

**CHAPTER-5**  
**Analysis of Profitability**

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## **INTRODUCTION:**

Business is conducted primarily to earn profits. The amount of profit earned measures the efficiency of a business. The greater the volume of profit, the higher is the efficiency of the concern. The profit of a business may be measured and analyzed by studying the profitability of investments attained by the business.

## **MEANING AND DEFINITION OF PROFIBILITY :**

The word 'profitability' is composed of two words, namely; profit and ability. The term profit has already been discussed at length in detail. The term ability indicates the power of a firm to earn profits. The ability of an enterprise also denotes its earning power or operating performance. Also, that the business ability points towards the financial and operational ability of the business. So, on this basis profitability may be defined as "the ability of a given instrument to earn a return from its use"<sup>1</sup> Weston and Brigham defines profitability as "the net surplus of a large number of policies and decisions."<sup>2</sup>

Profit being an absolute figure fails to indicate the adequacy of income or changes in efficiency resulting from financial and operational performance of an enterprise. Much difficulty and confusion comes home while interpreting the absolute figures of profit in case of historical or inter-firm comparisons due to variation in the size of investment or volume of sales etc. Such problems are handled by relating figures of profit either with the volume of sales or with the level of investment. A quantitative relationship is thereof established either in the form of ratios or percentages. Such ratios are names as profitability ratios. Thus, profitability may be regarded as a relative term measurable in terms of profit and its relation with other elements that can directly influence the profit.

No doubt, profit and profitability are closely related and mutually interdependent, yet they are two different concepts. "The accounting concept of profit measures what have been accumulated, the analytical concept of profitability is concerned with future accumulation of wealth."<sup>3</sup> Profit of an enterprise, reports about the financial and operational efficiency of the business. Whereas, profitability interprets the term profit in relation to other elements likely to affect these profits in order to help in decision-making.

Profit is regarded as an absolute connotation as against profitability, which is regarded as a relative concept. Where profit is the residual income left after meeting all manufacturing, administrative expenses; profitability is the profit making ability of an enterprise. The profit figure indicates the amount of earning of a business during a special period. While,

profitability denotes whether these profits are constant or improved or deteriorated, how and to what extent they can be improved. profit in two separate business concerns may be identical, yet, at many times, it usually happens that their profitability varies when measured in terms of size of investment\* It has been aptly remarked that the role played by profits and profitability in a business enterprises is identical to the function carried out by blood and pulse in the human body.

Profitability is the ability to earn profit from all the activities of an enterprise. It indicates how well management of an enterprise generates earnings by using the resources at its disposal. In the other words the ability to earn profit e.g. profitability, it is composed of two words profit and ability. The word profit represents the absolute figure of profit but an absolute figure alone does not give an exact ideas of the adequacy or otherwise of increase or change in performance as shown in the financial statement of the enterprise. The word 'ability' reflects the power of an enterprise to earn profits, it is called earning performance. Earnings are an essential requirement to continue the business. So we can say that a healthy enterprise is that which has good profitability. According to hermenson Edward and salmonson 'profitability is the relationship of income to some balance sheet measure which indicates the relative ability to earn income on assets employed.

## **CONCEPT OF PROFITABILITY:**

### **1.Accounting Profitability**

Profitability is a measure of evaluating the overall efficiency of the business. The best possible course for evaluation of business efficiency may be input-output analysis. Profitability can be measured by relating output as a proportion of input or matching it with the results of other firms of the same industry or results attained in the different periods of operations. Profitability of a firm can be evaluated by comparing the amount of capital employed i.e. the input with income earned i.e. the output. This is popularly known as return on investment or return on capital employed. It is regarded as the overall profitability ratio and has two components; net profit ratio and turnover ratio. That is:

**Return on Investment = Net Profit Ratio x Turnover Ratio**

Or, **Return on Investment =  $\frac{\text{Operating Profit}}{\text{Sales}}$  x  $\frac{\text{Sales}}{\text{Capital Employed}}$**

$$\text{Or, Return on Investment} = \frac{\text{Sales} - \text{Capital Employed}}{\text{Capital Employed}} \times \text{Operating Profit}$$

This method is increasingly accepted as an indicator of performance and capability. This is the reason for viewing operational and financial performance in relation to the scale of resources of funds required in production. That is, "a given amount of profit return should be evaluated in terms of the percentage profit return on the investment of funds."<sup>5</sup> Moreover, "the return on capital used depicts the effectiveness of all the operating decisions from the routine to the critical, made by the management at all levels of the organization from shop foreman to President."<sup>6</sup>

## 2. Social Profitability

Along with the economic objective of earning profits, a business is also required to perform a large number of social objectives. Besides providing better quality of goods and services, it provides big employment opportunities to the people, better condition of work, fulfill community needs, conserves resources etc. C. Mean Cardiner rightly observed, "The darkness of avarice has been dispelled by the light of a new kind of social responsibility."<sup>7</sup> Social objectives may prove profitable as well as expensive to a concern. As some objectives aids in enhancing profitability by attracting customers like in case of providing quality goods. Whilst other may be counteractive such as elimination of pollution may cost the company and reduce its profitability, but it creates social profitability.

In other words of Earnest Dale, these social objectives "appear to urge the executive to assume an infinitely broad-gauge burden of responsibilities to all the various public with whom he clears."<sup>8</sup> That makes it an obligation on the part of the company to disclose its financial, marketing, personnel and social objectives in a simple and concise form to all the members of the concern so that they can judge the influence of these objectives on their jobs.

## 3. Value Added Profitability

Wealth generation is essential for every enterprise. Value added profitability indicates the wealth generated (net value earned) as a result of manufacturing process during a specified period. Wealth generation is the very essence for survival or growth of a business. An enterprise may survive without making profit but would cease to do so without adding value. "The enterprise, not making profit, is bound to become sick but not adding value may cause its death over a period of time."<sup>9</sup>

Profit forms a part of value added. Thus, value added is a broader concept. "Value added at particular level of operating capacity and claims should be determined as value added can expose the efficiency and inefficiency of a business."<sup>TM</sup> The concept of value added can be related to the concept of social profitability of an enterprise. The investment of an enterprise comprises of the investment of shareholders, debenture holders, creditors, financial institutions etc. If an enterprise fails to generate growth or add anything as value added, it would simply mean that the enterprise is misusing public funds. This concept represents the wealth distribution in a proper manner besides suggesting how productivity can be increased when reducing the consumption of resources produces same or better outputs.

#### **4.Measurement of Profitability**

The measurement of profitability for a concern is as important as the earning of profits. The importance of measuring profitability has been stated by Hingorani, Ramanathan and Grewal, "A measure of profitability is the overall measure of efficiency."<sup>^</sup>Since, profitability is the outcome of many business activities. Therefore, its measurement is a multistage concept. As stated before profitability is a relative concept based on profits. But profits alone cannot express the concept of profitability. Thus, there arises a need to established relationship between profit and other variables. Some of the well-known techniques of measurement of profitability are discussed below: -

##### **Accounting Profitability**

The most common course of action adopted by a management in measuring profitability is that several relationships between investment figures and its related income figures are established. Profitability of a concern depends mainly up to two factors; the rapidity of turnover of capital employed and the operating profit margin. Profitability is the resultant figure obtained by the product of these two factors. Hence, profitability can be maximized by maximizing each i.e. a better profitability level can be achieved by improving the net profit ratio and turnover ratio of an enterprise. The net profit ratio reveals the margin made in each sale in terms of percentage and the turnover ratio states the rotation of the capital for affecting the sales proceeds. In technical terms the combination of profitability with operating profit margin and turnover is known as the '*triangular relationship*'. The significance of this relationship lies not only in the fact that it can be utilized as a tool of analysis but also because that it can be directly calculated from the earning and investment data. "It is useful in describing the two basic Forces bearing upon ultimate results and

therefore, establishes the area of business operation which must be properly controlled, if desired results are to be realized."™ The triangular relationship can be expressed in the forms of equation as follows: -

$$\text{Turnover} = \frac{\text{Sales}}{\text{Operating Assets}}$$

$$\text{And, Profit Margin} = \frac{\text{Net Operating Profit}}{\text{Sales}}$$

$$\text{So, Profitability} = \frac{\text{Net Operating Profit}}{\text{Operating Assets}}$$

Here, the term operating assets describe the capital employed in fixed assets and current assets. While, operating profit is the income earned from employing this capital in the business. Where on one side, increasing the net profit and turnover ratios can increase profitability, there on the other side profitability can also be increased by reducing investment in fixed and current assets and increasing profit margin.

Certain ways for reducing the investment in fixed assets are suggested below: -

**Disposing the idle plants and equipments.**

- (A) Closing down the unprofitable departments and transferring the assets of such a department to profitable ones.
- (B) Selling or leasing back the premise, which is not required.
- (C) Selling or disposing the tools and equipments which are either in worn out condition or have become obsolete.
- (D) The variations arising in measurement of profit due to existence of different methods of evaluating the assets must be duly recognized. Eg. Both straight-line method and diminishing value method of charging depreciations would differently influence the net margin. Thus, for such reasons a company must attempt for selecting more profitable method.

Some points of suggestions for decreasing current assets Investment is given below: -

- Purchasing good quality raw material at least possible prices by effective quality control and cost control techniques.
- Improving the equipments and methods of handling materials.
- By reducing the time of operation cycle and time lag between two operations.
- By bringing about reduction in the level of inventories with the help of good inventory management system.

- Curtailing the investment in accounts receivables by adopting conservative credit and collection policy.
- By maintaining just adequate cash position and investing the surplus cash in the marketable securities.
- By maximum utilization of the available resources and minimizing wastage.

Adopting any of the three ways stated below can increase the profit margin:

- (1) By increasing amount of sales. This can be made possible either by increasing selling price per unit or by enhancing sale of the product yielding high favourable returns or by minimizing the production unit incurring losses and utilizing that capacity in production of product yielding profit or by using the waste or scarp as raw material for producing other articles. Operating expenses in such cases must not be left ignored for any such increase would decrease the sales amount directly.
- (2) By reducing the cost of sales. Cost of sales comprises of elements of operating expenses. Operating expenses can be effectively and efficiently controlled through cost control and cost reduction techniques. As a matter of fact while bringing about reduction in operating expenses an enterprise can escape decrease in sales.
- (3) By increasing sales and reducing operating expenses simultaneously. As both these factors hold equal importance in raising profit margin, the improvement in any one factor while ignoring the other keep the return on investment at the same level. On the other hand, if excellence is attained in respect of one aspect while other remains unsatisfactory, it will lead to downfall in return on investment. Therefore, it is vital to maintain parity between the two factors.

### **Value Added Profitability**

Traditionally, the operational and financial efficiency of an organization are evaluated in terms of profit realized during an accounting Period. Profit analysis conducted solely and wholly on the basis of profit is regarded as uni-directional. Moreover, profitability analysis based on 'return on investment' which is two dimensional being resultant of profit margin and assets turnover is regarded as microscopic because it fails to expose the generation of earnings and its allocation to various parties. So, the need arises for assessing the profitability of a concern on the basis of profit, and absolute terms, on the basis of return on investment in relative terms and also on the basis of value added by the concern towards the gross national product. Thus, many companies are now introducing and stressing upon the

importance of the value added statement. Acknowledging the vitality of measuring value-added profitability, a large number of companies in western countries are presenting the value-added statement in their annual reports. But, this technique is at its infancy in India and is yet to be established. The presentation of value-added statement in annual reports is neither statutory nor deemed to be an obligation for companies in our country. Nevertheless, some companies have recognized its importance and have given due privilege to value-added statement by including it in their annual reports.

Value added is an excess of turnover and income from securities over and above the cost of availing materials and services the term '*turnover*' here, refers to the gross sale of goods including duties, sale tax but excluding the amount of returns, goods used for self-consumption, commission, rebates and discounts etc. The '*income from securities*' means the income in the form of dividends from subsidiary companies, rent, compensation and the like. The term '*cost of availing materials*' includes the cost of materials consumed the cost of merchanting of materials consumed in addition to the cost of stores and spare parts consumed during the process of manufacture. The term '*cost of services*' comprises of the cost of procuring services, power, fuel, repairs and maintenance, back commission, insurance premium, advertising and publicity, postage and telephones, printing, auditing, legal charges, traveling expenses etc. The employee's cost (like salaries and wages), depreciation and excise duty are not included in the cost of availing materials and services. Profit and loss account figures are the base for computation of the value added. There are certain items appearing on the debit and credit side of profit and loss account of an enterprise which is non-value added statement items like on credit side appears profit on sale of investment and fixed assets and on the debit side, provision for bad and doubtful debts, provision for taxation, non-operating expenses like donations etc.

According to one school of thought, the turnover plus income from services over the cost of bought-in of materials and services is termed as '*gross value added*'. The annual charge of depreciation on the remainder is called '*net valued added*'. Whilst another school of thought is of the opinion that the excess of turnover plus the income from services over cost of bought-in of materials and services is termed as '*value added*' and the annual charge of depreciation is known as an application of value added available to the owners of the enterprise in the form of retained earnings. For the purpose of this study the second school of thought is favoured.

There are two methods of calculating percentage of value added; *the subtractive and the additive method*. Whereby, value added can be obtained as sales less bought-in costs or



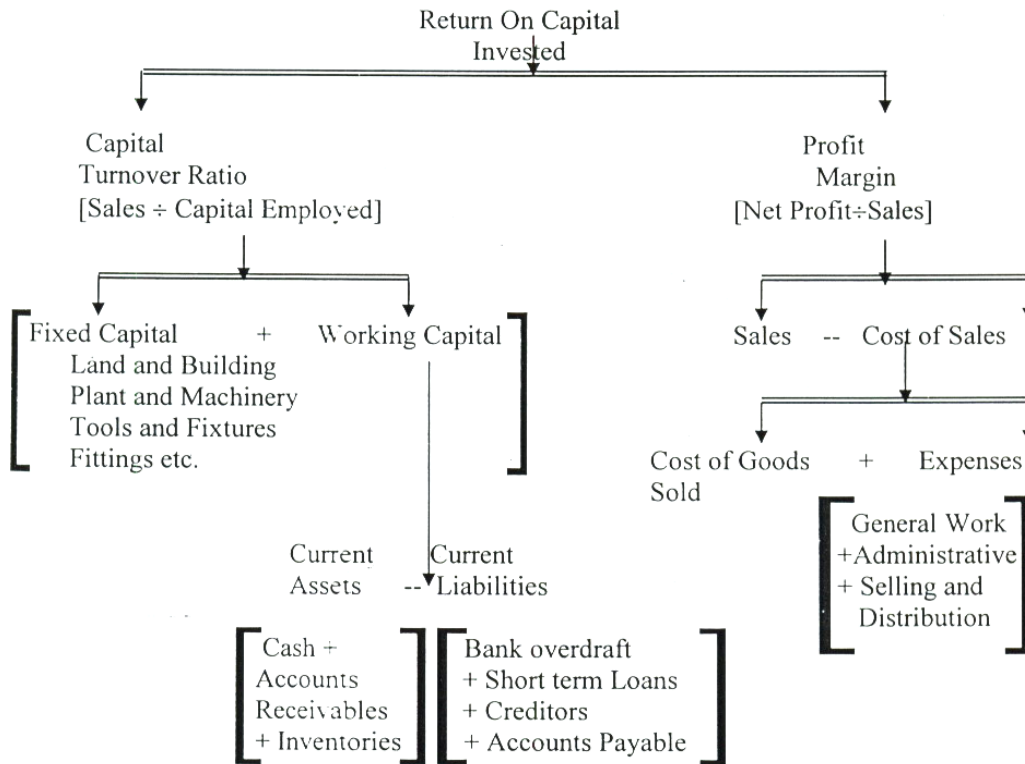
can be expressed as profit before tax plus employees cost, depreciation and interest. The application of value added belongs largely to four parties mentioned below: -

- ⇒ **Workers:** Workers contribute their skill, knowledge, capacity and efficiency. So, the share is entitled among them in the form of wages and salaries, bonus, contribution to provident funds, gratuity, welfare expenses, director's remuneration etc.
- ⇒ **Government:** A share in value added is to be given to the government for it provides most of the infra-structure facilities to an enterprise in the form of income tax, excise tax, sales tax, octrio duty, customs duty, rates and taxes etc. But the amount granted by the government to the enterprise in the form of export incentives, tax credits, subsidies, refunds of any duty etc. are to be deducted from this share.
- ⇒ **Providers of Capital:** It includes creditors and financial institutions who provides for working capital and other long-term requirements. Their share is paid off in the form of dividends and interest.
- ⇒ **Shareholders:** They are the real owners of the company. As the matter of policy the profits are to be ploughed back as retained earning which belong to them. But a share in value added is paid to them in the form of dividends which is required to be separately mentioned under the head 'reinvested in business.' Figure 4.1 displays allocation of value added to the various interested parties of steel development finance Industry by a simple and effective way of pie diagram for the period of 8 years

### **THE DU-PONT CONTROL CHART:**

E.I. Du Pont De Nemours and company Welmington, U.S.A. originally develops this chart. It was first put in operation in 1921, when Irene Du Pont was the president of the company. This system is considered to be an operationally useful tool for evolution of inter-industry, inter-corporation and inter-product profitability. The mechanics of Du Pont chart system of control utilizes the ratio inter-relationship and develops a series of chart to derive the attention of management to desirable and undesirable trends of the concern. Once a company succeeds in developing reasonable standards of performance regarding the various ratios, the performance changes can be easily judged with the help of such a system. The main objective of Du Pont system is to isolate the elements entering into the final figure in order to appraise the affect of individual factor on the performance.

**Figure 5.1**  
**Du Pont Control Chart**



The first tier i.e. capital turnover ratio is obtained by dividing sales by capital employed. Capital employed is bifurcated as fixed capital /consisting of land and building, plant machinery, tools, fixtures, fittings etc.) and working capital (which is computed by deducting current liabilities from current assets). Current liabilities are stated in the form of bank overdraft, short-term loans, creditors, accounts payable etc. Current assets are sum total of cash balance, accounts receivables and inventories. In the second tier, the sequence begins with the profit margin given by profit divided by sales. Where, profit is expressed as sales less cost of sales. Further, cost of sales is the aggregate sum of cost of goods sold and expenses like general work expenses, administrative expenses, and selling and distribution expenses.

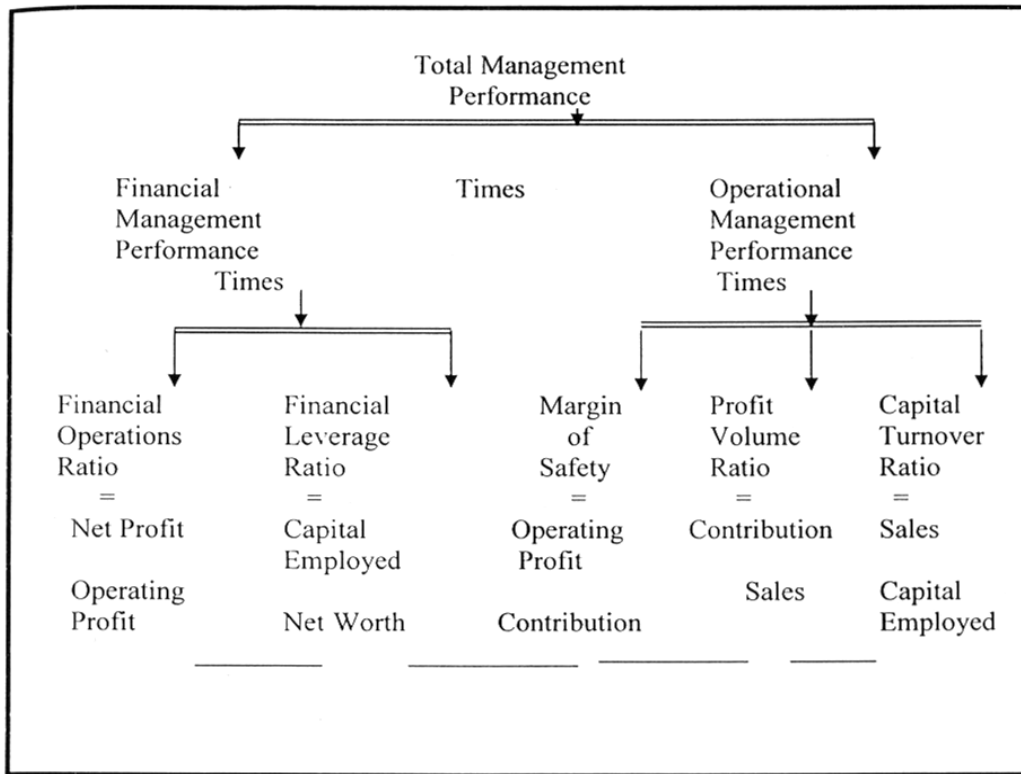
The two-tier approach concentrates attention on the separate forms contributing to profit. Improvement can be accomplished either through more effective use of available resources i.e. capital, measured by turnover sequence or by a better relationship between sales and expenses, measured by profit margin sequence. *"For providing standards of evaluation,*

*calculations are made on the ratios of return on investment, assets turnover and profit margins for comparable companies"*<sup>\*2</sup> James C. Van Home correctly remarks, "Profitability ratios are of two types; those showing profitability in relation to sales, and those showing profitability in relation to investment"<sup>TM</sup>. He further points out, "With all the profitability ratios, comparison of a company with similar companies are extremely valuable. Only by comparison are we able to judge whether the profitability of a particular company is good or bad and why. Absolute figures give some insight, but it is relative performance which is most important."<sup>TM</sup> This statement clearly emphasizes the importance of profitability.

### **MANAGEMENT ACHIEVEMENT CHART:**

Kenneth R. Rickey.<sup>15</sup> has portrayed 'Management Achievement Chart' for evaluation of total management performance. "The Management Achievement Chart and Profit Performance chart have been designed after making modifications in Du Pont Chart,"<sup>16</sup> Both these charts aid in analyzing the management performance as well as in establishing goals and measuring performance against them.

Figure 5.2  
**Management Achievement Chart**



As in figure 5.2, the Management Achievement Chart is bifurcated into two sections as financial management performance and operational management performance. Both combine together to indicate total management performance. The total management performance is given as net profit as a percentage of shareholders investment (net worth). This can be derived from the above chart in the form of equation as follows:

$$\text{Total Management Performance} = \text{Financial Management Performance} \times \text{Operational Management Performance}$$

OR

$$\text{Total Management Performance} = \frac{S.V}{C.E.} \times \frac{C}{S.V.} \times \frac{O.P.}{C} \times \frac{N.P.}{O.P.} \times \frac{C.E.}{N.W.}$$

i.e.  $\text{Total Management Performance} = \frac{N.P.}{N.W.}$

Where, S.V = Sales Volume  
C.E. = Capital Employed  
C = Contribution

O.P.	=	Operating Profit
N.P.	=	Net Profit and
N.W.	=	Net Worth

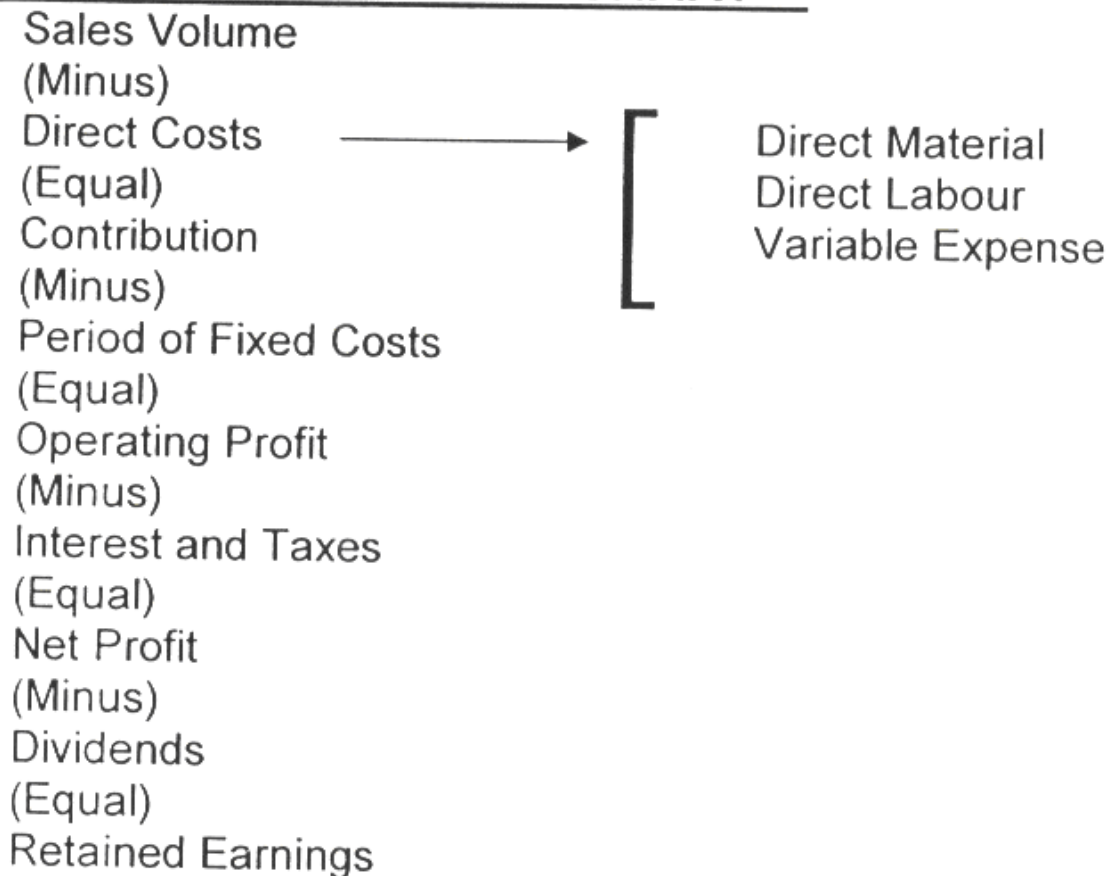
The product of financial operation ratio and financial leverage ratio calculates the performance of financial management. Financial operations ratio is computed by dividing net profit by operating profit. Net profit is arrived at after making adjustments for interest, taxes, profit or loss on sale of securities, dividend income etc. The financial leverage ratio is obtained by dividing capital employed by net worth. Corporate financial policy determines the range of this ratio. Moreover, interest on debenture reduced the financial ratio.

Another section relating to performance of operating management is the product of margin of safety, profit volume ratio and capital turnover ratio. Margin of safety is expressed as the excess of sales over break-even sales. It is calculated by dividing the operating profit (earnings before interest and taxes popularly known as EBIT) by contribution. The calculation of contribution given by sales less variable costs is made clear by way of profit performance chart is figure 4.3. The Profit volume ratio, which depicts the amount on sales after sales, has attained break-even-point. This ratio expresses the amount made on each rupee of sales before deduction of fixed cost, financing cost and taxes in terms of percentage. It is obtained buy dividing profit contribution by sales volume.

Although, total management performance can be calculated directly by dividing net profit by net worth but it is advisable that all the five relationships should be scrutinized separately in order to arrive at the final figure as essential for better decision-making. For better understanding of Management Achievement Chart and detail expression of the terms mentioned in the ratios, Profit performance chart must be refereed to which is drawn in figure.

Chart-5.3

**PROFIT PERFORMANCE CHART** <sup>31</sup>



However, Management Achievement Chart is regarded as the responsibility accounting in action. As in practice, after the targets set on the basis of Management Performance Chart are agreed upon, the objectives are accordingly formulated for accounting and finance department. Thereby, responsibility is imposed upon each manager for controlling his respective costs.

**WEAKNESS OF PROFITABILITY:**

Profitability is a full-fledged measure of evaluating overall business performance. Yet a management more often comes across certain pitfalls while practicing it. The following are some of the weak points that emerge in profitability analysis: -

- (A) Most of the techniques of profitability are bettered analyzed only if a comparative study with the part results of the business or with the results of a similar business is carried out. This sort of comparison only provides a glimpse of the past performance. Moreover, forecasts based on part trend may subjects to time factor, market

conditions managements policies etc. resulting in defective planning and unexpected results. And also the comparison of performance of two companies operating under different situations creates difficulty,

- (B) Profitability analysis may be regarded as only a beginning. It makes handy only a fraction of information required for decisions making. Thus, the information obtained only from profitability analysis cannot be gainfully interpreted but must be used in conjunction with information collected from other sources to ensure comprehensive analysis. Profitability must be looked upon as a means to an end rather than an end in itself.
- (C) Profitability is bound to be a carrier of human limitations. Since, it is the management of organization that plans the future course of action after interpreting the resulting already achieved. Where one management favors a particular course of action the other may not be at consensus with it like, some manages believe in adopting conservative policy, while some other prefer being liberal with regards to business policies. More often the interpretation and analysis is pure matter of managerial skills.
- (D) Profitability often becomes a victim of windows dressing i.e. manipulation of accounts in such a way that it concedes the vital facts in order to present a better position of a firm than what actually it is. Eg. a high total assets turnover indicates the efficiency of management in making good use of tangible assets. But assets with lower book value and lower depreciations may result in a misleading figure of high total assets turnover ratio.
- (E) No fixed norms can be laid down for the ratios. As ideal ratio for assets turnover is 2 times but in case of capital intensive industries 1.5 to 2 times is also admissible. Similarly, it is also considered ideal if current assets are twice the current liabilities. But in case of industries capially of acquiring needful funds form bankers may be perfectly ideal even if current assets are equal to current liabilities.
- (F) Profitability is largely based on ratios of different kinds, which are composite figures of various figures. Where, some figures are pertaining to time period other represent an instant of time, still other are averages. Nelcom Tom and Miller Paul have made wonderful remarks in the respect, *"A man who has his head in the over and his fact in the ice-box is on the average comfortable."*<sup>TM</sup> Many of the figures used in ratios analysis do not hold much significance than the average temperature of the room in which this man sits. Moreover, balance sheet presents figures of balance of accounts

at one moment of day. It certainly provides only a rough idea of balance during the year and is not the true representative of typical balance.

- (G) The data on which profitability analysis is based usually consist of estimates like with regards to the life of an asset, the ratio followed for the depreciation policy, provisions for bad debts etc. Hence, an analyst should not feel unnecessarily elated with what he calculates and interprets. As the actual results based upon this calculations are bound to be probable.
- (H) Practically there exist differences with regards to the definitions of certain terms. As diversity of views exists as to what should be included in shareholder's equity, capital employed or whether, intangible assets are to be included in calculating rate of return on investment etc. Above all, even profit holds different meaning to different people. This poses difficulty in calculation as well as in comparisons of profitability.
- (I) The interpretation and comparisons of profitability becomes less reliable due to price level change. The accounting figures, on the basis of which profitability analysis is made, are assumed to remain constant. In reality, prices constantly change over years affecting accounting earnings. This again contributes to misleading results, as two companies set up in different years or plant and machinery of different ages cannot be accurately compared. The techniques of current purchasing power and current cost accounting prove somewhat helpful in this respect.
- (J) Profitability analysis is only a quantitative analysis. It discards the importance of; managerial skill that accurately predicts and plans for profitability, manual efficiency and efforts that contributes a lot in achievement of projected level of profits external factors like market conditions, demands of products, business cycle and the like. It does not depict those terms, which cannot be expressed in monetary terms.

"It is unfortunate that the word 'profit'<sup>1</sup> is looked upon as a term of abuse since some firms always act to maximize profits at the cost of employees, customers and society.<sup>18</sup> Profits no doubt are essential but is morally wrong to assume that the management of company should initiate its every action towards maximization of profits, ignoring the social consequences altogether.

### **ANALYSIS OF PROFITABILITY:**

The most effective tool of analysis of profitability is ratio analysis. Ratios revealing profitability are popularly called profitability ratios. Profits may be derived either form operating or form non-operating activities. In the present study emphasis is laid upon profits



resulting from operating activities. The profitability from such activities is analyzed in detail from the point of view of the following considerations: -

1. Profit Margin
2. Return on Investment
3. Earnings per Share
4. Dividend Policy
5. Asset turnover

## **1. Profit Margin**

"The profit margin is a measure of overall profitability. These measures also referred to as the net income percentage or the return on sales".<sup>19</sup> Profit margins is the return generated by the company's assets and represents the difference between revenues and total expenditure."<sup>20</sup> in a manufacturing concern the profit margin results from sale of its products. In fact, "it is the key figure in the income statement or profit and loss account." <sup>21</sup>

The best way of calculating profit margin is to express them as a percentage of net sales i.e. sales minus sales returns, discount and rebates etc. Sales are the main activity of all concerns; manufacturing or merchandise. The aggregate of sale and other incomes becomes the total revenue but as against the net sales total revenue fails to indicate the effective volume of business which does not reveal the true profit. A company is expected to earn adequate profit on each rupee of sale else it would fails to give reasonable returns to its shareholders and will not be in a position to cover fixed costs and fixed charges on debts.

There are certain constraints that put restrictions on the efforts directed towards widening of profit margin. As the free economy featuring free competition, consumerisation and public interest places limit on profit margin. Likewise, inflation adds to difficulty in controlling cost accelerations. Yet, better organization, technical innovations, effective administration etc. are certain factors that provide answer to the problem of limiting the percentage of profit margin to a great extent. "*Terms like income, earning or profit are used interchangeably. The more commonly used accounting forms of profit are gross profit or operating profit (known as earnings before interest and tax) and net profit*"<sup>22</sup> Profit margins can be studies in detail under three heads; gross profit margin, net profit margin and operating profit margin.

### **(A) Net Profit Margin**

As pointed out by Hingorani, Ramanathan and Grewal, "Net profit margin indicates the net margin earned in a sale of Rs. 100."<sup>23</sup> Van Home states that net profit "tells us the

relative efficiency of the firm after taking into account all expenses and income taxes, but not extra-ordinary charges"<sup>24</sup> Net profit is obtained after deducting amount of operating expenses, interest and taxes from the gross profit amount. Net profit after taxes is nothing but the sum of dividends (paid or provided for) plus the retained earnings. Net profit ratio is measured by dividing net profit after taxes by sales. Thus,

$$\text{Net Profit Margin} = \frac{\text{Profit after tax}}{\text{Sales}}$$

Again no specific norm has been set for measurement of net profit margin ratio. If the ratio shows an increasing trend year after year, it may be concluded that business conditions are improving. Talking of an exception, a company with a low profit margin can earn a high rate of return on investment. This can happen only if the company has higher inventory turnover. Moreover, if net profit margin ratio is interpreted with gross profit margin ratio jointly, it adds meaning to the firm's profitability.

"A high net profit margin would ensure adequate return to the owners as well as enable a firm to withstand adverse economic conditions when the selling price is declining, cost of production is rising and demand for the product is falling."<sup>25</sup> The inadequate net profit would debar the company from paying off its debts and giving a satisfactory return to its shareholders. 'This ratio indicates a firm's capacity to withstand adverse conditions which may arise because of various reasons such as; (i) falling price, (ii) rising cost, and (iii) declining sales'<sup>26</sup>. In simple words, a firm having high net margin ratio would be benefited in terms of better surviving conditions in the times of falling selling prices, rising cost of production or declining demand for the product.

It indicates the manufacturing, financing and selling efficiency of concern. This ratio states the portion of sales that is available for shareholders after all Charges, costs and expenses have been provided for. 'This ratio is an inductive of management's ability to operate the business with sufficient success not only to recover from revenue of the period, the cost of merchandise or services, the expenses of operating the business, the expenses of operating the business (including depreciation) and the cost of borrowed funds, but also to leave a margin of reasonable compensation to the owners for providing their capital at risk. The ratio of net profit (after interest and taxes) to sales essentially expresses the cost/price effectiveness of the operation.'<sup>27</sup> this ratio is mainly related to non-operating activities. Table

5.1 depicts the net margin of the selected steel Companies in India for the period 1999-2000 to 2008-09 under study.

**Table 5.1**  
**Net Profit Ratio Of Steel Companies In India.**  
**(From 1999-2000 To 2008-2009)**

(Ratio in Percentage)

companies	1999-2000	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	AVG.	S.D	max	min
JSWSL	15.94	-3.69	17.62	-3.97	14.72	12.37	12.59	13.90	13.81	3.03	2.92	12.60	14.72	17.62
JS&AL	-0.78	0.40	0.44	0.27	0.68	0.79	28.17	74.03	n.a	n.a	13.00	26.52	74.03	-0.78
SAIL	10.55	-4.48	10.96	-1.57	10.31	21.38	12.39	15.78	16.50	12.66	6.15	11.90	21.38	10.96
TSL	6.86	7.69	2.70	10.34	14.65	21.89	20.47	21.36	21.12	19.38	14.65	7.20	21.89	2.70
avg.	-5.10	-0.02	-6.36	1.27	10.09	14.11	18.40	31.27	17.14	11.69	9.18	14.56	33.01	-6.67

**Sources: Annual Reports of steel Companies From 1999-2000 to 2008-2009**

The above Table No.5.1 shows the Net Profit Ratio of the JSWSL from the year 2000-01 to 2008 -09. During the ten years study period researcher found many things. The trend of the ratio of above said company was fluctuating in downward direction during the study period. The highest value of the ratio was 14.72 percent in the year 2003-04 and the lowest value of the ratio was -17.62 21 in the year 2001-02. The average value of the Net Profit ratio of above said company was 2.92 during the study period.

The net profit ratio of JS&AL was depicted in the Table No.5.1. The net profit ratio was showing fluctuated trend with an average of 13.00 percent. The net profit ratio was -0.78 percent in 1999-2000 which went down to 0.40 percent 2000-01. The ratio was 0.44 percent in 2001-02 which again slightly went down to 0.27 percent in 2002-03. The ratio was 0.68 percent in 2003-04 and 0.79 percent in 2004-05.the ratio was 28.17 percent in 2005-06 and 74.03 percent in 2006-07.The average ratio has been of 13.00 percent with a range of minus 0.78 percent to 74.03 percent. The average ratio was above the industry average which was considered to be good ratio. Company should try to minimize production cost. The standard deviation was 26.52 percent which showed high changes in net profit ratio.

The above Table No.5.1 shows the Net Profit ratio of the SAIL from the year 2000-01 to 2008-09. During the ten years study period researcher finds many things. The trend of the ratio of above said company was progressive and fluctuated from minus 10.55 percent in 1999-02 to 2008-09 during the study period. The highest value of the ratio was 21.38 in the year 2004-05 and the lowest value of the ratio was -10.96 in the year 2001-02. The standard deviation was 11.90 percent which showed slightly changes. The average value of the Net Profit Ratio of above said company was 6.15 during the study period. The company shows the good performance during the study period.

The Table No.5.1 showed the net profit ratio of TSL with the fluctuated trend during the research period. The highest net profit ratio found 21.89 percent in 2006-07 and the lowest net profit ratio found of 2.70 percent in 2001-02 with average of 14.65 percent. The standard deviation was 7.20 percent and 91.90 percent. The company shows the average performance was lower than the industry's average during the study period.

Above analysis explains that the JS&AL has the highest net profit ratio followed by SAIL, JSWSL and TSL have witnessed very good net profit ratio therefore company needs to maintain the ratio.

#### **Net Profit Ratio (ANOVA Test)**

**Null Hypothesis:** There is no any significant difference in Net Profit Ratio of steel units under study.

**Alternative hypothesis:** There is significant difference in Net Profit Ratio of steel units under study.

Level of Significance: 5 percent

Critical value: 2.24

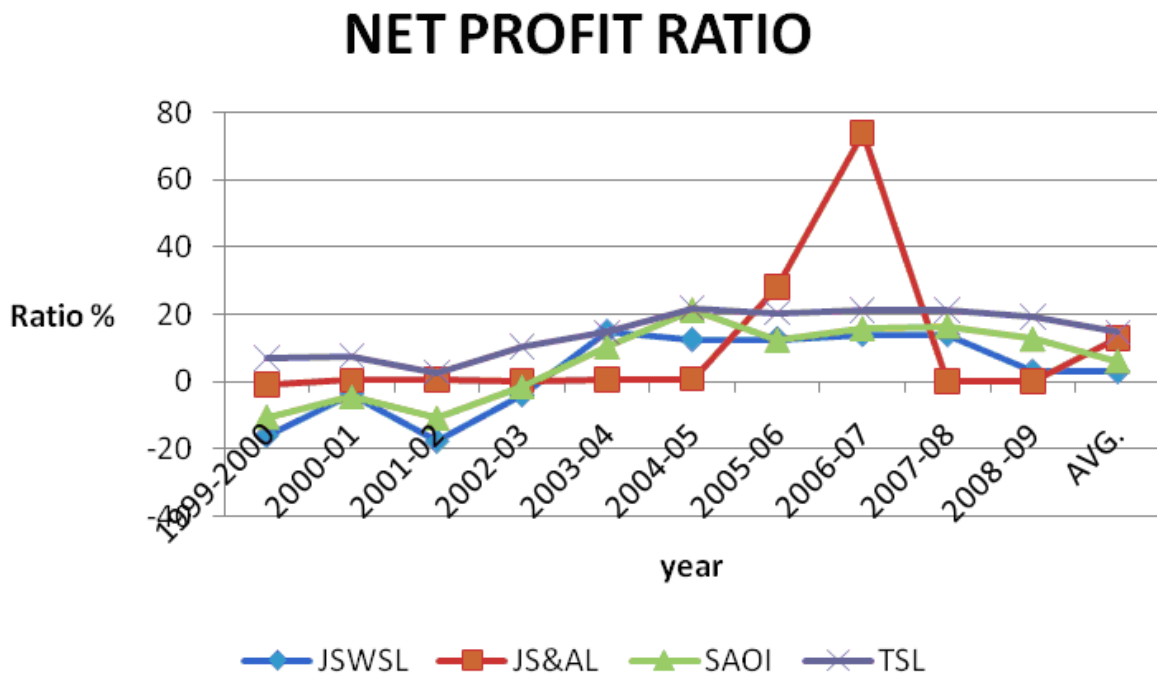
Degree of freedom: 37

**Table No.5.2**  
**Net Profit Ratio (Anova Test)**

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	4969.991	9	552.2212	3.844165	0.002892	2.235982
Within Groups	4022.25	28	143.6518			
Total	8992.241	37				

Table No.5.2 Indicates there is no significant difference in Net Profit ratio of steel units under study because the calculated value of 'F' is lower than table value so, null hypothesis is rejected and alternative hypothesis accepted. It can be concluded that there is a significance difference in the Net Profit ratio of steel units under study.

**Chart-5.1**



## 2. Return on Investment

The most commonly used measure of profitability is the technique of relating the profit output with the capital input, popularly called the rate of return on capital invested. *"This rate is the end-profit of a series of a quantitative variables representing different interconnected and interdependent factor of business operations."*<sup>28</sup> The return on investment is calculated by multiplying the profit margin on sales with investment turnover. Profitability on the basis of return on investment can be analyzed and interpreted under following categories: -

**(A). Return on Capital employed.**

**(B). Return on Shareholders' equity/Net Worth**

**(C). Return on Paid-up share capital.**

**(A). Return on Capital Employed.**

The term investment refers to total assets or at times net assets. Net assets are the term used for the fixed assets in addition to current assets less current liabilities (without bank loan). The funds employed in net current assets are mostly known as capital employed. Though there is no consensus as regards to the definition of capital employed. In simplest possible words capital employed whether owned or borrowed is said to be the investment made in the business. Capital employed, in other words signifies net worth plus total debts. Where, *Copeland, Dascher and Davison*<sup>29</sup> preferred the term 'Group Capital', *R. Worwick Dobson*<sup>30</sup> suggested the term, 'Return on Capital contributed' for it. To have a better understanding of the term capital employed and for minimizing the variations as to the meaning of capital employed. Let us examine the various items used for computation of capital employed. These items are described below: -

- Cash: Cash, normally used for fulfilling business requirements is a component of capital employed. But cash in excess of normal business requirement is an 'idle asset' therefore; it should be excluded from computation of the capital employed.
- Debtors: Debtors too are a part of capital employed in business but provision should be made in respect of bad and doubtful debts before including this term.
- Stock: Stock of raw material, work-in-progress, finished goods etc. are also included at cost for obtaining amount of capital employed.
- Investment: Usually the investment made by a company outside the business is excluded from this preview but if these external investments are made in the interest of the company they are included.

- Fixed Assets: Certain points are required to be considered before fixed assets are taken into accounts for evaluation of capital employed, which are:
  - (A) Valuation of Fixed Assets: There are three methods that can be used for valuing fixed assets, viz., gross value (original cost), net value (written down values) and replacement cost. Each of these methods has its own pro and cons. As a matter of fact the net value methods are favoured more than gross value method. Further, due to the problem of rising prices replacement cost has become more preferable a method than gross value method. "Replacement cost can either be carried at on the market rates or with the help of index numbers of market prices."<sup>31</sup>
  - (B) Idle Assets: Return on investment is a test of efficiency. So, idle assets are not included for the purpose of computing capital employed such non-operating assets do not contribute anything towards the earning of the company. But assets like, 'stand-by plant' as is required to maintain the level of production shall be included therein.
  - (C) Intangible Assets: Intangible assets like goodwill, patents, trademark, franchise etc., are to be written off as early as possible. Therefore, should be excluded unless have some resale value.
  - (D) Fictitious Assets: Fictitious assets like preliminary expenses, deferred revenue expenditure etc., shall in no case be included for the purpose of calculating capital employed.

Still the problem remains that the word investment implies different things to different persons. 'An analyst may include certain assets while the other may exclude them altogether in the computation of the amount of capital invested in the business.'<sup>2</sup> Anyhow, no unanimity of any kind exists regarding the concept of the term, 'return'. J. Batty<sup>33</sup> has explained this term under three concepts, namely; gross capital employed, net capital employed and proprietor's net capital employed. For the purpose of the present study the word return can be best explained by the term 'operating profit'<sup>1</sup>. The term capital employed for the purpose of present study would be analyzed and interpreted in the light of gross and net concept of capital employed.

#### **(a). Return on Gross Capital Employed**

Gross capital employed consists of the total assets i.e. the total of fixed assets and current assets employed in the business. Alternatively, it is the amount of shareholder's equity and total liabilities. It may be expressed by way of formula as:

**Return on Gross** =  $\frac{\text{Net Profit Before Interest and Taxes}}{\text{Capital Employed}} \times 100$

**Capital Employed** =  $\frac{\text{Gross Capital Employed}}{\text{Gross Capital Employed}}$

The term net profit here is the quantum of profit earned by the business before any deductions in respect of interest (on long and short term borrowings) and taxes have been made. While gross capital employed constitutes of amount of fixed assets less depreciation and current assets.

The higher the ratio of return on capital employed, the better it is. This ratio significantly tells how is efficient management in utilizing long and short-term funds supplied by creditors and owners. *Brown and Howard* has favoured a return of 17 percent as ideal ratio in this context. In table 5.2 rate of return on Gross Capital Employed has been given pertaining to selected steel companies in India for the period 1999-2000 to 2008-2009 under study.

**Table 5.3**  
**Return On Gross Capital Employed Of Steel Companies In India.**  
**(From 1999-2000 To 2008-2009)**

(Ratio in Percentage)

Companies	1999-2000	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	AVG.	S.D	max	min
JSWSL	3.30	4.94	7.76	15.69	27.09	37.86	27.80	32.14	24.88	13.27	19.47	12.10	37.86	3.30
JS&AL	8.10	33.33	28.38	19.84	11.29	8.91	27.52	-24.57	n.a	n.a	14.10	17.23	33.33	-24.57
SAIL	8.46	15.50	8.98	17.73	39.80	75.79	47.59	55.82	52.03	31.92	35.36	22.70	75.79	8.46
TSL	17.72	19.18	15.70	30.44	46.54	64.95	51.44	31.60	19.63	17.23	31.44	17.26	64.95	15.70
avg.	9.40	18.24	15.20	20.93	31.18	46.88	38.59	23.75	32.18	20.81	25.09	17.32	52.98	0.72

**Sources: Annual Reports of steel Companies From 1999-2000 to 2008-2009**

The Above Table No.5.2 showed Return on gross capital employed of JSWSL. The trend of this ratio was fluctuated during the research period. The standard deviation was 12.10 percent with an average of 19.47 percent. The return on gross capital employed was 3.30 percent in 1999-2000 and 4.94 percent in 2000-01. The ratio rose to 7.76 percent in 2001-02 and reached at the level of 15.69 percent in 2002-03. The ratio then after inclined to 37.86 percent in 2004-05 and 32.14 percent in 2006-07. The ratio was 32.14 percent and 24.88 percent in 2007-08 and in the last year the ratio was 13.27 percent in 2008-09. Thus the ratio ranged between 37.86 percent in 2004-05 and 3.30 percent 1999-2000.

The return on gross capital employed of JS&AL was shown in the above Table No. 5.2 the ratio ranged between minus -24.57 percent in 2006-07 and 33.33 percent in 2000-01. The average ratio was 14.10 percent with a standard deviation of 17.23 percent. The ratio was 8.10 percent in 1999-2000 and then it went down 8.91 in 2004-05.

The above Table No.5.2 showed return on gross capital employed of SAIL. The ratio showed very fluctuating trend with an average of 35.36 percent during the study period. The ratio was 8.46 percent in 1999-2000 and went up to 39.80 percent in 2003-04. The ratio was



75.79 percent in 2004-05 and 47.59 percent in 2005-06. The after it rose and reached to the highest level of 55.82 percent in 2006-07 and 52.03 percent 2006-07. The ratio was very good in the last three years of study period. The standard deviation was 22.70 percent.

The above Table No.5.2 shows the gross capital employed ratio of TSL from 2000-01 to 2008 -09. The trend of the above said ratio was mixed during the study period. The trend was upward in the beginning of the study and in the year 2004-05 it was upward further it increases in the year 2004-05. The highest value of the ratio was 64.95 percent in the year 2004-05 and the lowest value of the ratio was 15.70 percent the year 2001-02. The average value of the ratio was 31.44 with a standard deviation of 17.26. The overall position was good.

### **ANOVA test**

- ❖ **Null Hypothesis:** There is no any significant difference in Return on gross capital employed ratio of steel units under study.
- ❖ **Alternative hypothesis:** There is a significant difference in Return on gross capital employed ratio of steel units under study.
- ❖ **Level of Significance:** 5 percent
- ❖ **Critical value:** 2.24
- ❖ **Degree of freedom:** 37

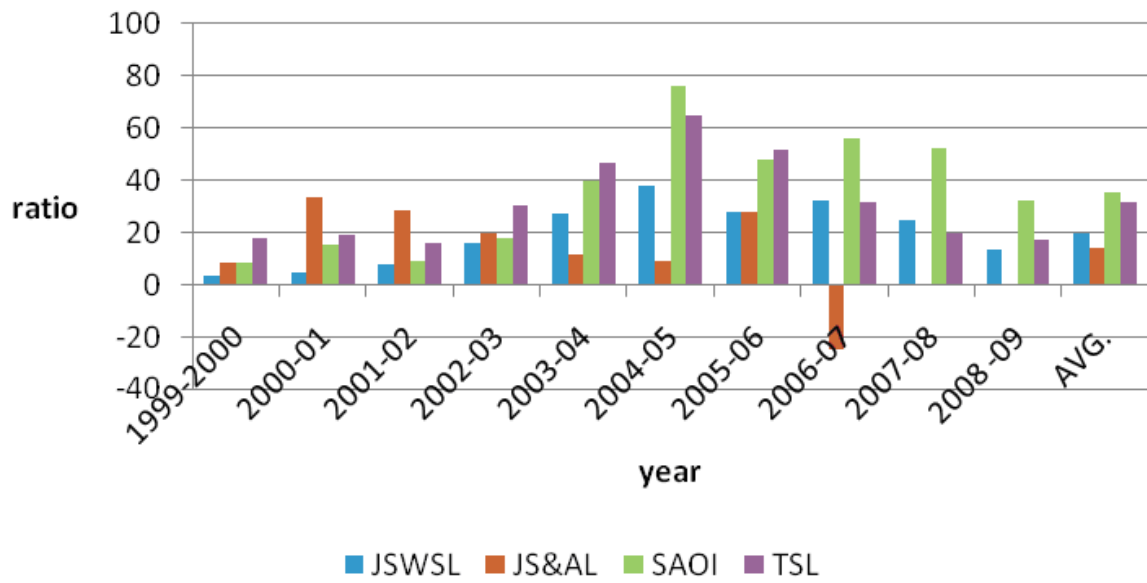
Table No.5.4  
Return On Gross Capital Employed Ratio (Anova Test)

<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Between Groups	4609.219	9	512.1354	1.574932	0.1713	2.235982
Within Groups	9105.022	28	325.1794			
Total	13714.24	37				

Since  $F_{cal} > F_{critical}$  (at 5% significance level), the null hypothesis is accepted and alternative hypothesis is rejected and hence it is concluded that the Return on gross capital employed ratio does not differ significantly.

Chart-5.2

## Return on Gross Capital Employed



### (b) Return on Net Capital Employed

Net capital employed is the total of fixed assets plus current assets less current liabilities. In other words it is the quantum of permanent capital expressed as non-current liabilities plus shareholders equity. Therefore,

$$\text{Return on Net Capital Employed} = \frac{\text{Net Profit before Interest and Taxes}}{\text{Net Capital Employed}} \times 100$$

The fixed assets forming a part of net capital employed are taken into account only after deducting the amount of depreciation. This ratio is regarded as one of the best method of evaluating managements' efficiency and overall profitability.

A company observing high rate of net capital employed will a ways be in comfortable position to capitalize. This ratio measures the earning power of a concern and indicates the economics productivity. Hence, a low ratio always suggests a bad sign of company's affairs. Table 5.4 exhibits the return on Net capital Employed of selected steel companies in India for the period ranging from 1999-2000 to 2008-09.

**Table 5.5**  
**Return On Net Capital Employed Ratio Of Steel Companies In India.**  
**(From 1999-2000 To 2008-2009)**

(Ratio in Percentage)

companies	1999-2000	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	AVG.	S.D	max	min
JSWSL	-3.68	-1.17	-9.54	-4.65	2.42	14.93	11.16	14.05	13.92	1.03	3.85	8.98	14.93	-9.54
JS&AL	-1.47	2.04	1.93	0.52	1.01	0	4.38	51.61	n.a	n.a	-5.40	18.75	4.38	51.61
SAIL	-11.36	-6.92	-18.5	-4.01	19.62	48.42	25.59	34.13	33.31	19.97	14.03	22.67	48.42	18.50
TSL	3.56	7.71	2.02	12.36	21.41	39.43	32.3	23.63	13.66	10.22	16.63	12.33	39.43	2.02
avg.	3.2375	0.415	6.0225	1.055	11.115	25.695	18.358	5.05	20.2967	10.4067	7.28	15.68	26.79	19.41

**Sources: Annual Reports of steel Companies from 1999-2000 to 2008-09**

Table no.5.3 makes it evident that the Return on Net Capital Employed ratio in JSWSL decreasing continuously from 1999-2000 to 2008-09. It was -3.68 times in 1999-2000 and it was -1.17 percent in 2000-01. The ratio then after slightly declined to -9.54 percent in 2001-02 and -4.56 percent in 2002-03. The ratio was 2.42 percent in 2003-04 which was good but it was above 10 percent in 2004-05.the ratio was 14.05 percent in 2006-07 and 13.92 percent in 2007-08 and 1.03 percent in 2008-09.The average ratio was 3.85 percent with the standard deviation of 8.89 percent. The ratio ranged between 14.93 times in 2004-05 and -9.54 percent in 2001-02. The Return on Net Capital Employed ratio except in 2001-02 and -1.17 and -4.65 percent 2002-03 indicates good operational efficiency use of the total assets.

In Table, no.5.3 JS&AL witnessed a fluctuating and decreasing trend in Return on Net Capital Employed ratio. It was -1.47 percent in 1999-2000, which went up to 2.04 percent in 2000-01 but thereafter it continuously, stepped down. It slightly went up to 0.52 percent in 2002-03 and further went up to 1.01 percent in 2003-04. The ratio went down to 0.00 percent in 2004-05. The average ratio was -5.40 times with standard deviation of 18.75 percent. The operation efficiency was the worst of this company.

The above Table no. 5.3 witnessed Return on Net Capital Employed ratio of the SAIL. The Return on Net Capital Employed ratio showed very increasing trend during the study period. The ratio was -11.36 times in 1999-2000 and it was -6.92 percent in 2000-01 the ratio was not good in these years. However, it was slightly gone up to 19.62 percent 2003-04 and 48.42 times in 2004-05. The ratio was less than ten in all years of study period. The standard deviation was 22.67 percent. The ratio has been the highest of 48.42 percent in the years of 2004-05 and the lowest of -18.50 percent in 2001-02. The ratio was showing good operational efficiency.

The above Table no. 5.3 showed Return on Net Capital Employed ratio of TSL. The ratio indicated the fluctuated and decreasing trend during the study period. The ratio was 3.56 times in 1999-2000, which was more than the one. The ratio was highly increased to 7.71 percent 2000-01 and after this year, the ratio declined to 2.02 percent in 2001-02. The ratio was 12.36 percent in 2002-03 and 0.36 times in 2004-05 indicating lower efficiency use of assets. The ratio was the lowest in the last year of the study period. The average ratio was 16.63 percent with a standard deviation of 12.33 percent and the overall financial efficiency has been very good.

Above analysis, shows that the total assets turnover ratio of TSL was found very highest of 16.63 percent followed by SAIL, JSWSL and JS&AL. The average ratio of TSL was above the total average of industry. This company has utilized its capital efficiently and JS&AL is advised to utilize the its capital efficiently to generate the enough sales

### **ANOVA test**

- ❖ **Null Hypothesis:** There is no any significant difference in Return on Net Capital Employed ratio of steel units under study.
- ❖ **Alternative hypothesis:** There is a significant difference in Return on Net Capital Employed ratio of steel units under study.
- ❖ **Level of Significance:** 5 percent
- ❖ **Critical value:** 2.24
- ❖ **Degree of freedom:** 37

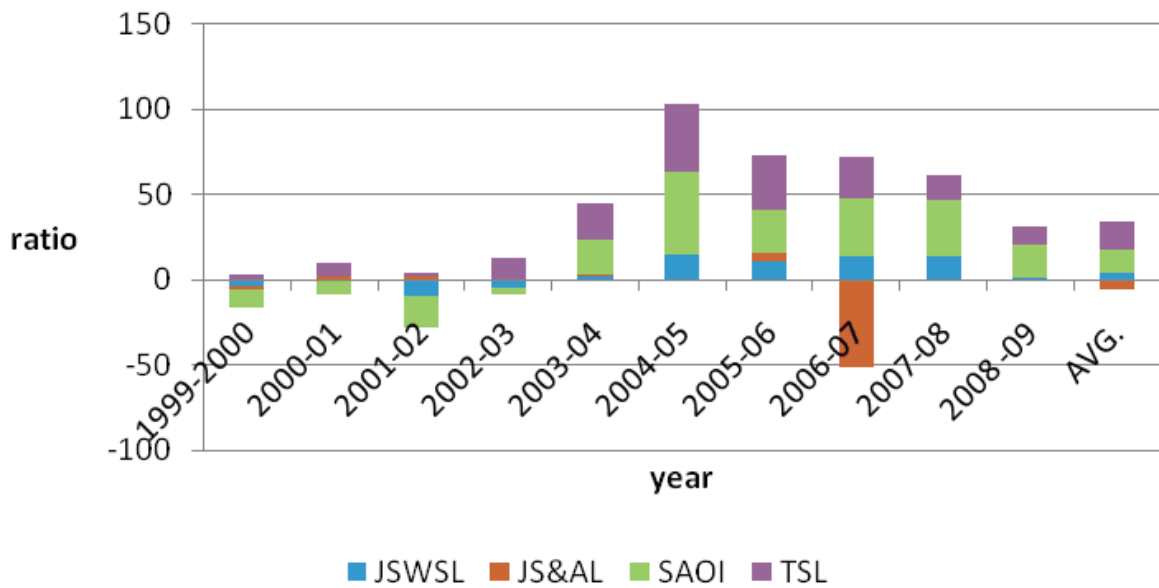
Table No.5.6  
Return On Net Capital Employed Ratio (Anova Test)

<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Between Groups	3940.77	9	437.8633	1.540853	0.182324	2.235982
Within Groups	7956.742	28	284.1694			
Total	11897.51	37				

Since  $F_{cal} > F_{critical}$  (at 5% significance level), the null hypothesis is accepted and alternative hypothesis is rejected and hence it is concluded that the Return on Net Capital Employed ratio does not differ significantly.

**Chart-5.3**

## Return on Net Capital Employed



### **(B) Return of Shareholders Equity/Net Worth**

In the words of K. Jr. H. Clifton, "*The return on equity relates net to stockholder's equity.*"<sup>35</sup> One of the objectives of operating a company is to seek benefit of its shareholders. Shareholders are all the more interested in knowing the amount of return entitled to them by the company on the investment made by them. Return on shareholders' equity calculates the profitability of owner's investment. So, the formula derived is:

$$\text{Return on Net Worth} = \frac{\text{Net Profit after Interest And Taxes}}{\text{Total Shareholders' Equity}} \times 100$$

This ratio is expressed in terms of percentage of net profit (after interest and taxes) earned on owner's equity. Shareholder's equity includes equity share capital, preference share capital, share premium, revenue and surplus less accumulated losses. Anthony and Reece are of the opinion that this ratio "reflects that how much the firm has earned on the funds invested by the shareholders (either directly or through retained earnings.)". "This ratio is, thus, of great interest to the present as well as prospective shareholders and also of great concern to management." As it significantly tells how efficiently the firm is using the resources of the owners i.e. the shareholders of the company.

A high rate of return is desirable in this case too. As it would depict the efficiency of the management in handling owner's funds. Business conditions and trading on equity. Contrary to this, a low rate of return simply implies misuse of shareholder's funds because of inefficient and ineffective production, sales, financial and general management. It also indicates unfavorable business conditions and over investment in the fixed assets. 'For manufacturing enterprises the usual standard of return on owner's fund is 10-15 percent'<sup>38</sup> Table 5.4 contains the figures of Return on Net Worth of selected steel Companies in India from 1999-2000 to 2008-2009.

**Table 5.7**  
**Return On Shareholders Fund Of Steel Companies In India.**  
**(From 1999-2000 To 2008-2009)**

(Ratio in Percentage)

companies	1999-2000	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	AVG.	S.D	max	min
JSWSL	-14.27	-4.99	-45.34	-27.29	10.93	37.13	20.88	24.3	25.4	2.16	2.89	26.08	37.13	45.34
JS&AL	-2.08	2.87	2.63	0.68	1.28	0	5.96	-28.13	n.a	n.a	-2.10	10.78	5.96	28.13
SAIL	-36.65	21.58	-66.13	-18.44	65.83	86.5	33.91	40.09	36.77	23.3	14.36	48.22	86.50	66.13
TSL	6.48	13.3	3.43	24.08	41.24	58.11	41.14	35.05	22.59	18.12	26.35	17.33	58.11	3.43
avg.	-11.63	-2.6	26.353	5.2425	29.82	45.435	25.473	17.8275	28.2533	14.5267	10.38	25.60	46.93	34.04

**Sources: Annual Reports of steel Companies from 1999-2000 to 2008-09**

Return on Shareholders Fund of steel Companies during the study period from 1999-2000 to 2008-09 shown in Table No.5.5 which gives a clear picture of Return on Shareholders Fund of steel Companies kept by the four companies. In Return on Shareholders Fund of steel Companies of all the steel companies shows fluctuating trend throughout the study period. The minimum Return on Shareholders Fund of steel Companies in JSWSL is -45.34 (2001-02,) JS&AL is -28.13 (2006-07), SAIL is -66.13 (2001-02) and TSL is 3.43 (2001-02). The maximum Return on Shareholders Fund of steel Companies in JSWSL is 37.13 (2004-05), JS&AL is 5.96 (2005-06), SAIL is 86.50 (2004-05), and TSL is 58.11 (2004-05).

#### **ANOVA test**

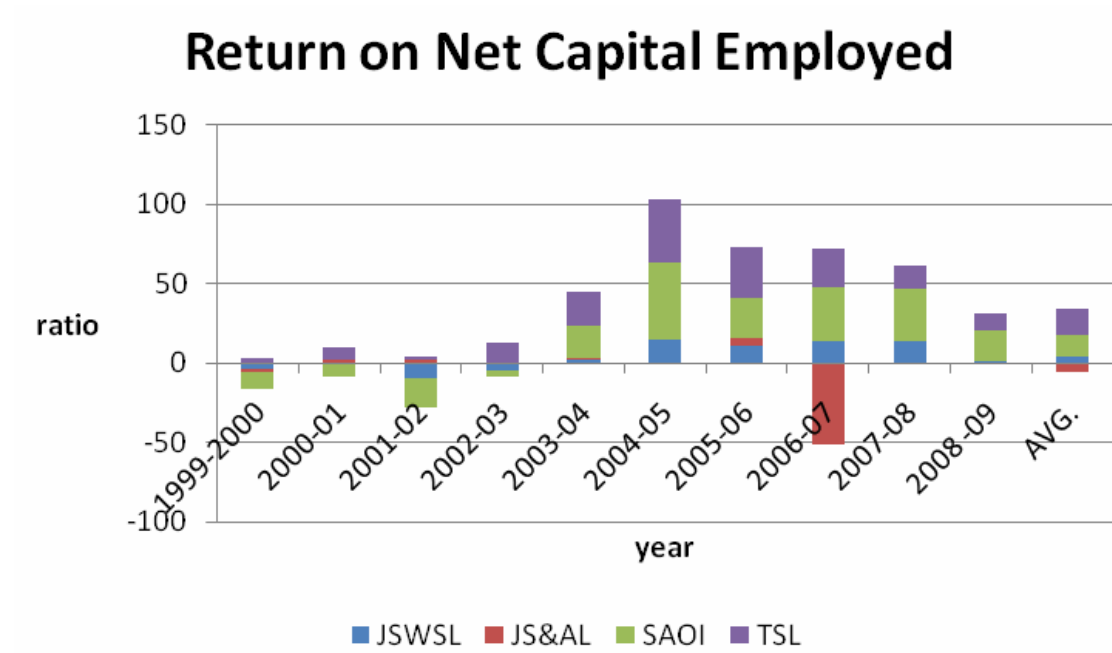
- ❖ **Null Hypothesis:** There is no any significant difference in Return on Shareholders Fund ratio of steel units under study.
- ❖ **Alternative hypothesis:** There is a significant difference in Return on Shareholders Fund ratio of steel units under study.
- ❖ **Level of Significance:** 5 percent
- ❖ **Critical value:** 2.24
- ❖ **Degree of freedom:** 37

**Table No.5.8**  
**Return On Shareholders Fund Ratio (Anova)**

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	17538.84	9	1948.76	3.113601	0.010106	2.235982
Within Groups	17524.81	28	625.8862			
Total	35063.66	37				

Since  $F_{cal} > F_{critical}$  (at 5% significance level), the null hypothesis is rejected and alternative hypothesis is accepted and hence it is concluded that the Return on Shareholders Fund does differ significantly.

Chart-5.4





### (C) Return on Paid-up Share Capital

As equity shareholders are the owners of the company. So, another method of measuring, the operational efficiency of the company is analysis of return on paid-up share capital (also known as return on equity capital). This ratio is obtained by dividing the net profit (after subtracting the amount of tax and dividend on preference share capital) by the paid-up amount of equity share capital. Hence,

$$\text{Return on Equity capital} = \frac{\text{Net Profit after Interest and Taxes}}{\text{Paid-up Equity Capital}} \times 100$$

The amount of net surplus in hand after deducting the tax expressed as a percentage to the equity capital points out the degree of current profits available in the form of return to the equity shareholders. Generally, the difference between the return on net worth and the return on equity shareholders is not substantial.

The higher the percentage of the return on equity shareholders fund the better it is. A high ratio is obtained by trading on equity. This ratio reflects the productivity earned on the funds contributed by the equity shareholders. If examined from the point of view of shareholders, this is regarded as the best measure for evaluation of equity shareholder's contribution. According to Bierman and Drebin, "The stock equity earning ratio gives indications of how effectively the investment of stockholder is being used."<sup>39</sup> Table 5.5 displays the Return on Equity Capital of the under corporation the period of study.

**Table 5.9**  
**Return On Equity Share Capital Of Steel Companies In India.**  
**(From 1999-2000 To 2008-2009)**

**(Ratio in Percentage)**

companies	1999-2000	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	AVG.	S.D	max	min
JSWSL	-14.05	-3.84	27.30	-8.57	40.95	674.29	545.63	787.90	923.92	245.12	316.40	378.37	923.92	-27.30
JS&AL	1800.00	15.24	15.67	7.69	10.11	9.54	24.07	67.81	n.a	n.a	206.23	644.28	67.81	1800.00
SAIL	-41.64	-17.64	41.33	-7.37	60.82	165.04	97.16	150.16	182.47	149.50	69.72	90.54	182.47	-41.64
TSL	114.91	150.49	55.71	275.26	473.26	627.71	633.53	727.37	641.55	711.99	441.18	265.68	727.37	55.71
avg.	-435.20	36.06	0.69	66.75	146.28	369.15	325.10	433.31	582.65	368.87	155.27	344.72	475.39	-453.31

**Sources: Annual Reports of steel Companies from 1999-2000 to 2008-09**

Return on Equity Capital Ratio in steel manufacturing companies in India has been computed and presented in the table No. 5.6 It is evident from table 5.6 that the Return on Equity Capital in JSWSL, JS&AL, SAIL and TSL showed fluctuating trend during the study period. The percentage to Return on Equity Capital was the highest to 923.92 in JSWSL in 2007-08 and highest 67.81 in JS&AL in 2006-07. SAIL showed fluctuating trend with an

average of 69.72. The percentage of Return on Equity Capital Ratio was reduced which shows that in those years the speed of increase in net profit was much more than that of the capital. The Return on Equity Capital ratio of steel companies shows fluctuating trend throughout the study period. The minimum Return on Equity Capital ratio in JSWSL is -27.30 (2001-02), JS&AL is --1800.00 (1999-2000), SAIL is -41.64 (2001-02), TSL is 55.71 (2001-02).The maximum Return on Equity Capital ratio in JSWSL is 923.92 (2007-08), JS&AL is 67.81 (2006-07), SAIL is 182.47 (2007-08) and TSL is 727.37 (2006-07).

### **ANOVA test**

- ❖ **Null Hypothesis:** There is no any significant difference in Return on Equity Capital Ratio of steel units under study.
- ❖ **Alternative hypothesis:** There is a significant difference in Return on Equity Capital Ratio of steel units under study.
- ❖ **Level of Significance:** 5 percent
- ❖ **Critical value:** 2.24
- ❖ **Degree of freedom:** 37

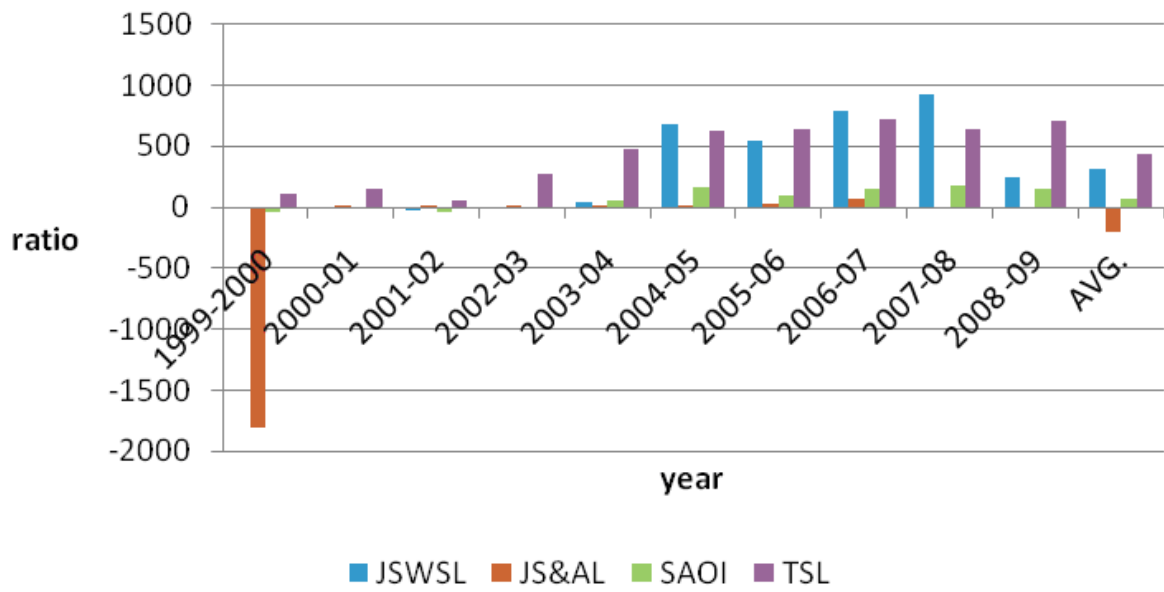
**Table No.5.10**  
**Return On Equity Capital Ratio (Anova Test)**

<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Between Groups	2857329	9	317481	2.102608	0.064143	2.235982
Within Groups	4227830	28	150993.9			
Total	7085158	37				

Since  $F_{cal} > F_{critical}$  (at 5% significance level), the null hypothesis is accepted and alternative hypothesis is rejected and hence it is concluded that the Return on Shareholders Fund does not differ significantly.

Chart-5.5

## Return on Equity Share Capital



### 3. Earning Per Share

Besides return on investment, equity shareholders may measure profitability by computing earning per share. "The earning per share simply shows the profitability of the firm on a per share basis, it does not reflect how much is paid as dividend and how much is retained in the business. But as a profitability index, it is a valuable and widely used ratio." <sup>40</sup> It is computed by dividing the amount of net profit by the total numbers of equity shares:

$$\text{Earning Per Share} = \frac{\text{Net Profit after Tax Interest} \\ \text{And Preference Dividend.}}{\text{Number of Equity Shares}} \times 100$$

For the purpose of the present study the earning per share has been calculated on percentage basis as the domination of the face value of equity shares differ from company to company. It should be noted that in connection of the earning per share 'the welfare of the shareholders of a company operating in any sector, lies only in maximizing the earning per share whether the earnings are currently paid out or not. Because negative profit would mean profit erosion which impedes capital accumulation in the economy.

It measures the profit entitled to the equity shareholders on per share basis i.e. the amount available on each share held by them. By analyzing the trend of earning per share over a period of time, one can estimate the changes in earning power of the firm on per share basis during that period. A comparison can also be affected with the earning per share of other firms and industry average to get a fair idea of firms earning capacity. Table 5.6 gives an idea of Earning per share of different steel development finance Company in India during the period of study.

Earning per share ratio fails to attach importance to effect of increase in equity share capital. Suppose if earning per share shows an increasing trend, it will in no case suggest that firm's profitability has increased due to increase in the volume of equity capital. Though the number of equity shares outstanding remains constant. Table 5.6 exhibits earning per share of the selected steel companies in India during the study period. 1999-000 to 2008-09.

**Table 5.11**  
**Earning Per Share Of Steel Companies In India.**  
**(From 1999-2000 To 2008-2009)**

(Amount in Crores Rs.)

companies	1999-2000	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	AVG.	S.D	max	min
JSWSL	-1.26	-0.31	-3.35	-1	1.56	72.37	58.5	85.44	92.39	24.51	32.89	39.86	92.39	-3.35
JS&AL	-180	1.44	1.35	0.36	0.68	0	2.15	6.27			20.97	64.29	6.27	180.00
SAIL	-4.16	-1.76	-4.13	-0.76	6.08	16.4	9.71	13.58	17.48	14.78	6.72	8.79	17.48	-4.16
TSL	7.81	17.39	5.57	27.21	47.33	62.77	63.35	72.74	66.21	71.2	44.16	27.03	72.74	5.57
avg.	44.4025	4.19	-0.14	6.4525	13.9125	37.885	33.428	44.5075	58.6933	36.83	15.70	34.99	47.22	-45.49

**Sources: Annual Reports of steel Companies from 1999-2000 to 2008-09**

Table No. **5.8** showed earnings per share ratio of JSWSL during the study period. The ratio was showing increasing trend during the study period. The ratio ranged between 92.39 percent in 2007-08 and -3.35 percent in 2001-02. The average ratio was 32.89 percent with standard deviation of 39.86 percent. Earnings per share ratio of JS&AL were manifested in the table No. 5.8. The ratio was showing highly fluctuated trend with an average of -20.97 percent. The ratio was the highest of 6.27 percent in 2006-07. But in the years of 2002-03, 2003-04, 2004-05, and 2006-07 the ratios were 0.36, 0.68 and 6.27 respectively.

The above table showed earnings per share ratio of SAIL from 2000-01 to 2008-97. The ratio showed upward trend with an average of 6.72 percent. The ratio ranged between 17.48 percent in 2008-09 and -4.16 percent in 2001-02. The ratio was the bad in years of first four years of study period then after it has gone up.

The above table showed earnings per share ratio of TSL with fluctuated and upward trend during the study period. The ratio was Rs 7.81 1999-2000 and 17.39 in 2000-01. The ratio was highly gone down to Rs 5.57 percent in 2002-03 and then it has gone up to Rs 27.21 in 2003-04. The ratio was Rs 47.33 in 2003-04 and Rs 62.77 percent in 2004-05. The ratio was Rs 63.35 in 2005-06 and Rs 72.74 percent in 2006-07. The ratio reached at Rs 71.2 the last year of study period. The ratio ranged between Rs 72.74 and Rs 5.57 with an average of Rs 44.16. The standard deviation was of Rs 27.03.

### ANOVA test

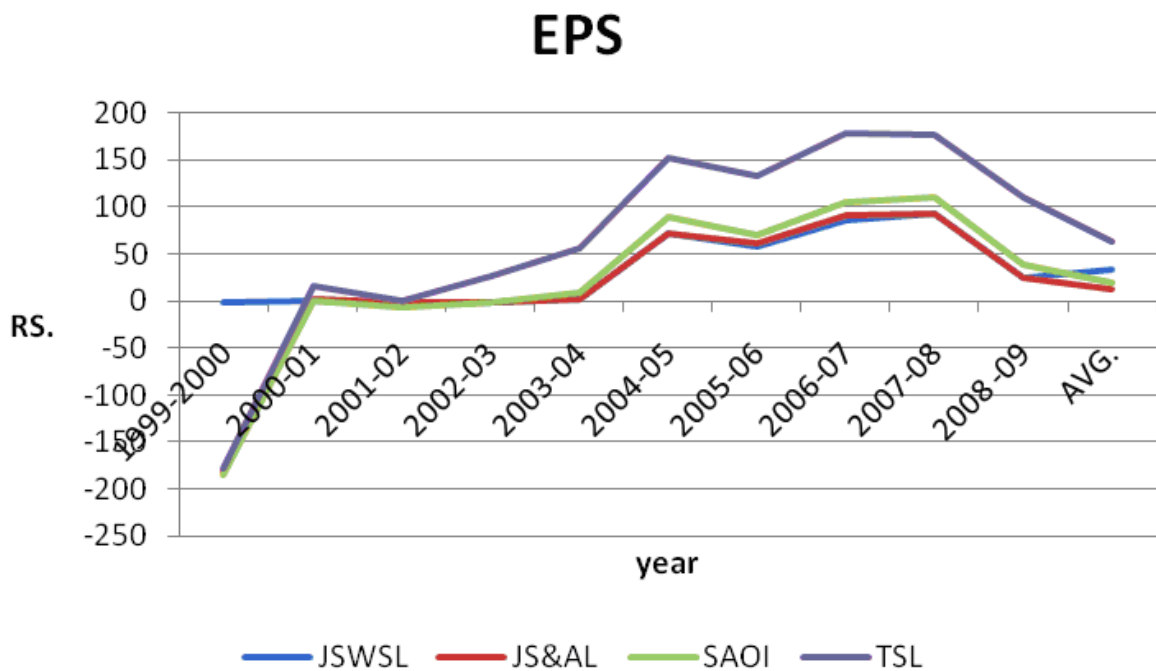
- ❖ **Null Hypothesis:** There is no any significant difference in EPS of steel units under study.
- ❖ **Alternative hypothesis:** There is a significant difference in EPS of steel units under study.
- ❖ **Level of Significance:** 5 percent
- ❖ **Critical value:** 2.24
- ❖ **Degree of freedom:** 37

**Table No. 5.12**  
**EPS (Anova Test)**

<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Between Groups	29626.19	9	3291.799	2.126462	0.061345	2.235982
Within Groups	43344.47	28	1548.017			
Total	72970.66	37				

Since  $F_{cal} > F_{critical}$  (at 5% significance level), the null hypothesis is accepted and alternative hypothesis is rejected and hence it is concluded that the Return EPS does not differ significantly.

**Chart-5.6**



## 4. Dividend Policy

The dividend policy of a firm greatly influences the dividends and retained earnings. Dividends are cash payments made by the firm to its shareholders. Retained earnings are the part of business surplus i.e. earnings kept as a reserve for financing the firm's long-term growth. Thus, the dividend policy of a firm affects the wealth of the shareholders as well as the firm's long-term financing.

Financial experts are of the opinion that a company should adopt a conservative dividend policy in order to bring consistency in it because consistency in this regard means the company's shares are a better investment. Moreover, a policy of stable dividends poses no difficulty when the company is willing to raise finance. *'When the dividends of a company widely fluctuate, the shareholders can never say what they may get in any particular year from their holding in such a company. Investment in the shares of such companies becomes a sort of speculation which only a few can afford'*<sup>2</sup>

The experts also suggest that no dividend should be paid in the beginning even if the company earns them. This should be continued until and unless the business becomes responded to a degree that its future can be predicted on the basis of past performance. But this policy cannot be favorably employed in the Indian context because the shareholders here would develop an attitude of permission if not entitled to any dividend for some years after a company starts working. The result would be a decline in the share prices and ultimately the company will lose its credit standing. However, it is advised that a firm should always start with a lower rate of dividend. In order to analyze the profitability of a concern, dividend policy, for the purpose of this study is discussed under three main heads, namely; dividend percentage, dividend yield and dividend payout ratio, as under: -

### (A) Dividend Percentage

Dividend percentage is that percentage, which shows the relationship between the face value of shares and dividend paid, to the shareholders. It should be higher which attracts the investors to invest in that particular concern, but its higher percentage also shows that the concern is maintaining a favorable position. The concern should always maintain a high percentage of dividends payable over the face of shares.

Table 5.10 gives an idea of Dividend Percentage of different steel companies in India during the period of study.

**Table 5.13**  
**Dividend Per Share And Dividend Percentage Of Steel Companies In India.**  
**(From 1999-2000 To 2005-2006)**

( Ratio in Percentage )

companies	1999-2000	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	AVG.	S.D	max	min
JSWSL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.05	0.31	0.96	3.05	0.00
JS&AL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00
SAIL	0.00	0.00	0.00	0.00	0.00	3.75	2.50	3.65	4.35	3.05	1.73	1.88	4.35	0.00
TSL	4.67	5.92	4.13	9.05	0.00	0.00	0.00	0.00	0.00	0.00	2.38	3.32	9.05	0.00
avg.	1.17	1.48	1.03	2.26	0.00	0.94	0.63	0.91	1.45	2.03	1.10	1.54	4.11	0.00

**Sources: Annual Reports of steel Companies from 1999-2000 to 2008-09**

Percentage of dividend per share selected steel companies from 1999-2000 to 2008-09 are shown in the Table No 5.10. Percentage of dividend per share JSWSL showed fluctuating trend with an average of 0.31. The ratio was zero in most of the years because of Loss Company could not pay dividend. The ratio was also zero JS&AL because company had loss for consecutive ten years. Percentage of dividend per share of SAIL ranged between zero from 1999-2000 to 2008-09 and 4.35 percentages in 2007-08. The ratio of SAIL ranged between zero to 9.05 percent in 2002-03. The ratio of TSL was showing fluctuating trend throughout the study period with an average of 2.38 percent.

#### ANOVA Test

- ❖ **Null Hypothesis:** There is no any significant difference in percentage of dividend of per share of steel units under study.
- ❖ **Alternative hypothesis:** There is a significant difference in percentage of dividend of per share of steel units under study.
- ❖ **Level of Significance:** 5 percent
- ❖ **Critical value:** 2.24
- ❖ **Degree of freedom:** 37

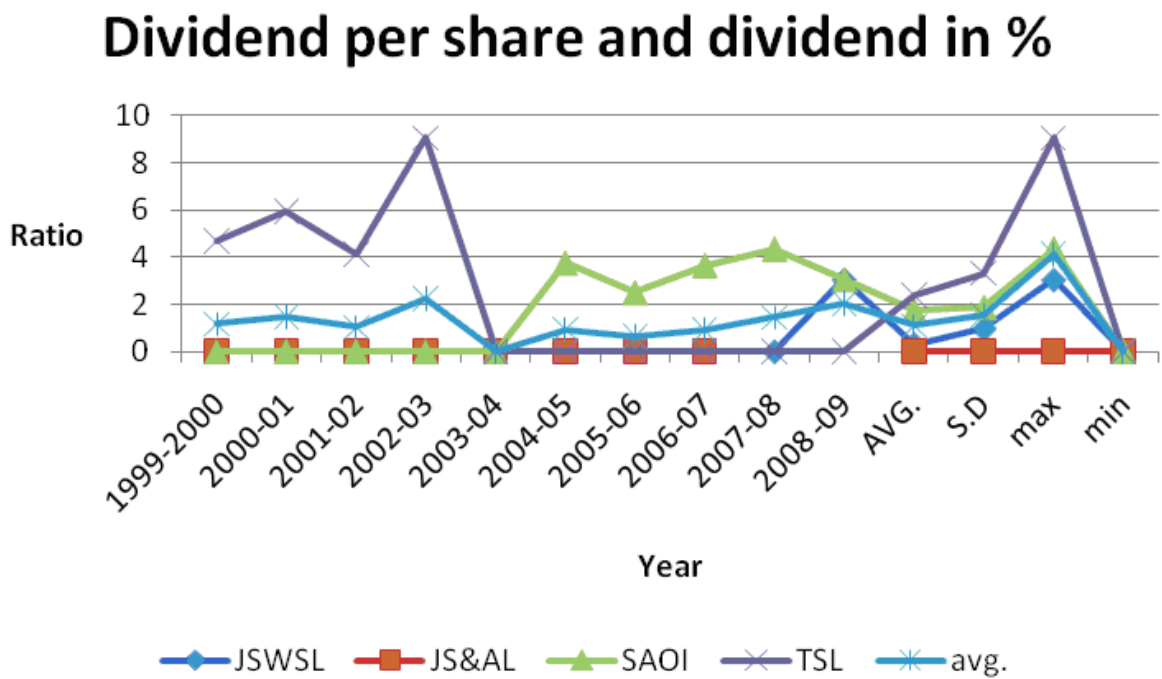


**Table No.5.14**  
**Percentage Of Dividend Per Share**

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	22.09	9.00	2.45	0.49	0.87	2.24
Within Groups	140.95	28.00	5.03			
Total	163.05	37.00				

Since  $F_{cal} > F_{critical}$  (at 5% significance level), the null hypothesis is accepted and alternative hypothesis is rejected and hence it is concluded that the Return percentage of dividend of per share does not differ significantly.

**Chart-5.7**



## (B) Dividend Pay Out Ratio

This ratio establishes the relationship between the earnings of equity shareholders and dividends paid to them. It is obtained by dividing total amount of dividends paid to the shareholders by the total amount of earning available to them. Therefore,

$$\text{Dividend Pay Out ratio} = \frac{\text{Dividends per Equity Share}}{\text{Earning per Share}} \times 100$$

It is an important and extensively used ratio for testing managerial ability and reputation of an enterprise. It would not be wrong to comment that this ratio overcomes the drawback suffered by the ratio of earning per share. As it clearly states as to how much is retained in the business and how much is paid as dividend to the shareholders. A dividend payout ratio less than 100% indicates that a part of reserve or accumulated profits has been distributed by way of dividends. Table 5.12 shows the dividend payout ratio of steel Companies in India under study covering the period from 1999-2000 to 2008-09.

**Table 5.15**  
**Dividend Pay-Out Ratio Of Steel Companies In India.**  
**(From 1999-2000 To 2008-2009)**

Companies	s(Ratio in Percentage)										AVG.	S.D	max	min
	1999-2000	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09				
JSWSL	0	0	0	0	0	1.86	2.06	1.96	2.06	1.26	0.92	1.00	2.06	0.00
JS&AL	0	0	0	0	0	N.A	0	0	N.A	N.A	0.00	0.00	0.00	0.00
SAIL	0	0	0	0	0	2.36	2.06	2.66	2.56	2.16	1.18	1.26	2.66	0.00
TSL	5.98	3.46	7.36	3.33	2.46	2.46	2.06	2.66	2.96	2.96	3.57	1.72	7.36	2.06
avg.	1.495	0.865	1.84	0.8325	0.615	2.22667	1.545	1.82	2.52667	2.12667	1.42	0.99	3.02	0.52

**Sources: Annual Reports of steel Companies from 1999-2000 to 2008-09**

Dividend Payout Ratio in steel manufacturing companies in India has been computed and presented in the table No. 5.12. It is evident from table 5.12 that the Dividend Payout Ratio in JSWSL, JS&AL, SAIL and TSL showed fluctuating trend during the study period. But JS&AL showed no trend during the study period. Dividend Payout Ratio was highest to 2.06 percent in JSWSL in 2007-08 and highest 2.66 percent in SAIL in 2006-07. TSL showed fluctuating trend with an average of 3.57. Dividend Payout Ratio of all the steel companies shows fluctuating trend throughout the study period except in JS&AL. The minimum size of Dividend Payout Ratio in JSWSL is 0.00 (1999-2000), JS&AL is 0.00 (1999-2000), SAIL is 0.00 (1999-2000), and TSL is 2.06 (2008-09). The maximum size Dividend Payout Ratio in JSWSL is 2.06 (2005-06), JS&AL is 0.00 (2008-09), SAIL is 2.66 (2006-07), TSL is 7.36 (2001-02).

## ANOVA Test

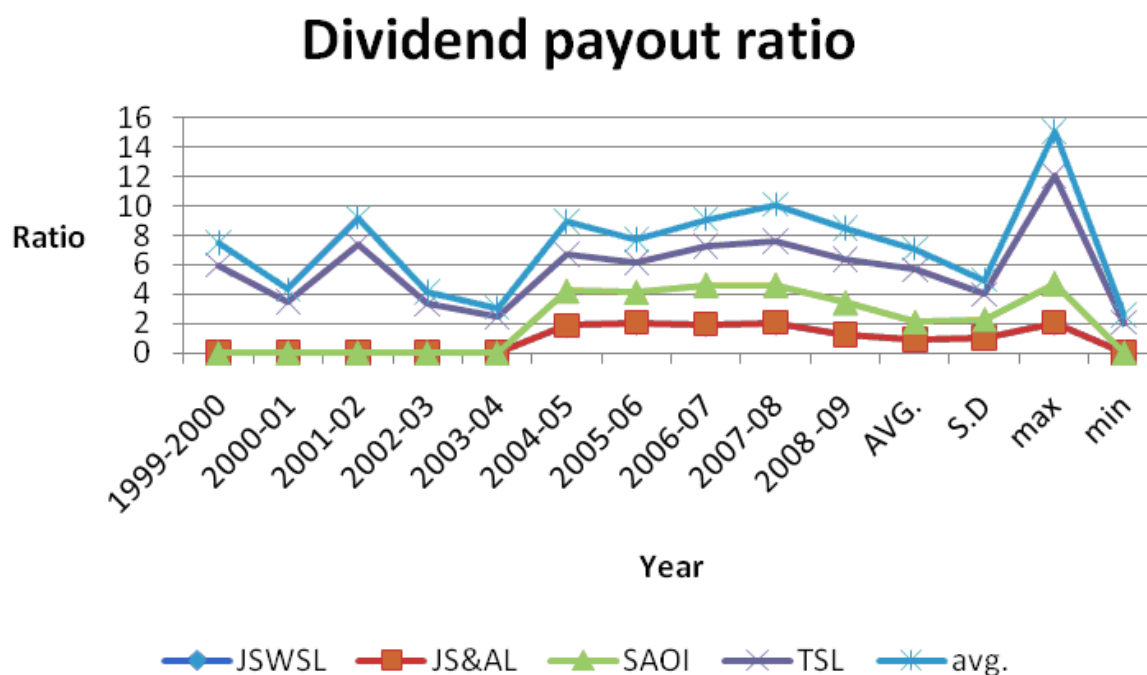
- ❖ **Null Hypothesis:** There is no any significant difference in Dividend Payout Ratio of steel units under study.
- ❖ **Alternative hypothesis:** There is a significant difference in Dividend Payout Ratio of steel units under study.
- ❖ **Level of Significance:** 5 percent
- ❖ **Critical value:** 2.24
- ❖ **Degree of freedom:** 37

**Table No.5.16**  
**Dividend Payout Ratio (Anova Test)**

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	14.84735	9	1.649705	0.287083	0.972753	2.235982
Within Groups	160.9005	28	5.746448			
Total	175.7479	37				

Since  $F_{cal} > F_{critical}$  (at 5% significance level), the null hypothesis is accepted and alternative hypothesis is rejected and hence it is concluded that the Dividend Payout Ratio of per share does not differ significantly.

**Chart-5.8**



## 5. Assets Turnover Ratio

Assets are used for generating sales. The relationship shared by sales and assets of a firm is termed as assets turnover. This ratio is also called investment turnover ratio. As mentioned earlier in this study, two-tier profitability is the end product of profit margin and asset turnover. The turnover of assets in context with the present study refers to the relationship existing between the rupee volume of sales and assets employed in the steel Industries selected for this study.

Assets turnover ratios are best explained as activity indices. An increasing trend of assets turnover ratio of an organization depicts effective utilization of assets. While, the decreasing trend signifies ideal capacity of assets of the firm. Any change in total assets turnover ratio can be directly related with increase or decrease in fixed and current assets utilization. If there is simultaneous increase in turnover ratios of total assets fixed asset and current asset; it indicates active and full utilization of fixed and current assets. On the other hand, increase in fixed asset turnover ratio and decrease in current assets turnover ratio or vice-versa accompanied by increase in total asset turnover ratio signifies that the asset featuring rising trend is utilized to its optimum which as result are capable enough to offset the inefficient utilization of fixed assets leading to increase in turnover of total assets.

The assets of a concern can be determined keeping the following considerations in mind: -

- ❖ Identifying various resources individually which are used by the concern.
- ❖ Valuation of these resources in monetary terms.
- ❖ Estimating the ownership degree present in each asset.

Once the assets of the concern are determined and valued, several assets turnover ratios can be calculated. Some are discussed below: -

### (A) Total Assets Turnover Ratio

"Assets are the economic resources owned by the business which can be conveniently expressed in monetary terms"<sup>43</sup> Total assets turnover ratio is obtained by dividing sales for a given period by all the assets employed in the business during that period. So,

$$\text{Total Assets Turnover} = \frac{\text{Sales}}{\text{Total Assets}}$$

The amount of total assets used is net of depreciation. The amount of total assets here excludes intangible assets like patents, copyright, trademarks etc. and fictitious assets such as preliminary expenses, goodwill etc. Accumulated expenses or deferred expenditures are also

not included in the amount of fixed assets for this purpose. The ideal total assets turnover ratio is 2 times but for steel Industries being of capital intensive in nature it can be anything between 1.5 to 2 times.

A high ratio indicates management's ability to make a good use of its available tangible assets. At times older assets with lower book value and lower depreciated value may bring out a misleading result of high turnover. On the other hand, lower total assets turnover ratio, which is undesirable, may be due to no utilization or under utilization of assets. As these two factors, increase not only the cost of financing but also the expense for maintenance and upkeep. So, this ratio ought to be computed with utmost care. As the larger the amount of sales made per rupee of capital invested, the more will be the amount of earning made per rupee invested in the assets of the business.

It measures as how many rupees of sales are supported by each rupee in total assets. This ratio reflects the efficiency of management in using assets for generating earning. The assets are usually significant for the concern, prospective investors, bankers, creditors, government and public research workers etc. Therefore, total assets turnover ratio serves some or other purpose of these parties. "It serves as means for analyzing and controlling the operations of the enterprise and for planning future actions."<sup>44</sup> Table 5.10 the total assets turnover in the selected steel Companies in India for the period from 1999-2000 to 2008-2009.

**Table 5.17**  
**Assets Turnover Ratio Of Steel Companies In India.**  
**(From 1999-2000 To 2008-2009)**

(Ratio in Times)

Companies	1999-2000	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	AVG.	S.D	max	min
JSWSL	6.45	4.61	3.17	2.29	1.74	1.18	1.61	1.36	1.57	1.73	2.57	1.71	6.45	1.18
JS&AL	3.04	0.55	0.55	0.49	0.75	0.86	7.31	-3.05	N.A	N.A	1.31	2.65	7.31	3.05
SAIL	1.55	1.51	1.43	1.11	0.89	0.85	0.88	0.83	0.88	1.08	1.10	0.29	1.55	0.83
TSL	1.64	1.43	1.34	1.09	0.86	0.77	0.78	1.12	0.75	0.79	1.05	0.32	1.64	0.75
avg.	3.17	2.02	1.62	1.24	1.06	0.91	2.64	0.06	1.07	1.20	1.51	1.24	4.24	0.07

**Sources: Annual Reports of steel Companies from 1999-2000 to 2008-09**

Table no.5.14 makes it evident that the total assets turnover ratio in JSWSL decreasing continuously from 2000-01 to 2008-09. It was 6.45 times in 1999-2000 and it was 4.61 times in 2000-01. The ratio then after slightly declined to 3.17 times in 2001-02 and 2.29 times 2002-03. The ratio was 1.74 times in 2003-04 which was good. The average ratio was 2.57 times with the standard deviation of 1.71. The ration ranged between 1.18 times in 2004-05

and 6.45 times in 1999-2000. The total assets turnover ratio indicates good operational efficiency use of the total assets.

Standard deviation was 0.27 times and co efficient of variation was 26.01 percent.

The above Table no.5.14 witnessed total assets turnover of the JS&AL L. The total assets turnover ratio showed very fluctuating trend during the study period. The ratio was 3.04 times in 1999-2000 and it was 0.86 times in 2004-05. The ratio was very good in these years. But it was slightly gone down to -3.05 times 2006-07. The standard deviation was 0.58 times with an average of 1.31 times. The ratio has been the highest of 7.31 times in the years of 2005-06 and the lower of -3.05 percent in 2006-07. The ratio was very good showing good operational efficiency.

The total assets turnover ratio of SAIL was seen in the above Table no.5.14. The ratio on average has been 1.10 times with a standard deviation of 0.29 times. The ratio was found highest of 1.55 times in 1999-2000 and very lowest of 0.83 times in 2004-05. The ratio in most of the years has not been found quite satisfactory.

The total assets turnover ratio of TSL was seen in the above Table no.5.14. The ratio on average has been 1.05 times with a standard deviation of 0.32 times. The ratio was found highest of 1.64 times in 1999-2000 and very lowest of 0.75 times in 2007-08. The ratio in from 1999-02 to 2002-03 has been found quite satisfactory.

#### **ANOVA Test**

- ❖ **Null Hypothesis:** There is no any significant difference in total assets turnover ratio of steel units under study.
- ❖ **Alternative hypothesis:** There is a significant difference in total assets turnover ratio of steel units under study.
- ❖ **Level of Significance:** 5 percent
- ❖ **Critical value:** 2.24
- ❖ **Degree of freedom:** 37

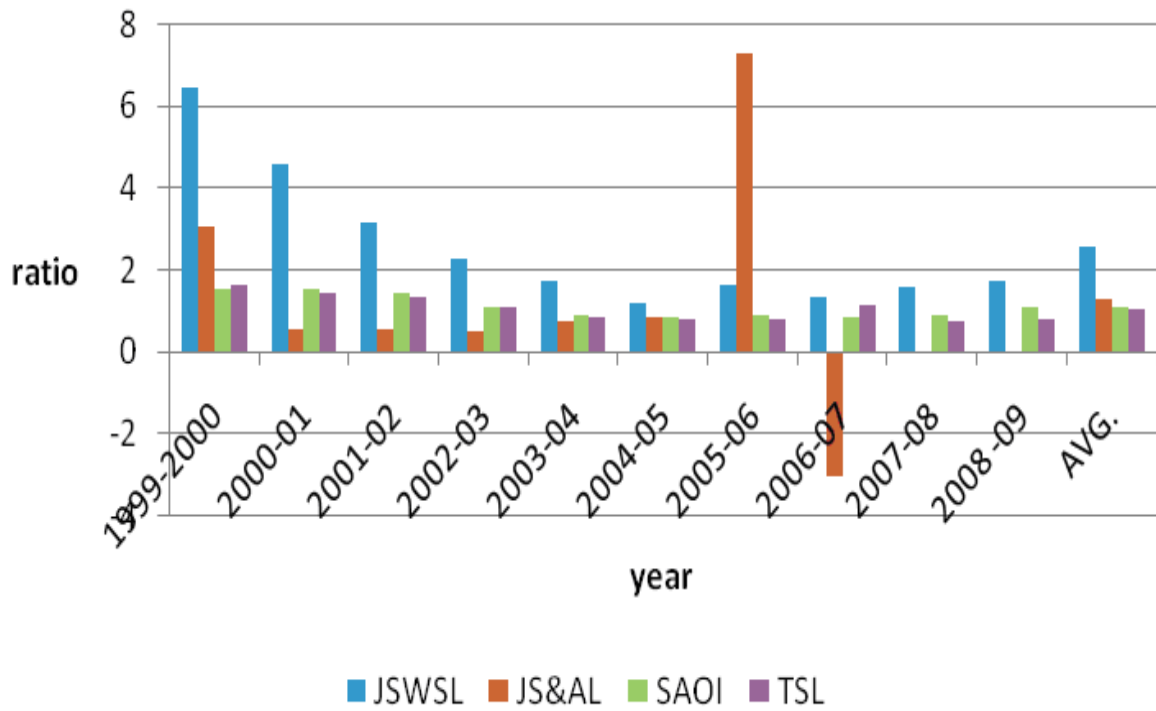
**Table No.5.18**  
**Anova Test Of Total Assets Turnover Ratio**

<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Between Groups	29.032	9	3.225778	1.209526	0.328271	2.235982
Within Groups	74.67539	28	2.666978			
Total	103.7074	37				

Since  $F_{cal} > F_{critical}$  (at 5% significance level), the null hypothesis is accepted and alternative hypothesis is rejected and hence it is concluded that the total assets turnover ratio does not differ significantly.

Chart - 5.9

## Total assets turnover ratio



## (B) Fixed Assets Turnover

The turnover of fixed assets is defined as, "The relationship between the volume of business done and the amount of capital tied-up in fixed property investment."<sup>45</sup> I.M. Pandey has suggested the computation of this ratio, as, "the fixed assets turnover ratio is sales divided by net fixed assets (i.e. the depreciated value of fixed assets.)"<sup>46</sup> The formula for fixed asset may be expressed as: -

$$\text{Fixed Assets Turnover} = \frac{\text{Sales}}{\text{Fixed Assets}}$$

Fixed assets for the purpose of this ratio are generally taken at written down values at the end of an accounting year. This may make the comparison meaningless, as the firm with fixed assets considerably depreciated would show higher fixed assets turnover ratio than that purchased recently. Thus, in order to avoid such discrepancies and effect of varying depreciation policies, the amount of gross fixed assets is regarded as fixed asset amount for the purpose of this study. The ideal fixed asset turnover ratio is 5 times. But for capital intensive industry like steel Industry the norm may range between 4 to 5 times.<sup>47</sup>

In general practice, a high fixed assets turnover ratio means efficient utilization of fixed assets in generating sales. Whereas, a low ratio indicates inefficient management and under utilization or no utilization of fixed assets. Contrary to this a high ratio may imply that the concern is over-trending on its assets and low investment may indicate an excessive investment in fixed assets in comparison to sales volume along with idle capacity and inefficient use of fixed assets.

This ratio signifies the firms, ability in generating sales from various financial resources committed to fixed assets. It measures the efficiency with which the fixed assets are utilized and discloses under investment or over investment in fixed assets. Table 5.14 shows the position of fixed assets turnover in selected steel Companies in India for the period under study of 1999-000 to 2008-09.



**Table 5.19**  
**Fixed Assets Turnover Ratio Of Steel Companies In India.**  
**(From 1999-2000 To 2008-2009)**

**(Ratio in Times)**

Companies	1999-2000	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	AVG.	S.D	max	min
JSWSL	0.17	0.24	0.35	0.49	0.68	1.09	0.81	0.91	0.76	0.68	0.62	0.30	1.09	0.17
JS&AL	0.53	3.23	3.12	2.55	1.45	1.25	0.16	-0.23	N.A	N.A	1.51	1.34	3.23	0.23
SAIL	0.94	0.99	1.01	1.34	1.80	2.48	2.51	3.07	3.27	2.59	2.00	0.89	3.27	0.94
TSL	0.83	0.95	1.01	1.30	1.52	1.74	1.74	1.79	1.76	1.85	1.45	0.39	1.85	0.83
avg.	0.62	1.36	1.37	1.42	1.36	1.64	1.30	1.39	1.93	1.71	1.39	0.73	2.36	0.43

**Sources: Annual Reports of steel Companies From 1999-2000 to 2008-2009**

The above Table No.5.14 showed fixed assets turnover ratio of JSWSL with an average of 0.62 times. The ratio ranged between minimum of 0.17 times in 1999-2000 and maximum 1.09 times in 2004-05. The ratio was not good in the all the years. The fixed assets turnover ratio of JSWSL showed a fluctuated trend during the study period. The standard deviation was 0.30, which showed low fluctuation in the ratios. The Company has made addition to existing assets in all years of study period. That is why the ratio was slightly gone down.

The fixed assets turnover ratio of JS&AL was seen in the above Table no.5.14. The ratio on average has been 1.51times with a standard deviation of 1.34 times. The ratio was found highest of 3.23times in 2000-01and very lowest of -0.23times in 2006-07. The ratio in from 1999-2000 to 2004-05 has been found quite satisfactory.

The above Table No.5.14 showed fixed assets turnover ratio of SAIL with an average of 2.00 times. The ratio was good in the year of 1999-2000 to 2005-06. The fixed assets turnover ratio of SAIL showed a progressive trend during the study period. The standard deviation was 0.89, which showed low fluctuation in the ratios. The Company has made addition to existing assets in all years of study period. That is why the ratio was slightly gone down.

The fixed assets turnover ratio of TSL was seen in the above Table no.5.14. The ratio on average has been 1.45 times with a standard deviation of 0.39times. The ratio was found highest of 1.85 times in 2008 -09 and very lowest of 0.83 times in 1999-2000. The ratio in from 2000-01 to 2008 -09 has been found quite satisfactory.

## ANOVA Test

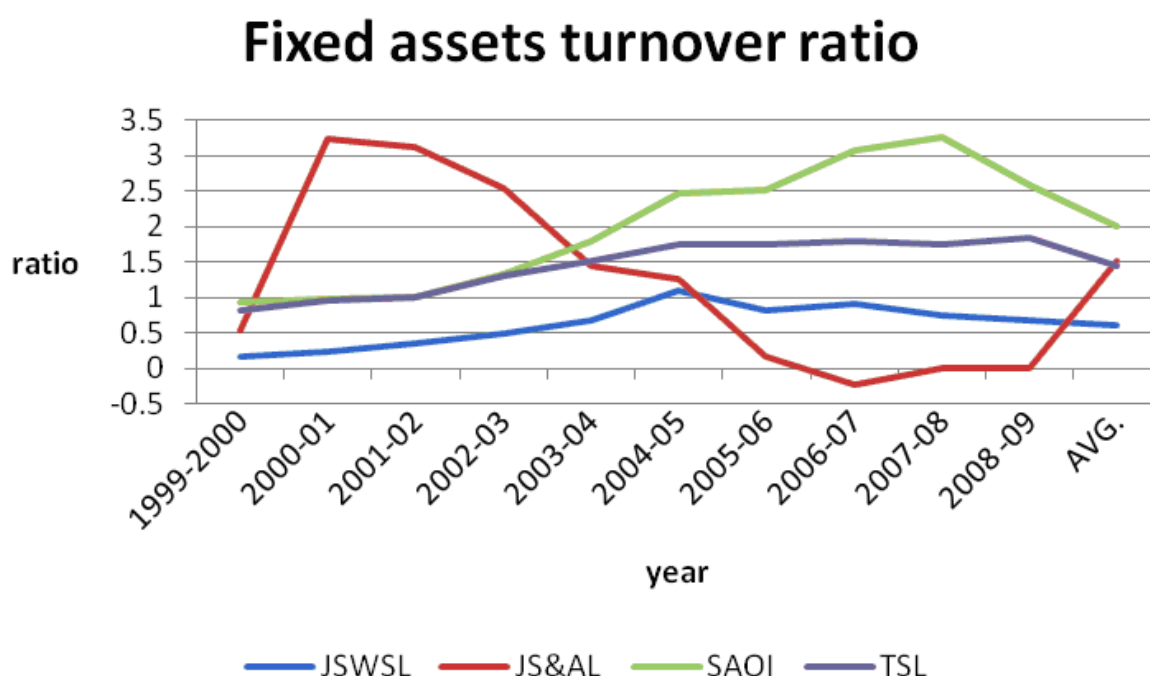
- ❖ **Null Hypothesis:** There is no any significant difference in fixed assets turnover ratio of steel units under study.
- ❖ **Alternative hypothesis:** There is a significant difference in fixed assets turnover ratio of steel units under study.
- ❖ **Level of Significance:** 5 percent
- ❖ **Critical value:** 2.24
- ❖ **Degree of freedom:** 37

**Table No.5.20**  
**Fixed Assets Turnover Ratio ( ANOVA TEST )**

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	3.86	10.00	0.39	0.41	0.93	2.15
Within Groups	28.85	31.00	0.93			
Total	32.71	41.00				

Since  $F_{cal} > F_{critical}$  (at 5% significance level), the null hypothesis is accepted and alternative hypothesis is rejected and hence it is concluded that the fixed assets turnover ratio does not differ significantly.

**Chart-5.10**



### (C) Current Assets Turnover

"Current assets turnover is to give an overall impression of how rapidly the total investment in current assets is turned."<sup>48</sup> Current assets turnover ratio can be obtained by dividing the amount of revenue earned i.e. sales made during a given period by the amount of current assets employed in the business during that period. Therefore,

$$\text{Current Assets Turnover} = \frac{\text{Sales}}{\text{Current Assets}}$$

For the purpose of this ratio, current assets consists of cash that is available for the business and other assets which can either be converted into cash or consumed during an accounting year or within one normal operating cycle of the business; whichever is longer. The term current assets do not include any fictitious or intangible assets. This ratio is associated with efficient utilization of receivables and inventory for them being a portion of current assets.

A higher current assets turnover ratio means greater circulation of current assets adding to sources of funds and easing the obligation of retiring current liabilities. While a low ratio indicates stagnation in the flow of current assets. The lower the turnover of current assets, the worse is the use of current assets. The higher the current assets turnover ratio, the better is the utilization of current assets.

Current assets turnover ratio appraises the efficiency of the business in using current assets in generating earning. It states how rapidly the investment in current assets is turned over by way of sales. It is the index of efficiency as well as profitability of the total current assets applied to conduct the operations of a firm. Table 5.16 depicts current assets turnover of selected Companies from 1999-2000 to 2008- 09.

**Table 5.21**  
**Current Assets Turnover Ratio Of Steel Companies In India.**  
**(From 1999-2000 To 2008-2009)**

(Ratio in Times)

Companies	1999-2000	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	AVG.	S.D	max	min
JSWSL	1.43	2.11	3.07	3.84	3.59	3.72	2.65	3.76	4.09	3.93	3.22	0.89	4.09	1.43
JS&AL	0.88	4.22	4.33	10.00	16.40	15.61	0.82	0.78	n.a	n.a	6.63	6.41	16.40	0.78
SAIL	2.07	2.00	2.27	2.73	3.04	2.25	2.09	2.00	1.75	1.43	2.16	0.46	3.04	1.43
TSL	2.30	2.60	2.92	3.18	5.01	5.21	5.02	1.79	5.48	4.03	3.76	1.36	5.48	1.79
avg.	1.67	2.73	3.15	4.94	7.01	6.70	2.64	2.08	3.77	3.13	3.94	2.28	7.25	1.36

Sources: Annual Reports of steel Companies From 1999-2000 to 2008-2009

The current assets turnover ratio of JSWSL was seen in the above Table no.5.16. The ratio on average has been 3.22 times with a standard deviation of 0.89 times. The ratio was found highest of 4.09 times in 2007-08 and very lowest of 0.78 times in 2006-07. The ratio in from 1999-2000to 2008 -09 has been found quite satisfactory.

The current assets turnover ratio of JS&AL was seen in the above Table no.5.16. The ratio on average has been 6.63times with a standard deviation of 0.89 times. The ratio was found highest of 4.09 times in 2007-08 and very lowest of 1.43 times in 1999-2000. The current assets turnover ratio in from 1999-2000to 2008 -09 has been found quite satisfactory.

The current assets turnover ratio of SAIL was seen in the above Table no.5.16. The ratio on average has been 2.16 times with a standard deviation of 0.46 times. The ratio was found highest of 3.04times in 2003-04and very lowest of 1.43 times in 2007-08. The current assets turnover ratio in from 1999-2000to 2008 -09 has been found quite satisfactory.

The current assets turnover ratio of TSL was seen in the above Table no.5.16. The ratio on average has been 3.76 times with a standard deviation of 1.36 times. The ratio was found highest of 5.48 times in 2007-08 and very lowest of 1.79 times in 2006-07. The current assets turnover ratio in from 1999-2000 to 2008 -09 has been found quite satisfactory.

#### ANOVA Test

- ❖ **Null Hypothesis:** There is no any significant difference in current assets turnover ratio of steel units under study.
- ❖ **Alternative hypothesis:** There is a significant difference in current assets turnover ratio of steel units under study.
- ❖ **Level of Significance:** 5 percent
- ❖ **Critical value:** 2.24
- ❖ **Degree of freedom:** 37

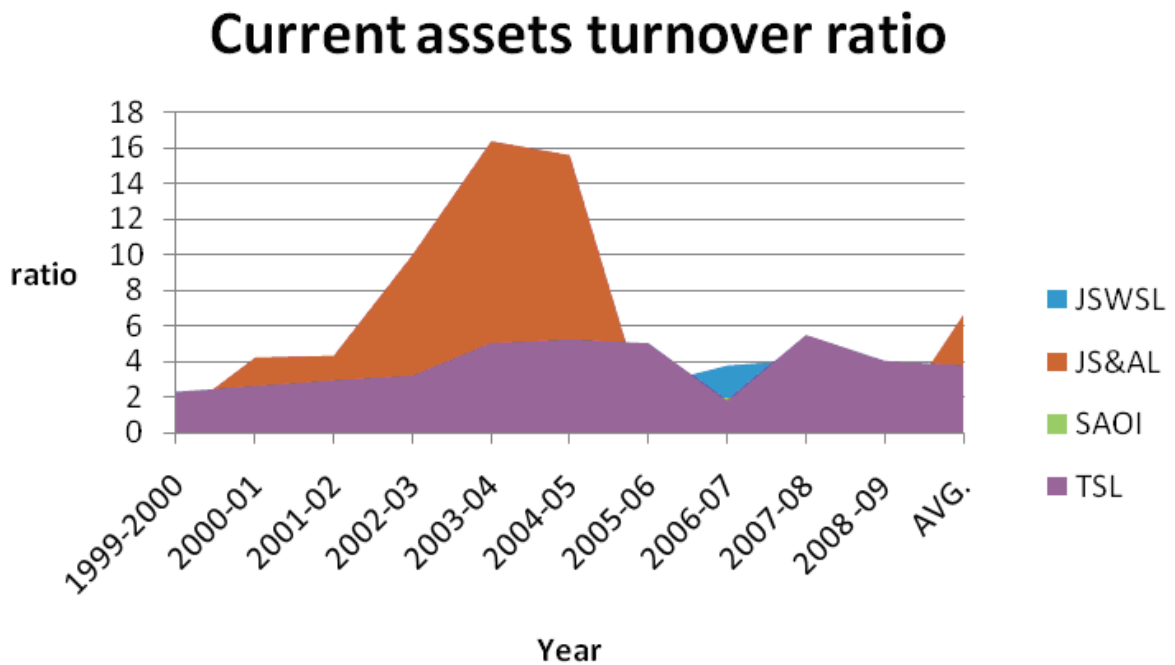
**Table No.5.22**

**Current Assets Turnover Ratio ( ANOVA TEST )**

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	122.8693	9	13.65215	1.288319	0.286539	2.235982
Within Groups	296.7124	28	10.59687			
Total	419.5818	37				

Since  $F_{cal} > F_{critical}$  (at 5% significance level), the null hypothesis is accepted and alternative hypothesis is rejected and hence it is concluded that the current assets turnover ratio does not differ significantly.

**Chart-5.11**



## **CONCLUSION:**

Chapter titled “analysis of profitability” describes the conceptual framework of financial efficiency and profitability. Financial efficiency is the ability of a given investment to earn a return from its use. It’s vital instrument to measure not only the business performance but also overall efficiency in its concerned.

In present study seven types of measurement tools of financial efficiency were discussed I.e. Gross profit ratio, operating profit ratio, net profit ratio, earning per share, return on gross capital employed, return on net capital employed, return and return on net worth. Generally, Earning per share ratio uses widely and famous. The present study showed concept. Importance and measurement tools for profitability performance for measure the efficiency of business organization.

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