



# **Biju Patnaik Institute of Information Technology & Management Studies**

**A  
PROJECT REPORT  
ON  
INVENTORY MANAGEMENT OF SAIL**



**सेल SAIL**

**स्टील अथॉरिटी ऑफ इण्डिया लिमिटेड  
STEEL AUTHORITY OF INDIA LIMITED**

**BY  
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UNDER THE GUIDANCE OF  
DR. CHINMAYA KUMAR ROUT  
SUBMITTED TO  
BIJU PATNAIK INSTITUTE  
OF IT & MANAGEMENT STUDIES**



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## **CERTIFICATE**

### **To Whom so ever It May Concern**

This is to certify that Mr. Divyajyoti Malik is student of MBA – Finance, Biju Patnaik Institute of IT & Management Studies, Bhubaneswar. He has done his training in our organization for 6 weeks from 20<sup>th</sup> Sep. 2021 to 5<sup>th</sup> Nov. 2021.

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DGM ( Fin ), BSO

Steel Authority of India Limited

## **ACKNOWLEDGEMENT**

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I also acknowledge the contribution of all the members of SAIL, Ltd. Who all together provide me and inspiring working environment .

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**DIVYAJYOTI MALIK**

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## **PREFACE**

The courses of MBA require one to under a summer internship with the end of the 2<sup>nd</sup> semester, so as to get a practical knowledge and understanding the aspects of all the theories read. It helps us to make the best use of our skills and intelligence so as to make a better research report. It is really the most important thing during the course our study. The purpose of my research project is to study the “Inventory management of SAIL”.

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# CHAPTER - 1

# Introduction

Every business organizations needs inventory for the smooth running of its activities. It serves as a link between production and distribution processes. The investment in inventories constitutes the most significant part of current assets. Working capital is the 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.

The investment in inventory is very high in most of the undertakings engaged in manufacturing, wholesale and retail trade. The amount of investment is sometimes more in inventory than on other assets. In India, a study of 29 major industries has revealed that the average cost of the material is 64 paise and the cost of labor and overhead is 36 paise in a rupee. About 90 per cent part of working capital is invested in inventories. It is necessary for every management to give proper attention to inventory management. A proper planning of purchasing, handling, storing, and accounting should form a proper inventory management. An efficient system of inventory management will determine:-

- a) What to purchase
- b) How much to purchase
- c) From where to purchase and
- d) Where to store

The purpose of inventory management is to keep the stocks in such a way that neither there is over-stocking nor under-stocking. Over-stocking means a reduction of liquidity and starving for other production processes. Under-stocking, on the other hand, will result in stoppage of work. The investment in inventory should be left in reasonable limits.

## **Need for the Study**

Steel Authority of India limited (SAIL) is the largest steelmaking company in India and one of the seven maharatna's of the country's central public sector enterprises.

The government of India owns about 75% of SAIL's equity and retains voting control of the company. Its headquarter is located at New Delhi, India.

SAIL operates and owns 5 integrated steel plants at Bhilai, Durgapur, Rourkela Bokaro, Burnpur (Asansol) and 3 special steel plants at Saleon, Durgapur and Bhadravath.

## **OBJECTIVES OF THE STUDY**

- To study inventory management of steel authority of India.
- To study different material control techniques used by SAIL.
- To analyse the effectiveness of inventory management results.



# **SCOPE OF THE STUDY**

This study examined the financial reports and financial statements of SAIL-Steel Authority of India limited from 2013 to 2020 with the help of statistical analysis, the projecting of following years can also be made for item such as sales, inventory, profit, etc.

The statistical scrutiny can also be applied to every ratio and by them upon more inclusive results can be obtained. Thus, this study also provides significant information to the management of SAIL company, for prophesying profit, sales amount, EPS etc.

# Chapter-2

# Company Profile

Steel Authority of India Limited (SAIL) is a government owned steel producer based in New Delhi, India. It is under the ownership of Ministry of Steel, Government of India with an annual turnover of INR 68,452 Crore (US\$9.32 billion) for fiscal year 2020–21. Incorporated on 24 January 1973, SAIL has 63,433 employees (as of 1 November 2021). With an annual production of 16.30 million metric tons, SAIL is the 20th largest steel producer in the world and the largest in India.

The Hot Metal production capacity of the company will further increase and is expected to reach a level of 50 million tonnes per annum by 2025.

SMTP Soma Mondal is the current Chairman of SAIL.

SAIL operates and owns five integrated steel plants at Bhilai, Rourkela, Durgapur, Bokaro and Burnpur (Asansol) and three special steel plants at Salem, Durgapur and Bhadravathi. It also owns a Ferro Alloy plant at Chandrapur. As a part of its global ambition, the company is undergoing a massive expansion and modernisation programme involving upgrading and building new facilities with emphasis on state-of-the-art green technology.

According to a recent survey, SAIL is one of India's fastest growing Public Sector Units. Besides, it has R&D Centre for Iron & Steel (RDCIS), Centre for Engineering in Ranchi, Jharkhand.

# Background

The Ministry of Steel and Mines drafted a policy statement to evolve a new model for managing industry. The policy statement was presented to the Parliament on December 2, 1972. On this basis the concept of creating a holding company to manage inputs and outputs under one umbrella was mooted. This led to the formation of Steel Authority of India Ltd. The company, incorporated on January 24, 1973, with an authorized capital of Rs. 2000 crore was made responsible for managing five integrated steel plants at Bhilai, Bokaro, Durgapur, Rourkela and Burnpur, the Alloy

Steel Plant and the Salem Steel Plant. In 1978 SAIL was restructured as an operating company. The company is a PSU under the Gol, which holds, 85.82% of the former's equity. In May 2010, SAIL was awarded the Maharatna status by the Gol.

Since its inception, SAIL has been instrumental in laying a sound infrastructure for the industrial development of the country. Besides, it has immensely contributed to the development of technical and managerial expertise. It has triggered the secondary and tertiary waves of economic growth by continuously providing the inputs for the consuming industry.

# Business Portfolio

A business portfolio is a group of products, services, and business units that confirm a given company and allows it to pursue its strategic goals. This portfolio can also be defined as the set of available assets that the company possess to develop its mission and reach its vision.

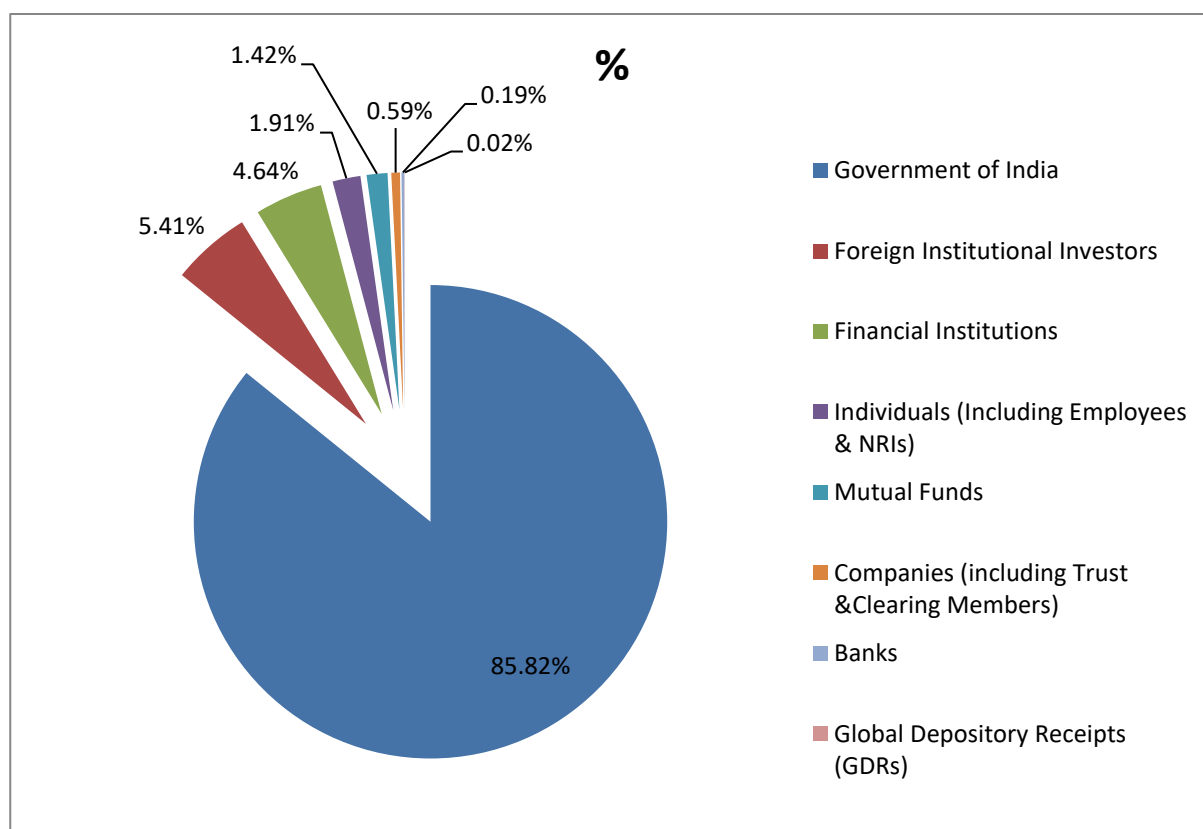
## Shareholding Pattern - Steel Authority of India (SAIL) Ltd.

| Holder's Name         | No of Shares | % Share Holding |
|-----------------------|--------------|-----------------|
| NoOfShares            | 4130525289   | 100%            |
| Promoters             | 2684714550   | 65%             |
| ForeignInstitutions   | 222027953    | 5.38%           |
| NBanksMutualFunds     | 159675887    | 3.87%           |
| CentralGovt           | 3118462      | 0.08%           |
| Others                | 121596042    | 2.94%           |
| GeneralPublic         | 584140747    | 14.14%          |
| FinancialInstitutions | 355140658    | 8.6%            |
| GDR                   | 110990       | 0%              |

## SHARE HOLDING PATTERN (% OF Equity)

- Government of India -85.82%
- Foreign Institutional Investors-5.41%
- Financial Institutions-4.64%
- Individuals (Including Employees & NRIs)-1.91%
- Mutual Funds-1.42%

- Companies (including Trust & Clearing Members)-0.59%
- Banks-0.19%
- Global Depository Receipts (GDRs)-0.02%



# SWOT Analysis

## **STRENGTH-:**

1. Bokaro Steel Plant has a huge pool of skilled and experienced personnel.
2. Principle of hierarchy is given due respect in BSP enabling management to ensure proper planning and its implementation.
3. Flawless corporate image of SAIL enhances the confidence of managers and customers alike.
4. Record of harmonious customer relation boosts the revenue graph towards north.
5. Strategic Information System in the organization gives cutting edge advantage reducing cost and time for every operation.
6. Huge infrastructure, when provides a strong base for better production and marketing, since it has countrywide network of stockyards, dockyard and sales branch offices.
7. The by-product of Bokaro Steel Plant is coal-based and of best quality against the petroleum based bye-products, giving the company a huge advantage against their competitors.

8. Bokaro Steel Plant has TQP i.e. Total Quality People which mean a dedicated work force towards serving the company's customers.
9. A strong R&D cell of the company keeps on working over enriching the quality of its bye-products and to reduce the cost of the whole process.

**WEAKNESS:-**

1. Lack of teamwork and internal customer orientation inhibits proper implementation of company's policy.
2. Complex pre post sale activities repel the probable customers.
3. Due to its large organizational structure involving numerous policies and officials, prompt decision making is a real problem.
4. The hard working marketing officials are not given due recognition and appropriate reward that hurts their motivation and interest.

**OPPORTUNITY:-**

1. There is growing demand for secondary and by-products in both domestic and international market.
2. State government is planning to establish small industries in and around Bokaro which will increase the list of probable customers.



3. New markets are to be searched and developed with the opening of the global steel market.

4. There is a great opportunity in the field of research to improve the quality of the coal-based products which would strengthen its well established base among customers.

### **THREAT:-**

1. The biggest threat for any company is competition, SAIL, BSL is also no exceptional. So due to globalization the company is facing stiff competition from global companies in all product segments as well as facing competition from domestic players.

#### **SAIL Steel Authority of India Brand Analysis**

**Parent Company**

**SAIL (Govt of India)**

**Category**

Iron & steel

**Sector**

[Industrial Products and Chemicals](#)

**Tagline/ Slogan**

There's a little bit of SAIL in everybody's life

**USP**

Leading steel making company in India producing basic & special steels

## SAIL Steel Authority of India STP

**Segment**

Iron & steel market

**Target Group**

Construction, engineering, power, railway, automotive & defense industries

**Positioning**

Respected world class corporation & the leader in Indian steel business in quality, productivity, profitability & customer satisfaction

## SWOT Analysis of SAIL Steel Authority of India

**SAIL Steel Authority of India Strengths**

Below are the Strengths in the SWOT Analysis of SAIL Steel Authority of India:

1. Strong employee workforce with over 130,000 employees
2. Technical & managerial expertise in the industry
3. Strong raw material supply chain management
4. Strong financial resources owing to being a Govt enterprise
5. It has an annual production of over 13million tonnes
6. Partnerships with NTPC, Bokaro Steel etc has strengthened its market position

|  |  |
|--|--|
| <b>SAIL Steel Authority of India Weaknesses</b>    | <p>Here are the weaknesses in the SAIL Steel Authority of India SWOT Analysis:</p> <ol style="list-style-type: none"> <li>1. Govt and political intervention affects operational efficiency</li> <li>2. Higher profit margins are not allowed</li> </ol>   |
| <b>SAIL Steel Authority of India Opportunities</b> | <p>Following are the Opportunities in SAIL Steel Authority of India SWOT Analysis:</p> <ol style="list-style-type: none"> <li>1. Expansion &amp; growth</li> <li>2. Globalization with tie-ups with international players</li> <li>3. Mergers &amp; Acquisitions</li> </ol>  |
| <b>SAIL Steel Authority of India Threats</b>       | <p>The threats in the SWOT Analysis of SAIL Steel Authority of India are as mentioned:</p> <ol style="list-style-type: none"> <li>1. Change in Government policies &amp; economy trend</li> <li>2. Emerging &amp; existing private sector players</li> <li>3. Technological developments in outside world</li> </ol> |

## SAIL Steel Authority of India Competition

### SAIL Steel Authority of India Competitors

Below are the top 3 competitors of SAIL Steel Authority of India:

1. [TATA Steel](#)
2. [JSW Steel](#)
3. ISPAT Industries

SAIL Steel Authority of India SWOT Analysis, Competitors, Segmentation, Target Market, Positioning, USP & Brand Analysis Table

## Market Capitalisation

Market capitalization refers to the total dollar market value of a company's outstanding shares of stock.

Commonly referred to as "market cap," it is calculated by multiplying the total number of a company's

Outstanding shares by the current market price of one share.

## Market Share

Market share is the percent of total sales in an industry generated by a particular company.

Market share is calculated by taking the company's sales over the period and dividing it

by the total sales of the industry over the same period. This metric is used to give a general

idea of the size of a company in relation to its market and its competitors.

The market leader in an industry is the company with the largest market share.

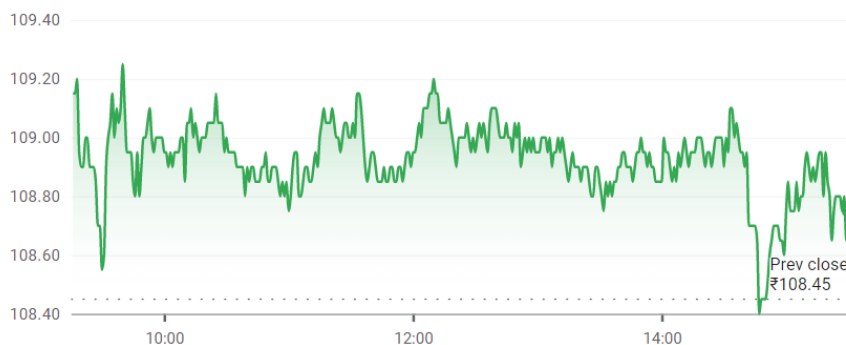
$$\text{Market Share} = \frac{\text{Total Number of Units Sold by the Company}}{\text{Total Number of Units Sold in the Market}} \times 100$$

## Market Share & Capitalisation of Sail

₹108.75 ↑ 0.28% +0.30 Today

28 Dec, 15:59:57 UTC+5:30 · INR · NSE · Disclaimer

1D 5D 1M 6M YTD 1Y 5Y MAX



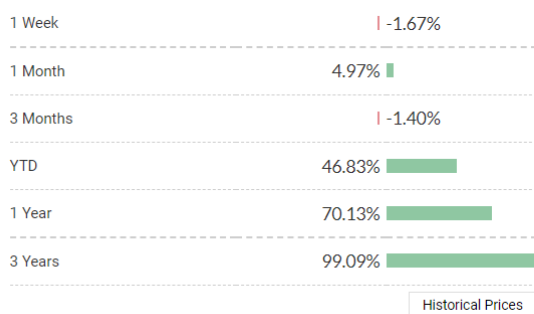
Most active Stock

IN listed security IN headquartered

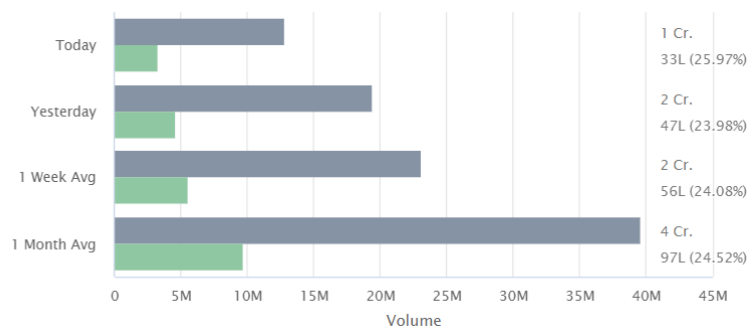
|                  |                   |
|------------------|-------------------|
| PREVIOUS CLOSE   | ₹108.45           |
| DAY RANGE        | ₹108.40 - ₹109.40 |
| YEAR RANGE       | ₹55.30 - ₹151.30  |
| MARKET CAP       | 449.40B INR       |
| P/E RATIO        | 3.41              |
| DIVIDEND YIELD   | 5.33%             |
| PRIMARY EXCHANGE | NSE               |

## PRICE AND VOLUME

### Price Performance



### Volume Analysis



|                |            |              |        |                      |        |                     |            |
|----------------|------------|--------------|--------|----------------------|--------|---------------------|------------|
| Open           | 108.70     | High         | 109.40 | TTM EPS              | 31.89  | Mkt Cap (Rs. Cr.)   | 44,940     |
| Previous Close | 108.45     | Low          | 108.40 | TTM PE               | 3.41   | Dividend Yield      | --         |
| Volume         | 12,134,126 | UC Limit     | 119.25 | Sector PE            | 13.28  | 20D Avg Volume      | 38,180,375 |
| Value (Lacs)   | 13,201.93  | LC Limit     | 97.65  | Book Value Per Share | 109.93 | 20D Avg Delivery(%) | 24.62      |
| ① VWAP         | 108.90     | 52 Week High | 151.30 | P/B                  | 0.99   |                     |            |
| Beta           | 1.42       | 52 Week Low  | 55.30  | Face Value           | 10     |                     |            |

## **Business Description**

SAIL manufactures the widest spectrum of steel products in the country, covering hot and cold rolled sheets and coils, galvanized sheets, electrical sheets, structural, railway products, plates, bars and rods, stainless steel and other alloy steels. The products of the company are used in several sectors, encompassing construction, engineering, power, railway, automotive and defence industries apart from catering to the export market. During FY10, the steel plants of SAIL produced 14.5 MT of hot metal, 13.5 MT of crude steel and 12.6 MT of saleable steel with saleable steel achieving 114% of capacity utilization. During the year several new products were developed, such as 3mm Chequered Coils, SAIL-MC60 HR Coils, C30 HMn 1.2 HR Coils, SAE1541 HR Coils & API X60 ERW Pipes at RSP, DMR 249B Plates at RSP & BSP and ATM Grade Plates at BSP.

## **Marketing and Distribution Network**

SAIL has established a country wide marketing network with 37 branch sales offices, 25 Departmental Warehouses, 42 Consignment Agents and 27 Customer Contact Offices. It also extended its distribution through its dealers. As on Apr 1, 2010, SAIL's distribution network covered 630 districts of the country with around 2,500 dealers in place.

## **Activities during the financial year**

- During the year, SAIL agreed to merge its subsidiary, Maharashtra Electro smelt Ltd (MEL) with itself.
- Signed an MoU with IRCON international Ltd, a PSU under the Ministry of Railways, for jointly working on rail infrastructure project both in India and abroad.
- The company established a JV SAIL SCI Shipping Pt Ltd in May 2010, to cater to its requirements of shipping imports of coal.
- Entered into a JV with RITES Ltd for establishing a wagon manufacturing plant in Kulthi, in WB.
- Signed an MoU with Kobe Steel Japan, for exploring feasibility of ITmk3 technology for producing premium grade iron nuggets using iron ore fines and non-coking coal.
- Signed an MoU with POSCO, Korea for exploring business opportunities in the areas of manufacturing and commercialization of CRNO; and exploration of upstream & downstream opportunities in utilizing FINEX technology.



# **CSR**

## **Corporate Social Responsibility of SAIL**

CSR was an integral part of its operations ever since the establishment of its production units in remote locations of the country since the early 1950s. Places like Bhilai, Rourkela, Durgapur, etc., which today are thriving industrial and commercial centres having grown around SAIL's integrated steel plants set up there, were once extremely backward locations without any economic or social infrastructure.

The company had to provide basic amenities like power, drinking water, and education and medical facilities for its workforce at these plant locations; these facilities have multiplied over the decades as SAIL's business has grown.

### **Healthcare**

At today's count, SAIL has established 54 Primary Health Centres, 12 Reproductive & Child Health Centres, 17 Hospitals and 7 Super-Specialty Hospitals for providing specialized healthcare to more than 30 million people since inception. Five special health centre (Kalyan Chikitsalyas) have been set up at plant locations for poor and needy people, where free medical treatment and medicines are provided. SAIL organizes health camps in the range of more than 3,000 every year, reaching out to people needing primary health support.

The coverage has spanned various states like Jharkhand, Chhattisgarh, Odisha, West Bengal, Tamil Nadu, Karnataka, Bihar, Maharashtra, Madhya Pradesh, Haryana, Rajasthan, etc. To help the poor and downtrodden patients and to have health outreach, 24 MMUs /ambulances have been provided to various NGOs like HelpAge India, Bharat Sewashram Sangha, Anugraha Drishtidaan, etc. A special project 'Akshaya' for providing free investigation to TB patients of under privileged sections of society and project 'Chetna' for treatment of sickle cell anaemia are run in Rourkela.

## **Education**

146 schools have been set up in the steel townships for providing modern education to about 70,000 children and assistance has been provided to over 286 schools of villages surrounding steel plants/units for free education of more than 55,000 students. 225 tribal children at Bhilai and 12 boys of the nearly extinct Birhore tribe at Bokaro have been adopted and are provided free education, boarding and lodging.

SAIL has achieved a girl-boy ratio of 1:1 for all levels of education as well as a survival rate of 96% in SAIL primary schools and 90% in SAIL secondary schools.

SAIL has also set up 6 Special Schools exclusively for poor, underprivileged, BPL children at its 5 integrated steel plant locations covering around 1,400 children providing free education, midday meals, uniform, including shoes, textbooks, stationery items, school bag, water bottles, etc. With the help of Akshay Patra Foundation, SAIL is providing midday meals to more than 18,000

students in different schools of Bhilai every day. In order to support the existing school infrastructure, SAIL has been providing additional classrooms across the country and such projects are in progress at Bhilai, Durgapur, Bokaro, Rourkela, Burnpur, as well as areas where SAIL carries out mining activities.

Besides the above, SAIL has supported Chhattisgarh Technical University with Rs 50 crore, for promotion of technical education and industry-education collaboration. Industrial Training Institutes (ITIs) have also been set up at Gua Mines and Bokaro and two new ITIs are being set up in Uttar Pradesh. Scholarships for ITI and nursing courses to people belonging to weaker sections and women, sponsorships to students for technical education, free coaching and assistance to needy and poor children for their higher education, etc., are other areas of focus for SAIL in the field of education.

Roads are a means of communication and help economic and social activities to multiply. Involved in the construction and repair of roads in far-flung locations since inception, SAIL has constructed roads in 435 villages helping around 73 lakh people.

## **Water**

SAIL has also provided access to water infrastructure to people living in far-flung areas by installing 5,153 water sources, thereby providing drinking water access to around 38 lakh people. Each SAIL plant has ensured that villages within the radius of approximately 16-18 kms of its township have access to potable water.

## **Model Steel Villages**

In order to bridge the gap between rural and urban areas and to provide comprehensive development of both physical and social infrastructure, 79 villages have been identified as ‘Model Steel Villages’ in 8 states across the country. The developmental activities being undertaken in these villages include medical & health services, education, roads & connectivity, sanitation, community centres, livelihood generation, sports facilities, etc.

## **Solar Power**

Promotion of alternative source of energy is one of the thrust areas of SAIL. This year, SAIL under this initiative is supporting setting up of 100-kw Community Solar Power Plants in Jarri, Albert Ekka Block, Jharkhand with the help of Jharkhand Renewable Energy Development Agency. SAIL is also installing solar street lights at public places to eradicate the problem of power crisis in rural and mines areas of the country.

## **Calamity Aid**

SAIL has been always a trend setter in supporting people during natural calamities and recently it has supported construction of low cost houses at Leh after a cloud burst, providing galvanized sheets to Sikkim earth quake victims, contributing to Chief Minister’s Relief Fund for aid to people affected by the Odisha floods, and provided flood relief packets during the floods in Uttar Pradesh

## **Vocational Training**

Villagers are being provided vocational training in areas such as improved agriculture, mushroom cultivation, animal husbandry (goatery, poultry, fishery, piggery), achar/ppapad/agarbatti making, etc.

Training is also provided for skill enhancement as welders, fitters and electricians, in sewing & embroidery, smokeless chullah making, etc. Vocational training centres like Bhilai Ispat Kaushal Kutir for rural and unemployed youth and Skill Development & Self Employment Training Institutes for the benefit of women and girls have also been set up.

One of the outstanding success stories of SAIL-supported Self Help Group programmes is 'Kiran' which is run by 97 lady artisans of nearby villages of Kiriburu Ore Mines. Kiran branded towels, bedsheets, sarees, Diwali candles and agarbattis are being sold through door-to-door marketing efforts and through cooperatives.

## **Sports**

SAIL has also become a part and parcel of the sporting history of the Nation. Right from the early trickles to the recent deluge of medals, awards and accolades, the steel major has supported many sports disciplines and promoted numerous sportspersons. SAIL supported wrestlers Sushil Kumar, Yogeshwar Dutt and Deepak Sharma, all of whom won top honours and made the nation

proud during international events such as the Beijing Olympics and Commonwealth Games 2010.

SAIL was the presenting sponsor of World Cup Hockey 2010 and is also sponsoring the Asian Tour-level SAIL Open Golf Championship for the past 4 years, besides prestigious annual events such as Davis Cup, SAIL Trophy Cricket Tournament, DSA league, Nehru Cup, etc. The company has also set up 6 academies at its plant & mines locations – for Athletics (boys & girls), Hockey, Football and Archery.

### **Preservation of Art & Culture**

Promotion and preservation of various forms of Indian arts and cultures enriches our cultural diversity. To fulfill this aspiration, SAIL has supported maintenance of monuments in Delhi's Lodhi Gardens, and Vedvyas, Saraswati kund in Rourkela. To take care of distinct features of tribal culture, a 5-day Chhattisgarh Lok Kala Mahotsav is celebrated every year in Bhilai and nearby places in which more than 600 artistes participate. To promote local culture and games, various Gramin Lokotsavs and Gramin athletics competitions are organised by SAIL at different locations throughout the year.

### **Awards & Accolades**

SAIL's efforts as a responsible corporate citizen in Nation building have been recognized by various organizations in the form of awards and accolades. These include the SKOCH Financial Inclusion Award-2012 for Women

Empowerment , India Shining Star CSR Award-2010 by Wockhardt Foundation in the Iron & Steel category, SCOPE Meritorious Award for Corporate Social Responsibility & Responsiveness for the year 2008-09.

Annual FICCI Awards 2008-09 in the category of ‘The Vision Corporate Triple Impact – Business Performance, Social & Environmental Action and Globalisation’, Business World -FICCI-SEDF CSR Award for the year 2006, FICCI Award for Rural & Community Development 2006-07, CSR Award of the Ministry of Rural Development, Government of India, Golden Peacock Award – 2008, 2009 & 2008-09 for CSR to Bhilai Steel Plant , CSR Award of Tamil Nadu Government to Salem Steel Plant for the consecutive years 2007-08 and 2008-09, etc.

## **Expansion Plans**

Steel Authority of India will finalise the next phase of its modernisation and capacity expansion plan — to more than double its installed crude steel production capacity to 50 million tonne per annum (MTPA) — in the next 15-18 months, its top management said in an investor call.

The work on the expansion is likely to start in 2023-24.

The public sector unit is currently on the verge of completing a Rs 70,000-crore modernisation and expansion programme. After that, its capacity will go up to 21.4 MTPA.

In the next round of modernisation and expansion, likely to start from FY24, SAIL will look at expanding capacity by 12-14 MTPA in the first phase at its units in Bokaro, Burnpur (IISCO) and Rourkela, the management said.

SAIL has already completed land surveys in Rourkela and Bokaro and has land parcels available to support a brownfield expansion.

“Taking cues from previous expansion, the management informed that it would not embark on all expansion projects at one go but would pursue it in a manner that there is a sufficient time gap between two large payments,” brokerage firm Motilal Oswal said in a report.

SAIL aims to repay as much debt as possible before embarking on its expansion plans and finance the new phase of expansion at a 1:1 debt-to-equity ratio, it said.

Sources said in the first phase, the company intends to enhance strength at its Durgapur Steel Plant to 7.5 MTPA from 2.5 MTPA. That of the Rourkela Steel Plant has been proposed to be raised to 8.8 MTPA from 3.7 MTPA. Bokaro Steel Plant’s capacity will be raised to 9.5 MTPA and IISCO’s to 3 MTPA in the first phase and subsequently to 7.3 MTPA in the next phase.

Though there hasn’t been any plan to raise capacity at Bhilai Steel Plant in the first phase, its capacity will be raised to 12 MTPA in the second phase from the current 7 MTPA, and subsequently to 14 MTPA by 2030.



# Chapter – 3

# PESTEL Analysis of the Steel Industry

Asian countries are in the lead with the production of the steel, China is the top producer among the Asian countries which are contributing high a supply of the steel in the international market. 419 million ton of the steel is produced only in China. In past 6 years there are many acquisitions and mergers are happening in the steel industry. May be this could be the one of the reasons behind this tremendous growth globally.

After the China country, Japan, India, and South Korea. India is contributing total of the 53 million ton steel in global market. The Japan is producing only 9% of the steel which is contributed to the global steel market. India is also one of the major countries in the production of the steel.

The east, south, and west regions are important for the steel industry in India. The rapid expansion is expected in the east region, Orissa because the availability of the superior raw material. In India because the vast availability of resources and major industry players India is enjoying the boom in this sector which are responsible of the growth in the GDP according to the survey which is done by the DEUTSCHE BANK where the analysis is done with detailed survey of 34 economies in nation.

The average is observed for the, whereas 5.4% to Malaysia. The opening up the economies in the global market is responsible for the high investment in the industry sector where lots of acquisitions and mergers are happening in the industry. The PESTEL ANALYSIS of the industry is divided into five parts which can be discussed as follows:

P- Political analysis

E - Economic analysis

S - Socio -culture analysis

T - Technological analysis

E - Environmental analysis

L - Legal analysis.

#### POLITICAL ANALYSIS:

Political analysis includes the factors which can influence the business. It is included the political factor which includes the policy offered by the government to the specific sector. Here for this sector government introduces the National Steel Policy. The main aim for the introduction of this policy is to fill the gap between the demand and supply of the steel. To maximize the production is also main activity is designed under this policy. To increase the production up to million ton is also the main objective of the policy.

Under this policy the special incentives are designed for the steel sector. Incentives like the cut in the duty, zero duty on imports, provision of the land and other infrastructural facilities are the facilities provided for the steel sector. Under this policy the government is encourage to the use the full opportunities available in the PUBLIC AND PRIVATE PATNERSHIP (PPP). With the growing industry the government is increased the sales tax from the 15% to 20% where as 75% FDI (foreign direct investment) is allowed in the industry this scheme also provides the various concessions in the custom duties.

## ECONOMICAL ANALYSIS:

STEEL industry is concern to be a very booming industry from past decades. Opening up with the various economies the foreign direct investment is the happened in this sector the various foreign players are interested to invest in the country. Under the various economies schemes there is permission in advance licensing scheme which allows the duty free imports of raw material for exports. But, with the boom in the industry GDP is rising at very slow rate. The steel industry is also facing the problem of the subprime crisis occurs in the united states before 15 months. Because of the subprime crisis there is ill effect occurs in the automobile industry, infrastructure and other business which are related with the steel industry.

## SOCIO- CULTURE:

The socio culture is one of the important aspect in the analysis of the industry it describes the impact of the particular industry on the society. Likewise the steel industry also give the encouragement to the permanent employment to the people but on the other hand it divides the area in to the rural and urban sector because the industry is only in the particular area only which leads to the particular development of that area only and not overall the development . because of the working conditions

the people which are employed in the steel industry faced many health problems which are incurable in the nature and many industries are not paying the attention on the health of the employees. Any kind of the allowances are not given to the employees. Steel industry is also responsible for the development in the rural sector which leads to the rise in the standard of the living of the people.

## TECHNICAL:

The traditional technologies are being used from many years in the industry. There is no innovation in the use of the technique in the production process. The Tata steel is developing the same technique is by which the encouragement is given to the trading of the steel. Tata and sail introduces the online trading of the steel. Only the electric furnace is being used now days in the production process but because of the fluctuations in the energy there is wastage in the raw material. The basic technologies are used in the production process are basic arc, induction furnace and electric furnace which are outdated in the nature. Sail the one of the leading steel industry India is planning to set up a plan with PASCO for using the latest technology named "FINEX"™.

## ENVIRONMENTAL:

Though the steel industry is encouraging the many sectors and the encouraging the development it is creating the unfavorable environment in the nature. The all leading industries are following the environmental acts which are declared by the governments, though it is creating very bad impact on the environment. Many industries are using the pollution control equipment and energy saving equipment but that is not sufficient in the nature. The least importance is given to the environmental aspect. But the Tata steel is encouraging the ecofriendly system, to reduce the emission the co2 gas during the production process. Tata is developing the Ultra-Low Carbon steel making where there will be reduction in the environmental loss.

## LEGAL:

Government is introducing the various rules and regulations of this particular industry. The government is about to paying the more attention in the health policies of the employees which are working with the steel industry. Special health incentives and rules are introduced in the steel industry.

#### Conclusion:

From above discussion and surveys, we come to know about how the pestel analysis is done in the industry we also come to know about the political, economic, and technical aspect are important for the development.

# Porter Five (5) Forces Model

**Barriers to entry:** We believe that the barriers to entry are medium. Following are the factors that vindicate our view.

**Capital Requirement:** Steel industry is a capital intensive business. It is estimated that to set up 1 mtpa capacity of integrated steel plant, it requires between Rs 25 bn to Rs 30 bn depending upon the location of the plant and technology used.

**Economies of scale:** As far as the sector forces go, scale of operation does matter. Benefits of economies of scale are derived in the form of lower costs, R& D expenses and better bargaining power while sourcing raw materials. It may be noted that those steel companies, which are integrated, have their own mines for key raw materials such as iron ore and coal and this protects them for the potential threat for new entrants to a significant extent.

**Government Policy:** The government has a favourable policy for steel manufacturers. However, there are certain discrepancies involved in allocation of iron ore mines and land acquisitions. Furthermore, the regulatory clearances and other issues are some of the major problems for the new entrants.

**Product differentiation:** Steel has very low barriers in terms of product differentiation as it doesn't fall into the luxury or specialty goods and thus does not have any substantial price difference. However, certain companies like Tata Steel still enjoy a premium for their products because of its quality and its brand value created more than 100 years back. Bargaining power of buyers: Unlike the FMCG or retail sectors, the buyers have a low bargaining power. However, the government may curb or put a ceiling on prices if it feels the need to do so. The steel companies either sell the steel directly to the user industries or through their own distribution networks. Some companies also do exports.

**Bargaining power of suppliers:** The bargaining power of suppliers is low for the fully integrated steel plants as they have their own mines of key raw material like iron ore coal for example Tata Steel. However, those who are non-integrated or semi integrated must depend on suppliers. An example could be SAIL, which imports coking coal.

**Competition:** It is medium in the domestic steel industry as demand still exceeds the supply. India is a net importer of steel. However, a threat from dumping of cheaper products does exist.

**Threat of substitutes:** It is medium to low. Although usage of aluminium has been rising continuously in the automobile and consumer durables sectors, it still does not pose any significant threat to steel as the latter cannot be replaced completely and the cost differential is also very high.



**Conclusion:** After understanding all the above viewpoints and the current global scenario, we believe that the domestic steel industry will likely maintain its momentum in the long term. However, the growth may get affected in short run. Investors need to focus on companies that are integrated, have economies of scale, and sell premium quality products.

# Chapter – 4

# Comparison with Competitors

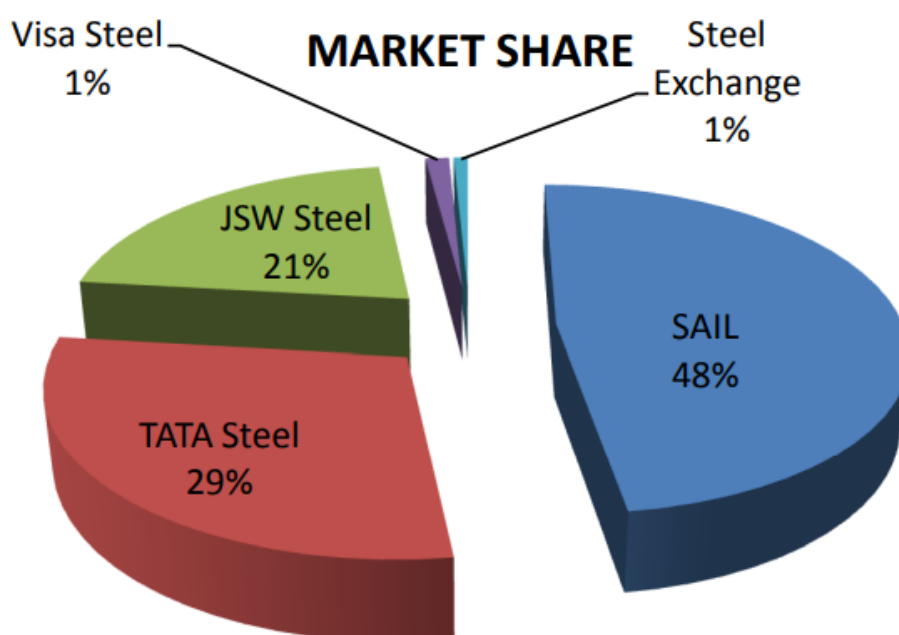
| Balance Sheet               | ----- in Rs. Cr. ----- |                  |                   |                  |                  |
|-----------------------------|------------------------|------------------|-------------------|------------------|------------------|
|                             | SAIL                   | JSW Steel        | Tata Steel        | Hindalco         | Jindal Steel     |
|                             | Mar '21                | Mar '21          | Mar '21           | Mar '21          | Mar '21          |
| <b>Sources Of Funds</b>     |                        |                  |                   |                  |                  |
| Total Share Capital         | 4,130.53               | 302.00           | 1,198.78          | 222.00           | 102.00           |
| Equity Share Capital        | 4,130.53               | 302.00           | 1,198.78          | 222.00           | 102.00           |
| Share Application Money     | 0.00                   | 0.00             | 3.78              | 0.00             | 0.00             |
| Preference Share Capital    | 0.00                   | 0.00             | 0.00              | 0.00             | 0.00             |
| Reserves                    | 39,364.35              | 46,675.00        | 89,289.55         | 49,842.00        | 32,540.11        |
| Revaluation Reserves        | 0.00                   | 0.00             | 0.00              | 0.00             | 0.00             |
| <b>Networth</b>             | <b>43,494.88</b>       | <b>46,977.00</b> | <b>90,492.11</b>  | <b>50,064.00</b> | <b>32,642.11</b> |
| Secured Loans               | 35,576.20              | 40,836.00        | 28,088.80         | 19,464.00        | 16,710.32        |
| Unsecured Loans             | 0.00                   | 0.00             | 0.00              | 0.00             | 0.00             |
| <b>Total Debt</b>           | <b>35,576.20</b>       | <b>40,836.00</b> | <b>28,088.80</b>  | <b>19,464.00</b> | <b>16,710.32</b> |
| <b>Total Liabilities</b>    | <b>79,071.08</b>       | <b>87,813.00</b> | <b>118,580.91</b> | <b>69,528.00</b> | <b>49,352.43</b> |
|                             | SAIL                   | JSW Steel        | Tata Steel        | Hindalco         | Jindal Steel     |
|                             | Mar '21                | Mar '21          | Mar '21           | Mar '21          | Mar '21          |
| <b>Application Of Funds</b> |                        |                  |                   |                  |                  |
| Gross Block                 | 112,636.59             | 68,659.00        | 91,729.43         | 50,446.00        | 55,503.09        |
| Less: Accum. Depreciation   | 45,036.83              | 16,717.00        | 22,951.81         | 18,056.00        | 12,781.57        |
| <b>Net Block</b>            | <b>67,599.76</b>       | <b>51,942.00</b> | <b>68,777.62</b>  | <b>32,390.00</b> | <b>42,721.52</b> |
| Capital Work in Progress    | 8,878.48               | 29,042.00        | 10,465.97         | 1,709.00         | 604.16           |
| <b>Investments</b>          | <b>1,595.01</b>        | <b>12,458.00</b> | <b>57,470.73</b>  | <b>31,731.00</b> | <b>5,557.53</b>  |
| Inventories                 | 19,508.30              | 10,692.00        | 8,603.79          | 15,989.00        | 4,591.67         |
| Sundry Debtors              | 7,124.00               | 3,333.00         | 3,863.31          | 1,602.00         | 1,960.75         |
| Cash and Bank Balance       | 680.52                 | 11,746.00        | 1,671.71          | 1,019.00         | 5,687.40         |
| Total Current Assets        | 27,312.82              | 25,771.00        | 14,138.81         | 18,610.00        | 12,239.82        |
| Loans and Advances          | 11,773.59              | 14,019.00        | 14,182.86         | 3,507.00         | 8,008.25         |
| Fixed Deposits              | 0.00                   | 0.00             | 0.00              | 0.00             | 0.00             |
| Total CA, Loans & Advances  | 39,086.41              | 39,790.00        | 28,321.67         | 22,117.00        | 20,248.07        |
| Deffered Credit             | 0.00                   | 0.00             | 0.00              | 0.00             | 0.00             |
| Current Liabilities         | 34,795.58              | 44,423.00        | 42,836.71         | 17,167.00        | 19,622.41        |
| Provisions                  | 3,293.00               | 996.00           | 3,618.37          | 1,252.00         | 156.44           |
| Total CL & Provisions       | 38,088.58              | 45,419.00        | 46,455.08         | 18,419.00        | 19,778.85        |
| <b>Net Current Assets</b>   | <b>997.83</b>          | <b>-5,629.00</b> | <b>-18,133.41</b> | <b>3,698.00</b>  | <b>469.22</b>    |
| Miscellaneous Expenses      | 0.00                   | 0.00             | 0.00              | 0.00             | 0.00             |
| <b>Total Assets</b>         | <b>79,071.08</b>       | <b>87,813.00</b> | <b>118,580.91</b> | <b>69,528.00</b> | <b>49,352.43</b> |
| Contingent Liabilities      | 47,462.92              | 51,081.00        | 33,058.37         | 1,023.00         | 13,858.80        |
| Book Value (Rs)             | 105.30                 | 194.34           | 751.48            | 225.05           | 320.02           |

# PROFIT AND LOSS ACCOUNT STATEMENTS

| Profit & Loss account              | ----- in Rs. Cr. ----- |                  |                   |                  |                     |
|------------------------------------|------------------------|------------------|-------------------|------------------|---------------------|
|                                    | SAIL                   | JSW Steel        | Tata Steel        | Hindalco         | Jindal Steel        |
|                                    | Mar '21                | Mar '21          | Mar '21           | Mar '21          | Mar '21             |
| <b>Income</b>                      |                        |                  |                   |                  |                     |
| Sales Turnover                     | 69,110.02              | 70,727.00        | 64,869.00         | 42,701.00        | 33,307.83           |
| Excise Duty                        | 0.00                   | 0.00             | 0.00              | 0.00             | 0.00                |
| Net Sales                          | 69,110.02              | 70,727.00        | 64,869.00         | 42,701.00        | 33,307.83           |
| Other Income                       | 1,337.77               | 300.00           | 3,472.28          | 680.00           | 494.30              |
| Stock Adjustments                  | -4,268.58              | 872.00           | -1,464.12         | 1,821.00         | -183.04             |
| <b>Total Income</b>                | <b>66,179.21</b>       | <b>71,899.00</b> | <b>66,877.16</b>  | <b>45,202.00</b> | <b>33,619.09</b>    |
| <b>Expenditure</b>                 |                        |                  |                   |                  |                     |
| Raw Materials                      | 26,362.32              | 31,548.00        | 19,126.56         | 29,292.00        | 12,183.39           |
| Power & Fuel Cost                  | 5,709.46               | 5,210.00         | 2,759.02          | 5,668.00         | 3,935.63            |
| Employee Cost                      | 10,445.94              | 1,501.00         | 5,198.82          | 1,844.00         | 675.86              |
| Other Manufacturing Expenses       | 0.00                   | 0.00             | 0.00              | 0.00             | 821.27              |
| Selling and Admin Expenses         | 0.00                   | 0.00             | 0.00              | 0.00             | 0.00                |
| Miscellaneous Expenses             | 9,595.67               | 14,081.00        | 14,555.13         | 3,625.00         | 2,453.73            |
| Preoperative Exp Capitalised       | 0.00                   | 0.00             | 0.00              | 0.00             | 0.00                |
| Total Expenses                     | 52,113.39              | 52,340.00        | 41,639.53         | 40,429.00        | 20,069.88           |
|                                    | <b>SAIL</b>            | <b>JSW Steel</b> | <b>Tata Steel</b> | <b>Hindalco</b>  | <b>Jindal Steel</b> |
|                                    | Mar '21                | Mar '21          | Mar '21           | Mar '21          | Mar '21             |
| <b>Operating Profit</b>            | <b>12,728.05</b>       | <b>19,259.00</b> | <b>21,765.35</b>  | <b>4,093.00</b>  | <b>13,054.91</b>    |
| PBDIT                              | 14,065.82              | 19,559.00        | 25,237.63         | 4,773.00         | 13,549.21           |
| Interest                           | 2,817.14               | 3,565.00         | 3,393.84          | 1,469.00         | 2,186.54            |
| PBDT                               | 11,248.68              | 15,994.00        | 21,843.79         | 3,304.00         | 11,362.67           |
| Depreciation                       | 4,102.00               | 3,781.00         | 3,987.32          | 1,708.00         | 2,243.45            |
| Other Written Off                  | 0.00                   | 0.00             | 0.00              | 0.00             | 0.00                |
| Profit Before Tax                  | 7,146.68               | 12,213.00        | 17,856.47         | 1,596.00         | 9,119.22            |
| Extra-ordinary items               | 0.00                   | 0.00             | 0.00              | 0.00             | 0.00                |
| PBT (Post Extra-ord Items)         | 7,146.68               | 12,213.00        | 17,856.47         | 1,596.00         | 9,119.22            |
| Tax                                | 3,029.01               | 3,803.00         | 4,188.51          | 566.00           | 1,964.91            |
| <b>Reported Net Profit</b>         | <b>3,850.02</b>        | <b>8,393.00</b>  | <b>13,606.62</b>  | <b>993.00</b>    | <b>7,154.31</b>     |
| Total Value Addition               | 25,751.07              | 20,792.00        | 22,512.97         | 11,137.00        | 7,886.49            |
| Preference Dividend                | 0.00                   | 0.00             | 0.00              | 0.00             | 0.00                |
| Equity Dividend                    | 0.00                   | 483.00           | 1,145.93          | 222.00           | 0.00                |
| Corporate Dividend Tax             | 0.00                   | 0.00             | 242.34            | 0.00             | 0.00                |
| <b>Per share data (annualised)</b> |                        |                  |                   |                  |                     |
| Shares in issue (lakhs)            | 41,305.25              | 24,172.20        | 12,041.27         | 22,245.67        | 10,200.16           |
| <b>Earning Per Share (Rs)</b>      | <b>9.32</b>            | <b>34.72</b>     | <b>113.00</b>     | <b>4.46</b>      | <b>70.14</b>        |
| Equity Dividend (%)                | 0.00                   | 650.00           | 250.00            | 300.00           | 0.00                |
| Book Value (Rs)                    | 105.30                 | 194.34           | 751.48            | 225.05           | 320.02              |

# Cash Flows

|   | ----- in Rs. Cr. ----- |                 |                 |                 |                |
|---|------------------------|-----------------|-----------------|-----------------|----------------|
|   | Jindal Steel           | Hindalco        | JSW Steel       | Tata Steel      | SAIL           |
|   | Mar '21                | Mar '21         | Mar '21         | Mar '21         | Mar '21        |
|   | 12 mths                | 12 mths         | 12 mths         | 12 mths         | 12 mths        |
| <b>Net Profit Before Tax</b>                                | <b>9119.22</b>         | <b>1574.00</b>  | <b>12196.00</b> | <b>17795.13</b> | <b>6879.03</b> |
| Net Cash From Operating Activities                          | 9760.12                | 5564.00         | 17733.00        | 29368.56        | 23395.88       |
| Net Cash (used in)/from Investing Activities                | -3508.73               | -3486.00        | -2609.00        | -13008.46       | -3390.79       |
| Net Cash (used in)/from Financing Activities                | -1080.01               | -4306.00        | -7441.00        | -15852.03       | -19690.12      |
| <b>Net (decrease)/increase In Cash and Cash Equivalents</b> | <b>5171.38</b>         | <b>-2228.00</b> | <b>7683.00</b>  | <b>508.07</b>   | <b>314.97</b>  |
| Opening Cash & Cash Equivalents                             | 380.99                 | 3231.00         | 3438.00         | 993.64          | 153.43         |
| Closing Cash & Cash Equivalents                             | 5552.37                | 1003.00         | 11121.00        | 1501.71         | 468.40         |



# Comparison of Market share

## Yearly

|   |                  |                  |                  |                  |                  |
|---|------------------|------------------|------------------|------------------|------------------|
| Dividend Tax  | --               | --               | --               | --               | --               |
| <b>Dividend (%)</b>                                       | --               | --               | --               | --               | --               |
| <b>Earnings Per Share</b>                                 | <b>113.50</b>    | <b>4.47</b>      | <b>9.32</b>      | <b>70.14</b>     | <b>34.83</b>     |
| Book Value  | --               | --               | --               | --               | --               |
| Equity  | 1,198.78         | 222.00           | 4,130.53         | 102.00           | 241.00           |
| Reserves  | 89,289.55        | 49,842.00        | 39,364.35        | 32,540.11        | 46,675.00        |
| Face Value  | 10.00            | 1.00             | 10.00            | 1.00             | 1.00             |
| -----   | -----            | -----            | -----            | -----            | -----            |
| <b>Total Expenses</b>                                     | <b>43,103.65</b> | <b>38,607.00</b> | <b>56,381.97</b> | <b>20,252.92</b> | <b>51,468.00</b> |
| <b>Operating Profit</b>                                   | <b>21,765.35</b> | <b>4,094.00</b>  | <b>12,728.05</b> | <b>13,054.91</b> | <b>19,259.00</b> |
| Profit On Sale Of Assets                                  | --               | --               | --               | --               | --               |
| Profit On Sale Of Investments                             | --               | --               | --               | --               | --               |
| Gain/Loss On Foreign Exchange                             | --               | --               | --               | --               | --               |
| VRS Adjustment  | --               | --               | --               | --               | --               |
| Other Extraordinary Income/Expenses                       | --               | --               | --               | --               | --               |
| Total Extraordinary Income/Expenses                       | 2,773.05         | 7.00             | 58.43            | -171.81          | -386.00          |
| Tax On Extraordinary Items                                | --               | --               | --               | --               | --               |
| Net Extra Ordinary Income/Expenses                        | --               | --               | --               | --               | --               |
| <b>Gross Profit</b>                                       | <b>22,403.24</b> | <b>4,744.00</b>  | <b>13,739.74</b> | <b>13,721.02</b> | <b>19,928.00</b> |
| Interest  | 3,393.84         | 1,469.00         | 2,817.14         | 2,186.54         | 3,565.00         |
| PBDT  | 21,782.45        | 3,282.00         | 10,981.03        | 11,362.67        | 15,977.00        |
| Depreciation  | 3,987.32         | 1,708.00         | 4,102.00         | 2,243.45         | 3,781.00         |
| Depreciation On Revaluation Of Assets                     | --               | --               | --               | --               | --               |
| PBT   | 17,795.13        | 1,574.00         | 6,879.03         | 9,119.22         | 12,196.00        |
| Tax   | 4,188.51         | 581.00           | 3,029.01         | 1,964.91         | 3,803.00         |
| <b>Net Profit</b>   | <b>13,606.62</b> | <b>993.00</b>    | <b>3,850.02</b>  | <b>7,154.31</b>  | <b>8,393.00</b>  |
| Prior Years Income/Expenses                               | --               | --               | --               | --               | --               |
| Depreciation for Previous Years Written Back/<br>Provided | --               | --               | --               | --               | --               |
| Dividend  | --               | --               | --               | --               | --               |

# Competition

| Name            | Last Price    | Market Cap.<br>(Rs. cr.) | Sales<br>Turnover | Net Profit      | Total Assets     |
|-----------------|---------------|--------------------------|-------------------|-----------------|------------------|
| JSW Steel       | 651.30        | 157,433.57               | 70,727.00         | 8,393.00        | 87,813.00        |
| Tata Steel      | 1,115.45      | 136,272.71               | 64,869.00         | 13,606.62       | 118,580.91       |
| Hindalco        | 458.90        | 103,122.62               | 42,701.00         | 993.00          | 69,528.00        |
| <b>SAIL</b>     | <b>108.80</b> | <b>44,940.12</b>         | <b>69,110.02</b>  | <b>3,850.02</b> | <b>79,071.08</b> |
| Jindal Steel    | 384.30        | 39,201.99                | 33,307.83         | 7,154.31        | 49,352.43        |
| NMDC            | 132.60        | 38,859.83                | 15,370.06         | 6,253.05        | 31,750.61        |
| APL Apollo      | 1,008.50      | 25,223.14                | 6,007.96          | 153.78          | 1,881.69         |
| KIOCL           | 265.40        | 16,129.71                | 2,383.61          | 301.17          | 1,985.99         |
| Tata Steel BSL  | 85.35         | 9,332.51                 | 21,418.63         | 2,445.98        | 31,578.01        |
| Jindal Stainles | 183.30        | 9,243.32                 | 11,679.14         | 427.92          | 6,017.70         |

# Chapter - 5



# Research Methodology

## RESEARCH DESIGN

The study has been carried out by selecting a company namely Steel Authority of India Limited”, which is one of the top public sector enterprises in the iron & steel sector. www.ijcrt.org © 2021 IJCRT | Volume 9, Issue 3 March 2021 | ISSN: 2320-2882 IJCRT2103362 International Journal of Creative Research Thoughts (IJCRT) www.ijcrt.org 2957

## PERIOD OF THE STUDY

The present study covers a period of 10 (TEN) years spanning from the year 2008-09 to 2017-18. The period of ten years is sufficient to infer the results. This period has been selected for the study as the needy complete data are available for the present study and through the data true insight into the financial health can be obtained.

## SOURCES OF DATA

The present study is based on the secondary data only. The sources include: a. Annual Reports of Steel Authority of India Limited; b. Reports Published by the Ministry of Steel; c.

Published and unpublished reports of Steel Authority of India Limited; d. Website of Steel Authority of India Limited; e. Journals, magazines and periodicals

## **TOOLS AND TECHNIQUES OF ANALYSIS OF DATA**

The following tools and techniques have been used for the present research work:

### **(i) Accounting Techniques:**

These techniques are used for deriving inferences. a. Ratio Analysis b. Trend Analysis

**(ii) Statistical Techniques:** These techniques are applied for interpreting the data.

a. Arithmetic Mean

b. Standard Deviation (S.D)

c. Co-efficient of Variation (C.V.)

d. Compound Growth Rate (C.G.R)

e. Linear Growth Rate (L.G.R)

f.. 't'- test

**(iii) Diagrammatical and Graphic Presentation of Data:** Wherever necessary diagrams, graphs and charts are prepared to give bird's eye view of the situation and also to facilitate easy interpretation of the collected data.

## Structure of Inventory

The structure of inventory is generally affected by the nature of the business of a firm. A trading firm will have small investments in raw-materials, work-in process, finished goods and stores & spares. A significant portion of its total inventory would consist of finished inventory only.

However, a manufacturing firm, on the other hand, has to invest in each component of inventory. The share of each component in the total inventory varies from industry to industry **2**. The structure of inventory in Steel Authority of India Limited is shown in table 1

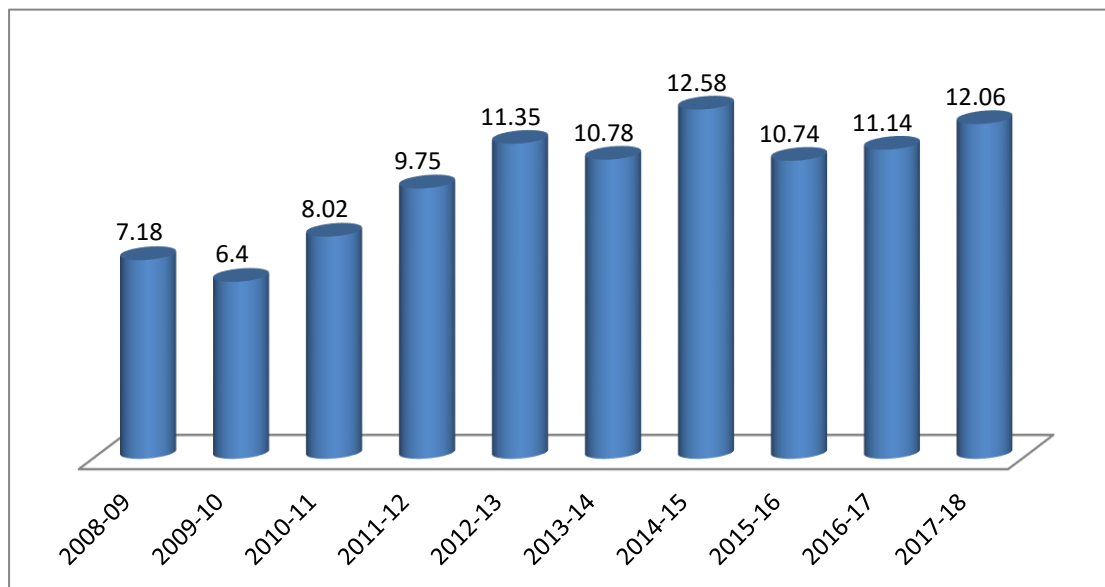
**Table 1**  
**Structure of Inventory in Steel Authority of India Limited during 2008-09 to 2017-18**

(Rupees in Crores)

| Year    | Inventory | Percentage |
|---------|-----------|------------|
| 2008-09 | 10121.45  | 7.18       |
| 2008-10 | 9027.46   | 6.4        |
| 2008-11 | 11302.79  | 8.02       |
| 2008-12 | 13742.37  | 9.75       |
| 2008-13 | 16008.21  | 11.35      |
| 2008-14 | 15200.82  | 10.78      |
| 2008-15 | 17736.37  | 12.58      |
| 2008-16 | 15134.94  | 10.74      |
| 2008-17 | 15711.35  | 11.14      |

|              |                 |            |
|--------------|-----------------|------------|
| 2008-18      | 16996.67        | 12.06      |
| <b>Total</b> | <b>140982.4</b> | <b>100</b> |

**Figure 1**  
**Structure of Inventory in Steel Authority of India Limited during 2008-09 to 2017-18**



### **Inventory Turnover Ratio**

This ratio is calculated to indicate whether the inventories have been used efficiently or not.

The purpose is to ensure the blocking of only required minimum funds in inventory. This ratio is also known as Stock velocity.

The particulars of the inventory turnover ratio in Steel Authority of India Limited during 2008-09 to 2017-18 are furnished in table 2

**Table 2****Inventory Turnover Ratio in Steel Authority of India Limited during 2008-09 to 2017-18****(Rupees in Crores)**

| <b>Year</b>      | <b>Cost of Goods sold</b> | <b>Average Inventory</b> | <b>Ratio</b>  |
|------------------|---------------------------|--------------------------|---------------|
| 2008-09          | 34689.54                  | 5060.72                  | 6.85          |
| 2008-10          | 31921.11                  | 4513.73                  | 7.07          |
| 2008-11          | 36985.6                   | 5651.39                  | 6.58          |
| 2008-12          | 38370.67                  | 6871.19                  | 5.58          |
| 2008-13          | 37789.53                  | 8004.11                  | 4.72          |
| 2008-14          | 39423.45                  | 7600.41                  | 4.44          |
| 2008-15          | 37455.55                  | 8868.19                  | 4.22          |
| 2008-16          | 38555.89                  | 7567.47                  | 5.09          |
| 2008-17          | 40551.24                  | 7855.68                  | 5.16          |
| 2008-18          | 48379.51                  | 8498.34                  | 5.69          |
| <b>Average</b>   | <b>38412.21</b>           | <b>7049.12</b>           | <b>5.54</b>   |
| <b>SD</b>        | <b>4053.37</b>            | <b>1411.09</b>           | <b>0.96</b>   |
| <b>C V ( % )</b> | <b>10.55</b>              | <b>20.02</b>             | <b>17.25</b>  |
| <b>LGR</b>       | <b>3</b>                  | <b>5.98</b>              | <b>-3.9</b>   |
| <b>CGR</b>       | <b>2.94</b>               | <b>6.5</b>               | <b>-3.7</b>   |
| <b>t value</b>   | <b>4.015</b>              | <b>4.712</b>             | <b>-2.411</b> |

**Source:** Compiled from the Annual Reports of Steel Authority of India Limited.

Note: \*significant at 5 per cent level;\*\*significant at 1 per cent level;

The details of inventory turnover ratio in the Steel Authority of India Limited for period 2008-09 to 2017-18 are exhibited in the table 2. The table shows that the cost of goods sold on an average per year stood at Rs. 38412.21 crores. The standard deviation was 4053.37 and CV was 10.55 per cent. The LGR was 3.00 per cent and

CGR was 2.94 per cent. The cost of goods sold was worth Rs.34689.54 crores in 2008-09 whereas rs. 48379.51 crores in 2017-18. The average inventory on an average per year was constituted at Rs. 7049.12 crores. The standard deviation was 1411.09 and CV was 20.02 per cent. The LGR was 5.98 per cent and CGR was 6.50 per cent.

The average inventory was worth Rs.5060.72 crores in 2008-09 whereas Rs. 8498.34 crores in 2017-18. The inventory turnover ratio was 6.85 times in 2008-09 which declined to 5.69 in 2017-18 with slight fluctuations during the study period. It registered the lowest 4.22 times in 2014-15 as against the highest of 7.07 times in 2009-10 and on an average per year it worked out to 5.54 times.

The standard deviation was 0.96 and CV was 17.25 per cent. The LGR was - 3.90 per cent and CGR was -3.70 per cent. It may be concluded that the inventory turnover ratio was in a satisfactory position in Steel Authority of India Limited during the study period. The 't' test was used whether Inventory Turnover Ratio of Steel Authority of India Limited is sign or not.

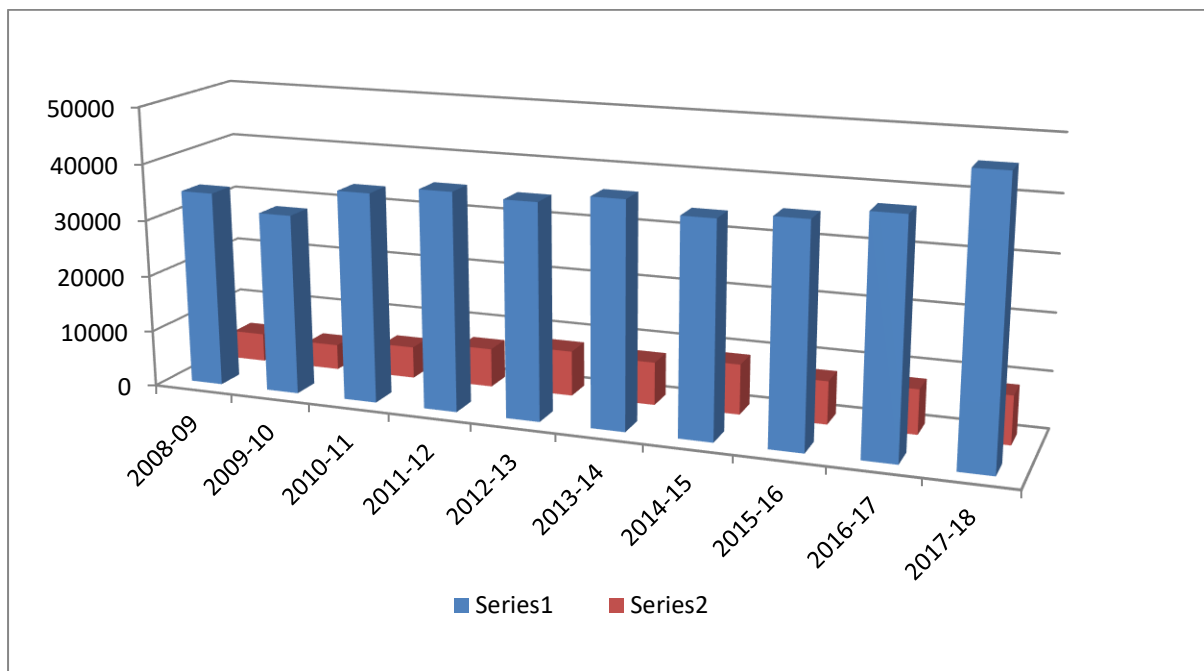
The calculated value of t is , which is greater than the table value of 2.262 @ 5 per cent level of significance. Hence the null hypothesis (H0) is rejected and it

is concluded that there was significant difference in inventory turnover ratio of Steel Authority of India Limited during study period. 2.411

The particulars of the inventory turnover ratio of Steel Authority of India Limited during 2008-09 to 2017-18 are shown in figure 2.

**Figure 2**

**Cost of Goods Sold and Average Inventory in Steel Authority of India Limited during 2008-09 to 2017-18**



### **Inventory Holding Period Ratio**

It may also be of interest to notice the average time taken for clearing the stocks. This can be done by calculating inventory conversion period. This period is calculated by dividing the number of days by inventory turnover ratio. The Inventory Holding Period ratio of Steel Authority of India Limited during 2008-09 to 2017- 18 is furnished in table 3.

**Table 3**

**Inventory Holding Period Ratio in Steel Authority of India Limited during 2008-09 to 2017-18**

| <b>Year</b>    | <b>No of Days in Year</b> | <b>Inventory turnover Ratio</b> | <b>Ratio</b> |
|----------------|---------------------------|---------------------------------|--------------|
| 2008-09        | 365                       | 6.85                            | 53.28        |
| 2008-10        | 365                       | 7.07                            | 51.62        |
| 2008-11        | 365                       | 6.58                            | 55.47        |
| 2008-12        | 365                       | 5.58                            | 65.41        |
| 2008-13        | 365                       | 4.72                            | 77.33        |
| 2008-14        | 365                       | 4.44                            | 82.2         |
| 2008-15        | 365                       | 4.22                            | 86.49        |
| 2008-16        | 365                       | 5.09                            | 71.71        |
| 2008-17        | 365                       | 5.16                            | 70.74        |
| 2008-18        | 365                       | 5.69                            | 64.14        |
| <b>Average</b> | <b>365</b>                | <b>5.54</b>                     | <b>67.84</b> |

**Source:** Compiled from the Annual Reports of Steel Authority of India Limited.



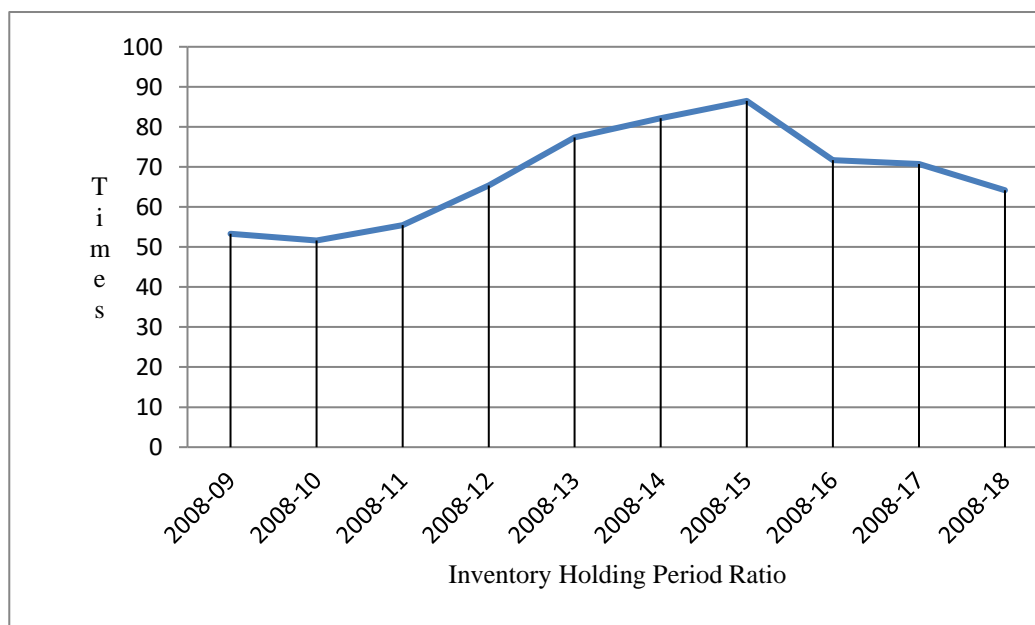
The details of inventory holding period ratio in the Steel Authority of India Limited for period 2008-09 to 2017-18 are exhibited in the table 3. The table shows that the Inventory holding period on an average per year stood at 67.84 or 68 Days.

The inventory holding period had the lowest of 51.62 or 52 days in the year 2009-10 and the highest of 86.49 or 86 days in 2014-15. Steel Authority of India Limited held its inventory for more than the yearly industry average holding period.

The details of the inventory holding ratio of Steel Authority of India Limited during 2008-09 to 2017-18 are shown in figure 3

**Figure 3**

**Inventory Holding Period Ratio in Steel Authority of India Limited during 2008-09 to 2017-18**



# CHAPTER - 6

## **FINDINGS**

The major findings are summarized below.

- It can be understood from the table 1 that the structural analysis of the inventory was increasing continuously during the study period from Rs. 34,689.54 in 2008-09 to Rs. 48,379.51 in 2017-18 and it also shows that the investment of more money in current assets through inventory.
- It has been observed through table 2, that during the study period, the inventory turnover ratio was 6.85 times in 2008-09 which declined to 5.69 in 2017-18 with slight fluctuations. It registered the lowest 4.22 times in 2014-15 as against the highest of 7.07 times in 2009-10 and on an average per year it worked out to 5.54 times. It is also found that the highest inventory turnover ratio indicates that the production efficiency of the organization and also shows that over investment in inventories or more inventories were held by the company. It means more money is required to maintain it.
- It can be found from the table 3 that the inventory holding period had the lowest of 51.62 or 52 days in the year 2009-10 and the highest of 86.49 or 86 days in 2014-15.

## **SUGGESTIONS**

- For better Inventory Management practices, the Steel Authority of India Limited needs to focus on purchase committees for making effective purchase decisions and adopt an appropriate inventory control system.

- The system should aim at keeping the local cost of maintaining inventories at a minimum level, through effective cost control methods.
- For effective utilization of inventory purpose, the company should adopt the efficient inventory management through the material planning and programming, inventory control, warehousing and store keeping and disposal of scrap.
- A purchase committee shall be constituted by involving the production and finance managers so as to properly estimate the raw material requirements to avoid piling up of funds unnecessarily.
- To manage the inventory efficiently, the company can follow economic order quantity to avoid unnecessary blocking of funds in inventory.
- Administrative and procurement lead times have to be minimized to avoid overstocking of inventory.

# CHAPTER - 7

## **CONCLUSION**

Thus, it is very necessary to a trade-off between the liquidity and profitability so as to avoid the excess and inadequate working capital and to maintain sufficient amount of working capital. Inventory includes raw materials, work-in-progress and finished goods. Inventory management is a very important concept in working capital management. Inventory management is accountable to some minor defects in purchasing policy and investment. Effective management of inventory is essential to avoid unnecessary securing up of investment in inventories and minor deficiencies in purchasing policy.

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