

**A STUDY ON INVENTORY MANAGEMENT
COROMANDAL INTERNATIONAL LIMITED**

Submitted in partial fulfillment of the requirements for the award of

MASTER OF BUSINESS ADMINISTRATION

**BY
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REG NO: 41410213



SCHOOL OF MANAGEMENT STUDIES

**SATHYABAMA
INSTITUTE OF SCIENCE AND TECHNOLOGY**

(DEEMED TO BE UNIVERSITY)

**Accredited with Grade "A" by NAAC | 12B Status by UGC |
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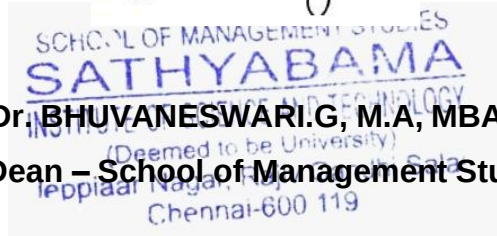
This is to certify that this Project Report is the BONAFIDE work of **G. NEERAJ (41410213)** who carried out the project entitle “**A STUDY ON INVENTORY MANAGEMNT**” under our supervision from **JANUARY2023 to MARCH 2023**.

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DECLARATION

I **G. NEERAJ (REG No: -41410213)** hereby declare that the Project Report entitled “**A STUDY ON INVENTORY MANAGEMENT**” done by me under the guidance of **DR.B. BHAVYA**, is submitted in partial fulfillment of the requirements for the award of **MASTER of BUSINESS ADMINISTRATION**.

DATE:05.05.2023

PLACE: Chennai

A handwritten signature in black ink, appearing to be 'G. Neeraj', written over a grid of lines.

G. NEERAJ

SIGNATURE OF CANDIDATE

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ABSTRACT

In day-to-day management of the firm, it is essential to manage the inventory so as to maintain proper supply of goods at proper time. Inventory represents an important decision variable at all stages of product manufacturing, distribution and sales, in addition to being a major portion of current assets of many organizations. Too much and too low inventories bring down the level of profitability of an organization. Therefore, whether it is a manufacturing or merchandized organization, the goal should always be the same that is, to ensure the inventory is ready and at the same time inventory is at a low level. Inventory management is functional field of finance and production that covers the efficient and effective use of raw materials and spares which are consumed in producing the finished goods in manufacturing concern. A firm ignoring the management of inventories will be jeopardizing its long run profitability and may fail finally. The reduction in 'excessive' inventories carries a favorable impact on a company's profitability. This paper consists of different parts where the inventory management concepts are discussed, and different inventory control techniques are discussed. This paper also introduces the various costs incurred due to the storage inventory, economic order quantities, stock levels, shortage costs, inventory methods.

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CHAPTER-1

1.1 INTRODUCTION

Inventory is one of the resources that are managed by business organizations and it was first recorded in 1601. The need for inventory control cannot be overemphasized as it is a means for improving the performance of manufacturing industries. Inventory can be defined as a record of a business current assets including property owned, merchandise on hand and the value of work in progress and work complete but not sold and it is classified as a current asset because it can be turned into liquid cash within a short period of time. Inventory has created a great impact on the profitability of the manufacturing firm which resulted to the deep research of this topic. Effectiveness of inventory management in a manufacturing company.

Inventory plays a major role in the operation of many businesses and manufacturing companies. In manufacturing, inventories of raw materials allow companies to operate independently of their sources of supplies. Day to day operation is not dependent on deliveries from supplies since stock of the necessary materials are maintained and used as needed. Without inventory control, millions of naira could be lost year because of non-accountability of stocks and inaccurate checks and balances.

The process of control and management of inventory is a very important factor in the success or failure of any business for example, little stock will result in stock out which will disrupt the production distribution cycle that is crucial to the survival of all manufacturing companies while too much stock will tie down the resources of a company. Poor or inadequate inventory management can present a serious challenge to the productive capacity of a manufacturing organization. In addition to raw materials and finished goods, many companies also maintain items of assets, property, inventories of work in progress, office supplies, business firms and general operation supplies.

Inventories often constitutes the most significant part of current assets of large companies. In the public limited companies, inventories are approximately 60% of current assets on the average. The US Bureau of the census stated that inventory and accounts receivable are the two largest accounts of equal magnitude and together they comprise almost 80% of current assets and over 30% of total assets for all

manufacturing companies in 1982.

Considering the large sum of money that are committed to the stocks of raw materials, work in progress and finished goods, it is therefore of paramount necessity that these stocks be managed efficiently and effectively in order to avoid the jeopardizing of the profit position of the firm.

In inventory, there is an optimum level therefore inadequate inventory causes loss of sale and disrupts the production process while excessive stock level leads to unnecessary carrying cost and obsolescence or spoilage risks. According to Charles T. Horngren (2007), the optimum inventory level lies between the inadequate inventories and the excessive inventories. Inventory management aims at maintaining an optimum inventory level that will be carried at the least cost.

1.2 INDUSTRY PROFILE

One productive industry is the Indian fertilizer industry. Regarding its raw material requirement, the industry relies heavily on the imports. Any devaluation of the rupee would, therefore, inflate its import bill. Since the retention price structure (so far) covers the Nitrogen- based fertilizers, the rising prices will impact the manufacturers of phosphorus and potassium fertilizers.

The first full mineral fertilizer Glibber produced was a mixture of saltpeter, lime, phosphoric acid, nitrogen, and potash. As scientific chemical theories evolved, the chemical needs of plants were discovered, leading to improved composition of fertilizers.

Fertilizer is a material which is applied to the soil to increase the growth and yield of plants. Fertilizer technology first used by ancient farmers grew greatly, when the chemical needs of growing plants were discovered. Modern synthetic fertilizers consist mainly of nitrogen, phosphorus, and potassium compounds with added secondary nutrients. The use of synthetic fertilizers has significantly increased the quality and quantity of the food available today, while environmentalists are questioning their long-term use. Plants are made up of cells as are all living organisms. Numerous metabolic chemical reactions occur within certain cells, which are responsible for growth and reproduction.

Since plants do not consume food like animals, they are dependent on nutrients in the soil to provide these metabolic reactions with the basic chemical substances. However, the availability of these components in soil is limited, and as plants are harvested it is diminishing, leading to a reduction in plant quality and yield.

The fertilizers replace the chemical components which growing plants take from the soil. But they are also designed to improve soil's growing ability. And fertilizers can create a better atmosphere for growth than natural soil. They can also be customized to suit the type of crop being cultivated. The fertilizers usually consist of nitrogen, phosphorus, and potassium compounds.

They also contain trace elements which boost plant growth. Nutrients are the primary components in fertilizers which are vital for plant growth. Plants use

nitrogen for protein synthesis, nucleic acids, and hormones. When plants are deficient in nitrogen, they are characterized by a reduced growth and leaf yellowing. Plants also require phosphorus, a nucleic acid component, phospholipids and several proteins. Providing the energy for driving metabolic chemical reactions is also important.

Without sufficient phosphorus, plant growth would be reduced. Potassium is another important substance which plants obtain from the soil. It is used in the synthesis of proteins and other essential plant processes. Yellowing, dead tissue spots, and poor stems and roots are all indicative of plants which lack adequate potassium. Also, essential materials for plant growth are calcium, magnesium, and Sulphur.

However, they are only used in small quantities of fertilizers, as most soils naturally contain plenty of these components. For plant growth other materials are needed in relatively small quantities. Such micronutrients include iron, chlorine, copper, manganese, zinc, molybdenum, and boron, which mainly function in enzymatic reactions as cofactors. Although these compounds may be present in small quantities, they are no less essential to growth and plants may die without them.

Several different substances are used to provide the nutrients that are necessary for effective fertilizers. Such compounds may be extracted from natural sources, or removed from them. Examples include sodium nitrate, marine algae, bones, guano, potash and rock phosphate. Compounds can also be synthesized chemically from base raw materials. This may include ammonia, urea, nitric acid, and ammonium phosphate, among others. Since these compounds occur in many physical environments, fertilizers may be marketed as solids, liquids, or slurries.

1.3 COMPANY PROFILE

Coromandel International limited is located spreading over 464 acres of land (which is leased from Visakhapatnam port trust on renewal basis) at Visakhapatnam, at 5kms far from Visakhapatnam port on the east coast of India. On 16 October 1961, the CIL was set up as a private Ltd with Rs.50 Crores of capital investment. It was then sold to public company Ltd. Two well-known U.S Company and E.I.D. Parry (India) Limited, CIL was jointly sponsored by the International Minerals and Chemicals Company (IMC) and chevron chemical corporation.

In 1981 EID parry was taken over by **MURUGAPPA** group holds 79% of share market: Indian financial 13 % and Indian public hold 8% of share market of CIL producing high analysis of fertilizers like urea ammonium phosphate **28:28:0,14:35:14 NPK**, as well as low analysis fertilizers like **20:20:0:15** under the brand name of “**GROMOR**” CIL is originally an integrated fertilizer complex plant where some of the required raw material such as urea, ammonia, sulfuric acid & phosphoric acid were manufactured at high capacity.

At present ammonia & urea, plants were closed down, as its production cost is incompatible with the lower international market rates, so we are importing ammonia from gulf countries and urea from local fertilizer industries. We are also importing sulfur & rock phosphate (from foreign countries like Japan, Senegal etc.) for the production of sulfuric acid & phosphoric acid respectively. IL installed Ammonia importation facility consisting of 5.2 Km length pipeline in the year 1999. Urea required for the manufacture of 28:28:0 is being procured from various producers of Urea Fertilizer in India.

Coromandel International Limited operates in two major segments: Nutrient and other allied businesses and Crop Protection. These include Fertilizer, Crop Protection, Specialty Nutrients and Organic fertilizer businesses. The Company is 2nd largest manufacturer and marketer of Phosphatic fertilizer in India. The Company's Crop Protection products are marketed in India as well as in international geographies, offering wide range of technical and formulation products. The Specialty Nutrients business of the Company focuses on water-soluble fertilizer and secondary & micro nutrients segments. The Company is leading marketer of Organic fertilizer in India and has recently added bio pesticides to its portfolio. It also

operates a network of around 800 rural retail outlets across Andhra Pradesh, Telangana, Karnataka and Maharashtra. Through these Retail outlets, the company offers farming services including crop advisory, soil testing and farm mechanization to around 3 million farmers. The Company has a strong R&D and Regulatory setup, supporting the businesses in process development and new product introduction. The Company has 16 manufacturing facilities, producing wide range of Nutrient and Crop Protection products, which are marketed through an extensive network of dealers and its own retail centers.

1.4 NEED FOR THE STUDY

- Inventories constitute the most significant part of manufacturing concern.
- the objective of inventory management should be to determine and maintain optimum level of inventory.
- It will be lie between two danger points of excessive and inadequate inventory.
- Inventory management is recurred at different locations within a facility or within multiple locations of a supply or network to protect the regular and planned course of production against the random disturbance of running out of materials or goods.

1.5 OBJECTIVES

PRIMARY OBJECTIVE:

To study inventory management

SECONDARY OBJECTIVE :

- To study the inventory Control measures in inventory management.
- To examine the extent to which insufficient inventory of finished goods cause loss of sales to the company.
- To study the inventory management procedure.
- To analyze the inventory management techniques used in the company.
- To know how the company keeps all the data of invent- tory perfectly.

1.6 SCOPE OF THE STUDY

- The study helps the management to improve its profitability through a reduction in non-moving inventory.
- It develops the policies for both continuous review of inventory management systems.
- The study helps to show the level of the inventory in the organization.
- The company will make the proper inventory methods from the suggestions of the study.

CHAPTER -2

2.1 REVIEW OF LITERATURE

Abramowitz and Modigliani (2005)

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, existing 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.

Krishna Murthy (2006)

Study was aggregative and dealt with inventories in the private sector of Indian economy as a whole for the period 1948-61. This study used sales to represent demand for the product and suggested the importance of accelerator. Short- term rate of interest had also been found to be significant.

R.S. Chadda (2007)

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 investment 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.

Krishnamurthy and Sastry (2008)

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 analyses each of the major components, like the raw materials, goods-in-process and finished goods, for 21 industries over the period . The study was a time series one although there were some inter-industry 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.

George (2010)

It was the study on cross section analysis of balance sheet data of 52 public limited companies for the period of 1967- 70. Accelerator, internal and external finance variables were considered in the formulation of equations for raw materials including goods-in-process inventories. However, equations for finished goods inventories conceive only output variable. Deliberation was given on accelerator and external finance variables.

Mishra (2011)

It is the study of six major public sector enterprises. He concluded that (i) inventory constitutes the most important component of working capital of public enterprises (ii) efficiency of working capital funds employed in receivables is terribly low in the selected enterprises and (iii) In all units both the current assets and the quick ratios are greater than their standards. Enterprises need proper control on receivables.

Rich Lavelly (2012)

Asserts that inventory means “Piles of Money” on the shelf and the profit for the firm. However, he notices that 30% of the inventory of most retail shops is dead. Therefore, he argues that the inventory control is facilitate the shop operations by reducing rack time and thus increases profit. He also elaborates the two types of inventory calculations that determine the inventory level required for profitability. The two calculations are “cost to order” and “cost to keep”. Finally, he proposes seven steps to inventory control.

Gaur, Fisher and Raman (2015)

In their study examined firm-level inventory behavior among retailing companies. They took a sample of 311 public-listed retail firms for the years 1987–2000 to exam. the relationship of inventory turnover with gross margin, capital intensity and sales surprise. They observed that inventory turnover for retailing firms was positively related to capital intensity and sales surprise while inversely associated with gross margins. They also suggested models that yield an alternative metric of inventory productivity, adjusted inventory turnover that can be used in study of performance analysis and managerial decision-making.

S. Singh (2016)

Analyzed the inventory control practices of single fertilizer company named IFFCO. He statistically examined the inventor system with consumption, sales and other variables along with growth of these variables and inventory patterns. He concluded that an increase in components of inventory lead to an increase in the proportion of inventory in current assets. A special focus was made on stores and spares in order to calculate excess purchases resulting in loss of profit.

CHAPTER-3

3.1 Research Methodology:

The research has been chosen and designed the research in such a way to explore the factors involved in the problem and was further conducted research to describe the relationship between the factors explore on the given problem. By applying the theoretical model and the related statistical tools, the data collected by the researcher in the firm of primary and secondary data, the hypothesis were tested and arrived at certain conclusion on the problem given. So, the present study mainly adopted the descriptive research design and partly exploratory research design in attempt to provide suitable solution to the problem chosen in the study.

3.2 Research Design:

The descriptive type of research has been applied in the study. This research the researcher has no control over the variables. Only reports what has happened or what is happening. the research can only discover causes but cannot control the variables.

3.3 Source of data:

- Secondary data

Secondary data:

It includes information gathered from financial report balance sheets and other accounts, archives, and several other relevant records kept by the company and cited by journals, business brochures, textbooks, and other publication Data.

3.4 .Period of the study

The study covers a period of 4 years from 2019-20 to 2021- 22.

The accounting year commenced from 1st April and ending with 31st march of the next year.

3.5 TOOLS USED FOR ANALYSIS

- 1.FIRST IN FIRST OUT
- 2.LAST IN FIRST –OUT
- 3.BASE STOCK METHODS
- 4.INVENTORY TURN OVER RATIO

1. FIRST IN-FIRST OUT (FIFO)

The FIFO method of valuation of inventory is based on the assumption that the inventory is consumed in chronological order, that is those received first are issued consumed first and value fixed accordingly. The merit of FIFO method is that the physical flow of matches the flow of cost.

2. LAST IN FIRST –OUT(LIFO)

Under the LIFO method, the cost of goods sold and the value of closing inventory can be determined only after the final lot of the year has been received. This is because of the assumption underlying the valuation of inventory, according to this method. As the name LIFO suggests, the use of the inventory is valued on this basis of the inverse sequence of receipt. Since the LIFO method assumes that the latest item in is the first item out, the current cost of material is matched with the current selling price revenues. This matching of current cost with current revenues is the essence of the argument for the LIFO method.

3.BASE STOCK METHODS:

This method is not an independent method because it makes use of both the FIFO and the LIFO method. The base stock method implies a fixed minimum stock carried at the original cost. it should be set aside and should be issued out when an emergency situation arises. Except the minimum of buffer stock, the subsequent materials received may be issued and charged on the basis of any stock valuation method.

$$\text{Base stock} = \frac{\text{Average inventory}}{\text{Average sales}}$$

4.Inventory turnover ratio

The inventory turnover ratio is the number of times a company has sold and replenished its inventory over a specific amount of time. The formula can also be used to calculate the number of days it will take to sell the inventory on hand. The turnover ratio is derived from a mathematical calculation, where the cost of goods sold is divided by the average inventory for the same period. A higher ratio is more desirable than a low one as a high ratio tends to point to strong sales. You can use ending stock in place of average inventory if the business does not have seasonal fluctuations. More data points are better, though, so divide the monthly inventory by 12 and use the annual average inventory. Then apply the formula for inventory turnover:

$$\text{Inventory turnover ratio} = \frac{\text{cost of goods sold}}{\text{Average inventory}}$$

Cost of goods sold:

Cost of goods sold (COGS) refers to the direct costs of producing the goods sold by a company. This amount includes the cost of the materials and labour directly used to create the good. It excludes indirect expenses, such as distribution costs and sales force costs.

$$\text{COGS} = \text{Beginning Inventory} + \text{Purchases} - \text{Ending Inventory}$$

CHAPTER-4

DATA ANALYSIS AND INTERPRETATION

4.1 FIFO ANALYSIS

4.1.1 Monthly stock ledger between the period (1-04-2022) -(31-03-2021) stores ledger account under FIFO system

<u>Date</u>	Purchases			Issues			Balance (opening/closing)		
	Units	Price Units	<u>Amount</u>	Units	<u>Price Units</u>	Amt	Units	Price Units	Amount
2022									
April 1 st	--	--	--	--	--	--	93.55	70	6548.50
15 th	98	70	6860	--	--	--	93.55	70	6548.50
							98.00	70	6860.00
30 th	--	--	--	97.50	93.55X70 + 3.95X70	6825	94.05	70	6583.5
	37.00	70	2590.00	--	--	--	94.05	70	6583.5
May 15 th	--	--	--	114.50	--	--	37.00	70	2590.00
30 th	115	70	8050.00	--	94.05X70 + 20.45X70	8015	16.55	70	1158.50
Jun 15 th	--	--	--	104.50	--	--	16.55	70	1158.50
							115.00	70	8050.00
30 th	124	70	8680	--	--	7315	27.05	70	1893.50
Jul 15 th	--	--	--	114.50	16.55X70 + 87.95X70	--	27.05	70	1893.50
							124.00	70	8680.00
30 th	131	70	9170	--	--	8015	36.55	70	2558.50
Aug 15 th	--	--	--	95.00	27.05X70 + 87.45X70	--	36.55	70	2558.50
							131.03	70	9170.00
30 th	138	70	9660	--	--	7490	60.55	70	4238.50
Sep 15 th	--	--	--	95.00	36.55X70 + 70.45X70	6650	60.55	70	4238.50
							138.00	70	9660.00
30 th					--	--	103.55	70	7248.50
					60.55X70 + 34.45X70				

<u>Date</u>	Purchases			Issues			Balance (opening/closing)		
	Units	Price Units	<u>Amount</u>	Units	<u>Price Units</u>	Amt	Units	Price Unit s	Amount
Oct 15 th	121	70	8470	--	--	--	103.55 121.00	70 70	7248.50 8470.00
30 th	--	--	--	101.00	101.00X70	7070	2.55 121.00	70 70	178.5 8470.00
	57.00	70	3990.00						
				--	--	--	2.55 121.00	70 70	178.5 8470.00
Nov 15 th	--	--	--				57.00	70	3990.00
				98.00	2.55X70 + 95.45X70	6860	25.55 57.00	70 70	1788.50 3990.00
30 th	94	70	6580.00						
				--	--	--	25.55 57.00	70 70	1788.50 3990.00
Dec 15 th	--	--	--				94.00	70	6580.00
				115.00	25.55X70 + 57.00X70 + 32.45X70	8050	61.55	70	4308.50
30 th	219	70	15330						
	--	--	--	--	--	--	61.55 219.00	70 70	4308.50 15330.00
Jan 15 th				98.00	61.55X70 + 36.45X70	6859.5	182.55	70	12778.50
30 th	54	70	3780						
	--	--	--	--	--	--	182.55 54.00	70 70	12778.50 3780.00
Feb 15 th				67.50	67.50X70	4725	115.05 54.00	70 70	8053.50 3780.00
30 th	137.9	70	9653						
	--	--	--	--	--	--	115.05 54.00	70 70	8053.50 3780.00
Mar 15 th				114.05	114.05X70	7983.5	137.90 1.00	70 70	9653.00 70.00
30 th							54.00 137.90	70 70	3780.00 9653.00

Total closing stock is 192.90 units amount is 13503.

Interpretation :

From the above table it is identified that the company total purchases units were 1326.9 . whereas it issues a unit of 1226.55. Therefore, the issues units were lower than purchased units in the year 2022 – 21.

4.1.2 Monthly Stock Ledger Between the Period (01/04/2021) (31/03/2020)Stores Ledger Account (Under FIFO System)

Date	Purchases			Issues			Balance (opening/closing)		
	Units	Price Units	<u>Amount</u>	Units	<u>Price Units</u>	Amt	Units	Price Units	Amount
2021									
April 1 st	--	--	--	--	--	--	80.00	65	5200.00
15 th	78.00	68	5304	--	--	--	80.00	65	5200.00
							78.00	68	5304.00
30 th	--	--	--	90.00	80.00X65 + 10.00X68	5880	68.00	68	4624.00
	50.00	67	3350.00	--	--	--	68.00	68	4624.00
May 15 th	--	--	--	102.00	68.00X68 + 34.00X67	6902	50.00	67	3350.00
30 th	100	67.50	6750.00	--	--	--	16.00	67	1072.00
							100.00	67.50	6750.00
Jun 15 th	--	--	--	80.00	16.00X67 + 64.00X67.5	5392	36.00	67.50	2430.00
30 th	150	68.00	10200.00	--	--	--	36.00	67.50	2430.00
							150.00	68.00	10200.00
Jul 15 th	--	--	--	94.00	36.00X67.5 + 58.00X68	6374	92.00	68	6256.00
30 th	110	68	7480	--	--	--	92.00	68	6256.00
							110.00	68	7480.00
Aug 15 th	--	--	--	98.00	92.00X68 + 6.00X68	6664	104.00	68	7072.00
30 th	120	69	8280	--	--	--	104.00	68	7072.00
							120.00	69	8280.00
Sep 15 th	--	--	--	110.00	104.00X68 + 6.00X69	7486	114.00	69	7866.00
30 th									

<u>Date</u>	Purchases			Issues			Balance (opening/closing)		
	Units	Price Units	<u>Amount</u>	Units	<u>Price Units</u>	Amt	Units	Price Units	Amount
Oct 15 th	115	69	7935	--	--	--	114.00 115.00	69 69	7866.00 7935.00
30 th	--	--	--	90.00	90.00X69	6210	24.00 115.00	69 69	1656.00 7935.00
Nov 15 th	80.00	70	5600.00	--	--	--	24.00 121.00 80.00	69 69 70	1656.00 7935.00 5600.00
30 th	--	--	--	130.00	24.00X69 + 106.00X69	8970	15.00 80.00	69 70	1035.00 5600.00
Dec 15 th	90	70	6300.00	--	--	--	15.00 80.00 90.00	69 70 70	1035.00 5600.00 6300.00
30 th	--	--	--	120.00	15.00X69 + 80.00X70 + 25.00X70	8385	65.00	70	4550.00
Jan 15 th	150	70	10500	--	--	--	65.00 150.00	70 70	4550.00 10500.00
30 th	--	--	--	110.00	65.00X70 + 45.00X70	7700.0	105.00	70	7350.00
Feb 15 th	20	70	1400	--	--	--	105.00 20.00	70 70	7350.00 1400.00
30 th	--	--	--	80.00	80.00X70	5600	25.00 20.00	70 70	1750.00 1400.00
Mar 15 th	141.0	70	9870	--	--	--	25.00 20.00 141.00	70 70 70	1750.00 1400.00 9870.00
30 TH	--	--	--	92.50	92.50X70	6475.0	93.50	70	6545.00

Total closing stock is 93.50 units and amount are 6545.00

Interpretation :

From the above table it is identified that the company total purchases units were 1205 where as it issues a unit of 1196.5. Therefore, the issues units were lower than purchased units in the year 2021 – 2020.

4.1.3 Monthly Stock Ledger Between the Period (01/04/2020) -(31/03/2019) Sales Ledger Account (Under FIFO System)

<u>Date</u>	Purchases			Issues			Balance (opening/closing)		
	Units	Price Units	<u>Amount</u>	Units	<u>Price Units</u>	Amt	Units	Price Units	Amount
2020									
April 1 st	--	--	--	--	--	--	95.00	60	5700.00
15 th	70.00	61	4270	--	--	--	95.00	60	5700.00
							70.00	61	4270.00
30 th	--	--	--	100.00	95.00X60 + 5.00X61	6005	65.00	61	3965.00
	50.00	61	3050.00	--	--	--	65.00	61	3965.00
							50.00	61	3050.00
May 15 th	--	--	--	100.00	65.00X61 + 35.00X61	6100	15.00	61	915.00
30 th	100	60.00	6000.00	--	--	--	15.00	61	915.00
							100.00	60.00	6000.00
Jun 15 th	--	--	--	75.00	15.00X61 + 60.00X60.00	4515	40.00	60.00	2400.00
30 th	120	61.00	7320.00	--	--	--	40.00	60.00	2400.00
							120.00	61.00	7320.00
Jul 15 th	--	--	--	80.00	40.00X60.00+ 40.00X61	4840	80.00	61	4880.00
30 th	120	63	7560	--	--	--	80.00	61	4880.00
							120.00	63	7560.00
Aug 15 th	--	--	--	100.00	80.00X61 + 20.00X63	6140	100.00	63	6300.00
30 th	120	62	7440	--	--	--	100.00	63	6300.00
							120.00	62	7440.00
Sep 15 th	--	--	--	110.00	100.00X63 + 10.00X62	6920	110.00	62	6820.00
30 th									

<u>Date</u>	Purchases			Issues			Balance (opening/closing)		
	Units	Price Units	<u>Amount</u>	Units	<u>Price Units</u>	Amt	Units	Price Units	Amount
Oct 15 th	110	63	6930	--	--	--	110.00	62	6820.00
							110.00	63	6930.00
30 th	--	--	--	90.00	90.00X62	6820	20.00	62	1240.00
							110.00	63	6930.00
	70.00	64	4480.00	--	--	--	20.00	62	1240.00
Nov 15 th							110.00	63	6930.00
							70.00	64	4480.00
	--	--	--	100.00	20.00X62 + 80.00X63	6280	30.00	63	1890.00
30 th							70.00	64	4480.00
	80	65	5200.00	--	--	--	30.00	63	1890.00
Dec 15 th							70.00	64	4480.00
							80.00	65	5200.00
	--	--	--	120.00	30.00X63 + 70.00X64 + 20.00X65	7670	60.00	65	3900.00
30 th									
	150	65	9750	--	--	--	60.00	65	3900.00
Jan 15 th							150.00	65	9750.00
	--	--	--	100.00	60.00X65 + 40.00X65	6500.0	110.00	65	7150.00
30 th									
	40	65	2600	--	--	--	110.00	65	7150.00
Feb 15 th							40.00	65	2600.00
	--	--	--	100.00	100.00X65	6500	10.00	65	650.00
30 th							40.00	65	2600.00
	90	65	5850	--	--	--	10.00	65	650.00
Mar 15 th							40.00	65	2600.00
							90.00	65	5850.00
30 th	--	--	--	60.00	60.00X65	3900.0	80.00	65	5200.00

- **Total closing stock is 80 units and amount are 5200**

INTERPRETATION

From the above table it is identified that the company total purchases units were 1120 . whereas it issues a unit of 1135. Therefore, the issues units were higher than purchased units in the year 2020– 2019.

4.1.4 Monthly Stock Ledger Between the Period (01/04/2019)(31/03/2018) Sales Ledger Account (Under FIFO System)

<u>Date</u>	Purchases			Issues			Balance (opening/closing)		
	Units	Price Units	<u>Amount</u>	Units	<u>Price Units</u>	Amt	Units	Price Units	Amount
2019									
April 1 st	--	--	--	--	--	--	85.00	60	5600.00
15 th	50.00	59	4110	--	--	--	85.00	60	5600.00
							60.00	61	4110.00
30 th	--	--	--	100.00	95.00X60 + 5.00X61	5995	65.00	61	3755.00
	45.00	59	3030.00	--	--	--	65.00	61	3765.00
							50.00	61	3050.00
May 15 th	--	--	--	100.00	65.00X61 + 35.00X61	6100	15.00	61	905.00
30 th	90	50.00	6000.00	--	--	--	15.00	61	905.00
							100.00	60.00	6000.00
Jun 15 th	--	--	--	65.00	15.00X61 + 60.00X60.00	4515	40.00	60.00	2400.00
30 th	100	61.00	7320.00	--	--	--	40.00	60.00	2400.00
							120.00	61.00	7320.00
Jul 15 th	--	--	--	80.00	40.00X60.00+ 40.00X61	4840	80.00	61	4880.00
30 th	110	63	7560	--	--	--	80.00	61	4880.00
							120.00	63	7560.00
Aug 15 th	--	--	--	100.00	80.00X61 + 20.00X63	6140	100.00	63	6300.00
30 th	120	62	7440	--	--	--	100.00	63	6300.00
							120.00	62	7440.00
Sep 15 th	--	--	--	110.00	100.00X63 + 10.00X62	6920	110.00	62	6820.00
30 th									

<u>Date</u>	Purchases			Issues			Balance (opening/closing)		
	Units	Price Units	<u>Amount</u>	Units	<u>Price Units</u>	Amt	Units	Price Units	Amount
Oct 15 th	110	63	6930	--	--	--	110.00 110.00	62 63	6820.00 6930.00
30 th	--	--	--	90.00	90.00X62	6820	20.00 110.00	62 63	1240.00 6930.00
Nov 15 th	70.00	64	4480.00	--	--	--	20.00 110.00 70.00	62 63 64	1240.00 6930.00 4480.00
30 th	--	--	--	100.00	20.00X62 + 80.00X63	6280	30.00 70.00	63 64	1890.00 4480.00
Dec 15 th	80	65	5200.00	--	--	--	30.00 70.00 80.00	63 64 65	1890.00 4480.00 5200.00
30 th	--	--	--	120.00	30.00X63 + 70.00X64 + 20.00X65	7670	60.00	65	3900.00
Jan 15 th	150	65	9750	--	--	--	60.00 150.00	65 65	3900.00 9750.00
30 th	--	--	--	100.00	60.00X65 + 40.00X65	6500.0	110.00	65	7150.00
Feb 15 th	40	65	2600	--	--	--	110.00 40.00	65 65	7150.00 2600.00
30 th	--	--	--	100.00	100.00X65	6500	10.00 40.00	65 65	650.00 2600.00
Mar 15 th	90	65	5850	--	--	--	10.00 40.00 90.00	65 65 65	650.00 2600.00 5850.00
30 th	--	--	--	60.00	60.00X65	3900.0	80.00	65	5200.00

Total stock is 80 units and amount are 5200

Interpretation : From the above table it is identified that the company total purchases units were 1050 . whereas it issues a unit of 1225. Therefore, the issues units were higher than purchased units in the year 2019– 2018.

4.2 LIFO ANALYSIS

4.2.1 Monthly stock ledger between the period (1-04-2022) -(31-03-2021) stores ledger account under LIFO system

Date	Purchases			Issues			Balance (opening/closing)		
	Units	Price Units	<u>Amount</u>	Units	<u>Price Units</u>	Amt	Units	Price Units	Amount
2022									
April 1 st	--	--	--	--	--	--	92	75	6900
15 th	100	75	7500	--	--	--	92	75	6900
							100	75	7500
30 th	--	--	--	105	100X75 + 5X75	7875	87	75	6525
May 15 th	35.00	70	2450	--	--	--	87	75	6525
							35	70	2450
30 th	--	--	--	35	35X70	2450	87	75	6525
Jun 15 th	115	70	8050.00	--	---	--	87	75	6525
							115.00	70	8050
30 th	--	--	--	110	110X70	7700	87	75	6525
							5	70	350
Jul 15 th	120	70	8400				87	75	6525
							5	70	350
							120	70	8400
30 th	---	---	---	125	120X70+5X70	8750	87	75	6525
Aug 15 th	--	--	--	57	57X75	4275	30	75	2250
30 th	130	70	9100	--		--	30	75	2250
							130	70	9100
	--	--	--	95	95X70	6650	30	75	2250
Sep 15 th							35	70	2450
20 th	140	70	9800				30	75	2250
							35	70	2450
							140	70	9800
30TH		--	--	155	140X70+15X70	10850	30	75	2250
							20	70	1400

<u>Date</u>	Purchases			Issues			Balance (opening/closing)		
	Units	Price Units	<u>Amount</u>	Units	<u>Price Units</u>	Amt	Units	Price Units	Amount
Oct 15 th	120	70	8400	--	--	--	30 20 120	75 70 70	2250 1400 8400
30 th	--	--	--	110	110X70	7700	30 20 10	75 70 70	2250 1400 700
NOV 15	--	--	--	30	10X70+20X70	2100	30	75	2250
30 TH	150	70	10500	--	---	---	30 150	75 10500	2250 10500
DEC 15	---	----	---	110	110X70	7700	30 40	75 70	2250 2800
30 TH	---	---	---	60	40X70+20X75	4300	10	75	750
JAN 15 TH	200	50	10000	---	----	----	10 200	75 50	750 10000
30 TH	50	50	2500	100	50X100	5000	10 100 50	75 50 50	750 5000 2500
FEB 15 TH	--	--	--	100	50X50+50X50	5000	10 50	75 50	750 2500
30 TH	150	40	6000	--	----	---	10 50 150	75 50 40	750 2500 6000
MAR 15 TH	30	30	900	--	---	---	10 50 150 30	75 50 40 30	750 2500 6000 900
30 TH	---	----	---	120	30X30+90X40	4500	10 50 40	75 50 40	750 2500 1600

❑ Total closing stock is 100 units and amount are 4850

Interpretation:

From the above table it is identified that the company total purchases units were 1340 . whereas it issues a unit of 1412. Therefore, the issues units were higher than purchased units in the year 2022 – 21.

4.2.2 Monthly Stock Ledger Between the Period (01/04/2021)- (31/03/2020) Stores Ledger Account (Under LIFO System)

<u>Date</u>	Purchases			Issues			Balance (opening/closing)		
	Units	Price Units	<u>Amount</u>	Units	<u>Price Units</u>	Amt	Units	Price Units	Amount
2021									
April 1 st	--	--	--	--	--	--	80.00	65	5200
15 th	70	60	4200	--	--	--	80.00	65	5200
							70	60	4200
30	--	--	--	90	70X60+20X65	5500	60	65	3900
MAY 15	90	50	4500	--	---	--	60	65	3900
							90	50	4500
30 TH	30	100	3000	50	50	2500	60	65	3900
							40	40	2000
JUNE 15	40	50	2000	--	--	---	30	100	3000
							40	65	3900
							40	40	2000
							30	100	3000
							40	50	2000
30 TH	--	--	--	100	40X50+30X100+30X40	6200	60	65	3900
							10	40	400
JULY 15	110	50	5500	---	--	---	60	65	3900
							10	40	400
							110	50	5500
30 TH	----	--	---	60	60X50	3000	60	65	3900
							10	40	400
							50	50	2500
AUG 15	80	90	7200	--	--	--	60	65	3900
							10	40	400
							50	50	2500
							80	90	7200

30 TH	--	--	--	140	80X90+50X50+10X40	10100	60	65	3900
SEP 15	70	60	4200	---	---	---	6070	6560	39004200
30 TH	--	--	--	100	70X60+30X65	6150	30	65	1950
OCT 15	120	50	6000	---	---	---	30120	6550	19506000
30	40	40	1600	70	70X50	3500	305040	655040	195025001600
NOV 15	20	100	2000	---	----	----	30504020	655040100	1950250016002000
30 TH	--	----	----	100	20X100+40X40+40X50	5600	3010	6550	1950500
DEC 15	75	25	1875	---	---	---	301075	655025	19505001875
30 TH	---	--	---	80	75X25+5X50	2125	305	6550	1950250
JAN 15	140	60	8400	--	----	---	305140	655060	19502508400
30 TH	---	---	----	145	140X60+5X50	8650	30	65	1950
FEB 15	65	55	3575	---	----	---	3065	6555	19503575
30 TH	45	75	3375	55	55X55	3025	301545	655575	19508253375

MAR 15	52	82	4264	---	---	---	30 15 45 52	65 55 75 82	1950 825 3375 4264
30TH	---	---		87	52X82+35X 75	6889	30 15 10	65 55 75	1950 825 750

Total closing stock is 55 units and amount are 3525

Interpretation:

From the above table it is identified that the company total purchases units were 1047 . whereas it issues a unit of 1077. Therefore, the issues units were higher than purchased units in the year 2021 – 2020.

4.2.3 Monthly Stock Ledger Between the Period (01/04/2020) -(31/03/2019) Sales Ledger Account (Under LIFO System)

<u>Date</u>	Purchases			Issues			Balance (opening/closing)		
	Units	Price Units	<u>Amount</u>	Units	<u>Price Units</u>	Amt	Units	Price Units	Amount
2020									
April 1 st	--	--	--	--	--	--	95.00	60	5700.00
15 th	70.00	61	4270	--	--	--	95.00	60	5700.00
							70.00	61	4270.00
30 th	--	--	--	100.00	95.00X60 + 5.00X61	6005	65.00	61	3965.00
	50.00	61	3050.00	--	--	--	65.00	61	3965.00
May 15 th	--	--	--	100.00	65.00X61 + 35.00X61	6100	50.00	61	3050.00
30 th	100	60.00	6000.00	--	--	--	15.00	61	915.00
							100.00	60.00	6000.00
Jun 15 th	--	--	--	75.00	15.00X61 + 60.00X60.00	4515	40.00	60.00	2400.00
30 th	120	61.00	7320.00	--	--	--	40.00	60.00	2400.00
							120.00	61.00	7320.00
Jul 15 th	--	--	--	80.00	40.00X60.00+ 40.00X61	4840	80.00	61	4880.00
30 th	120	63	7560	--	--	--	80.00	61	4880.00
							120.00	63	7560.00
Aug 15 th	--	--	--	100.00	80.00X61 + 20.00X63	6140	100.00	63	6300.00
30 th	120	62	7440	--	--	--	100.00	63	6300.00
							120.00	62	7440.00
Sep 15 th	--	--	--	110.00	100.00X63 + 10.00X62	6920	110.00	62	6820.00
30 th									

<u>Date</u>	Purchases			Issues			Balance (opening/closing)		
	Units	Price Units	<u>Amount</u>	Units	<u>Price Units</u>	Amt	Units	Price Units	Amount
Oct 15 th	110	63	6930	--	--	--	110.00 110.00	62 63	6820.00 6930.00
30 th	--	--	--	90.00	90.00X62	6820	20.00 110.00	62 63	1240.00 6930.00
Nov 15 th	70.00	64	4480.00	--	--	--	20.00 110.00 70.00	62 63 64	1240.00 6930.00 4480.00
30 th	--	--	--	100.00	20.00X62 + 80.00X63	6280	30.00 70.00	63 64	1890.00 4480.00
Dec 15 th	80	65	5200.00	--	--	--	30.00 70.00 80.00	63 64 65	1890.00 4480.00 5200.00
30 th	--	--	--	120.00	30.00X63 + 70.00X64 + 20.00X65	7670	60.00	65	3900.00
Jan 15 th	150	65	9750	--	--	--	60.00 150.00	65 65	3900.00 9750.00
30 th	--	--	--	100.00	60.00X65 + 40.00X65	6500.0	110.00	65	7150.00
Feb 15 th	40	65	2600	--	--	--	110.00 40.00	65 65	7150.00 2600.00
30 th	--	--	--	100.00	100.00X65	6500	10.00 40.00	65 65	650.00 2600.00
Mar 15 th	90	65	5850	--	--	--	10.00 40.00 90.00	65 65 65	650.00 2600.00 5850.00
30 th	--	--	--	60.00	60.00X65	3900.0	80.00	65	5200.00

Total closing stock is 80 units and amount are 5200

Interpretation:

From the above table it is identified that the company total purchases units were 1000. whereas it issues a unit of 1135. Therefore, the issues units were higher than purchased units in the year 2020– 2019.

4.2.4 Monthly Stock Ledger Between the Period(01/04/2019) - (31/03/2018)

Stock Ledger Account (Under LIFO System)

<u>Date</u>	Purchases			Issue s			Balance (opening/closing)		
	Units	Price Unit s	<u>Amount</u>	Units	<u>Price Units</u>	Amt	Units	Price Unit s	Amount
2020 April 1 st 15 th	-- 60	-- 61	-- 3660	-- --	-- --	-- --	85 85.00	60 60	5100 5100
30	--	--	--	100	60X61+40X 60	6060	60	61	3660
MAY 15	120	82	9840	---	---	---	45	60	2700
30 TH	--	---	---	50	50X82	4100	45 120	82	9840
JUNE 15	90	64	5760	---	---	---	45 70	60 82	2700 5740
30 TH	--	--	--	110	90X64+20X82	7400	45 70 90	60 82 64	2700 5740 5760
JULY 15	80	51	4080	--	---	---	45 50	60 82	2700 4100
30 TH	---	---	---	85	80X51+5X82	4490	45 50 80	60 82 51	2700 4100 4080
AUG 15	95	73	6935	---	---	---	45 45	60 82	2700 3690
30 TH	--	--	---	130	95X73+35X82	9805	45 45 95	60 82 73	2700 3690 6935
	--	--	---	130	95X73+35X82	9805	45 10	60 82	2700 820

SEP 15	75	66	4950	--	---	---	45 10 75	60 82 66	2700 820 4950
30 TH	---	---	----	90	75X66+10X82+ 5X60	6070	40	60	2400
OCT 15	140	52	7280	----	---	---	40 140	60 52	2400 7280
OCT 30	---	---	----	65	65X52	3380	40 75	60 52	2400 3900
NOV 15	55	50	2750	---	----	----	40 75 55	60 52 50	2400 3900 2750
30 TH	----	----	----	100	55X50+45X52	5090	40 30	60 52	2400 1560
DEC 15	70	71	4970	---	----	----	40 30 70	60 52 71	2400 1560 4970
30 TH	--	---	---	55	55X71	3905	40 30 15	60 52 71	2400 1560 1065
JAN 15	85	56	4760	----	----	---	40 30 15 85	60 52 71 56	2400 1560 1065 4760
30 TH	---	---	---	110	85X56+15X71+ 10X52	6345	40 20	60 52	2400 1040
FEB 15	95	100	9500	---	---	---	40 20 95	60 52 100	2400 1040 9500
30 TH	---	---	---	45	45X100	4500	40 20 50	60 52 100	2400 1040 5000
MAR 15	65	60	3900	----	-----	----	40 20 50 65	60 52 100 60	2400 1040 5000 3900
30 TH						7400			

	----	--	----	110	65X60+35X100		40	60	2400
							20	52	1040
							15	100	1500

☐ Total closing stock is 75 units and amount are 4940

Interpretation:

From the above table it is identified that the company total purchases units were 1030. whereas it issues a unit of 1050. Therefore, the issues units were higher than purchased units in the year 2022 – 21.

4.3 Base stock method

$$\text{BSM} = \frac{\text{average inventory}}{\text{average sales}}$$

$$\text{Avg inventory} = \frac{\text{opening} + \text{closing}}{2}$$

$$\text{Avg sales} = \frac{\text{month end issued units}}{\text{No of years issued}}$$

2022

$$\text{BSM} = \frac{143.225}{102.212} = 1.401$$

2021

$$\text{BSM} = \frac{86.75}{85.53} = 1.014$$

2020

$$\text{BSM} = \frac{87.5}{1047} = 0.83$$

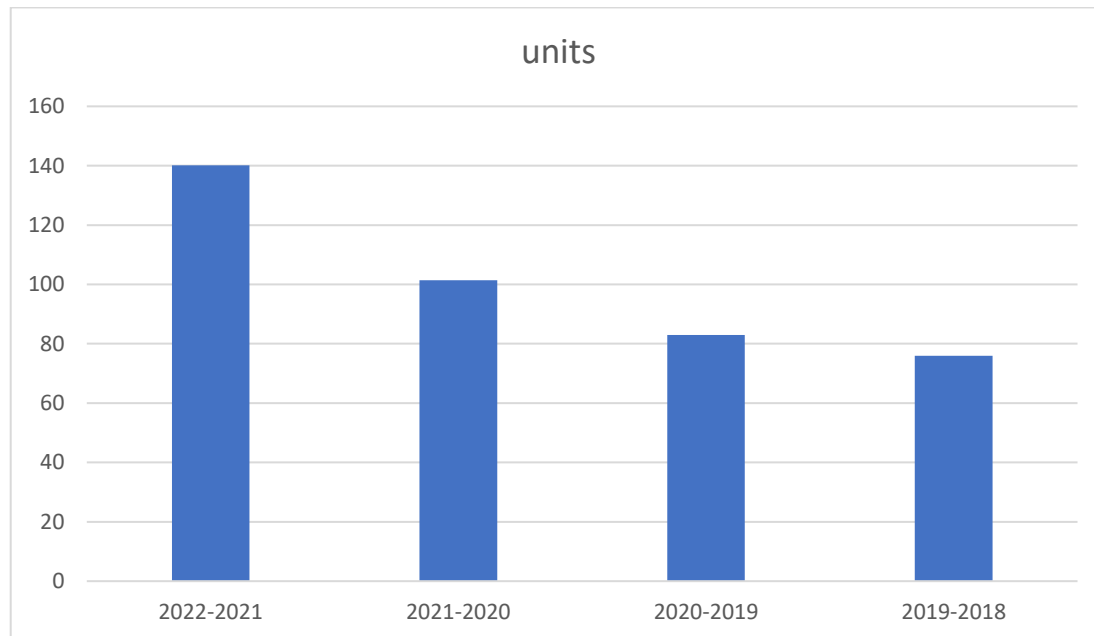
2019

$$\text{BSM} = \frac{82.5}{1080} = 0.76$$

Table 4.3.1

s.no	year	units
1	2022-2021	140.1
2	2021-2020	101.4
3	2020-2019	83
4	2019-2018	76

Chart 4.3.1



4.4 Inventory turnover ratio

$$\text{Inventory turnover ratio} = \frac{\text{cost of goods sold}}{\text{Average inventor}}$$

$$\text{COGS} = \text{Beginning Inventory} + \text{Purchases} - \text{Ending Inventory}$$

2022

$$\text{COGS} = 99361 - 13503 = 85858$$

$$\text{ITOR} = 85858 / 143.225 = 599.46$$

2021

$$\text{COGS} = 88169 - 6545 = 81624$$

$$\text{ITOR} = 81624 / 86.75 = 940.91$$

2020

$$\text{COGS} = 76150 - 5200 = 70950$$

$$\text{ITOR} = 70950 / 87.5 = 810.85$$

2019

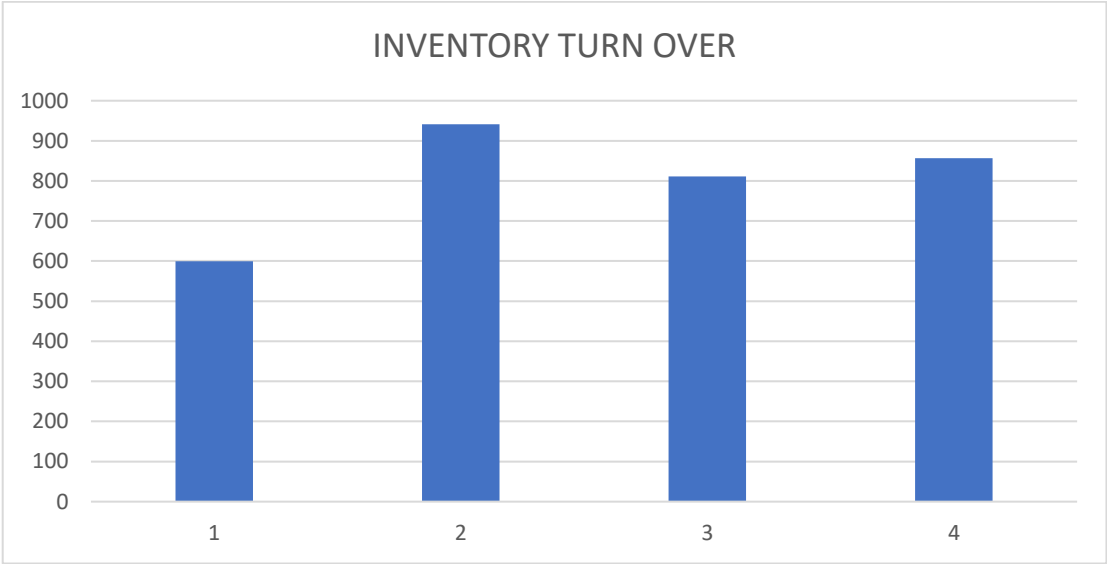
$$\text{COGS} = 75870 - 5200 = 70670$$

$$\text{ITOR} = 70670 / 82.5 = 856.60$$

Table 4.4.1

S.NO	YEAR	INVENTORY TURNOVER
1	2022	599.46
2	2021	940.91
3	2020	810.85
4	2019	856.6

Chart 4.4.1



CHAPTER – 5

5.1 FINDINGS

1. In the above analysis I analysed that the lifo method show the highest value than the fifo method in the year 2022-21.
2. The above table shows that the lifo method is higher than the fifo method in the year 2021-20.
3. The base stock method shows that it has the highest index value in the year 2022-2021 with 1.4
4. The base stock has the lowest index value in the year 2019-2018 with 0.76
5. It is identified, the base stock metho index is increasing year after year with a positive trend.
6. The Inventory turnover ratio is high in the year 2021 with 940.91. whereas low in the year 2020 with 810.85.
7. It is identified that the Inventory turnover ratio is fluctuating year of year with decreases and increase in the ratio.

5.2Suggestion

There are many recommendations on purchase of inventory goods depending upon demand , they are

- Company may try to order annually rather than monthly depending upon demand for the

products.

- Total cost incurred when purchases are made annually is less than the total cost incurred when orders placed monthly.
- Company should make orders at one stretch.
- When orders are made at one time in bulk, then suppliers may provide special discounts.
- Reduction of transport facilities is noticed when orders in a bulk.

5.3 CONCLUSIONS

Though coromandel international ltd is doing good in manufacturing many products or items it was found that a little rectification has to be made They are Order is placed monthly or quarterly .It may cost heavy expenditure for placing order so many times. Cost will be bearding each time an order is placed. So, it is suggestible that order should be placed annually depending on demand. Storage facilities should be modified. A stores manager should be appointed separately to look after product at hand. Separate department of research should be placed. Especially for inventory of goods.

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