CHAPTER – II

PROFILE OF CENTRAL PUBLIC ENTERPRISES IN SALEM

“Steel was the symbol of the strength of the economy and a portent of the glory of India to the future”.

- Jawaharlal Nehru

Steel plays a vital role in accelerating growth and development of a nation. It is used as a basic material in the manufacture of metal products, electrical machinery, transport equipment etc. Thus steel is considered to be the backbone of human civilization. Since the development of industries depends on the growth of the steel industry, various efforts have been made by the government for starting up of the production of steel after independence. The production and per capita consumption of steel is a major contributor to a country’s GDP and an indicator of its industrial and economic strength. With the public sector Iron & Steel Company Restructuring and Miscellaneous Provision Act 1978, SAIL has become an integrated company owning the steel plants at – Rourkela, Bhilai, Durgapur, Bokaro Alloy Steel Plants and Salem Steel Plant under its management.

SALEM STEEL PLANT - ORIGIN

Salem Steel Plant is a unit of Steel Authority of India Limited, [SAIL] a Government of India undertaking with its headquarters at New Delhi. A steel plant in Salem was a long cherished dream. Government of India decided in May 15, 1972, to setup an integrated special steel plant at Salem for the production of sheets and strips of electrical stainless and other special mild steels on the basis of sound techno economic considerations. The construction of the plant was inaugurated in June 13, 1972, by the Late Shri Mohan Kumaramangalam, the then minister for Steel and Mines. Salem Steel Plant was registered on October 25, 1972. Thus a dream of having steel plant in Salem had started taking a shape in the foot hills of Kanjamalai, 13 kms from Salem City. Salem Steel Plant is a world class producer of Stainless Steel in India. “Steel in need SAIL indeed” SalemSteel’s customer base spans over thirty seven countries worldwide.
FUNCTIONAL ASPECTS OF PLANT

The plant was originally envisaged as an integrated steel plant to produce 2,20,000 tonnes p.a. of hot rolled stainless steel, carbon steel and special steels. The Government of India, while approving the Detailed Project Report (DPR) for Salem Steel Plant in 1977, decided that the plant would be setup in phases by following backward integration and sanctioned installation of Cold Rolling Mill (CRM) complex as phase I. The plant was designed to roll out 32000 tonnes of Cold Rolled Stainless Steel (CRSS) strips and wide sheets per annum in the phase I. Situated in Tamilnadu, the plant brings to India the latest sophistication in cold rolling technology.

To meet the growing demand of stainless steel, the phase II expansion of the plant was taken up in March 1988 for doubling the Cold Rolling Capacity to 70,000 tonnes p.a. with the addition of a second sendzimir Mill and associated facilities. The Phase II was commissioned in March 1991.

In addition to CRM, Blankingline was commissioned during the year 1993 for manufacture of stainless steel coin blanks for supply to India Government Mint (IGM) for minting of stainless steel coins.

The CRM complex was based on the input materials ie Hot Rolls Stainless Steel [HRSS] received from imports as well as from Alloy Steel Plant [ASP] route. To indigenize the production of HRSS Coils the Government of India approved installation of a double stand steckel mill associated facilities at Salem. As one step ahead in reaching the goal of backward integration, Hot Rolling Steckel Mill was commissioned during November 1995 with an installed capacity of around 2 lakh tonnes with an approximate investment of ` 839 Crores. This mill is capable of rolling both stainless and non-stainless steels.

In view of the non-availability of stainless steel raw materials at competitive rates and in desired qualities, a proposal was made for setting up a steel melting facility at Salem for production of 1,80,000 tonnes p.a. of stainless steel slabs and to increase the production capacity of existing CRM to 1,46,000 tonnes p.a. of Cold Rolled Stainless Steel [CRSS] materials by setting up an additional CRM complex. The project was
commissioned in March 2010. The project also includes additional Roll Grinding Machines for existing HRM to roll 3,70,000 tonnes per annum of slabs. The entire plant is certified to ISO 2004 Quality Assurance system and ISO 14001 Environment Management System.

The Plant layout is a process layout consisting of the following lines.

1. Annealing and pickling Lines.
3. Coil Preparation Line
4. 20 – Hi Sendzimir Mill
5. Skin Pass Mill
6. Tension Levelling Line
7. Slitting Line
8. Rotary polisher
9. Roll Grinder for existing sendzimir Mill.
10. Associated facilities.

EQUIPMENT SUPPLIERS

The Salem Steel Plant bears contribution by way of equipment supplies from 13 major foreign suppliers in eight countries, twelve public sector undertaking and several private sector industries in India. The Hindustan Steel Works Construction Limited is providing civil and structural requirement and Tamilnadu Water Supply and Drainage (TWAD) Board is providing water supply and sewage facilities. One of the biggest Liquefied Petroleum Gas [LPG] storage facilities in the country is at Salem Steel Plant, put up by Indian agencies.

The production know – how of CRSS and finishing was obtained from M/s Ugine of France.

The blanking line supplied by M/s Schuler Germany uses the state of the art technology to produce high quality stainless steel blanks for coins and utility purposes. The line has facility for deburring, degreasing, rimming, annealing and pickling, counting and packing facility. The press supplies 25P, 50P and Re.1 coin blanks to the Government of India Mint.
PROCESS OF HRM AND CRM

HOT ROLLING MILL (HRM)

EQUIPMENTS

HRM complex consists of a slab yard, a walking beam reheating furnace, a roughing mill, a single stand four high reversible steckel mill, a down coiler and a coil yard for marking, cooling and dispatch.

RAW MATERIAL

Slabs of carbon steel or stainless steel are received through wagons from Alloy Steel Plants-Durgapur or Bhilai Steel Plant or from abroad and stored in slab storage yard.

PROCESS

1. The slabs are charged into the walking beam reheating furnace and annealed to a suitable temperature.
2. These slabs are discharged from furnace and sent to roughing mill.
3. The slabs are rolled to a thickness of 25mm transfer bar and sent to steckel mill for further reduction.
4. Now the material is cooled with the system of Laminar cooling in case of carbon steel and coiled in down coiler. Incase of stainless steel the material is directly coiled in down coiler.
5. After natural cooling, HR coils are taken to Cold Rolling Mill (CRM) through trucks.

COLD ROLLING MILL [CRM]

EQUIPMENTS

SSP employs the latest technology in cold rolling and incorporates the most modern equipment supplied by the leading machinery manufactures all over the world.

RAW MATERIALS

Hot rolled stainless steel coils are imported to produce cold rolled stainless steel coils and sheets. As part of reverse integration the hot rolling steckel mill supplies the required Hot Rolled Coils (HRC) input to CRM.
PROCESS
1. The Hot rolled stainless steel coils called hot band are processed in Coil Build up Line (CBL)
2. Coils are softened and descaled in Annealing and Pickling Lines (APL)
3. They are sent for cold rolling in the sendzimir mill to the desired final thickness.
4. These are passed through Skin Pass Mill (SPM) to give a bright finish and necessary flatness.
5. These coils are either slit or sheared into finished products in the form of slit / divided coils or cut lengths.

PRODUCT MIX
1. SSP specialises in the production of wide cold rolled stainless steel sheets and coils.
2. HRM is capable of producing both stainless steel as well as non-stainless steel (carbon steel)
3. In addition a wide range of surface finishes mirror and hair line finishes are produced in a wide variety of grades.
4. It also supplies 25p, 50p and red coin blanks to the government of India mint.

ORGANISATION STRUCTURE
The organization structure of SSP is divisional in nature. The divisional concept means the setting up of functions to be performed by individuals or groups for the attainment of defined objectives, given the necessary authority and responsibility.

The Managing Director, also named as Chief Executive is the head of the organisation. He is assisted by several departmental heads who are in charge of various departments.

Functional departments in SSP are
1. Project department
2. Works department
3. Personnel and administration
4. Finance
5. Marketing
6. Purchase and material management
7. Vigilance
8. Law
9. Public relations.

**EXHIBIT 2.1**

**ORGANISATION STRUCTURE OF SSP**

GM – General Manager
DGM – Deputy General Manager
AGM – Assistant General Manger

Generally every department is headed by GM or DGM or AGM. Below them there are Senior Manager, Manager, Deputy Manager, Assistant Manager and Junior Manager for every department. Below them there are staff members to carryout the routine activities.
1. PROJECT DEPARTMENT

At the plant level General Manager of project is responsible for efficient performance of projects in accordance with the policies and plans approved by the Board. The functions are:

1) Selection of New project
2) Identification of Addition, Modification and Replacement Project (AMRP)
3) Determination of the financial viability of the project.
4) Decision making about the human and monetary resources required for the project
5) Finally drawing a programme comprising number of persons required, time duration, cost involved etc.
6) Send the proposal to the Board for approval.
2. WORKS DEPARTMENT

HRM – Hot Rolling Mill
CRM – Cold Rolling Mill
M & S – Maintenance and Services
CMM – Central Mechanical Maintenance
TQM – Total Quality Management

This department is concerned with operation and production activities. It is actually the engineering department where the technical staff are engaged in repairs and maintenance of machines in good condition and do other production activities regarding the upkeep of machines. This department is headed by GM. Deputy General Managers of HRM, CRM, TQM, Maintenance and Supplies, and Central Mechanical Maintenance have to report to GM (Works) regarding their activities. The main functions are:

1) Production planning
2) Maintenance of furnaces, CRM, HRM
3) Water supply, Civil Monitoring, Environmental cleanliness, Safety engineering and fire services.
4) Electrical and mechanical maintenance.
5) Checking and maintenance of the quality of materials and finished products.

3. PERSONNEL AND ADMINISTRATION DEPARTMENT

The Administration Department is headed by General Manager who performs all of his duties under the supervision of Chief Executive of the organisation. General Manager (P & A) is assisted by personnel Manager, Human Resource Development (Training) Manager, General Administration Manager. The main functions of the administration department are as follows:

1) To deal with selection, recruitment, training and promotion of employees
2) To maintain service records of employees
3) To maintain discipline in the working of the organization
4) To ensure the welfare of employees of the organisation

4. FINANCE DEPARTMENT

The Finance Department is headed by General Manager who performs all of his duties under the supervision of Chief Executive of the organisation. GM (Finance) is assisted by AGM (F) (Pricing of products), SM (F) (Projects), and AGM (F) (Raw material, Pay, PF etc). The main functions of the Finance Department are as follows:

1) To prepare and maintain the financial records of the organisation
2) To ensure the financial stability of the organisation
3) To ensure the efficient use of financial resources
4) To manage the financial transactions of the organisation
This important department is headed by General Manager of Finance. Under him there are two Assistant General Managers and one Senior Manager. One Assistant General Manager looks after pricing of products and another Assistant General Manager is responsible for procurement of raw materials. Senior Finance Manager is responsible for disbursement of cash for projects. Some of the functions of finance department are:

1. To prepare annual budget and Management Information System (MIS) report
2. To look after both domestic and export sales, as well as disposal of scrap
3. To maintain accounts relating to excise duty, service tax, sales tax
4. Preparation of payroll and disbursement of pay
5. Maintain all purchase bills including raw materials, as well as miscellaneous bills i.e. job works
6. To keep accounts relating to provident fund
7. Procurement of raw materials and pricing of finished products

5. MARKETING DEPARTMENT

This department is a revenue department. It is responsible for increasing the volume of sales of stainless steel, non-stainless steel, scraps and converted articles. This department establishes a relationship between demand and supply. This department satisfies the needs and desires of the consumers. Its functions are:

1) To determine the needs and desires of consumers
2) To look after delivery schedule
3) To determine the time limit for urgent deliveries
4) To determine the minimum order size and stock levels
5) To find out the marketing strategy for promotion of sales
6. PURCHASING AND MATERIAL MANAGEMENT DEPARTMENT

GM (Purchases)

DGM (MM)

DGM (Projects)

AGM (MM-Purchase)

AGM (MM-Purchase)

AGM (MM-CC)

SM (Stores)

M (Stores)

M (Stores)

JM (Stores)

AM  —  Assistant Manager
SM  —  Senior Manager
JM  —  Junior Manager
M   —  Manager
CC  —  Contract Cell
This department plays a vital role, because of the potential contribution it makes to the total organisation. Material Management covers all aspects of cost, supply and utilisation. Material Management includes planning and programming for purchases, procurement, inspection, storage and handling of materials inside the works and effective control over the inventories. Material Manager looks after both purchase and storage activities. Since Materials Management objectives are interrelated, it is desirable to give one person the entire authority for all the activities concerned with Material Management. The integrated management of material facilitates a high degree of co-ordination among all material activities. It also permits close control over total material cost.

Materials Management views material flow as a system. It includes
1) Anticipating materials requirement
2) Sourcing, obtaining and inspecting materials
3) Introducing materials into organization
4) Storing, handling of materials and disposal of scrap and unserviceable items.

Stores Department is designed to do the following functions:
1) To receive and issue all materials including finished goods
2) To store and handle materials effectively
3) To carry out stocktaking
4) To accept and store scrap and other discarded materials as they arise

7. VIGILANCE DEPARTMENT

Vigilance is also a part of company’s activities. This department is headed by DGM (Vigilance). The main function of this department is to ensure safety of the property and assets of the organisation and exercise control over revenue loss.

8. LAW DEPARTMENT

This department is headed by AGM (Law). The main functions are:
1) To advise and deal with legal matters
2) To frame rules for implementation of polices
3) To ensure the implementation of different labour laws
4) To maintain discipline in the working of the organization
9. PUBLIC RELATIONS DEPARTMENT

AGM (PR) is in charge of Public Relations Department. The main function is to bring cordial relationship between the organization and the public by supplying the required information from the company to the public and vice versa.

GROWTH AND DEVELOPMENT

Growth and development of a business depends on earnings, control of cost, higher productivity of physical and human resources employed in the business and profitability. The progress of SSP is analysed in terms of
1) Investment
2) Productivity
3) Profitability

1. INVESTMENT
(i) Analysis of Capital Structure

SSP, the youngest of SAIL is the biggest public sector undertaking in Salem. The share capital as on 31st March 2009 was to the tune of `93 Crores. Besides this it has long term liabilities in respect of loans amount to `6 crores. The total capital employed on that date was `952 crores.

Table 2.1 gives a synoptic view of the capital structure of SSP as on 31st March of selected years.
TABLE 2.1
CAPITAL STRUCTURE OF SSP
(` in crores)

<table>
<thead>
<tr>
<th>Year</th>
<th>Share capital (`)</th>
<th>Loan Funds (`)</th>
<th>Current Liabilities and provision (`)</th>
<th>Total (`)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999-2000</td>
<td>93 (33.94)</td>
<td>45 (16.42)</td>
<td>136 (49.64)</td>
<td>274 (100)</td>
</tr>
<tr>
<td>2000-2001</td>
<td>93 (47.21)</td>
<td>45 (22.84)</td>
<td>59 (29.95)</td>
<td>197 (100)</td>
</tr>
<tr>
<td>2001-2002</td>
<td>93 (47.45)</td>
<td>46 (23.47)</td>
<td>57 (29.08)</td>
<td>196 (100)</td>
</tr>
<tr>
<td>2002-2003</td>
<td>93 (43.87)</td>
<td>44 (20.76)</td>
<td>75 (35.37)</td>
<td>177 (100)</td>
</tr>
<tr>
<td>2003-2004</td>
<td>93 (52.54)</td>
<td>40 (22.60)</td>
<td>44 (24.86)</td>
<td>177 (100)</td>
</tr>
<tr>
<td>2004-2005</td>
<td>93 (30.90)</td>
<td>39 (12.96)</td>
<td>169 (56.14)</td>
<td>301 (100)</td>
</tr>
<tr>
<td>2005-2006</td>
<td>93 (61.59)</td>
<td>4 (2.65)</td>
<td>54 (35.76)</td>
<td>151 (100)</td>
</tr>
<tr>
<td>2006-2007</td>
<td>93 (49.73)</td>
<td>6 (3.21)</td>
<td>88 (47.06)</td>
<td>187 (100)</td>
</tr>
<tr>
<td>2007-2008</td>
<td>93 (49.73)</td>
<td>6 (3.21)</td>
<td>88 (47.06)</td>
<td>187 (100)</td>
</tr>
<tr>
<td>2008-2009</td>
<td>93 (46.27)</td>
<td>6 (2.99)</td>
<td>102 (50.74)</td>
<td>201 (100)</td>
</tr>
</tbody>
</table>

Source: Annual Report of SSP. Figure in parentheses indicates percentages to total.

The capital structure of SSP is quite different. The share capital remains constant whereas loan funds constituted 16.42% in 1999 – 2000 and it was reduced to 2.99% in 2008 – 2009. The current liabilities were 49.64% in 1999 – 2000 and it was increased to 50.74% in 2008 – 2009.

(ii) Working Capital

The efficiency with which working capital as a whole as well as its various components are managed greatly influence the working results of an enterprise. The management should see that the circular flow of funds continues unimpeded and funds do not get blocked unnecessarily at any particular part.
TABLE 2.2
WORKING CAPITAL OF SSP
( ` in Crores)

<table>
<thead>
<tr>
<th>Year</th>
<th>Current Assets (')</th>
<th>Current Liabilities (')</th>
<th>Working Capital (')</th>
<th>Current Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999-2000</td>
<td>314.11</td>
<td>135.68</td>
<td>178.43</td>
<td>2.32</td>
</tr>
<tr>
<td>2000-2001</td>
<td>250.75</td>
<td>58.79</td>
<td>191.96</td>
<td>4.27</td>
</tr>
<tr>
<td>2001-2002</td>
<td>225.06</td>
<td>57.37</td>
<td>167.69</td>
<td>3.92</td>
</tr>
<tr>
<td>2002-2003</td>
<td>224.68</td>
<td>74.62</td>
<td>150.06</td>
<td>3.01</td>
</tr>
<tr>
<td>2003-2004</td>
<td>211.75</td>
<td>43.72</td>
<td>168.03</td>
<td>4.84</td>
</tr>
<tr>
<td>2004-2005</td>
<td>464.90</td>
<td>168.85</td>
<td>296.05</td>
<td>2.75</td>
</tr>
<tr>
<td>2005-2006</td>
<td>408.24</td>
<td>53.66</td>
<td>354.58</td>
<td>7.61</td>
</tr>
<tr>
<td>2006-2007</td>
<td>340.03</td>
<td>88.04</td>
<td>251.99</td>
<td>3.80</td>
</tr>
<tr>
<td>2007-2008</td>
<td>429.55</td>
<td>87.80</td>
<td>341.75</td>
<td>4.89</td>
</tr>
<tr>
<td>2008-2009</td>
<td>739.00</td>
<td>102.00</td>
<td>637.00</td>
<td>7.25</td>
</tr>
</tbody>
</table>

Source: Annual Report of SSP

There is a clear upward trend in current assets from 2004-05 but current liabilities shows a fluctuating trend during the whole study period but it was the highest in 2004-2005. Working capital had increased from ` 178.43 crores to ` 637 crores in 2008-2009. Current ratio indicates the strong liquidity position of SSP.

(iii) Fixed Assets – Working Capital Relationship

It is working capital which puts to effective use the earning capacity of a business as represented by its fixed assets.
### TABLE 2.3
FIXED AND WORKING CAPITAL OF SSP

(‘ in Crores)

<table>
<thead>
<tr>
<th>Year</th>
<th>Fixed Capital (‘)</th>
<th>Working Capital (‘)</th>
<th>Working Capital as % of Fixed Capital</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999-2000</td>
<td>1008.15</td>
<td>178.43</td>
<td>17.70</td>
</tr>
<tr>
<td>2000-2001</td>
<td>1015.66</td>
<td>191.96</td>
<td>18.90</td>
</tr>
<tr>
<td>2001-2002</td>
<td>1025.10</td>
<td>167.69</td>
<td>16.36</td>
</tr>
<tr>
<td>2002-2003</td>
<td>1030.01</td>
<td>150.06</td>
<td>14.57</td>
</tr>
<tr>
<td>2003-2004</td>
<td>1023.00</td>
<td>168.03</td>
<td>16.42</td>
</tr>
<tr>
<td>2004-2005</td>
<td>1024.00</td>
<td>296.05</td>
<td>28.91</td>
</tr>
<tr>
<td>2005-2006</td>
<td>1029.00</td>
<td>354.58</td>
<td>34.46</td>
</tr>
<tr>
<td>2006-2007</td>
<td>1033.00</td>
<td>251.99</td>
<td>24.39</td>
</tr>
<tr>
<td>2007-2008</td>
<td>1036.00</td>
<td>341.75</td>
<td>32.99</td>
</tr>
<tr>
<td>2008-2009</td>
<td>1042.00</td>
<td>637.00</td>
<td>61.13</td>
</tr>
</tbody>
</table>

Source: Annual Report of SSP. Fixed capital has been represented by gross fixed assets.

Fixed capital as represented by gross fixed assets has an upward trend. Though the working capital is increasing in tune with rising volume of fixed assets investment, it is fluctuating from year to year. The percentage of working capital to fixed capital increased from 17.70% in 1999–2000 to 61.13% in 2008–2009.

### 2. PRODUCTIVITY

Productivity rests on the concept of producing goods and services in ever increasing quantities through more efficient use of resources like labour, material, machinery and capital.
(i) Production and Installed Capacity

Capacity utilization is one of the most important measures of productivity and efficiency. A blast furnace is considered to run efficiently when potential output of a plant is realized with the least possible consumption of power.

### TABLE 2.4
PRODUCTION AND INSTALLED CAPACITY OF SSP

<table>
<thead>
<tr>
<th>Year</th>
<th>Installed Capacity (in tonnes)</th>
<th>Actual Production (in tonnes)</th>
<th>Utilisation (in %)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999-2000</td>
<td>1,75,000</td>
<td>1,48,435</td>
<td>84.82</td>
</tr>
<tr>
<td>2000-2001</td>
<td>1,75,000</td>
<td>1,29,264</td>
<td>73.87</td>
</tr>
<tr>
<td>2001-2002</td>
<td>1,75,000</td>
<td>62,756</td>
<td>35.86</td>
</tr>
<tr>
<td>2002-2003</td>
<td>1,75,000</td>
<td>82,882</td>
<td>47.36</td>
</tr>
<tr>
<td>2003-2004</td>
<td>1,75,000</td>
<td>84,673</td>
<td>48.38</td>
</tr>
<tr>
<td>2004-2005</td>
<td>1,75,000</td>
<td>1,49,105</td>
<td>85.20</td>
</tr>
<tr>
<td>2005-2006</td>
<td>1,75,000</td>
<td>1,80,204</td>
<td>102.97</td>
</tr>
<tr>
<td>2006-2007</td>
<td>1,75,000</td>
<td>1,83,391</td>
<td>104.79</td>
</tr>
<tr>
<td>2007-2008</td>
<td>1,75,000</td>
<td>2,30,732</td>
<td>131.85</td>
</tr>
<tr>
<td>2008-2009</td>
<td>1,75,000</td>
<td>1,80,204</td>
<td>102.97</td>
</tr>
</tbody>
</table>

**Source:** Annual Report of SSP

(ii) **Material Productivity**

It is measured in terms of the following formula

\[
\text{Material productivity} = \frac{\text{Material Cost}}{\text{No. of Units Produced}}
\]

## TABLE 2.5

**MATERIAL PRODUCTIVITY OF SSP** (\` in Crores)

<table>
<thead>
<tr>
<th>Year</th>
<th>Material cost (`)</th>
<th>No.of Units Produced (tonnes)</th>
<th>Material Productivity (`)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999-2000</td>
<td>346.09</td>
<td>1,48,435</td>
<td>0.002</td>
</tr>
<tr>
<td>2000-2001</td>
<td>353.67</td>
<td>1,29,264</td>
<td>0.0030</td>
</tr>
<tr>
<td>2001-2002</td>
<td>209.57</td>
<td>62,756</td>
<td>0.0033</td>
</tr>
<tr>
<td>2002-2003</td>
<td>266.58</td>
<td>82,882</td>
<td>0.0032</td>
</tr>
<tr>
<td>2003-2004</td>
<td>329.95</td>
<td>84,673</td>
<td>0.0038</td>
</tr>
<tr>
<td>2004-2005</td>
<td>866.00</td>
<td>1,49,105</td>
<td>0.0060</td>
</tr>
<tr>
<td>2005-2006</td>
<td>574.00</td>
<td>1,80,204</td>
<td>0.0030</td>
</tr>
<tr>
<td>2006-2007</td>
<td>700.00</td>
<td>1,83,391</td>
<td>0.0038</td>
</tr>
<tr>
<td>2007-2008</td>
<td>881.00</td>
<td>2,30,732</td>
<td>0.0038</td>
</tr>
<tr>
<td>2008-2009</td>
<td>980.00</td>
<td>1,80,204</td>
<td>0.0050</td>
</tr>
</tbody>
</table>

**Source:** Annual Report of SSP.

Material productivity shows steady trend of \` 0.002 / tonne to \` 0.005 / tonne in 2008-2009. It is inferred that the total cost of material has raised steadily with increase in number of units produced.
(iii) Labour Productivity

Measurement of labour productivity is essential to know the efficiency of labour.

\[
\text{Labour productivity} = \frac{\text{Sales Value}}{\text{No. of Workers}}
\]

TABLE 2.6

LABOUR PRODUCTIVITY OF SSP

(\` in Crores)

<table>
<thead>
<tr>
<th>Year</th>
<th>Sales (`)</th>
<th>No. of Labourers</th>
<th>Labour Productivity (`)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999-2000</td>
<td>603.28</td>
<td>1550</td>
<td>0.389</td>
</tr>
<tr>
<td>2000-2001</td>
<td>503.44</td>
<td>1538</td>
<td>0.327</td>
</tr>
<tr>
<td>2001-2002</td>
<td>338.68</td>
<td>1488</td>
<td>0.228</td>
</tr>
<tr>
<td>2002-2003</td>
<td>434.07</td>
<td>1365</td>
<td>0.318</td>
</tr>
<tr>
<td>2003-2004</td>
<td>562.57</td>
<td>1351</td>
<td>0.416</td>
</tr>
<tr>
<td>2004-2005</td>
<td>1016.00</td>
<td>1344</td>
<td>0.756</td>
</tr>
<tr>
<td>2005-2006</td>
<td>785.00</td>
<td>1342</td>
<td>0.585</td>
</tr>
<tr>
<td>2006-2007</td>
<td>1305.00</td>
<td>1336</td>
<td>0.977</td>
</tr>
<tr>
<td>2007-2008</td>
<td>1397.00</td>
<td>1349</td>
<td>1.040</td>
</tr>
<tr>
<td>2008-2009</td>
<td>1265.00</td>
<td>1328</td>
<td>0.950</td>
</tr>
</tbody>
</table>

Source: Annual Report of SSP

Table 2.6 shows that the productivity of labour has improved from ` 0.389 crores per employee p.a in 1999-2000 to ` 0.95 crores per employee p.a. in 2008-2009. There was a downfall in labour productivity from 1999 – 2000 till 2002 – 2003. But it has gained its momentum from 2003 – 2004 to till date. It indicates the increase in efficiency of labour in SSP.
3. **PROFITABILITY**

Profit is the engine that drives the business enterprise. It is considered to be primary and ultimate objective of an enterprise. Profit is the fulcrum around which the entire business activities rotate. The excess of output over the input factors expressed in monetary terms is called profit.

Profitability is a concept based on profit but it is a relative concept. Profits are expressed in relation to some relevant factors to measure the profitability in quantitative terms. The profitability ratios are calculated to measure the operating efficiency of an enterprise.

(i). **Profit and Loss Position**

Profit of SSP is expressed as income which is excess of revenue over expenditure.

**TABLE 2.7**

PROFIT AND LOSS POSITION OF SSP (\` in crores)

<table>
<thead>
<tr>
<th>Year</th>
<th>Revenue (`)</th>
<th>Expenditure (`)</th>
<th>Gross Margin (`)</th>
<th>Int and Finance charges (`)</th>
<th>Cash Surplus / Deficit (`)</th>
<th>Depreciation (`)</th>
<th>Net Profit (`)</th>
<th>Cumulative Net Profit (`)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999-2000</td>
<td>NA</td>
<td>NA</td>
<td>15.43</td>
<td>106.92</td>
<td>-91.49</td>
<td>50.73</td>
<td>-142.22</td>
<td>-142.22</td>
</tr>
<tr>
<td>2000-2001</td>
<td>463.91</td>
<td>469.25</td>
<td>-5.34</td>
<td>102.34</td>
<td>-107.68</td>
<td>47.64</td>
<td>-155.32</td>
<td>-297.54</td>
</tr>
<tr>
<td>2002-2003</td>
<td>418.01</td>
<td>419.26</td>
<td>-1.25</td>
<td>73.57</td>
<td>-74.82</td>
<td>44.31</td>
<td>-119.13</td>
<td>-569.81</td>
</tr>
<tr>
<td>2003-2004</td>
<td>603.99</td>
<td>522.29</td>
<td>81.70</td>
<td>36.45</td>
<td>45.25</td>
<td>43.31</td>
<td>1.94</td>
<td>-567.87</td>
</tr>
<tr>
<td>2004-2005</td>
<td>1132.00</td>
<td>1073.50</td>
<td>58.50</td>
<td>11.93</td>
<td>46.57</td>
<td>43.09</td>
<td>3.48</td>
<td>-564.39</td>
</tr>
<tr>
<td>2005-2006</td>
<td>739.00</td>
<td>752.74</td>
<td>-13.74</td>
<td>9.96</td>
<td>-23.70</td>
<td>43.18</td>
<td>-66.88</td>
<td>-631.27</td>
</tr>
<tr>
<td>2006-2007</td>
<td>1069.00</td>
<td>898.44</td>
<td>170.56</td>
<td>5.24</td>
<td>165.32</td>
<td>47.21</td>
<td>118.11</td>
<td>-513.16</td>
</tr>
<tr>
<td>2007-2008</td>
<td>1288.00</td>
<td>1136.66</td>
<td>151.34</td>
<td>4.95</td>
<td>146.39</td>
<td>43.65</td>
<td>102.74</td>
<td>-410.42</td>
</tr>
<tr>
<td>2008-2009</td>
<td>1266.00</td>
<td>1215.43</td>
<td>50.57</td>
<td>4.30</td>
<td>46.27</td>
<td>43.45</td>
<td>2.82</td>
<td>-407.60</td>
</tr>
</tbody>
</table>

*Source: Annual Report of SSP. NA - Not Available.*
Interest and financial charges have been reduced considerably from `106.92 crores in 1999-2000 to `4.30 crores in 2008-2009. It indicates that the loanable funds of SSP were reduced steadily from 1999-2000. Reduction of loan components in capital structure reveals that the company’s solvency condition is strong. Depreciation was also reduced from `50.73 crores to `43.45 crores in 2008-2009. Irrespective of decrease in interest and depreciation, SSP was left with low margin and net loss in all years resulted into cumulative net loss of `407.60 crores in 2008-2009. The profit and loss position of SSP is not satisfactory. One of the reasons for low profit is that around 80% of the income was spent on raw material consumption

(ii) Net Profit Ratio

It is the overall measure of the enterprise ability to turn each rupee of revenue into net surplus. The enterprise with inadequate net profit cannot achieve satisfactory return on owner’s capital. It also indicates adverse economic condition of an enterprise.

<table>
<thead>
<tr>
<th>Year</th>
<th>Net Profit / Loss (₹)</th>
<th>Turn over (₹)</th>
<th>Net Profit/ Turnover x100 %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999-2000</td>
<td>-142.22</td>
<td>603.28</td>
<td>-ve</td>
</tr>
<tr>
<td>2000-2001</td>
<td>-155.32</td>
<td>503.44</td>
<td>-ve</td>
</tr>
<tr>
<td>2001-2002</td>
<td>-153.14</td>
<td>338.68</td>
<td>-ve</td>
</tr>
<tr>
<td>2002-2003</td>
<td>-119.13</td>
<td>434.07</td>
<td>-ve</td>
</tr>
<tr>
<td>2003-2004</td>
<td>1.94</td>
<td>562.57</td>
<td>0.34</td>
</tr>
<tr>
<td>2004-2005</td>
<td>3.48</td>
<td>1016.00</td>
<td>0.39</td>
</tr>
<tr>
<td>2005-2006</td>
<td>-66.88</td>
<td>785.00</td>
<td>-ve</td>
</tr>
<tr>
<td>2006-2007</td>
<td>118.11</td>
<td>1305.00</td>
<td>9.05</td>
</tr>
<tr>
<td>2007-2008</td>
<td>102.74</td>
<td>1397.00</td>
<td>7.35</td>
</tr>
<tr>
<td>2008-2009</td>
<td>2.82</td>
<td>1265.00</td>
<td>0.22</td>
</tr>
</tbody>
</table>

Source: Annual Report of SSP

SSP started earning net profit only from 2003-2004 onwards. But it incurred loss again in 2005-2006. Thereafter SSP had earned net profit at a maximum of 9.05% in 2006-2007. It was decreased to 0.22% in 2008-09.
(iii) Return on Investment

In any financial analysis the key indicator is profit. When it is related to capital invested it is known as Return On Investment (ROI)

<table>
<thead>
<tr>
<th>Year</th>
<th>Net Profit / Loss (`)</th>
<th>Capital Employed (`)</th>
<th>Net Profit x100</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999-2000</td>
<td>-142.22</td>
<td>860.65</td>
<td>-ve</td>
<td></td>
</tr>
<tr>
<td>2000-2001</td>
<td>-155.32</td>
<td>834.08</td>
<td>-ve</td>
<td></td>
</tr>
<tr>
<td>2001-2002</td>
<td>-153.14</td>
<td>773.77</td>
<td>-ve</td>
<td></td>
</tr>
<tr>
<td>2002-2003</td>
<td>-119.13</td>
<td>717.07</td>
<td>-ve</td>
<td></td>
</tr>
<tr>
<td>2003-2004</td>
<td>1.94</td>
<td>685.00</td>
<td>0.29</td>
<td></td>
</tr>
<tr>
<td>2004-2005</td>
<td>3.48</td>
<td>766.00</td>
<td>0.45</td>
<td></td>
</tr>
<tr>
<td>2005-2006</td>
<td>-66.88</td>
<td>786.00</td>
<td>-ve</td>
<td></td>
</tr>
<tr>
<td>2006-2007</td>
<td>118.11</td>
<td>641.00</td>
<td>18.43</td>
<td></td>
</tr>
<tr>
<td>2007-2008</td>
<td>102.74</td>
<td>691.00</td>
<td>14.87</td>
<td></td>
</tr>
<tr>
<td>2008-2009</td>
<td>2.82</td>
<td>952.00</td>
<td>0.30</td>
<td></td>
</tr>
</tbody>
</table>

**Source**: Annual Report of SSP

Table 2.9 reveals that during 1999-2000 to 2002-2003, ROI was negative and for the rest of the years ROI was positive but it was low in the range of 14% to 18% only.

**SWOT ANALYSIS**

The vision of SSP is to achieve market leadership and prosper in business through satisfaction of customer needs with continuous improvement in quality, cost and delivery of product and services. It is essential to analyse Strength, Weakness, Opportunity and Threat of SSP [SWOT] which can dictate the further expansion path.
STRENGTH
1) SSP is the youngest plant of SAIL but technologically, it is one of the giants in SAIL. It has got technical collaborators like
   (1) M/s Schloemann – Siemag [Germany]
   (2) M/s Ugine [France]
   (3) M/s Schuler [Germany]
   (4) Alloy Steel Plant [Durgapur and Bhilai]
2) HRM is capable of producing both stainless as well as non-stainless steel.
3) It employs the latest technology in CRM and incorporates the most modern equipment supplied by the leading machinery manufactures all over the world.
4) The blanking line is capable of producing high quality stainless steel blanks for coins and utility purpose.
5) The plant’s production has exceeded the rated capacity.
6) The products marketed by SSP have won customer appreciation for the quality and mechanical characteristics. Its products are marketed through a nationwide network with branch sales offices in Ahmedabad, Coimbatore, Bangalore, Hyderabad, Chennai, Kolkata, Mumbai, New Delhi, Baroda, Kochi & Pune.
7) The plant has had the unique distinction of bagging international awards for its safety measures.
8) The labour cost per tonne of saleable steel is one of the lowest in the world.
9) The real estate value of land owned by SSP along with its township will be worth crores of rupees.
10) It has developed a brand image which will give it an edge over its competitors in future.

WEAKNESS
1) Purchase of raw material from outside sources was in abundance.
2) There is no reliable distribution channels to market saleable steel.
3) Though the number of manpower decreased, the expenditure on manpower has increased significantly due to wage revision.
4) SSP extended unsecured credit which resulted in non-recovery of dues.
5) The prosperity of SSP in future will depend on upgradation of existing technology and new roll wiping system to improve quality and productivity.
OPPORTUNITY

1) Huge growth of demand of steel in Indian market is offering SSP a unique opportunity to grow in galloping way if it can grab market properly with prudent product mix and proper cost management.

2) Since the international price is rising, it offers unique opportunity to export on a large scale.

3) The added capacity in HR/CR coils may increase production and productivity.

4) Demand growth rate of Steel of SSP sustained at 8 – 10%.

5) SSP is now giving final touches to a long term plan which basically seeks to address the plant’s inherent problem relating to sourcing of slabs for rolling. This bottleneck can be removed by setting up steel melting facilities for SSP.

THREAT

1) A number of new private companies enter into the market. Some of these producers have up-to-date technology, good financial management and low cost of production. This may be a real threat to SSP in the long run particularly to the HR Coils.

2) Though dumping in the Indian market at a cheaper rate by MNCs have not started in a big way, but with gradual lowering of import duty, the possibility cannot be ruled out.

3) Nickel price volatility restrict SSP to use nickel for industry to a great extent.

The future steel scenario in India both in domestic and global terms is indeed very bright. In order to serve the customers better, it is essential to have a communication network throughout the country, which would result in ready flow of information on quantities needed by customers and the status of processing of the orders at steel plants. It has enormous strengths in the form of large trained and dedicated manpower. To retain its position as one of the major steel producers it should definitely mould its future strategies to fit into the emerging scenario.

SSP has joined the elite group of about 1750 organisations across the world with the SA 8000 certification. It reflects the plant’s commitment for continual improvement in employer-employee relationship by focusing on various aspects of human rights standard at the workplace.
Public enterprises occupy an important place in the economy of developing countries. Public enterprises setup as government companies incorporated under Companies Act are playing a key role in the country’s economic development. Today the Indian public enterprise sector embraces a wide spectrum of activities including manufacturing, trading and services. In the present context, the role of public sector in refractive industries is worth mentioning.

Refractory is a term given to the class of materials which are produced from non-metallic minerals and possess capability to withstand heat and pressure. The fortunes of refractory industry are linked to the growth of Iron and Steel sector which consumes 75% of refractories produced.

The production of refractories started in India in the form of clay bricks in 1874. Today a wide variety of refractory products are manufactured to suit the requirements of various sectors like iron and steel, cement, glass, fertilizer, thermal power plant etc. Refractory production in the country has been showing a growth of 16% p.a. from 2002-03 onwards.

The Indian refractory industry is more than a century old. With the passage of time, it has made considerable improvements both in terms of volume of production and quality of products. Abundant quantity of magnesite deposits at Salem mark the beginning of basic refractory industry in India. Burn Standard Company Limited, Salem is a Government of India undertaking engaged in the manufacture of basic refractories monolithics and slaped products.

Origin

Burn Standard Company Limited [BSCL] is a Central Government company under the administrative jurisdiction of the Department of Heavy Industries. The management of the Company was taken over by the Government of India on December 1973 and the company was subsequently nationalized with effect from April 1975. The company was incorporated as a public sector undertaking in West Bengal as Burn
Standard Company Limited on 1st December 1976. BSCL became a wholly owned subsidiary of the holding company Bharat Bhari Udyog Nigam Ltd [BBUNL] upon its formation in September 1986. Burn Standard Company Limited is the symbol of diversified activities. It has two large engineering works located at Howrah and Burnpur in West Bengal and refractory unit at Salem and the registered office of the company is located at Kolkata in West Bengal.

Salem unit is one of manufacturing units of BSCL and it is the leading subsidiary of Bharat Bhari Udyog Nigam Limited [BBUNL]. Once known as Burn and company in early 1950s, it has been named as Burn Standard Company Limited on taking over by the Government of India in 1976. The company achieves high quality by practising vigorous quality control and process monitoring. After long experience and through research and development, special high grade qualities for successful operation have been developed. Products of Salem unit have already received ISO 9002 accreditation. Mag Carbon bricks supplied by the unit to Bokaro Steel achieved record lining life in SMS – I converter exceeding 1000 Heats. Under the guidance of BSCL the Indian magnesite Industry at Salem, prospered and developed, over the years and many hundreds thousands tons were exported to all the major industrialized nations, subsequently earning the reputation that Indian Magnesite was the finest in the world.
PROCESS INVOLVED IN BSCL

MINING

CRUDE MAGNESITE

- SHAFT KILN
  - RAYMOND MILL
    - PACKING

- CRUSHING
  - ROTARY KILN
    - COOLER
      - BUNKER
        - GRINDING
          - FRACTION BUNKER
            - BATCH WEIGHING
              - MIXER
                - PRESSING
                  - DRYER

- DESPATCH
- DEPOT
- TUNNEL KILN
Raw Materials

Raw magnesite which is chemically known as Magnesium Carbonate contains 47% of MgO in its purest form and includes huge sum of carbon dioxide and little composition of Iron, Aluminium and Silica. Raw magnesite can be obtained from both earth and sea water. Under the earth’s surface due to chemical reaction dunite rocks get transformed into raw magnesite over the passage of time.

PROCESS

Mining

Raw magnesite from specialised area can be obtained through mining process. The magnesite thus obtained is divided into low silica and high silica based on silica percentage.

Factory

The raw material supplied is stored in stacking yard according to silica percentage. The selected grade of magnesite is sized by crushing, screening and washing in primary crushing house. Then they are fed into high temperature rotary kilns namely Rk₁ and Rk₂. The output obtained through this process is named as Dead Burnt Magnesite [DBM]. DBM is further sized to requisite fractions and suitable compositions are prepared to the standard set by Research & Development Department.

These meticulously formulated compositions are pressed into a variety of shapes and sizes in an array of presses including computer controlled high capacity hydraulic presses. The resultant product is named as Green bricks.

The bricks are dried and then sent to Tunnel kiln for final firing. The tunnel kiln is divided into three zones namely preheating zone upto 400°C, firing zone upto 1600°C and cooling zone. From tunnel kiln they are sent for finishing, testing / inspection and packing before being forwarded to a wide range of thoroughly satisfied customers across the country and abroad.

Products Outcome in BSCL

The company is engaged in the production of Dead Burnt Magnesite [DBM], fired bricks, unfired bricks, magnesia carbon bricks and light calcined products. In addition, it is also producing monolithic products such a ramming mass, gunning mass,
castables and hot and cold repair of steel making furnaces in ferrous, nonferrous and special steel furnaces and also whole range of olivine containing raw dunite products.

FUNCTIONAL ASPECTS OF PLANT

The plant layout is a process layout consisting of the following.

<table>
<thead>
<tr>
<th>Works 1</th>
<th>Producing calcined products.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rotary Kilns</td>
<td>Producing DBM</td>
</tr>
<tr>
<td>Works 2</td>
<td>Producing fired, unfired &amp; MCB through various presses.</td>
</tr>
<tr>
<td>Clinker plant</td>
<td>Producing spindles</td>
</tr>
<tr>
<td>Bulk section</td>
<td>Mixing of Export products</td>
</tr>
<tr>
<td>Dust extraction system</td>
<td>Recovery of flying dust for reuse.</td>
</tr>
</tbody>
</table>

ORGANIZATION STRUCTURE

Burn standard company limited with 100% shareholding by Government of India is a Government company within the meaning of section 617 of the Companies Act 1956. The functions and duties of Burn Standard Company Limited are fully enumerated in Memorandum and Articles of Association. There is an internal system of delegating specific and general authorities within the company which are issued and cancelled from time to time as per the approval of competent authority.

The management of the company is vested in the hands of General Manager under the supervision, control and direction of Board of Directors. The organization structure of Burn Standard Company Limited [Salem works] is as follows:
Functional Departments in BSCL

1. Purchase/Materials Management
2. Marketing/Sales
3. Finance/Accounts
4. Personnel and Administration.
5. Production Department.
6. Research and Development.
7. Maintenance.
8. Green Bricks Production Department.
9. TK Depot.

1. PURCHASE / MATERIALS MANAGEMENT DEPARTMENT

   General Manager
   (Material Management)

   Manager (Purchase)          Manager (Stores)
   Officer (Purchase)           JM / AM (Stores)

Material function has been given due importance in BSCL because of the fact that the cost of purchase and inventory account for a much large share in the sales value of a product. The stores and purchase functions are under the direct control of GM [MM] whose status is that of a departmental head. The Administrative Reforms commission appointed by the Government of India in their report enumerated two basic principles with regard to the status of Head of material management department.

1. The Head of MM should be equal in rank with finance, operation, marketing etc and must sit in the apex of policy making body.
2. The head of MM shall not report to any user department.

   Materials management department performs the following functions:

1. Purchase of raw material, packing material, equipment, spares, - and services as required by user department
2. Prepare Sub-contractor enlistment and assessment.
3. Selection of proper source of supply
4. Placing purchase order  
5. Development of proper procedure for purchase  
6. Development of effective communication and information system so that a true picture of the purchase function is presented to the top management  

Functions of stores are:  
1. Receiving of materials, making physical check and sending them to laboratory for inspection.  
2. Storage and presentation  
3. Record keeping  
4. Issue of right material to user department  
5. Disposal of non-conforming materials at periodic intervals.

2. MARKETING / SALES DEPARTMENT

It is the revenue earning department. It is headed by Deputy Manager (Sales). Below him there are Junior Manager (Sales), Officer (Marketing) Officer (Exports) and Junior Manager (Liaison). The main functions of the sales department are:  
1. To market and sell Magnesia carbon bricks within and outside the country  
2. To plan production requirement and despatch as per work order  
3. To look after shipping formalities  
4. To review contract and handle complaints in a cordial manner.
3. FINANCE / ACCOUNTS DEPARTMENT

Finance is the life blood of the company. This is headed by GM (A/cs). Under his direct control, there are managers belonging to Accounts, EDP, Assistant Manager (ERP), Junior managers (EDP and ERP). The functions of the accounts departments are:

1. To maintain all accounts properly
2. To supply all financial information to the head of the department.
4. PERSONNEL AND ADMINISTRATIONS DEPARTMENT

This department is headed by DGM who performs all of his duties under the supervision of General Manager of BSCL. To assist him there are three deputy managers each of them belonging to Administration, Personnel and Welfare. The main functions of the department are:

1. To advise and deal with legal matters
2. To frame rules in regard to implementation of policies
3. To keep and maintain service records of the employees
4. To deal with selection, recruitment, training, promotion etc.
5. PRODUCTION DEPARTMENT

This department is related to operation and production activities. The two operation departments namely GB production, TK production are headed by Deputy Manager (Production). There are three managers for Rotary kiln, Dunite and monolithic production respectively. The main functions of production department are as follows:

(i) To ensure availability of all resources for production
(ii) To ensure that all delivery schedules are met
(iii) To adhere statutory requirement.
6. RESEARCH AND DEVELOPMENT DEPARTMENT

Research and development programme for quality assurance at every stage from raw materials to finished products is carefully carried out to ensure that basic refractory products are qualitative enough to reach the highly cost and quality conscious customer. It aims to reduce the gap between the users’ dream refractory and producers’ best effort. Its functions are:

1) To ensure the quality of incoming raw materials
2) To ensure in-process and final quality of Magnesia Carbon Bricks
3) To plan and formulate batch recipes as per work order
4) To ensure that testing, certifying raw material work in progress and finished product are as per quality plan
5) To ensure calibration of all laboratory testing and measuring instruments equipment are as per national and international control of batch sheet.

7. MAINTENANCE DEPARTMENT

Maintenance service has a great role to play in the production of operation of plant and machinery. The depot workshops have technical staff for repairs and maintenance of equipments. The main functions are as follows:

1) To review the maintenance activities carried out by various engineering department
2) Preplanning for all materials and spares required for Mould Box making and press or other equipment maintenance
3) Ensure calibration of all listing and measuring instruments other than main lab and quality control as per national and international standard.

PRESS MAINTENANCE

This department is responsible to ensure the availability of the presses for production of MCB to execute as per production planning schedule, and to organize preventive and breakdown maintenance of presses and all mechanical machineries.

ELECTRICAL MAINTENANCE

The department is in charge of maintenance of all electrical and electronical equipments and it also prepares a plan of spares for electrical / electronic equipments and
gauges. It ensures power supply to all departments all the time either through Board Power or through generators.

8. GREEN BRICKS PRODUCTION

The main functions of Green Bricks production department are to decide about the daily production instruction, monthly production plan, production process as per work order, provision of raw material inputs and allocation of manpower as per requirement and control of sinter crushing process.

9. TK DEPOT

The manager of TK Depot is empowered to maintain the finished goods inventory of magnesia carbon bricks at Depot, to ensure the availability of packing materials for Magnesia Carbon Bricks (MCB) for packing and despatch of MCB. Likewise he will be planning for dispatch of all the products manufactured namely Magnesite, Chromag, Steel clad and other bricks.

GROWTH AND DEVELOPMENT

Growth of BSCL is analysed in terms of

1. Adequacy of Working Capital
2. Productivity and
3. Profitability

1. ADEQUACY OF WORKING CAPITAL

A company has to maintain an adequate amount of working capital throughout its life. So working capital is considered as the lifeblood and controlling nerve centre of the business.

(i) Working Capital of BSCL

The important objective of working capital control is to arrange the needed funds adequately from the proper sources so that trade off between liquidity and profitability may be realised.
TABLE 2.10
WORKING CAPITAL OF BSCL

(` in crores)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1999-2000</td>
<td>36.56</td>
<td>25.62</td>
<td>10.94</td>
<td>1.43</td>
</tr>
<tr>
<td>2000-2001</td>
<td>44.60</td>
<td>31.94</td>
<td>12.66</td>
<td>1.40</td>
</tr>
<tr>
<td>2001-2002</td>
<td>34.26</td>
<td>26.64</td>
<td>7.62</td>
<td>1.29</td>
</tr>
<tr>
<td>2002-2003</td>
<td>32.43</td>
<td>30.54</td>
<td>1.89</td>
<td>1.06</td>
</tr>
<tr>
<td>2004-2005</td>
<td>46.91</td>
<td>20.99</td>
<td>25.92</td>
<td>2.23</td>
</tr>
<tr>
<td>2005-2006</td>
<td>47.52</td>
<td>20.67</td>
<td>26.85</td>
<td>2.30</td>
</tr>
<tr>
<td>2006-2007</td>
<td>46.66</td>
<td>24.67</td>
<td>21.99</td>
<td>1.89</td>
</tr>
<tr>
<td>2007-2008</td>
<td>49.06</td>
<td>22.66</td>
<td>26.40</td>
<td>2.17</td>
</tr>
<tr>
<td>2008-2009</td>
<td>52.28</td>
<td>25.09</td>
<td>27.19</td>
<td>2.08</td>
</tr>
</tbody>
</table>

Source: Annual Report BSCL

Table 2.10 reveals that the current assets had been on the increase during the period under study even though there was a fall in its value during 2001 – 2002, and 2002 – 2003. Current assets had increased from ` 36.56 crores in 1999-2000 to ` 52.28 crores 2008 – 2009. Current liabilities during the same period had shown a decreasing trend i.e from ` 25.62 crores to ` 25.09 crores 2008-2009. Even though current ratio in most of the years under study are below 2:1 which is an ideal ratio, it has gained its momentum in 2007-2008 and it constitutes 2.08 :1 in 2008-2009. It reveals that the company’s liquidity position is satisfactory.
(ii) Fixed Assets and Working Capital Relationship

The fixed capital investments generate production capacity and the working capital makes use of that capacity to the maximum extent possible. In its absence, fixed assets cannot be gainfully utilized. Fixed assets are acquired to be retained in the business over a period of time and to give returns over the life of assets, whereas working capital loses its identity very quickly and usually within a year.

**TABLE 2.11**

**FIXED AND WORKING CAPITAL OF BSCL**

<table>
<thead>
<tr>
<th>Year</th>
<th>Fixed Capital (`)</th>
<th>Working Capital (`</th>
<th>Working Capital As % of Fixed Capital</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999-2000</td>
<td>34.12</td>
<td>10.94</td>
<td>32.06</td>
</tr>
<tr>
<td>2000-2001</td>
<td>35.56</td>
<td>12.66</td>
<td>35.60</td>
</tr>
<tr>
<td>2001-2002</td>
<td>35.15</td>
<td>7.62</td>
<td>21.66</td>
</tr>
<tr>
<td>2002-2003</td>
<td>47.30</td>
<td>1.89</td>
<td>3.99</td>
</tr>
<tr>
<td>2003-2004</td>
<td>48.00</td>
<td>19.47</td>
<td>40.57</td>
</tr>
<tr>
<td>2004-2005</td>
<td>48.62</td>
<td>25.92</td>
<td>53.31</td>
</tr>
<tr>
<td>2005-2006</td>
<td>52.17</td>
<td>26.85</td>
<td>51.47</td>
</tr>
<tr>
<td>2006-2007</td>
<td>52.44</td>
<td>21.99</td>
<td>41.94</td>
</tr>
<tr>
<td>2007-2008</td>
<td>53.26</td>
<td>26.40</td>
<td>49.57</td>
</tr>
<tr>
<td>2008-2009</td>
<td>53.31</td>
<td>27.19</td>
<td>51.01</td>
</tr>
</tbody>
</table>

**Source:** Annual Report BSCL. Fixed capital has been represented by gross fixed assets.

Table 2.11 reveals the relationship between fixed assets and working capital of BSCL. Fixed capital as represented by Gross fixed assets has shown a clear upward trend from `34.12 crores in 1999 – 2000 to `53.31 crores 2008 – 2009. The working capital had considerably increased, but it had not shown a consistent growth. Working capital as percentage of fixed capital considerably had been increased except in the year 2002 – 2003. The increase of fixed capital followed by increase in working capital ensures the profitability of BSCL.
2. PRODUCTIVITY

Productivity represents the relationship between performance or output and input. Production and productivity cannot be considered in isolation. It is generally presumed that higher productivity results in higher profits.

(i) Installed Capacity and Capacity Utilisation

Capacity means the maximum output which can be delivered during a period of time under given conditions. Capacity utilization is one of the most important measures of productivity and efficiency.

Capacity utilization percentage has been calculated by dividing the figure of production by the figure of installed capacity. The potential output is defined as installed capacity.

### TABLE 2.12
PRODUCTION AND INSTALLED CAPACITY OF BSCL

<table>
<thead>
<tr>
<th>Year</th>
<th>Installed Capacity (In tonnes)</th>
<th>Actual Production (In tonnes)</th>
<th>Utilization %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999-2000</td>
<td>13326</td>
<td>11735</td>
<td>88.06</td>
</tr>
<tr>
<td>2000-2001</td>
<td>15573</td>
<td>14450</td>
<td>92.79</td>
</tr>
<tr>
<td>2001-2002</td>
<td>10513</td>
<td>9768</td>
<td>92.91</td>
</tr>
<tr>
<td>2002-2003</td>
<td>13835</td>
<td>12595</td>
<td>91.04</td>
</tr>
<tr>
<td>2003-2004</td>
<td>16170</td>
<td>15257</td>
<td>94.35</td>
</tr>
<tr>
<td>2004-2005</td>
<td>15660</td>
<td>14582</td>
<td>94.84</td>
</tr>
<tr>
<td>2005-2006</td>
<td>16338</td>
<td>15324</td>
<td>93.79</td>
</tr>
<tr>
<td>2006-2007</td>
<td>12973</td>
<td>11872</td>
<td>91.51</td>
</tr>
<tr>
<td>2007-2008</td>
<td>18952</td>
<td>17813</td>
<td>93.99</td>
</tr>
<tr>
<td>2008-2009</td>
<td>18276</td>
<td>17556</td>
<td>96.06</td>
</tr>
</tbody>
</table>

Source: Annual Report of BSCL

It is evident from Table 2.12, that the average capacity utilization was 88% in 1999-2000. The entire period of study marked an increasing trend except during the years 2002-2003 and 2006-2007. The increasing trend in percentage of capacity utilization indicates that its productive capacity was encouraging during study period.
(ii) Material Productivity

It is a vital factor in ensuring a high level of effectiveness because raw materials and bought out components usually constitute a high proportion of the total cost of sales. Material productivity is obtained by dividing material cost by number of units produced.

\[
\text{Material Productivity} = \frac{\text{Material Cost}}{\text{No. of Units Produced}}
\]

### TABLE 2.13

**MATERIAL PRODUCTIVITY OF BSCL**  
(\` in crores)

<table>
<thead>
<tr>
<th>Year</th>
<th>Material Cost (`)</th>
<th>No. of units Produced (tonnes)</th>
<th>MAT. Productivity (`)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999-2000</td>
<td>17.31</td>
<td>11735</td>
<td>0.0010</td>
</tr>
<tr>
<td>2000-2001</td>
<td>25.00</td>
<td>14450</td>
<td>0.0020</td>
</tr>
<tr>
<td>2001-2002</td>
<td>16.82</td>
<td>9768</td>
<td>0.0020</td>
</tr>
<tr>
<td>2002-2003</td>
<td>16.58</td>
<td>12595</td>
<td>0.0010</td>
</tr>
<tr>
<td>2003-2004</td>
<td>17.03</td>
<td>15257</td>
<td>0.0010</td>
</tr>
<tr>
<td>2004-2005</td>
<td>12.95</td>
<td>14582</td>
<td>0.0009</td>
</tr>
<tr>
<td>2005-2006</td>
<td>18.11</td>
<td>15324</td>
<td>0.0010</td>
</tr>
<tr>
<td>2006-2007</td>
<td>16.94</td>
<td>11872</td>
<td>0.0010</td>
</tr>
<tr>
<td>2007-2008</td>
<td>25.73</td>
<td>17813</td>
<td>0.0010</td>
</tr>
<tr>
<td>2008-2009</td>
<td>26.99</td>
<td>17556</td>
<td>0.0020</td>
</tr>
</tbody>
</table>

**Source:** Annual Report of BSCL

Table 2.13 reveals that the cost of materials is on the increase correspondingly the number of units produced has also increased but it is not in a consistent manner. There was a sudden decline in production during 2001-2002 and 2006-2007. The average material productivity for the study period was \` 0.001 per tonne.

(iii) Labour Productivity

Labour productivity is generally perceived as a measure of labour efforts or effectiveness. It is a function of many variables and is dependent on factors, such as technology, the management practices, policies and other organizational
characteristics of the plant. It can be obtained by dividing sales value by number of workers.

\[
\text{Labour Productivity} = \frac{\text{Sales Value}}{\text{No. of Workers}}
\]

**TABLE 2.14**

**LABOUR PRODUCTIVITY OF BSCL**

(` in crores)

<table>
<thead>
<tr>
<th>Year</th>
<th>Sales (`)</th>
<th>No. of Workers</th>
<th>Labour Productivity (`)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999-2000</td>
<td>42.67</td>
<td>1405</td>
<td>0.03</td>
</tr>
<tr>
<td>2000-2001</td>
<td>49.52</td>
<td>1387</td>
<td>0.04</td>
</tr>
<tr>
<td>2001-2002</td>
<td>39.21</td>
<td>777</td>
<td>0.05</td>
</tr>
<tr>
<td>2002-2003</td>
<td>42.37</td>
<td>506</td>
<td>0.08</td>
</tr>
<tr>
<td>2003-2004</td>
<td>54.37</td>
<td>474</td>
<td>0.115</td>
</tr>
<tr>
<td>2004-2005</td>
<td>53.93</td>
<td>472</td>
<td>0.11</td>
</tr>
<tr>
<td>2005-2006</td>
<td>59.40</td>
<td>462</td>
<td>0.13</td>
</tr>
<tr>
<td>2006-2007</td>
<td>69.13</td>
<td>455</td>
<td>0.15</td>
</tr>
<tr>
<td>2007-2008</td>
<td>88.64</td>
<td>440</td>
<td>0.20</td>
</tr>
<tr>
<td>2008-2009</td>
<td>100.89</td>
<td>424</td>
<td>0.24</td>
</tr>
</tbody>
</table>

*Source: Annual Report of BSCL*

The productivity of labour has shown an increasing trend because of increase in value of sales accompanied by reduction of workers. Labour cost which is one of the important elements of cost of production is in a controllable manner in BSCL. Better manufacturing technology in the form of machines tools increases the output with perhaps lesser efforts on the part of workers.

**3. PROFITABILITY**

Profit is essential for the economic viability of any enterprise. The performance and efficiency of any management is measured by its profitability.
(i) Profit and Loss Position of BSCL

Profit is the acid test of individual firm’s performance. In case the enterprise is unable to make profits, capital invested is eroded and in due course of time the enterprise ultimately ceases to exist. Profit is the soul of a business without which it is lifeless.

### TABLE - 2.15
**PROFIT AND LOSS POSITION OF BSCL**

(’ in crores)

<table>
<thead>
<tr>
<th>Year</th>
<th>Revenue (’)</th>
<th>Expenditure (’)</th>
<th>Gross Margin (’%)</th>
<th>Interest (’%)</th>
<th>Cash surplus or Deficit (’%)</th>
<th>Depreciation (’%)</th>
<th>N/P/Loss (’%)</th>
<th>Cumulative N/P (’%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999-2000</td>
<td>52.35</td>
<td>50.25</td>
<td>2.10</td>
<td>0.09</td>
<td>2.01</td>
<td>1.90</td>
<td>0.11</td>
<td>0.11</td>
</tr>
<tr>
<td>2000-2001</td>
<td>60.26</td>
<td>62.99</td>
<td>-2.73</td>
<td>0.33</td>
<td>-3.06</td>
<td>1.24</td>
<td>-4.30</td>
<td>-4.19</td>
</tr>
<tr>
<td>2001-2002</td>
<td>45.18</td>
<td>47.24</td>
<td>-2.06</td>
<td>0.39</td>
<td>-2.45</td>
<td>0.82</td>
<td>-3.27</td>
<td>-7.46</td>
</tr>
<tr>
<td>2002-2003</td>
<td>50.05</td>
<td>48.92</td>
<td>1.13</td>
<td>0.24</td>
<td>0.89</td>
<td>1.18</td>
<td>-0.29</td>
<td>-7.75</td>
</tr>
<tr>
<td>2003-2004</td>
<td>63.57</td>
<td>57.06</td>
<td>6.51</td>
<td>0.21</td>
<td>6.30</td>
<td>1.67</td>
<td>4.63</td>
<td>3.12</td>
</tr>
<tr>
<td>2004-2005</td>
<td>62.71</td>
<td>55.49</td>
<td>7.22</td>
<td>0.10</td>
<td>7.12</td>
<td>1.72</td>
<td>5.40</td>
<td>2.28</td>
</tr>
<tr>
<td>2005-2006</td>
<td>70.73</td>
<td>65.84</td>
<td>4.89</td>
<td>0.07</td>
<td>4.82</td>
<td>1.79</td>
<td>3.03</td>
<td>5.31</td>
</tr>
<tr>
<td>2006-2007</td>
<td>77.24</td>
<td>70.24</td>
<td>7.00</td>
<td>0.03</td>
<td>6.97</td>
<td>1.89</td>
<td>5.08</td>
<td>10.39</td>
</tr>
<tr>
<td>2007-2008</td>
<td>99.54</td>
<td>89.72</td>
<td>9.82</td>
<td>0.05</td>
<td>9.77</td>
<td>1.76</td>
<td>8.01</td>
<td>18.40</td>
</tr>
<tr>
<td>2008-2009</td>
<td>111.63</td>
<td>99.38</td>
<td>12.25</td>
<td>0.03</td>
<td>12.22</td>
<td>1.76</td>
<td>10.46</td>
<td>28.86</td>
</tr>
</tbody>
</table>

*Source: Annual Report of BSCL*

Table 2.15 reveals that the year 2008 –2009 was a landmark in the history of BSCL when it earned a profit of ` 10.46 crores which is the highest profit during the study period. There was a loss in the beginning of study period from 2000-2001 to 2003 – 2004. From 2004 – 2005 onwards it earned net profit at a lower rate and reached the maximum during the 2008-09. The main reason for increase in profit is reduced interest burden and also the demand for bricks had gone up in the market which in turn boosted the volume of sales. Compared to 1999 -2000, the sales almost doubled during 2008 – 2009. The above factors have added positive results and with the lower expenditure the way has opened for more revenue.
(ii) Net Profit Ratio

Profit in absolute sense does not signify anything unless it is related with some other variables. Thus profitability analysis comprises the analysis of profit in relation to sales.

**TABLE – 2.16**

**NET Profit Ratio of BSCL**

(‘ in crores)

<table>
<thead>
<tr>
<th>Year</th>
<th>Net Profit/ Loss (‘)</th>
<th>Turnover (‘)</th>
<th>( \frac{\text{Net Profit}}{\text{Turnover}} \times 100% )</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999-2000</td>
<td>0.11</td>
<td>42.67</td>
<td>0.26</td>
</tr>
<tr>
<td>2000-2001</td>
<td>-4.30</td>
<td>49.52</td>
<td>-ve</td>
</tr>
<tr>
<td>2001-2002</td>
<td>-3.27</td>
<td>39.21</td>
<td>-ve</td>
</tr>
<tr>
<td>2002-2003</td>
<td>-0.29</td>
<td>42.37</td>
<td>-ve</td>
</tr>
<tr>
<td>2003-2004</td>
<td>4.63</td>
<td>54.37</td>
<td>8.52</td>
</tr>
<tr>
<td>2004-2005</td>
<td>5.40</td>
<td>53.93</td>
<td>10.01</td>
</tr>
<tr>
<td>2005-2006</td>
<td>3.02</td>
<td>59.40</td>
<td>5.08</td>
</tr>
<tr>
<td>2006-2007</td>
<td>5.08</td>
<td>69.13</td>
<td>7.35</td>
</tr>
<tr>
<td>2007-2008</td>
<td>8.01</td>
<td>88.64</td>
<td>9.03</td>
</tr>
<tr>
<td>2008-2009</td>
<td>10.46</td>
<td>100.89</td>
<td>10.36</td>
</tr>
</tbody>
</table>

**Source**: Annual Report of BSCL

Table 2.16 reveals that net profit ratio showed negative sign during the year 2000-2001, 2001-2002 & 2002-03. It reached its maximum 10.36% in 2008-09.

**SWOT ANALYSIS**

BSCL is one of the leading manufacturers of fire bricks and refractory materials. The analysis of the strength, weakness, opportunity and threat help BSCL move in a right direction to increase production and productivity which in turn results in higher profitability.
STRENGTH

1. Magnesite ore which is the basic raw material for production of bricks is available abundant in Salem which is in 1900 acres.
2. Technologically advanced production systems with the installation of plant and equipment necessary for modernised refractory operations are available.
3. Market only high quality products.
5. Providing complete range of support services.
6. Cordial relations with industry, employees & customers.
7. No closure of industrial units on account of labour unrest in its history of operations.
8. Modernisation of Salem unit includes 2500 MT press, co-clinker project, Dust Extraction System etc. which will improve quality of bricks and diversify the product portfolio for entry into cement and glass sector.
9. Development of improved quality of MCB (Mag Carbon Bricks), a prestigious product of BSCL for ladle of SAIL plants
10. Energy conservation measures are taken in BSCL in the form using energy efficient motors, maintaining high power factor by replacing capacitors and change of motor connection from Delta to star mode for under-load motors.
11. It possesses ISO 9002 certification and it received export contribution award from CAPEXCIL for the year 2001-2002.
12. Better productivity and increase in sales of the refractory unit in Salem lead to increase in overall production of BSCL by 14.76% and sales by 9.94%.

WEAKNESS

1. Customers of refractory products are in far away places like Madhya Pradesh, West Bengal etc resulting in increased transport cost.
2. Even though magnesite is available more in Salem, it contains 98% of silica.
3. To convert silica content of magnesite for production purposes, the cost involved is high and the output is low.
OPPORTUNITY

The merger of BSCL with SAIL on 17th December 2011 and named as SAIL Refractory Company Limited would help to improve its production capacity through modernisation. The Salem unit has been producing 18000 tonnes of refractory bricks. Modernisation of unit would increase the production to 90000 tonnes of refractory bricks. It may help to diversify its market to cement, glass and aluminium industries apart from being used in steel industry.

THREAT

1. Lack of manpower supply to work in mines.
2. China, North Korea and Russia have comparatively more magnesite ore (i.e.) four times than that of India. Of the three, China is the market competitor offering quality bricks at cheaper cost.

The activities of BSCL are guided by a vibrant R & D set up to keep pace with the rapid changes taking place worldwide in the field of refractories. The country’s new economic policy has given scope and impetus to expand export effort. Now Salem unit is fully geared to meet the challenging opportunity of catering to a much larger market both inland and overseas. The R & D effort at Salem Plant is a close liaison between the vibrantly advancing steel, glass, copper and cement industrials and the production lines aimed at constantly reducing the gap between the users’ dream refractory and producer’s best efforts.

To conclude BSCL liquidity, productivity and profitability positions are at a satisfactory level. Even though magnesite ore is adequately available, its silica content reduces the output of BSCL. But BSCL is blessed with more magnesite ore availability which cannot be exhausted for about another 40 to 50 years. This strengthens the stability of BSCL production of bricks.