.

The inventory position of any organization impacts considerable supply chain and financial health of the balance sheet. Hence to maintain optimal inventory has always been the key objectives of the organization and they strive their best to avoid over stocking or under stocking of inventory in their warehouse. Inventory is always dynamic and need careful planning from the stages of procurement to the stages of final delivery of product to the customers. Various factors are being reckoned while planning, procurement, consumption and delivery of the inventory and close monitoring and control plays vital role for managing it judiciously. Majority of the organization are having separate department popularly known Inventory department which oversees the operations for effective control and inventory management.

The main purpose of inventory management is to maintain inventory at optimal level to avoid over stocking or under stocking of inventory because both the cases are unprofitable for business. Thus, management is confronted with the following dilemma:

1. To keep inventory at sufficiently maximum level for smooth production and sales activities.
2. In order to maximize profitability, to minimize investment in inventory at minimum level

Hence it is imperative for the organization to set up a KPI for tracking the inventory in order to evaluate and improve the performance.

OBJECTIVES OF THE RESEARCH PAPER

1. The objectives of the research paper is to study the critical KPIs relating to inventory management
2. Evaluation of the KPIs which will contribute towards minimizing the inventory and contribute towards operations efficiency and profits.

LIMITATIONS OF THE STUDY

1. Data analysis has been carried out in five companies relating to FMCG sector.
2. The study is restricted to the analysis of inventory turnover ratio of the companies.
3. The study is restricted to 5 years (from 2014 to 2019)
4. Data has been computed from the figures appearing in annual reports

DATA COLLECTION

The data is collected from various secondary sources such as research papers, annual reports, company's website, articles, annual reports, etc.

3. REVIEW OF LITERATURE

(Nazar Sohail, 2018) mentioned that inventory problems of too great or too small quantities on hand can cause business failures. Stock out situation of any critical inventory items in warehouse could bring production bottlenecks and may result in disruption in production process. Inventory management indicates the broad framework of managing inventory.

Dr. Srinivasa Rao Kasisomayajula , 2014) where it has been stated that overall analysis of inventory of all units in the commercial vehicle industry in India is very good in their management of inventory. Among the firms in the commercial vehicle industry Tata Motors Ltd occupies the first place in the managing the inventory and there exists a strong correlation between sales and inventory thereby indicating good administration of inventory. It is the largest asset among current assets in manufacturing concerns. Thus, proper management of inventory is important to maintain and improve the health of an organization. Efficient management of inventories will improve the profitability of the organization.

(Anajali Mishra & Harshal Anil Salunkhe Suryadatta, 2018) where it is stated that to have effective inventory management system in place. The company should also try to implement modern inventory management techniques like Just in Time (JIT) inventory system to save the time of the organization and will help reduction of inventory holding cost in the organization. As the company Linamar India is already following Lean manufacturing, now the company can also try and implement different manufacturing techniques like TQM, Six Sigma etc.

(Basavarajappa MT, 2012) where it is stated that inventory turnover ratio increased from the year 2005 to 2007 (3.43 to 3.631) then there is decrease in 2008 and 2009 and finally increased in 2010. Also, to have better information systems packages which will improve the efficiency of the management of inventory control system?

INVENTORY KPI**A. Inventory Turnover Ratio**

Inventory Turnover Ratio shows the number of times inventory is converted into revenue from operations or rather how many times a company has sold and replaced inventory during a given period. It expresses the relationship between the average inventory cost of goods sold from operations and average inventory. If a company's average annual inventory is Rs 4,000 crore and revenue is Rs 20,000 crore, it implies that the company sold its inventory five times in a year.

The formula for its calculation is as follows

Inventory Turnover Ratio = Cost of Goods Sold from Operations / Average Inventory

Where average inventory refers to average of opening and closing inventory, and the cost of goods sold from operations means revenue from operations less gross profit.

The cost of goods sold is the direct expense associated with production of goods. For the service industry, cost of goods sold includes wages, benefits and taxes

In retail or wholesale business, the COGS include merchandise that was purchased from a Producer, plus the expenses incurred in relation to acquisition, storing, and displaying inventory items.

- **Significance of Inventory Turnover Ratio:** Inventory turnover measures how quick a company sells inventory and where the company stands with reference to the industry averages. A low turnover implies excess inventory in the warehouse (means overstocking resulting in blockage of working capital). Overstocking also implies there is poor marketing effort to dispose the goods in the market.

A high ratio implies either strong sales or insufficient inventory (chances of stock out is imminent) may lead to lost sales leading to customer dissatisfaction.

If the inventory is held for considerable period of time, the carrying cost of inventory increases and hence speeds of selling inventory is an important measure of company performance.

Data Analysis and Interpretation of Inventory Turnover Ratio of leading FMCG Sector in India

FMCG Companies	2019	2018	2017	2016	2015
ITC	6.03	6.13	7.05	6.10	6.43
Britannia Industries	14.58	15.78	14.41	21.29	21.24
Nestle India	11.70	11.29	10.13	10.33	12.06
Hindustan Unilever	15.78	14.93	14.60	13.25	12.57

(Source: Moneycontrol.com)

In the FMCG, sector, optimal inventory turnover is usually 8 or above, In the FMCG sector, goods are generally classified as fast moving category and as a result, inventory moves very fast from the warehouse.

The inventory turnover ratio of ITC Ltd is consistent over a period of 5 years and ranges from 6.43 to 7.05 which reflects that the company is managing its inventory quite well and as the figures reflects there has been no instances of overstocking of inventory.

The inventory turnover ratio of Britannia Industries Ltd had been very high during 2015 and 2016 and suddenly it went down to 14.41 in 2017. Overall in comparison to the rest of the industries Britannia is the highest in rating compared to other three companies

Nestle India has been consistent in managing and controlling inventory over five years with consistently maintained the ratio around 11 thereby indicating company is having efficient control system with respect to inventory management.

B. Days in Inventory (DIO)

Days in inventory ratio measures the average number of days the company holds its goods or inventory before selling it. A day in Inventory is also known as Days inventory outstanding (DIO) and it varies from one industry to industry.

$$DIO = \text{Average Inventory} / \text{Cost of goods sold} \times 360$$

Or

$$DIO = 365 / \text{Inventory turnover ratio}$$

Example – A company X Ltd had an inventory turnover ratio of 8. Assuming 360 as the number of days in the year, the company's *days' sales in inventory was 45 days* (360 days divided by 8).

Significance of DIO: Since inventory holding costs take significant investment, efforts are made any organization to reduce level of inventory. Lower level of inventory will result in lower DIO ratio. Therefore it is favorable to have lower values of this ratio. Higher value of DIO can prove to be unfavourable.

However, stock out situation can prove dangerous to the organization and it is advisable to have safe level of inventory to avoid loss of sales. Hence low value of DIO may also not favorable for the business if it results into loss of business.

DIO varies significantly differ from one industry to another. For example, entity which are dealing with perishable items such as vegetables and fruits have very low values of days' sales in inventory whereas companies selling non-perishable goods such as automobiles have high values of days of inventory.

Days Inventory Outstanding analysis carried out in five FMCG sector and results of the analysis is explained below:

FMCG Companies	2019	2018	2017	2016	2015	Average (in days)
ITC	60	59	51	59	56	57
Britannia Industries	25	23	25	17	17	21
Nestle India	31	32	36	35	30	33
Hindustan Unilever	23	24	25	27	29	25

ITC Ltd has the highest days in inventory outstanding (i.e. 57 days) compared to other FMCG sector and lowest days in inventory outstanding is that of Britannia Industries (i.e. 21 days) thereby reflecting that carrying cost of inventory at Britannia Industries Ltd is lowest compared to its competitors.

Days in Inventory outstanding ratio is very similar to inventory turnover ratio and both measure the efficiency of a business in managing its inventory.

Few important KPI relating to inventory management are:

- a. Stock to sales ratio – It represents the stock available for sale versus the stock that has been sold.
- b. Cost of carrying or holding inventory –This particular metric is the cost of storing inventory over a certain time period.
- c. Rate of return – It tracks the percentage of orders that are returned from the customers.
- d. Order pick, pack and dispatch accuracy – It takes care of the process relating to warehouse and where they need improvement.

CONCLUSION

Inventory Turnover Ratio provides insight on how long working capital is tied up in the cycle of procurement of raw materials or a finished product for sale through to selling the product. Inventory turnover ratio varies from industry to industry and higher inventory turnover ratio indicates that business is carrying excess inventory resulting in blockage of working capital in the organization. ITC Ltd has been managing its inventory level well at its optimum level and it indicates that investment in working capital is higher compared to its competitors In contrast Britannia Industries Ltd is having highest inventory turnover ratio meaning that the company is holding a lower level of inventory with respect to sales.

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