CHAPTER- 4

Analysis of Liquidity

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INTRODUCTION:

Industrial sickness in India is rampant. One possible reason for industrial sickness is the poor management of liquidity. A firm in order to remain in existence and sustain its activities as a going concern must remain liquid and meet its obligations as and when they become due. A classification system of the functions of financial management links the twin goals of liquidity and profitability. The functions are directed towards achieving either or both of these goals.

Generally, liquidity means conversion of assets into cash during normal courses of business and to have regular uninterrupted flow of cash to meet outside current liability (Generally maturing within a year) as and when due and payable and also the ensure money for day to day business operations. Hence the flow of current should circulate with such a rapid speed that they are converted into cash within a year so that timely payment may be made to outsiders for interest dividend etc. if a major part of current assets are blocked in inventories and credit sales, not only ready cash will be available to pay current debt but there is a risk shrinkage in the total current assets available because of possible fall in the value of inventories or possible losses an account of bad debts.

The quality of current assets is therefore very important for analyzing liquidity. To know the liquidity position working capital analysis must be done. The term" liquidity" refers to the ability of a firm to meet its maturing obligations. The failure of a company to meet its obligations results in bad credit rating and leads to closure of the company. A major precondition for the very survival is a avoidance of serious resource constraints. Thus the importance of liquidity to meet debt obligations when they become due can hardly be over emphasized. To ensure increased liquidity, a manager will be in favor of maintaining a high level of current assets. But a very high degree of liquidity is not warranted, as funds will be unnecessarily locked up in current assets involving idle capital Cost which will hamper the profitability. Hence a sound financial management policy seeks to maintain adequate liquidity without impairing profitability. Effective management of liquidity would result in higher profit accrual, especially, if the effectiveness were due to lowering of receivable accounts and inventories. Of course, there are examples of companies who have witnessed a decline in profits despite effective management of liquidity. But then the rate of decline in profit probably would have been higher if not countered by effective liquidity management.
LIQUIDITY MANAGEMENT:

The importance of liquidity management is reflected in the fact that financial managers spend a great deal of time in managing current assets and current liabilities. The key issues in liquidity management are as to how much must be invested in each component of liquidity management and how to manage these components effectively and efficiently. Each current asset has unique characteristics and its investment level may vary from time to time. Thus both the investment decision and the management of liquidity become complicated. The financial manager has to monitor these assets continuously to maintain their optimal levels.

Proper management of liquidity is very important for the success of an enterprise. The manner of management of liquidity to a very large extent determines the success of the operation of concern. Constant management is required to maintain appropriate levels in the various working capital accounts. The failure of any enterprise is undoubtedly due to poor management and absence of management skill. Shortage of liquidity, so often advance as the main cause of failure is nothing but the clearest evidence of poor management, which is so common. There are many aspects of liquidity which make it an important function of the financial manager, on the one hand it maintain proper while on the other it help in increasing the profitability of the concern.

DETERMINANT OF LIQUID CAPITAL:

There are no set rules or formulae to determine the amount of liquid capital needed by an enterprise. A large number of factors influence the liquid capital needs of the concern. All of them have their own importance. Therefore, an analysis of the relevant factors should be made in order to determine the total requirements in liquid capital, the influencing liquid capital needs are described below:

1. Size of Business

The liquid capital requirements of the company are closely related to the size of its business and activity. Public utilities have very little need for current assets because of cash dealing. They have to invest abundantly in fixed assets. In these cases no funds will be tied up in accounts receivables and inventories. On the other hand, trading and financial firms have a very little investment in fixed assets but they required large amount to be invested in liquid capital. The industrial units besides large investment in fixed assets also need a large
amount of liquid capital through it varies from industry to industry because of lack of uniformity in the assets structure of different companies. The size of business also has been an important bearing on its liquid capital needs. The size may be measured in terms of the scale of Operation. A Concern with larger scale of operation will need more liquid capital than a small industry.

2. Business Cycle Fluctuation

Business enterprises usually experience fluctuations in demand for their product and services because of changes in economic conditions. In view of this liquid capital requirements of enterprises are affected. When there is an upward swing in economy, sales will increase and correspondingly the firm's investment in liquid capital will also increase. Under a business boom, extra investment in fixed assets may be made by some concerns to increase their production capacity. This act of the concerns will need further addition to the liquid capital.

3. Growth and Expansion of Business

As a general Rule, growing firm's need a continuously increasing amount of fund both for fixed and liquid capital. But it is difficult to precisely determine the relationship between the volumes of the turnover of the liquid capital requirement. According to V. E. Ramamoorthy, "The critical fact, however, is that the need for increased working capital funds does not follow but proceeds the growth in business activities."

4. Credit Policy

Credit policy and billing cycles of the enterprises also determine the requirements of liquid capital. An organization which has got efficient debts collection machinery and offers strict terms for credit, which may require a lesser amount of liquid capital. The credit terms granted to the customers may depend upon the norms of the company to which the enterprises belong. "In order to ensure that unnecessary funds are not tied up in book debts, the enterprise should follow a rationalized credit policy based on credit standing of the customers and other relevant factors."

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5. Availability of Credit

A firm with readily available credit from banks and suppliers will be able to get by with less liquid capital than a firm without such a facility.

6. Manufacturing Times

Time taken in manufacturing also affects the size of liquid capital. If the time is longer, the size of liquid capital is bound to be large. Moreover, the amount of liquid capital depends upon inventory turnover and the unit cost of the goods that are sold.

7. Speed of Production Cycles

Need for liquid capital of enterprises must be assessed in the light of the level of production proposed to be carried out and the Speed of production cycle. A firm can manage its affairs with little cash in reserve. If the circulation of liquid capital is normal, than at any time if something goes wrong with this circulation, additional funds will have to be provided for.

8. Volume of Sales

This is the most important factor to determine the size and components of liquid capital. A firm maintains current assets because they are needed to support the operational activities that culminate in sales. The volume of sales and size of liquid capital are directly related to each other, with the increase in the volume of the sales, there is an increase in the required investment in liquid capital in the form of inventory and receivables.

9. Liquidity and Profitability

If a firm desires to take a greater risk for bigger gains or losses. It reduced the size of its liquid capital in relation to its sales. If it is interested in improving its liquidity, it increases the level of its liquid capital. However, this policy is likely to result in a reduction of sales.
volume and therefore, of profitability. A firm, therefore, should choose between liquidity and profitability and decide about its liquid capital need accordingly.

10. Seasonal Fluctuation in Sales

Seasonal fluctuation in sales affected the level of variable liquid capital. Although, the demand for products may be of a seasonal nature, yet inventories have got to be purchased during certain season only. The size of liquid capital is in one period may therefore, be higher than that in the others.

11. Other Factors

In addition to the above consideration, there are a number of other factors affecting the amount of liquid capital. The absence of coordination in the policies of production and distribution of goods in enterprises result in higher demand for liquid capital. Secondly, the absence of specialization in the product mix on distribution thereof may in hence the need of liquid capital for a concern, as it will have to maintain an elaborate organization both for production and marketing. Thirdly, it means of transport and communication in a country are not well developed, the enterprises may face great demand for working capital in order to maintain huge inventory of raw materials and other accessories.

**STRUCTURE OF FIXED ASSETS:**

The structure of liquid capital fairly comprises of components of liquid assets and current liabilities. A financial manager of enterprises is expected to keep in mind the condition of five R's of money management before taking any decision with regard to capital structure. The five R's are; the right quality of money for liquidity, the right quantity of money whether owned :r borrowed, the right time of investment of money, the right source of acquisition or money and the right cost of capital a company can manage to pay. The structure of liquid capital in the right of above points is discussed below: -

1. Cash in Hand

Cash is not only the means but also the end for a business it is in a way all for a firm. If a firm has sufficient cash, it can easily fulfill its ether needs. It is the most liquid
assets of all that an enterprise owns, "Cash is the prime necessity of an undertaking in the form of capital invested and ultimate goal in the form of cash realized from sale of final product cash balance of a company is a safety value or shock absorber protecting the company short run fluctuations in funds requirement." One can hardly assume a moment in the life of a business when cash does not hold any importance. The staidly and healthy circulation of cash throughout the entire business operation is the basis of business solvency.

The management of cash plays a vital role in the decision-making process an overall performance of a business. The adequacy of cash must be prudently judged. As excess of cash would fail to contribute anything towards the objective of the firm for it will lie ideal. Similarly, paucity of cash prevents the firm from maximum utilization of its resources.

2. Cash at Bank

Cash at bank is the amount of cash deposited in the bank by the concern for the purpose of exploiting this resource in the times of need and emergency. In practice, it is assumed that a big volume of bank deposit indicates a sound liquid position of the business. But from the financial management's point of view, this assumption is considered unwise because such balance is devoid of generating any earning so proves expensive if retained. Moreover, bank balance fails into the category of unproductive and non-earning assets. Thus, so far as possible the least amount required should be kept in this form. The various factors like production cycle, the sales collection, time lag, maturing of payments, age of concern etc. are required to be considered while deciding the optimum level of bank balance.

3. Bills Receivables

Receivables are assets created on account of sale of goods and rendering of services on credit in the ordinary course of business. Receivables represent short-term debts, which enterprises owned. They mainly include book accounts, notes and bills, accrued receivables, prepayment on purchases, advances to employees or subsidiaries etc. The valuation of account receivables is usually done at face value but at times market rate of discount is deducted from it. As a matter of fact, receivables carry a considerable degree of risk attached to them like in case of default. Further the accuracy of bad doubtful debts inflates the amount of receivables. The receivables are favored on the grounds that they help in:
(a) Reducing collection cost over cash collection;
(b) Reducing sales variability;
(c) Increasing the levels of near-term sales.

The size of receivables mainly depends upon the credit policy of the business concern.

4. Marketable Security

Marketable securities refer to the amount of cash in excess invested by the enterprise in assets, which can be easily converted into cash within an accounting period. Such investment is temporary in nature and is regarded as near money. Marketable securities mainly consist of government securities, bonds, shares, debentures etc. The securities like government treasury bills which can be sold quickly without any loss of price are termed highly liquid or marketable.

5. Other Current Assets

The balance sheet of a company comprises of many other terms on assets side. Which too constitute a part of liquid capital? To name a few, they are loans and advances, interest accrued, and payment of tax, prepaid expenses, deposits with financial institutions etc.

6. Bank Overdraft

Many times the amount withdrawn by a company over and above the amount deposited by firm with the bank. Such withdrawals are termed as bank overdraft. This facility is provided upon a limited sum of money by the bank for which a nominal amount of interest is charged. A company can escape from borrowing small amounts at high rate of interest from other sources by taking advantage of this facility.

7. Short-term Loan;

At times, company avails itself the banking facilities of short-terms loan through cash credit mainly for the purpose of acquisition of assets. These loans are to be paid bank within a fixed period of time along with a fixed rate of interest. Bank allows rolling over of loans by
renewals. The nature of contract with bank should be scrutinized before including bank under this head. Only short-term loans are included under the head current liabilities.

8. Account Payable

This liability is also called trade creditors. Trade creditors are the parties to the business transactions that oblige a company with credit facilities regarding purchase of raw materials, stores, and goods for resale on credit terms etc.

"These purchases on open account are for most firms, the largest single sources of short-term financing. However, the extent of trade credit depends upon the trade custom, the type of goods involved and financial soundness of the suppliers and the purchasers."


Tax and dividends due for payment within a period of a year are included under this head. As a rule, the final dividend of a company cannot be declared officially until the annual general meeting is held. Therefore, a company cannot make any payment with regards to taxes and dividends before such payments are recommended at annual general meeting, which is usually held six months after the year-end. Till then, provisions in this respect are made and are included under the head current liabilities.

10. Other Current Liabilities

Other current liabilities like unclaimed dividends, outstanding expenses and salaries, unexpired discounts, interest accrued but not due on loans, super-annotations funds etc. are a few of the items that too fall under the head current liabilities in construction of liquid capital structure.

LIQUIDITY ANALYSIS OF STEEL INDUSTRY:

The current assets of enterprises are generally financed by short-term funds and hence the test of liquidity should compare the availability of short-term funds. Hence liquidity is being tested by the ratio related to current assets and current liabilities. These ratios are current ratio, quick ratio, absolute liquidity ratio, etc.
1. Current Ratio

It is the most widely used measure of testing liquid position of a concern. It is applied to test solvency and short-term financial strength of a concern. It indicates the relationship between firm's current assets to current liabilities. In the form of equation the current ratio may be expressed as:

\[
\text{Current Ratio} = \frac{\text{Total Current Assets}}{\text{Total Current Liabilities}}
\]

This ratio is also known as current assets and current liabilities ratio, solvency ratio, "working capital ratio or 2 to 1 ratio." Current ratio is a tool for measuring the short-term stability or ability of a company to carry on day-to-day work and meet the short-term commitments earlier. The significance of the current ratio is that it is not only a measure of solvency but is an index of working capital available it’s to the enterprises. A good current ratio may mean a good umbrella for creditors against rainy day but to the management it reflects bad financial planning or presence of idle assets or overcapitalization. This ratio suffers from a serious drawback. As a high current ratio does not always guarantee that a firm will always be able to repay its debts due to the value of inventory included in it, which cannot be easily converted into cash.

The ratio of 2:1 of current assets and current liabilities is assumed to be as ideal current ratio. Table 4.1 gives account of current ratio of the selected steel companies during the study period.

Analysis of Liquidity Position through Ratio:

With a view to appraising the performance in utilization of working capital by the steel industry and the individual companies under study, the analysis of working capital has been made from the point of view of:

1. Short term creditors:
2. Efficiency in the use of working capital:
3. Investment in working capital:
4. The collection policy of debts
Short term creditors are primarily concerned with the analysis of short term financial position or test of liquidity, Which is valuable to management in checking the efficiency with which working capital is being employed in the business. The problems posed in connection With the ratio analysis of the short-term financial position are (1) will the company be also to its current depts. promptly? (2) Is management utilizing the capital position effectively? (3) Is the current financial position improving? The following ratios have been calculated to evaluate the performance of working capital:

1. Current ratio:
2. Quick ratio:
3. Working capital turnover:
4. Inventory to working capital ratio:
5. Debtors turnover: and:
6. Average collection period:

**Current Ratio:-**

Current ratio is used to measure the liquidity position of the concerned and thus it reflects the short-term solvency of the concerned. It explains the relationship between the current assets and current liabilities. It gives a general picture of the adequacy of the working capital of the concern and the concern’s ability to meet its day-to-day payment obligations. The current ratio is calculated by dividing current liabilities:

\[
\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}
\]

This ratio indicates the availability of current assets in rupees for every one rupee of current liabilities. A ratio of greater than one means that concern has more current assets than current liabilities. A conventional rule, current ratio of 2:1 or more considered to be satisfactory. Tondon committee has recommended that idea current ratio for bank financing is 1.33:1

A relatively high value of the current ratio is considered as a indication that the firm is not lacking in liquidity of its assets and has the ability to pay its current liabilities on the other hand, a relatively low value of current ratio is considered as on indication that the firm faces difficulty in paying its current obligations. In Nut shell, higher the current ratio, the greater the margin of safety, i.e., a cushion of protection for creditors and large the amount of current assets in relation to current liabilities, more the firm’s ability to meet its current obligations.
However, too high ratio may be favorable to creditors, but is not beneficial for the firms, because it shows poor utilization of its current assets.
The Current ratio of selected unit of steel industry was explained in Table No.4.1 the ratio of JSWSL showed progressive and fluctuating trend during the study period. The average ratio was 0.82. The ratio ranged between 1.08 in 2005-06 and 0.27 in 2001-02. The ratio of JS&AL ranged between 0.47 in 2001-02 and 0.08 in 2004-05 with decreasing trend during the study period. The average ratio of SAIL was 1.53 the ratio ranged between 2.08 times in 2008-09 and 0.63 times in 2001-02 with a increasing trend during the study period. The ratio of TSL was minimal of 0.51 in 2007-08 and maximum 1.63 in 2006-07 with an average 0.76 the ratio showed highly fluctuated trend during the study period. The industry average is 0.81 which is not up to the standard because the selected companies have not maintained the standard of 2:1.

**Current Ratio (ANOVA Test)**

- **Null Hypothesis:** There is no any significant difference in current Ratio of steel units under study.
- **Alternative hypothesis:** There is a significant difference in current Ratio of steel units under study.
- **Level of Significance:** 5 percent
- **Critical value:** 2.24
- **Degree of freedom:** 37
Table No.4.2
ANOVA Test Of Current Ratio

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<th>Source of Variation</th>
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<th>df</th>
<th>MS</th>
<th>F</th>
<th>P-value</th>
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<td>Between Groups</td>
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<td>9</td>
<td>0.188772</td>
<td>0.734049</td>
<td>0.674743</td>
<td>2.235982</td>
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<td>Within Groups</td>
<td>7.200625</td>
<td>28</td>
<td>0.257165</td>
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<tr>
<td>Total</td>
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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 ratio does not differ significantly.

Chart no.4.1

current ratio

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<table>
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<th>year</th>
<th>JS W Steel Ltd.</th>
<th>Jindal Steel &amp; Alloys Ltd.</th>
<th>Steel Authority Of India Ltd.</th>
<th>Tata Steel Ltd.</th>
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<td>1999-2000</td>
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<td>2008-09</td>
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<tr>
<td>avg.</td>
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</table>
2. Liquid Ratio

This ratio is also known as acid test or quick ratio and is another widely used device for judgment of true short-term solvency of a business. This ratio establishes a relationship between the quick assets (liquid assets) and current liabilities of a firm. Liquid assets for accounting purpose include all current assets except stock and prepaid expenses. This way liquid ratio overcomes the drawbacks of the current ratio. It may be expressed as:

\[
\text{Liquid Ratio} = \frac{\text{Liquid Assets}}{\text{Current Liabilities}}
\]

A quick ratio of 1:1 is the standard norm for evaluating the accuracy of the information pertaining to going concern solvency of a business. This ratio specifically indicates the extent to which the liquid assets are available to set off the current obligations of a concern during a period of time. Table 4.2 presents liquid ratio pertaining to the steel companies during the study period.

Table 4.3
Liquidity Ratio Of Steel Companies In India.
(From 1999-2000 To 2008-2009)

<table>
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<td>JSWSL</td>
<td>0.21</td>
<td>0.25</td>
<td>0.16</td>
<td>0.21</td>
<td>0.53</td>
<td>0.47</td>
<td>0.57</td>
<td>0.46</td>
<td>0.22</td>
<td>0.13</td>
<td>0.32</td>
<td>0.17</td>
<td>0.57</td>
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<tr>
<td>JS&amp;AL</td>
<td>0.17</td>
<td>0.25</td>
<td>0.27</td>
<td>0.10</td>
<td>0.06</td>
<td>0.07</td>
<td>0.11</td>
<td>0.13</td>
<td>n.a</td>
<td>n.a</td>
<td>0.15</td>
<td>0.08</td>
<td>0.27</td>
<td>0.06</td>
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<tr>
<td>SAIL</td>
<td>0.29</td>
<td>0.30</td>
<td>0.22</td>
<td>0.32</td>
<td>0.47</td>
<td>0.83</td>
<td>0.78</td>
<td>1.05</td>
<td>1.35</td>
<td>1.43</td>
<td>0.70</td>
<td>0.45</td>
<td>1.43</td>
<td>0.22</td>
</tr>
<tr>
<td>TSL</td>
<td>0.37</td>
<td>0.36</td>
<td>0.43</td>
<td>0.28</td>
<td>0.19</td>
<td>0.15</td>
<td>0.15</td>
<td>1.23</td>
<td>0.12</td>
<td>0.27</td>
<td>0.36</td>
<td>0.33</td>
<td>1.23</td>
<td>0.12</td>
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<tr>
<td>avg.</td>
<td>0.26</td>
<td>0.29</td>
<td>0.27</td>
<td>0.23</td>
<td>0.31</td>
<td>0.38</td>
<td>0.40</td>
<td>0.72</td>
<td>0.56</td>
<td>0.61</td>
<td>0.38</td>
<td>0.26</td>
<td>0.88</td>
<td>0.13</td>
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</table>

Sources: Annual Reports of Steel companies from 1999-2000 to 2008-2009

The quick ratio of JSWSL manifested in the above table No.4.3. The ratio showed upward trend during the research period. The ratio was 0.21 times in 1999-02 and then it inclined to 0.25 times in 2000-01. The ratio was 0.16 times in 2001-02 and it went up to 0.21 times in 2002-03. The ratio was 0.53 times in 2003-04 and 0.47 times in 2004-05. The ratio was 0.68 times in 2006-07. The ratio ranged between 0.58 times in 2004-05 and 0.46 times in 2006-07 and in the last year the ratio was 0.13 with an average of 0.32 times. The standard
deviation of this ratio is 0.17 times. The ratio showed that during the whole study period company could not maintain the quick ratio according the norms.

Table No.4.3 indicated quick ratio of JS&AL for the year of 1999-2000 to 2008-09. The ratio was fluctuated and shown downward trend with an average of 0.15 times. The ratio was 0.17 times in 1999-2000 and then it went up to 0.25 times in 2000-01. The ratio was 0.27 times in 2001-02 which lower than norm. The ratio was 0.10 times and 0.06 times during the years of 2002-03 and 2003-04 respectively. The ratio then went up to 0.07 times in 2004-05 and 0.11 times in 2005-06. The ratio 0.13 times in 2006-07. Thus ratio ranged between 0.27 to 0.06 times with the standard deviation of 0.08 percent. The ratio was not according to the norms during the study period.

The quick ratio of SAIL was manifested in the above table No. 4.3. The ratio showed upward trend during the research period. The ratio was 0.29 times in 1999-2000 and then it inclined to 0.30 times in 2000-01. The ratio was 0.22 times in 2001-02 and it went up to 0.32 times in 2002-03. The ratio was 0.47 times in 2003-04 and 0.83 times in 2004-05. The ratio was 0.78 times in 2005-06. The ratio ranged between 1.43 times in 2008-09 and 0.22 times in 2001-02 with an average of 0.70 times. The standard deviation of this ratio is 0.45 times. The ratio showed that during the last three years of study period company could maintain the quick ratio according the norms.

The Table No.4.3 showed quick ratio of TSL with downward trend during the study period. The ratio was 0.37 times which then slipped to 0.36 times in the year of 2000-01. The ratio again went up to 0.43 times in the year of 2001-02 and then went down to 0.28 times year of 2002-03. The ratio was 0.19 times in the year of 2003-04. The ratio was showing decreased trend during the last years of study period. The ratio ranged between 1.23 times in 2006-07 and 0.12 times in 2007-08. The average ratio was 0.36 times with standard deviation of 0.36. The ratio in all year of study period during the 1999-2000 and 2008-09 found less than the norms of 1:1. Therefore company is advised to tighten its credit policy.

**Quick ratio (ANOVA Test)**

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

<table>
<thead>
<tr>
<th>Source of Variation</th>
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<th>P-value</th>
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<td>Between Groups</td>
<td>0.959718</td>
<td>9</td>
<td>0.106635</td>
<td>0.814328</td>
<td>0.607559</td>
<td>2.235982</td>
</tr>
<tr>
<td>Within Groups</td>
<td>3.666567</td>
<td>28</td>
<td>0.130949</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>4.626284</td>
<td>37</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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 quick ratio does not differ significantly.

**Chart No.4.2**

**Quick ratio**

- **JSWSL**
- **JS&AL**
- **SAOI**
- **TSL**
3. Absolute Liquidity Ratio

This ratio is also known as Super Quick Ratio or cash position ratio. This ratio establishes a relationship between absolute liquid assets and current liabilities. There are two components of this ratio, which are as under:

(a) Absolute liquid assets, which mean marketable securities, cash in hand and bank balance.

(b) Current liabilities

Absolute Liquidity Ratio = Absolute Liquid Assets / Current Liabilities

This ratio is used to examine absolute liquid position of the firm. If this ratio is 1:1 it indicates that the firm has enough cash to pay to its creditors. Secondly, it’s also shows that the firm is not paying attention towards credit purchases and avoids the use of short-term loan from bank. Table 4.3 shows the figure of Absolute Liquidity ratio of selected steel companies under study from 1999-2000 to 2008-2009.

Table 4.5
Absolute Liquidity Ratio Of Steel Companies In India.
(From 1999-2000 To 2008-2009)

<table>
<thead>
<tr>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>JSWSL</td>
<td>0.11</td>
<td>0.14</td>
<td>0.18</td>
<td>0.41</td>
<td>0.94</td>
<td>1.07</td>
<td>0.87</td>
<td>1.32</td>
<td>0.93</td>
<td>0.53</td>
<td>0.65</td>
<td>0.43</td>
<td>1.32</td>
<td>0.11</td>
</tr>
<tr>
<td>JS&amp;AL</td>
<td>0.00</td>
<td>0.04</td>
<td>0.44</td>
<td>0.42</td>
<td>0.00</td>
<td>-0.01</td>
<td>-0.04</td>
<td>0.00</td>
<td>n.a</td>
<td>n.a</td>
<td>0.11</td>
<td>0.18</td>
<td>0.44</td>
<td>-0.04</td>
</tr>
<tr>
<td>SAIL</td>
<td>0.47</td>
<td>0.42</td>
<td>0.16</td>
<td>0.34</td>
<td>0.73</td>
<td>0.79</td>
<td>0.31</td>
<td>0.47</td>
<td>0.57</td>
<td>0.33</td>
<td>0.46</td>
<td>0.20</td>
<td>0.79</td>
<td>0.16</td>
</tr>
<tr>
<td>TSL</td>
<td>0.41</td>
<td>0.49</td>
<td>0.57</td>
<td>0.50</td>
<td>0.66</td>
<td>0.72</td>
<td>0.68</td>
<td>0.74</td>
<td>0.79</td>
<td>0.73</td>
<td>0.63</td>
<td>0.13</td>
<td>0.79</td>
<td>0.41</td>
</tr>
<tr>
<td>avg.</td>
<td>0.25</td>
<td>0.27</td>
<td>0.34</td>
<td>0.42</td>
<td>0.58</td>
<td>0.64</td>
<td>0.45</td>
<td>0.63</td>
<td>0.76</td>
<td>0.53</td>
<td>0.46</td>
<td>0.23</td>
<td>0.83</td>
<td>0.16</td>
</tr>
</tbody>
</table>

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

Absolute Liquidity of selected steel companies from 2000-01 to 2008-09 are shown in the table No.4.5. The Absolute Liquidity JSWSL showed fluctuating trend with an average of 0.65. The ratio was 0.11 in 1999-2000 and it went up to 0.14 in 2000-01. The ratio was the higher of 1.32 in 2006-07 and the lowest was in 0.11 in 1999-2000. The Absolute Liquidity of JS&AL ranged between 0.44 in 2001-02 and -0.04 in 2005-06. The ratio was on an average of 0.11. The ratio of SAIL ranged between 0.79 in 2004-05 and 0.16 in 2001-02 with
an average of 0.46. The ratio of TSL was showing fluctuating trend throughout the study period with an average of 0.63.

**Absolute Liquidity (ANOVA Test)**

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

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>P-value</th>
<th>F crit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>0.98583</td>
<td>9</td>
<td>0.109537</td>
<td>0.988383</td>
<td>0.471151</td>
<td>2.235982</td>
</tr>
<tr>
<td>Within Groups</td>
<td>3.103074</td>
<td>28</td>
<td>0.110824</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>4.088904</td>
<td>37</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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 Absolute liquidity ratio does not differ significantly.
4. Current assets to Total assets Ratio

The ratio of current asset to total asset indicates the share of current asset in the total assets. The current asset ratio should be more so as to shown strong the liquid position of the concern. Here in this ratio it includes two components. It is:

(1) Current Assets, as per mentioned in current ratio.
(2) Total asset, is the sum of loans and advances, current asset and fixed assets.

Current assets to total assets = \( \frac{\text{Current assets}}{\text{Total assets}} \)

Table 4.4 shows the figures indicating Current assets to total assets in selected steel companies from 1999-2000 to 2008-09.

<table>
<thead>
<tr>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>JSWSL</td>
<td>0.11</td>
<td>0.10</td>
<td>0.10</td>
<td>0.11</td>
<td>0.16</td>
<td>0.23</td>
<td>0.23</td>
<td>0.20</td>
<td>0.16</td>
<td>0.15</td>
<td>0.15</td>
<td>0.05</td>
<td>0.23</td>
<td>0.10</td>
</tr>
<tr>
<td>JS&amp;AL</td>
<td>0.37</td>
<td>0.43</td>
<td>0.42</td>
<td>0.20</td>
<td>0.08</td>
<td>0.07</td>
<td>0.17</td>
<td>-0.42</td>
<td>n.a</td>
<td>n.a</td>
<td>0.17</td>
<td>0.25</td>
<td>0.43</td>
<td>-0.42</td>
</tr>
<tr>
<td>SAIL</td>
<td>0.31</td>
<td>0.33</td>
<td>0.31</td>
<td>0.33</td>
<td>0.37</td>
<td>0.52</td>
<td>0.55</td>
<td>0.61</td>
<td>0.65</td>
<td>0.64</td>
<td>0.46</td>
<td>0.14</td>
<td>0.65</td>
<td>0.31</td>
</tr>
<tr>
<td>TSL</td>
<td>0.26</td>
<td>0.27</td>
<td>0.26</td>
<td>0.29</td>
<td>0.23</td>
<td>0.25</td>
<td>0.26</td>
<td>0.50</td>
<td>0.24</td>
<td>0.31</td>
<td>0.29</td>
<td>0.08</td>
<td>0.50</td>
<td>0.23</td>
</tr>
<tr>
<td>avg.</td>
<td>0.27</td>
<td>0.28</td>
<td>0.27</td>
<td>0.23</td>
<td>0.21</td>
<td>0.27</td>
<td>0.30</td>
<td>0.22</td>
<td>0.35</td>
<td>0.37</td>
<td>0.27</td>
<td>0.13</td>
<td>0.45</td>
<td>0.06</td>
</tr>
</tbody>
</table>

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

Current Assets to Total Assets Ratio in steel manufacturing companies in India has been computed and presented in the table No. 4.7. It is evident from table 4.7 that the Current Assets to Total Assets Ratio in JSWSL, JS&AL, SAIL and TSL showed fluctuating trend during the study period. The percentage to current assets to total assets was the highest to 0.23 in JSWSL in 2004-05 and highest 0.43 in JS&AL in 2000-01. SAIL showed fluctuating trend with an average of 0.46. The percentage of Current Assets to Total Assets was reduced which shows that in those years the speed of increase in current assets was much more than that of the total assets. The Current Assets to Total Assets ratio of steel companies shows fluctuating trend throughout the study period. The minimum Current Assets to Total Assets
Ratio in JSWSL is 0.10 (2000-01), JS&AL is -0.42 (2006-07), SAIL is 0.31 (2001-02), TSL is 0.23 (2003-04). The maximum Current Assets to Total Assets Ratio in JSWSL is 0.23 (2005-06), JS&AL is 0.43 (2000-01), SAIL is 0.65 (2007-08) and TSL is 0.50 (2006-07).

Current Assets to Total Assets Ratio (ANOVA Test)

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

### Table No.4.8

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>P-value</th>
<th>F crit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>0.081682</td>
<td>9</td>
<td>0.009076</td>
<td>0.192916</td>
<td>0.993119</td>
<td>2.235982</td>
</tr>
<tr>
<td>Within Groups</td>
<td>1.317266</td>
<td>28</td>
<td>0.047045</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1.398947</td>
<td>37</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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 to Total Assets ratio does not differ significantly.
5. Debtors to Sales Ratio

Another method of analyzing the level of the investment in debtors is debtors to sales ratio. This ratio holds considerable importance in indicating credit policy. The higher ratio shows the higher credit investment & the lower ratio point out that the company is practicing strict credit and collection policy resulting in effective management control. Table 4.5 shows the figures indicating Debtors to sales ratio in selected steel companies from 1999-2000 to 2008-09.

<table>
<thead>
<tr>
<th>Companies</th>
<th>Average</th>
<th>Standard Deviation</th>
<th>Maximum</th>
<th>Minimum</th>
</tr>
</thead>
<tbody>
<tr>
<td>JSWSL</td>
<td>0.51</td>
<td>0.33</td>
<td>0.51</td>
<td>0.07</td>
</tr>
<tr>
<td>JSSLAL</td>
<td>0.66</td>
<td>0.15</td>
<td>1.06</td>
<td>0.04</td>
</tr>
<tr>
<td>SAIL</td>
<td>0.18</td>
<td>0.05</td>
<td>0.18</td>
<td>0.10</td>
</tr>
<tr>
<td>TSL</td>
<td>0.22</td>
<td>0.05</td>
<td>0.22</td>
<td>0.04</td>
</tr>
<tr>
<td><strong>Avg.</strong></td>
<td>0.39</td>
<td>0.22</td>
<td>0.49</td>
<td>0.06</td>
</tr>
</tbody>
</table>

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

From steel companies under study have kept different level of Debtors to Sales Ratio of steel Companies in India during the study period from 1999-2000 to 2008-09. Table No. 4.9 gives a clear picture of Debtors to Sales Ratio of steel Companies in India kept by the five companies. In Debtors to Sales Ratio of all the steel companies shows fluctuating trend throughout the study period. The minimum Debtors to Sales Ratio of steel Companies in JSWSL is 0.07 (2003-04) JS&AL is 0.04 (2003-04), SAIL is 0.10 (2005-06), and TSL is 0.04 (2007-08). The maximum Debtors to Sales Ratio of steel Companies in JSWSL is 0.51 times (1999-2000), JS&AL is 1.06 times (2006-07), SAIL is 0.18 times (2000-01) and TSL is 0.22 times (1999-2000).

Debtors to Sales Ratio of steel companies in India

- **Null Hypothesis:** There is no any significant difference in Debtors to Sales Ratio of steel units under study.
- **Alternative hypothesis:** There is a significant difference in Debtors to Sales Ratio of steel units under study.
- **Level of Significance:** 5 percent
➢ Critical value: 2.24

➢ Degree of freedom: 37

**Table No.4.10**

Debtors To Sales Ratio One Way Anova Test

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>P-value</th>
<th>F crit</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Between Groups</strong></td>
<td>0.513945</td>
<td>9</td>
<td>0.057105</td>
<td>1.040024</td>
<td>0.434423</td>
<td>2.235982</td>
</tr>
<tr>
<td><strong>Within Groups</strong></td>
<td>1.537407</td>
<td>28</td>
<td>0.054907</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>2.051351</td>
<td>37</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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 Debtors to Sales Ratio does not differ significantly.

**Chart No-4.5**

Debtors to Sales
6. Working Capital Turnover Ratio:

In order to test the efficiency with which working capital is used the working capital turnover ratio is calculated. The ratio is computed by dividing the amount of sales by net working capital.

\[
\text{Working capital turnover ratio} = \frac{\text{Net Sales}}{\text{Net working capital}}
\]

A close relationship exists between sales and net working capital. With any increase in sales volume there is a corresponding increase in the working capital. Therefore, a good amount of net working capital may be needed to support the increase in sales. The turnover of net working capital is computed to test the efficiency with which net working capital is utilized. In other words, the ratio helps to assess the degree of efficiency in the use of short-term funds for generating sales.

Working capital turnover ratio reveals whether a business is being operated with a small or large amount of net working capital in relation to sales. A very high working capital ratio may be the result of favorable or may reflect an inadequacy of working capital and over trading. On the other hand, a very low ratio may be the outcome of an excess of working capital. Slow turnover of inventories and receivables, large cash balance or investment of working capital in the form of temporary investments. The very low ratio is also an indicator of under trading which means more working capital funds have been invested in the business than needed.
Table 4.11 shows the working capital turnover ratio in selected steel companies from 1999-2000 to 2008-09.

### Table 4.11
Working Capital Turnover Ratio Of Steel Companies In India.  
(From 1999-2000 To 2005-2006)  

<table>
<thead>
<tr>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>JSWSL</td>
<td>-1.31</td>
<td>-1.98</td>
<td>-2.18</td>
<td>-5.09</td>
<td>38.49</td>
<td>535.86</td>
<td>16.15</td>
<td>51.89</td>
<td>-11.84</td>
<td>-4.08</td>
<td>61.59</td>
<td>167.94</td>
<td>535.86</td>
<td>11.84</td>
</tr>
<tr>
<td>JS&amp;AL</td>
<td>-1.42</td>
<td>14.34</td>
<td>-6.93</td>
<td>-2.84</td>
<td>-1.65</td>
<td>-1.42</td>
<td>-0.12</td>
<td>-0.14</td>
<td>n.a</td>
<td>n.a</td>
<td>-3.61</td>
<td>4.85</td>
<td>-0.12</td>
<td>14.34</td>
</tr>
<tr>
<td>SAIL</td>
<td>10.62</td>
<td>18.23</td>
<td>34.62</td>
<td>-22.80</td>
<td>-13.43</td>
<td>10.53</td>
<td>8.61</td>
<td>5.11</td>
<td>3.87</td>
<td>3.06</td>
<td>1.08</td>
<td>16.89</td>
<td>18.23</td>
<td>34.62</td>
</tr>
<tr>
<td>TSL</td>
<td>170.91</td>
<td>31.19</td>
<td>13.63</td>
<td>-13.89</td>
<td>-6.06</td>
<td>-7.07</td>
<td>-9.24</td>
<td>-4.50</td>
<td>-5.73</td>
<td>-7.84</td>
<td>11.30</td>
<td>57.21</td>
<td>170.91</td>
<td>31.19</td>
</tr>
<tr>
<td>avg.</td>
<td>44.70</td>
<td>-7.32</td>
<td>-7.52</td>
<td>-9.91</td>
<td>4.34</td>
<td>134.47</td>
<td>3.85</td>
<td>15.34</td>
<td>-4.56</td>
<td>-2.95</td>
<td>17.05</td>
<td>61.72</td>
<td>181.22</td>
<td>23.00</td>
</tr>
</tbody>
</table>

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

Above table showed the working capital turnover ratio steel industry in India. The ratio of JSWSL ranged between 535.86 in 2004-05 and -11.84 in 2007-08 with an average of 61.59. The highest ratio was -0.12 and lowest ratio was -14.34 in JS&AL during the year of 1999-2000 and 2008-09. The minimum ratio in SAIL's was -34.62 in 2001-02 and maximum ratio was 18.23 in 2000-01 with an average of 11.30. In TSL ratio ranged between minus 31.19 and minus 170.91 during the years of 2000-01 and 1999-2000 with an average of 11.30. Maximum ratio was 535.86 (2004-05) in JSWSL. The average ratio in JS&AL was -3.61 times. The maximum ratio of TSL 170.91 times in 1999-2000 with an average of 11.30 times.

**Working capital turnover ratio**

- **Null Hypothesis**: There is no any significant difference in working capital turnover ratio of steel units under study.
- **Alternative hypothesis**: There is a significant difference in working capital turnover ratio of steel units under study.
- **Level of Significance**: 5 percent
- **Critical value**: 2.24
- **Degree of freedom**: 37
Table No.4.12
One Way Anova Test Of Working Capital Turnover Ratio

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>P-value</th>
<th>F crit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>0.513945</td>
<td>9</td>
<td>0.057105</td>
<td>1.040024</td>
<td>0.434423</td>
<td>2.235982</td>
</tr>
<tr>
<td>Within Groups</td>
<td>1.537407</td>
<td>28</td>
<td>0.054907</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>2.051351</td>
<td>37</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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 working capital turnover ratio does not differ significantly.

Chart No-4.6

Working Capital Turnover Ratio
7. Debt - Equity Ratio

This ratio is also called "External Internal" equity ratio and is generally represented in the form of percentage. It is calculated by dividing total debt of a business by its net worth. In simple words, a relationship is established between external equities i.e. the total outside liabilities and internal equities i.e. the shareholder's funds or the tangible net worth. Thus,

\[
\text{Debt Equity Ratio} = \frac{\text{Total Debt}}{\text{Net Worth}}
\]

"For the purpose of calculation of this ratio, the term shareholder's equity includes! Share capital', 'reserve & surpluses minus miscellaneous expenses (if any). This ratio is also known as 'Net Worth to Total Indebtness Ratio." This ratio is an indicator of the extent to which debt financing has been exploited by the business. Generally, the ratio of 1:1 is considered satisfactory i.e. the loans & borrowings should not exceed the net worth.

This ratio indicates the soundness of debt equity mix by measuring the amount of long-term obligations in relation to the amount contributed by owners. The importance of this ratio lies in the fact that a proper mix of debt and equity aids in improving the rate of capital formation. It also helps in assessment of permanent liabilities of the organization in comparison to owner's fund. It can measure the relative interest of owners and long-term creditors in a company.

A high ratio indicating higher claims of creditors as compared to owner's funds is least desirable. Although it may enable a concern to relish the advantage of high leverage, yet during market uncertainties such capital structure is bound to suffer unfavorable market conditions. Whereas, a low ratio always adds points of safely in creditor's account. This ratio is a ratio of conflicting margin for creditors and shareholders of the concern. As creditors always prefer a low debt equity ratio; for the lower the ratio, the larger will be the amount contributed by owners of the concern and greater the stock of security to the creditors. Whereas, a higher ratio is favored by shareholders, as in that case they can derive optimum
benefit from the assets provided by creditors through leverage. Table 4.7 presents debt equity ratio of selected steel companies from 1999-2000 to 2008-09.

**Table 4.13**
Debt -Equity Ratio Of steel Companies in India.
(From 1999-2000 to 2008-2009)

<table>
<thead>
<tr>
<th></th>
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<th></th>
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<td>18.55</td>
<td>18.83</td>
<td>4.38</td>
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<td>0.98</td>
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<td>7.13</td>
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<td>1.84</td>
<td>2</td>
<td>1.11</td>
<td>0.29</td>
<td>0.27</td>
<td>0.24</td>
<td>0.74</td>
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<td>n.a</td>
<td>n.a</td>
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<td>-0.12</td>
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<td>6.02</td>
<td>6.23</td>
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<td>0.27</td>
<td>0.19</td>
<td>0.09</td>
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<td>2.41</td>
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<td>0.09</td>
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<td>1.18</td>
<td>1.37</td>
<td>1.33</td>
<td>0.78</td>
<td>0.4</td>
<td>0.26</td>
<td>0.71</td>
<td>0.66</td>
<td>0.9</td>
<td>0.89</td>
<td>0.40</td>
<td>1.37</td>
<td>0.26</td>
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<td>3.855</td>
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<td>6.67</td>
<td>1.7875</td>
<td>0.6025</td>
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<td>0.85333</td>
<td>2.47</td>
<td>2.68</td>
<td>7.11</td>
<td>0.25</td>
</tr>
</tbody>
</table>

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

The Table No.4.13 debt equity ratio of JSWSL reveals also the fluctuating and decreasing trend with an average of 6.02 times. The ratio of the company was increased from 4.11 times in 1999-2000 to 8.9 times in 2000-01 and reached to 18.55 times in 2001-02. For the next two year ratio decreased to 4.38 times in 2003-04 and 1.27 times in 2004-05. The ratio was 1.01 times and 0.77 times in 2006-07 and 0.98 times in 2007-08. The ratio was 1.42 times in the last year of the study period with the standard deviation of 7.13 percent. In the last years of study period, the owner’s equity decreased due to decrease in profit.

The table No.4.13 explains the debt equity ratio of JS&AL was fluctuating and declining during the study period. The ratio varied from 2.00times in 2000-01 to -0.12times in 2006-07. The average ratio was 0.80 times which was the lower than the steel industry. The standard deviation was of 0.79 percent. The ratio was not good because the financial risk is low as increase in owner’s capital.

The table No.4.13 indicated the debt equity ratio of SAIL. The ratio showed decreased trend during the study period. The ratio varied from 6.23 times in 2002-03 to 0.09 times in 2007-08. The average ratio was 2.17 times which the second was highest among the selected steel companies. In the last four of the study period the ratio had been less than 1 times which means that the company had not invested short term debt in fixed assets. Such type of capital budgeting decision was good. The company is advised to increase the net worth to invest in fixed assets.
The above table showed total debt equity ratio of TSL. The ratio indicated downward trend during the span of research period with an average of 0.89 times. The ratio fluctuated from a lowest 0.26 times in 2005-06 to highest 1.37 times in 2001-02. The average ratio of this unit was below the combined average of steel group. The company has the highly fluctuant standard deviation. In the last three years, the company had invested net worth in fixed asset so company is advised not to increase this ratio to have good rate of return on net worth. The company has more financial charges burden.

**Debt Equity Ratio (ANOVA-Test)**

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

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>P-value</th>
<th>F crit</th>
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<tbody>
<tr>
<td>Between Groups</td>
<td>217.9276</td>
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<td>21.79276</td>
<td>1.379878</td>
<td>0.235103</td>
<td>2.153156</td>
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<tr>
<td>Within Groups</td>
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<td>31</td>
<td>15.79325</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>707.5184</td>
<td>41</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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 debt equity ratio does not differ significantly.
Chart No-4.7

Debt-equity ratio

Year


Ratio

-2 0 2 4 6 8 10 12 14 16 18 20

JSWSL JS&AL SAOI TSL
8. Propriety Ratio

This ratio establishes a relationship between Net worth and Tangible Assets. This ratio is also known as Net Worth to Total Assets or Shareholders Equities to Total Equities ratio and Equities Ratio. It expresses the relationship between net worth and total assets. This ratio can be expressed as:

\[
\text{Propriety ratio} = \frac{\text{Net worth}}{\text{Total assets}}
\]

\[
\text{Net worth} = \text{Equity share capital} + \text{Preference Share Capital} + \text{Reserves - Fictitious Asset}
\]

\[
\text{Total asset} = \text{Fixed Asset} + \text{current asset (excluding fictitious assets)}
\]

Reserves earmarked specially for a particular purpose should not be included in calculation of Net worth. This ratio shows how much capital is introduced by the owner in business. Higher ratio shows the sound financial position of the business, because it shows that the organization is not running through outside funds, which means less interference and pressure of outsiders. The higher the ratio, the better it is.

Table 4.8 shows the proprietary ratio in selected steel companies from 1999-2000 to 2008-09.
Table 4.15
Proprietary Ratio Of Steel Companies In India.
(From 1999-2000 To 2008-2009)

(Ratio in Times)

<table>
<thead>
<tr>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>JSWSL</td>
<td>14.27</td>
<td>-4.99</td>
<td>-45.34</td>
<td>-27.29</td>
<td>10.93</td>
<td>37.13</td>
<td>20.88</td>
<td>24.3</td>
<td>25.4</td>
<td>2.16</td>
<td>2.89</td>
<td>26.08</td>
<td>37.13</td>
<td>45.34</td>
</tr>
<tr>
<td>JS&amp;AL</td>
<td>-2.08</td>
<td>2.87</td>
<td>2.63</td>
<td>0.68</td>
<td>1.28</td>
<td>0</td>
<td>5.96</td>
<td>-28.13</td>
<td>n.a</td>
<td>n.a</td>
<td>-2.10</td>
<td>10.78</td>
<td>5.96</td>
<td>28.13</td>
</tr>
<tr>
<td>SAIL</td>
<td>36.65</td>
<td>-21.58</td>
<td>-66.13</td>
<td>-18.44</td>
<td>65.83</td>
<td>86.5</td>
<td>33.91</td>
<td>40.09</td>
<td>36.77</td>
<td>23.3</td>
<td>14.36</td>
<td>48.22</td>
<td>86.50</td>
<td>66.13</td>
</tr>
<tr>
<td>TSL</td>
<td>6.48</td>
<td>13.3</td>
<td>3.43</td>
<td>24.08</td>
<td>41.24</td>
<td>58.11</td>
<td>41.14</td>
<td>35.05</td>
<td>22.59</td>
<td>18.12</td>
<td>26.35</td>
<td>17.33</td>
<td>58.11</td>
<td>3.43</td>
</tr>
<tr>
<td>avg</td>
<td>11.63</td>
<td>-2.6</td>
<td>26.35</td>
<td>5.2425</td>
<td>29.82</td>
<td>45.435</td>
<td>25.473</td>
<td>17.8275</td>
<td>28.2533</td>
<td>14.5267</td>
<td>10.38</td>
<td>25.60</td>
<td>46.93</td>
<td>34.04</td>
</tr>
</tbody>
</table>

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

The above Table No. 4.15 showed the ratio of return on net worth of JSWSL which also indicated fluctuated trend with an average of 2.89 percent. The highest ratio had been found of 37.13 percent in 2004-05 and the lowest ratio had also been found of -45.34 percent in 2001-02. The standard deviation was 26.08 percent. The ratio was not quite satisfactory.

The ratio of return on net worth of JS&AL was seen in above Table No. 4.13. The ratio explained the downward trend with an average of -2.10. The ratio was -2.08 percent in 1999-2000 and rose to 2.87 percent in 2000-01. The ratio slipped to 0.68 percent in 2002-03 and then it went high to 1.28 percent in 2003-04. The ratio was highly fluctuated and went down to zero percent in 2004-05 and 5.96 percent in 2005-06. The ratio was ranged between -28.13 percent and 5.96 percent during the study period. The ratio showed standard deviation of 10.78 percent. The company had shown bad performance in the last three years.

The above Table No. 4.13 showed Return on net worth of SAIL. The ratio showed fluctuated and progressive trend with an average of 14.36 percent. The return on net worth ratio ranged between -66.13 percent in 2001-02 and 86.50 percent in 2004-05. The standard deviation was 48.22 percent. The average ratio was above average of industry.

The above Table No. 4.13 showed return on net worth of TSL with increased trend. The average ratio was 26.35 percent which was the best. The ratio was 6.48 percent in 1999-2000 but it was lightly inclined to 13.3 percent in 2000-01. The ratio again indicated fall and reached to 24.08 percent in 2002-03. The ratio was 41.24 percent in 2003-04 and 58.11 percent in 2004-05. The ratio again decreased to previous year to 41.14 percent in 2005-06. The ratio was 35.05 percentages in 2006-07 and 22.59 percentages in 18.12 percentages in
2008-09. The standard deviation was 17.33 percent and the average ratio was above average of industry. The ratio has been highly satisfactory during the study period.

**Proprietary Ratio (ANOVA-Test)**

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

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>P-value</th>
<th>F crit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>17538.84</td>
<td>9</td>
<td>1948.76</td>
<td>3.113601</td>
<td>0.010106</td>
<td>2.235982</td>
</tr>
<tr>
<td>Within Groups</td>
<td>17524.81</td>
<td>28</td>
<td>625.8862</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>35063.66</td>
<td>37</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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 Proprietary Ratio does differ significantly.
9. Fixed Assets to Net worth Ratio

In these words of Anil B. Roy Choudhary, "This ratio indicates the relationship between net worth (i.e. shareholders’ funds) and investment in net fixed assets (i.e. gross block minus depreciation)\(^{14}\). Thus,

\[
\text{Fixed Assets to Net Worth} = \frac{\text{Net Fixed Assets}}{\text{Net Worth}}
\]

No specific norm has been prescribed for fixed assets to net worth ratio. As this ratio indicates the proportion of fixed assets (after depreciation) which are supported by the contribution of shareholders? Therefore, in case this ratio exceeds the ratio of \(1:1\) it automatically reveals the portion of net fixed assets provided by the creditors. As stated by Professor Boxen, "This ratio measures the proportion of contributed capital that has been invested in fixed property."\(^{15}\) This ratio is regarded as an important tool for judgment of margin of safety for long-term creditors.

A high fixed asset to net worth ratio signifies less protection to creditors. Contrary to this, low ratio would mean that fixed assets are financed by shareholders' funds. Thus, it
would extend the margin of safety for long-term creditors. Table 4.16 reveals fixed assets to net worth ratio of steel companies 1999-2000 to 2008-09.

Table 4.17
Fixed Assets To Net Worth Ratio Of Steel Companies In India.
(From 1999-2000 To 2008-2009)

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>JSWSL</td>
<td>5.41</td>
<td>5.05</td>
<td>7.08</td>
<td>7.39</td>
<td>3.50</td>
<td>2.04</td>
<td>1.92</td>
<td>1.82</td>
<td>2.16</td>
<td>2.81</td>
<td>3.92 2.16 7.39 1.82</td>
</tr>
<tr>
<td>JS&amp;AL</td>
<td>2.54</td>
<td>2.33</td>
<td>2.19</td>
<td>2.08</td>
<td>1.92</td>
<td>1.77</td>
<td>2.99</td>
<td>0.64 n.a</td>
<td>2.06</td>
<td>0.69</td>
<td>2.99 0.64</td>
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<td>SAIL</td>
<td>3.30</td>
<td>3.61</td>
<td>5.43</td>
<td>5.71</td>
<td>2.69</td>
<td>1.25</td>
<td>1.03</td>
<td>0.74</td>
<td>0.61</td>
<td>0.67</td>
<td>2.50 1.96 5.71 0.61</td>
</tr>
<tr>
<td>TSL</td>
<td>1.63</td>
<td>1.54</td>
<td>1.70</td>
<td>2.37</td>
<td>1.74</td>
<td>1.29</td>
<td>1.01</td>
<td>0.79</td>
<td>0.46</td>
<td>0.48</td>
<td>1.30 0.61 2.37 0.46</td>
</tr>
<tr>
<td>avg.</td>
<td>3.22</td>
<td>3.13</td>
<td>4.10</td>
<td>4.39</td>
<td>2.46</td>
<td>1.59</td>
<td>1.74</td>
<td>1.00</td>
<td>1.08</td>
<td>1.32</td>
<td>2.45 1.35 4.61 0.88</td>
</tr>
</tbody>
</table>

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

Table No. 4.16 showed fixed assets to net worth ratio of JSWSL during the study period. The ratio was showing decreasing trend during the study period. The ratio ranged between 1.82 percent in 2006-07 and 7.39 percent in 2002-03. The average ratio was 3.92 percent with standard deviation of 4.705 percent.

A fixed asset to net worth ratio of JS&AL was manifested in the table No. 4.16. The ratio was showing highly fluctuated trend with an average of 2.06 percent. The ratio was the higher of 2.99 percent in 2005-06. But in the years of 2002-03, 2003-04, 2004-05, and 2006-07 the ratios were 2.08, 1.92 and 1.77 respectively. The ratio was 2.99 percent in 2005-06 and 0.64 percent in 2006-07. The company should try to lower the administrative cost.

The above table showed fixed asset to net worth ratio of SAIL from 2000-01 to 2008-97. The ratio showed declining trend with an average of 2.50 percent. The ratio ranged between 5.71 percent in 2002-03 and 0.61 percent in 2007-08. The ratio was the good in years of first three years of study period then after it has gone down.

The above table showed fixed asset to net worth ratio of TSL with fluctuated and downward trend during the study period. The ratio was 1.63 percent 1999-2000 and 1.54 percent in 2000-01. The ratio was highly rose to 2.37 percent in 2002-03 and then it has gone down to 1.74 percent in 2003-04. The ratio was 1.29 percent in 2004-05 and 1.01 percent in 2005-06. The ratio was 0.48 percent in the last year of study period. The ratio ranged between 2.37 percent and 0.46 percent with an average of 1.30 percent. The standard deviation was of 0.61 percent.
Fixed asset to net worth ratio (ANOVA-Test)

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

<table>
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<td>35063.66</td>
<td>37</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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 fixed asset to net worth ratio does differ significantly.
Chart No-4.9

Fixed assets to Networth

Ratio

Year


JSWSL JS&AL SAOI TSL
CONCLUSION:

Chapter titled “ANALYSIS OF LIQUIDITY” describe that its one of the important measurement of the financial position of the business organization. The concept and nature of working capital or current assets denotes that “Investment in current assets is turned over many times in a year. Investment in current assets such as inventories and book debts (accounts receivable) is realized during the firms operating cycle which is usually less than year.” Therefore measurement liquidity has its own important. Importance of liquidity describes that it’s lifeblood and controlling nerve center of the business. Without circulation of blood no one can live, just like without circulation of liquidity business can’t maintain.

The performance of liquidity can be judged by investment in working capital, short-term creditors, and efficiency in working capital. In the present study there where six types of ratios was calculated i.e. current ratio, quick ratio, and inventory turn over ratio working capital turnover ratio, debtor turnover ratio, and average collection period. Thus above analysis describe that the need for liquidity to rub day-to-day business activities can’t be over emphasized.
REFERENCES:


    (Bombay: Asia Publishing House, 1962), P.181