



Saurashtra University

Re – Accredited Grade 'B' by NAAC
(CGPA 2.93)

Barad, Mahesh M., 2010, *A Study of Liquidity Management of Indian Steel Industry*, thesis PhD, Saurashtra University

<http://etheses.saurashtrauniversity.edu/id/eprint/77>

Copyright and moral rights for this thesis are retained by the author

A copy can be downloaded for personal non-commercial research or study, without prior permission or charge.

This thesis cannot be reproduced or quoted extensively from without first obtaining permission in writing from the Author.

The content must not be changed in any way or sold commercially in any format or medium without the formal permission of the Author

When referring to this work, full bibliographic details including the author, title, awarding institution and date of the thesis must be given.

Saurashtra University Theses Service
<http://etheses.saurashtrauniversity.edu>
repository@sauuni.ernet.in

**“A Study on Liquidity Management of
Indian Steel Industry”**

A THESIS

**SUMMITTED TO THE
SAURASHTRA UNIVERSITY
FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY IN COMMERCE
(FACULTY OF COMMERCE)**

SUBMITTED BY

**MAHESH M. BARAD
ASSISTANT PROFESSOR
SRK INSTITUTE OF MANAGEMENT & COMPUTER EDUCATION
SAPEDA – KUTCH**

UNDER THE SUPERVISION OF

**DR. SANJAY J. BHAYANI
ASSOCIATE PROFESSOR
DEPARTMENT OF BUSINESS MANAGEMENT
(M. B. A. PROGRAMME)
SAURASHTRA UNIVERSITY
RAJKOT – 360 005**

MAHESH M. BARAD

Assistant Professor

SRK Institute of Management & Computer Education

Sapeda Ta. : Anjar Dist. : Kutch

Date:-

DECLARATION

I declare that the thesis entitled “**A Study on Liquidity Management of Indian Steel Industry**” is record of Independent research work carried out by me under the supervision and guidance of Dr. S. J. Bhayani Associate Professor, Department of Business Management (M.B.A. Programme), Saurashtra University, Rajkot. This has not been previously submitted for the award of any diploma, degree, associatesship or other similar title.

Mahesh M. Barad

CONTENTS

Particulars	Page no.
Preface	I
List of tables and chart & figures	III

Chapter No.	Chapters	Page No.
1	Conceptual Framework of Liquidity Management	1
2	Profile of Steel Industry in India	24
3	Research Design	51
4	Analysis of Liquidity	66
5	Analysis of Profitability	108
6	Analysis of Receivable Management	165
7	Analysis of Cash Management	206
8	Analysis of Cash Flow	230
9	Summary, Findings and Suggestions	246

PREFACE

The present study deals with the Analysis on liquidity of steel industry in India, which are mainly engaged in production of steel Products, This study is aimed at exploring analysis of liquidity performance of steel industry in India.

Steel is crucial to the development of any modern economy and is considered to be the backbone of human civilization. The level of per capita consumption of steel is treated as an important index of the level of socioeconomic development and living standards of the people in any country. It is a product of a large and technologically complex industry having strong forward and backward linkages in terms of material flows and income generation. All major industrial economies are characterized by the existence of a strong steel industry and the growth of many of these economies has been largely shaped by the strength of their steel industries in their initial stages of development. Steel industry was in the vanguard in the liberalization of the industrial Sector and has made rapid strides since then. The new Greenfield plants represent the latest in technology. Output has increased, the industry has moved up in the value chain and exports have raised consequent to a greater integration with the global economy. The new plants have also brought about a greater regional dispersion easing the domestic supply position notably in the western region. At the same time, the domestic steel industry faces new challenges. Some of these relate to the trade barriers in developed markets and certain structural problems of the domestic industry notably due to the high cost of commissioning of new projects. The domestic demand too has not improved to significant levels. The litmus test of the steel industry will be to surmount these difficulties and remain globally competitive.

In order to analysis the liquidity ,profitability, management of receivable, management of cash and cash flow statement of the steel industry in India researcher has collected data from published accounting annual reports, some publications. Most useful information has been gathered from the various journals reports, periodicals and daily newspapers. It is hoped that the thesis will be of immense help and use to practicing financial Managers, Management, Government officials, employees, Shareholders, Academicians and research scholars.

The present study is divided into nine chapters. The first chapter is the Conceptual Framework of liquidity management. The second chapter focuses on Profile of steel industry in India. The third chapter is related with the Research design. In the fourth chapter, liquidity position of the steel industry has been analyzed. The management of receivable of selected

steel units has been critically analyzed in the fifth chapter. The sixth chapter explained management of cash. The seventh chapter deals with the analysis of cash flow statement of selected steel units. Finally, in the last chapter suitable and significance suggestions have been made and conclusion drawn.

It would not be out of place to express my sincere thanks and gratefulness for the help and support received from time to time from my guide Dr. Sanjaybhai J. Bahyani, Associate Professor, Department of Business Management, Saurashtra University-Rajkot who has guided me through out my research work.

I am thankful to Dr. Pratapsinh L. Chauhan Professor & Head, Department of Business Management, Saurashtra University, Rajkot for inspiring and providing me a valuable guidance in my research work.

I am also obliged to Dr. Daxaben Gohil, Professors and Head of the Department of Commerce, Saurashtra University- Rajkot for giving me a valuable suggestions and moral boosting. I would like to thanks my best friend Dr. Butalal Ajmera, Assistant Professor Department of MBA-Bhavnagar , he gave me appropriate guidance in this Research work by personally & telephonic way. And also I am thankful to my chairman Mr. Arjan Bhai Kangad who gave me opportunity to do this research work and helped me in various way.

At last but not the least I would like to thanks my wife Dr. Manisha Barad, my son(Aadi),my daughter (Jhanvi),and my whole family who encouraged me from time to time,I love them a lot and Mr.Mahesh Mulani (HOD-BCA) and Mr. Farid Khoja (HOD-BBA) and all my staff members of SRK INSTITUTE,also my best students of BBA named Krupa Patel(Gold Medalist) and Hetab Kangad, without their kindly approach it might not be possible to made this thing possible.

For completing the present study, I got assistance, valuable advice and suggestions, directly or indirectly from many of my teacher, well-wishers, colleagues, officials and a special indebts of gratitude is due to my parents, who took keen interest through the work and inspired me.

Finally, I acknowledge that this work would never been possible without the consistent support and inspiration of God “SWAMI NARAYAN”

Date: /.... /.....

Place: Rajkot

Mahesh Barad

(.....)

List of Tables

Table No.	Title of the Tables	Page No.
CHAPTER – 2		
Table 2.1	Country Wise Crude Steel Production during the year of 2007-08	27
Table 2.2	Demand and growth of steel industry	30
Table 2.3	Steel production In India	33
Table 2.4	Finished carbon steel and pig iron	38
Table 2.5	Market share of leading players in iron and steel industry	46
CHAPTER - 4		
Table 4.1	Current Ratio Of Steel Companies in India.	78
Table 4.2	ANOVA test of current ratio	79
Table 4.3	Liquidity Ratio Of steel Companies in India.	80
Table 4.4	one way ANOVA test of Quick ratio	82
Table 4.5	Absolute Liquidity Ratio Of steel Companies in India.	83
Table 4.6	One way ANOVA test of Absolute liquidity	84
Table 4.7	Current Assets to Total Assets Ratio of steel Companies in India	86
Table 4.8	One way ANOVA test of Current Assets to Total Assets Ratio	87
Table 4.9	Debtors to Sales Ratio of steel Companies in India.	89
Table 4.10	Debtors to Sales Ratio one way(ANOVA TEST)	90
Table 4.11	Working Capital Turnover Ratio	92
Table 4.12	One way ANOVA test of Working capital turnover ratio	93
Table 4.13	Debt -Equity Ratio Of steel Companies in India.	95
Table 4.14	Debt Equity Ratio (ANOVA TEST)	96
Table 4.15	Proprietary Ratio of Steel Companies in India.	99
Table 4.16	Proprietary Ratio (ANOVA TEST)	100
Table 4.17	Fixed Assets to Net worth Ratio Of steel Companies in India.	102
Table 4.18	Fixed asset to net worth ratio (ANOVA TEST)	103
CHAPTER - 5		
Table 5.1	Net Profit Ratio Of steel Companies in India.	126
Table 5.2	Net Profit Ratio (ANOVA TEST)	128
Table 5.3	Return on Gross Capital Employed Of steel Companies in India	131

Table 5.4	Return on gross capital employed ratio (ANOVA TEST)	132
Table 5.5	Return on Net Capital Employed ratio Of steel Companies in India	134
Table 5.6	Return on Net Capital Employed ratio (ANOVA TEST)	136
Table 5.7	Return on Shareholders Fund of steel Companies in India	138
Table 5.8	Return on Shareholders Fund Ratio (ANOVA TEST)	138
Table 5.9	Return on Equity Share Capital of steel Companies in India	140
Table 5.10	Return on Equity Capital Ratio (ANOVA TEST)	141
Table 5.11	Earning Per Share Of steel Companies in India.	144
Table 5.12	EPS (ANOVA TEST)	145
Table 5.13	Dividend per Share and Dividend Percentage Of steel Companies in India	147
Table 5.14	Percentage of dividend per share	148
Table 5.15	Dividend Pay-Out Ratio Of steel Companies in India	149
Table 5.16	Dividend Payout Ratio (ANOVA TEST)	150
Table 5.17	Assets Turnover Ratio of steel Companies in India.	152
Table 5.18	ANOVA TEST of Total assets turnover ratio	153
Table 5.19	Fixed Assets Turnover Ratio Of steel Companies in India.	156
Table 5.20	ANOVA TEST of Fixed assets turnover ratio	157
Table 5.21	Current TEST Turnover Ratio Of steel Companies in India	159
Table 5.22	ANOVA TEST of current assets turnover ratio	160
CHAPTER – 6		
Table 6.1	Relationship of Credit Terms and Effective per Annum Interest Rates	192
Table 6.2	Size of Receivables Of steel Companies in India	194
Table 6.3	Index of Growth in Annual Sales and Receivables of steel Companies in India.	195
Table 6.4	The size of sundry's debtors and the percentage of sundry debtors to current assets in selected steel companies	196
Table 6.5	Size of Loans and Advances of steel Companies in India	198
Table 6.6	Accounts Receivable Turnover Ratio Of steel Companies in India.	200
Table 6.7	Receivable to Sales Ratio Of steel Companies in India	201
Table 6.8	Average collection period	203
CHAPTER - 7		
Table 7.1	Quantum of Cash of steel Companies in India.	218
Table 7.2	Cash to Current Assets Ratio Of steel Companies in India.	220
Table 7.3	Cash to Sales Ratio of steel Companies in India.	221

Table 7.4	Cash Turnover Ratio Of steel Companies in India.	222
Table 7.5	Cash Position Ratio Of steel Companies in India	224
Table 7.6	Net cash flow to Current Liabilities Ratio Of steel Companies in India.	226
Table 7.7	Coverage of Current Liabilities Ratio Of steel Companies in India.	228
CHAPTER – 8		
Table 8.1	Net cash flow from operating activities (indirect method)	236
Table 8.2	Net cash inflow/ (outflow) from investment activities	238
Table 8.3	Net cash inflow/ (outflow) from financing activities	239
Table 8.4	Net cash inflow/(outflow) due to net increase/(decrease) in cash and cash equivalents	241
Table 8.5	Cash flow cash opening balance	242
Table 8.6	Cash flow cash closing balance	243

List of Chart

Chart No.	Title of the Chart	Page No.
1.1	Brief highlight of global steel industry	26
1.2	Steel production	28
1.3	Growth in key sector	47
4.1	Current ratio	79
4.2	Quick ratio	82
4.3	Absolute liquidity ratio	85
4.4	Current assets to total assets ratio	88
4.5	Debtors to sales ratio	90
4.6	Working capital turnover ratio	93
4.7	Debt-equity Ratio	97
4.8	Proprietary Ratio	101
4.9	fixed asset to net worth Ratio	104
5.1	Net profit ratio	128
5.2	Return on gross capital employed	133
5.3	Return on net capital employed	136
5.4	Return on Shareholders Fund	139
5.5	Return on equity share capital	142
5.6	Earnings per share	145
5.7	percentage of dividend of per share	146
5.8	Dividend payout ratio	150

5.9	total assets turnover ratio	154
5.10	Fixed assets turnover ratio	157
5.11	Current assets turnover ratio	160
6.1	Average collection period	204
8.1	Net cash flow from operating activities (indirect method)	237
8.2	Net cash inflow/ (outflow) from investment activities	238
8.3	Net cash inflow/ (outflow) from financing activities	240
8.4	Net cash inflow/(outflow) due to net increase/(decrease) in cash and cash equivalents	241
8.5	Cash flow cash opening balance	243
8.6	Cash flow cash closing balance	244

List of Figures

Diagram No.	Tittles of the Diagram	Page No.
1.1	Conversion of operating cycle	3
5.1	Du-Pont chart	117
5.2	Management Achievement Chart	119
5.3	Profit performance chart	121
6.1	Flow chart showing the purpose of maintaining the receivable	170
6.2	Determinants of investment in receivable	173

List of Abbreviation

AVE.	AVERAGE
BAC	BHARAT ALUMINIUM COMPANY LTD
S.D	STANDARD DEVIATION
EPS	EARNING PER SHARE
EBIT	EARNING BEFORE INTEREST AND TAX
EBT	EARNING BEFORE TAX
JSWSL	J S W Steel Ltd.
JS&AL	Jindal Steel & Alloys Ltd.
SAIL	Steel Authority Of India Ltd.
TSL	Tata Steel Ltd.
MIN	MINIMUM
MAX	MAXIMUM
RNK	RANK
ANOVA	ANALYSIS OF VARAINCE
VAL.	VALUE

CHAPTER-1

Conceptual Framework of Liquidity Management

Particular	Page No.
Concept of Liquidity	2
Concept of Liquidity Management	2
Meaning of Liquidity Management	4
Need an Importance of Liquidity Management	5
The operating cycle consists of three phases	6
Principles of Liquidity Management	8
Technique of Liquidity Management	11
Relationship between Liquidity and Profitability	14
Significance of a Study for Stakeholders	14
Evaluation Methods	15
References	23

CONCEPT OF LIQUIDITY:

Finance is a like blood in our body so long as blood-circulate properly in the body; we feel healthy and have capacity to work. If circulation is not proper, It will put effect on the functioning of the body, similarly it will be difficult for business concern to take financial decision related to the determination of the amount of long-term finance required and the sources from which such finance is to be raised. The optimum capital structure should be determined by keeping in mind the long-term and short-term requirement of finance.

No doubt the investment decision is very much important from the long-term point of view aid in the changing spectrum of business. A business organization has to face quite often the problem of capital investment decision, because investment in this project has quite heavy and have to be made immediately, but the returned will be available in the long run. For replacement expansion diversification, research and development investment decision are most crucial and critical, but the availability of short-term fund in most in liquid form is also very important. The small, but very important short-term transactions need availability of sufficient liquid resources. Short-term solvency much depends upon the availability of liquid resources as per short-term availability as short-term requirements. No businessman can aspire to keep surplus fund in the business but while developing these surplus funds he has to estimate its short-term requirements. Liquidity effects over short-term capacity to pay day to day say routine transaction.

Thus, we say that businessmen want to hold imbalance a sufficient quantity of liquid assets. So that undue solvency risks are not imposed on it. This is a logical approach indicating quantitative amount of liquid resources. Thus, the modern business atmosphere financial experts have to consider a minimum amount of liquid capacity in the business appraises management in estimating property that prospects needs. Insufficient liquid resources may cost a black shadow on goodwill of the concern because the ability to pay short-term liability may be doubted by the external parties. Thus the concept of liquidity comes in the light of proper financial functioning to the business.

CONCEPT OF LIQUIDITY MANAGEMENT :

"In the management of liquidity two characteristics of current assets must be boom in mind: -

- 1. Short life span and,*
- 2. Swift transformation into other assets forms. "¹*

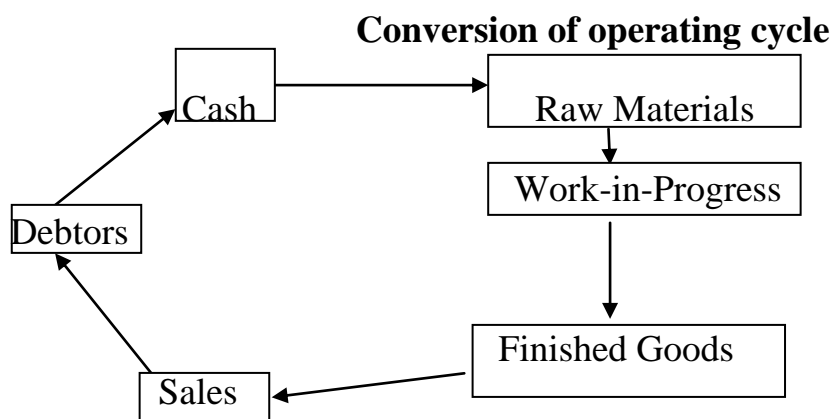
1. Short life Span

Current assets have a short life span, cash balance may be hold idle for a week or account receivable may have a life span of 30 to 60 days and inventories may be held for 30 days to 100 days. The short life span of current assets depends upon the requirement of firm, in the activities of procurement production sales collection and the degree of synchronization among them.

2. Swift transformation into Other Assets Forms

Each current asset (C.A) had swiftly transformed into other assets forms. Cash is used for acquiring raw materials. Raw materials (R.M) are transformed into finished goods (this transformation may involve several stage of work in progress) Finished goods generally sold on credit are converted into account receivable (book debts); and finally, Account receivable on realization generated cash.

Figure 1.1 is show the cycle of transformation -



The short life span of working capital components and their swift transformation form one into another as certain implementations: -

- (1) Decisions relating to working capital management are repetitive and frequent.
- (2) The difference between profit and present value is in significant.
- (3) The close interaction among working capital components implies that efficient management of one component can not be under taking without simultaneous consideration of other components that is if the firm has a large accumulation of finished goods inventory. It may have to provide more liberal credit terms

or show laxity in credit collection. Another example if they have a cash crunch it may have to offer generous discounts.

The investment of net current assets could not reveal the capacity to pay very short-term obligation. Investment in these assets may seem to be sufficient but the composition of current asset may say a different story. Suppose a business concern has working assets of Rs. 5 lacs and its current liabilities are Rs. 1 Lacs. Then the concern may be said solvent keeping in view the investment in short-term assets. But if the value of stock in these assets is Rs. 450 thousands then the situation here reverses the concept of liquidity developed. It is correct that stock may be converted into cash (the most liquid form of the asset). But how much time it will take, we cannot say that in this case payment of short-term obligation may be difficult. Hence, the idea developed that sufficient of cash and bank balance plus other liquid assets should be kept as minimum. So that businessman discharges its short-term commitment due to this reason the concept of liquidity developed. It indicates what portion of current assets in the form of liquid assets.

MEANING OF LIQUIDITY MANAGEMENT:

The term 'Liquidity' means the ability of an organization to realize value in money the most liquid among all assets. It implies conversion of assets into cash during the normal course of business and to have regular uninterrupted flow of cash to meet outside current liabilities as and when due and payable and also ensure availability of money for day-to-day business operations. The concept of liquidity in case of companies has two dimensions viz; the quantitative and qualitative. The quantitative aspect includes the quantum, structure and utilization of liquid assets. The qualitative aspect emphasizes upon the ability of a firm to meet all present and potential demand on cash in a manner that minimize cost and maximize the value of the business.

The liquidity is a vital factor in business operations. For the very survival of business, the firm should have requisite degree of liquidity. It should be neither excessive nor inadequate. Excessive liquidity means accumulation of idle funds. Which may lead to lower profitability, increase speculation, and unjustified extension, extension of liberal credit terms, liberal dividend policy etc; whereas inadequate liquidity result in interruptions of business operations. A proper balance between these two extreme situations therefore should be maintained for efficient operation of business through skill full liquidity management. The need of efficient liquidity management corporate sector has become greater in recent years.

NEED AND IMPORTANCE OF LIQUIDITY MANAGEMENT :

The need for liquidity of current assets could not be over emphasized. The efficient management of liquidity is a integrated part of overall finance management and has a bearing on the objective of the consolidation of short-terms solvency position to achieve this. It is necessary to generate sufficient liquid fund. The extent to which liquidity can be gained will naturally depend upon the magnitude of the sales. The efficiency of collection department the lowest period of operating cycle etc. a successful collection programmer is in other words, necessary for maintaining liquidity by any business enterprises. Those sales don't convert into cash is instantly remain a time lag between the sales of goods and receipt of cash.

There is therefore a need for liquidity in the form of cash and bank balance, marketable security and bills receivables etc. will deals with the problem arising out of take of immediately realization of current assets? Therefore sufficient liquidity is necessary to certain the ability to pay short-term obligations. Technically, liquidity depends upon the production or cash cycling. The operating cycle can be said to be; the heart of the need for liquidity. *"The continuing flow from cash to supplier to inventory to account receivable and back into cash what is collected operating cycle."*² In other words, the terms cash cycle refused to the length of time necessary cycle events:

- 1." *Conversion of cash into inventory.*
2. *Conversion of inventory into receivable.*
3. *Conversion of receivable into cash.*³

Thus, the operating cycle is a continuous process. If it were possible to complete the sequences instantaneously, there would no need of liquid fund. But since it is not possible; the firm is forced to have current assets. Since cash inflows and cash outflow don't match, firms have to necessity keep cash or investment in short-term liquid securities.

Therefore they will be in a position to meet due obligation as per requirement. Similarly, business concern must have adequate Inventory to guard against the possibility of not being able to meet a demand for their products. Adequate inventory therefore provides a cushion against being out of stock. If the firms have to be competitive they must sale goods to their customers on credit which receivables the holding of account receivable. It is in these ways that an adequate level of working capital is absolutely necessary for smooth sales activity which, in turn, enhances the liquid position of the concerns.

THE OPERATING CYCLE CONSISTS OF THREE PHASES:

1. Cash Gets Converted into Inventory

This would include purchase of raw materials, conversion of raw materials into work-in-progress, finished goods and terminate in the transformation of goods into stock at the end of the manufacturing process. In the case of trading organizations, this phase would be shorter as there would be no manufacturing activity and cash will be converted into stock directly. The phases will, of course, be totally absent in the case of service organization.

2. Conversion of Inventory into Receivable

In the second phase, the inventory is converted into receivables as credit sales are made to customers. Firms, which do not sell on credit, will obviously do not consist of second phase of the operating cycle.

3. Conversion of Receivable into Cash

The last phase thirds represent the stage when receivables are collected, this phase complete the operating cycle. Thus, the firm has involved from cash to inventory, to receivables and to cash again. Thus the process of gaining liquidity is of vital importance. The need and importance of liquidity management is due to the followings points: -

(A) Management of Short-term Solvency

Liquidity or availability of liquid resources gives an indication of the capacity to pay its short-term obligation. This kind of information is valuable for short-term creditors and present and future investors.

(B) Management of the Efficiency of the Credit Department

In the normal course of the business no firm can strict to cash sales only. Every business concern has to sale on credit if the collection for debtors is very slow than it will affect the quantum of liquid resources. The concern may feel difficulty in paying short-term liabilities. Thus it is very necessary to know the efficiency of collection department and sufficient amount of collection will be hence the liquidity of the concern.

(C) Inter-Firm Comparison

As regard the liquidity we can compare the position of different firms, in case of paying its short-term liabilities. Thus on the basis of liquidity inter firm comparison may also be done.

(D) Early Payment to Suppliers

Sufficient liquidity will enable the business to pay its suppliers immediately. Similarly, the concern may not feel difficulty in acquiring raw materials regularly and consequently the production activity may be continued without any obstruction.

(E) Benefits of Cash Discount

If we have sufficient liquidity we can get the benefit of cash discount on goods purchase by doing this, the production cost will be decreased and in that case business firm may reduce its prices and will be able to compete better.

(F) Payment of Dividend

Due to lack of liquidity, sometimes it happens that business activity is going very smoothly but the concern is not able to pay dividend. This situation arises when the quantum of credit sales is very high consequently. The business concern is not able to pay dividend while the profit and loss account show the sufficient profits but if it have sufficient profit and liquidity, we may pay attractive dividend and the shareholders may get full satisfaction and the prices of the security will also remain static.

(G) Increase in Credit and Capacity of Getting Loans

The institutions, which have sufficient liquid resources, may be treated as institution of having good financial position. This type of institution may get loan and advances where needed. Secondly, the institution may be able to run its manufacturing and trading activity continuously without any difficulty.

(H) Easy Bank Loan

If the concern has sufficient liquid asset, the short-term solvency may be treated as good and banks will hesitate to give short-term or long-term loans. Because, the sample of liquid assets over liquid liabilities is treated as a good security by the bank.

(I) To Make Use of Favorable Conditions

If business conditions have a tendency to change and have sufficient liquidity, it can make use of favorable condition and may gain profit. I.e. if there is a probability of price rise in raw materials we can purchase sufficient amount of raw materials. Thus, we can make use of this favorable condition provided that we have sufficient liquid resources.

Sufficient liquid resources will effect psychologically to directors and managers and they will be more inspired to work with zeal. Similarly, if the employees get their salary with allowances in time, they will work more effectively. Thus, sufficient liquid resources physiologically, motivate managers as well as employees and by this the efficiency of the concern will increase.

(J) Helpful in Payment of Contingencies

In case of contingent events and contingent trading difficulties we can face them easily, if we have sufficient liquid resources.

(K) Increase in Efficiency

Sufficient liquid resources will effect psychologically to directors and managers and they will be more inspired to work with zeal. Similarly, if the employees get their salary with allowances in time, they will work more effectively. Thus, sufficient liquid resources physiologically, motivate managers as well as employees and by this the efficiency of the concern will increase.

(L) Increase in Productivity of Fixed Assets

Sufficient liquid resources increase the productivity of fixed assets that is, if raw materials and labour is available in sufficient quantity the machine will work on full capacity without liquidity. Fixed assets will be age arises without ammunition. Proper management of liquidity is very important for the success of an enterprise. The manner of management of liquidity to very large extent determines the successes 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 advanced 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 manger, on the one hand it maintain proper liquidity, while on the other it help in increasing the profitability of the concern.

PRINCIPLE OF LIQUIDITY MANAGEMENT :

The liquid Capital needs of a firm are influence by numerous factors. The important principles of liquid capital are as under: -

(1) Nature of Business

The amount of liquidity required by a firm depends largely on the nature of business. In rail components Transports Company, electronic company and many other welfare institution of very less amount of liquidity is required because amount of liquidity depend on cash receipt and sales of service in cash. Contrary to this business firm organized in the productive of luxury items need a large amount of liquid capital, because due to fluctuation in demand, they need a higher quantity of stock.

(2) Seasonality of Business

Due to seasonal business fluctuations demand of these products may. They have product in particular seasons. The amount of liquidity had also fluctuated according to the seasonal requirements. Some industries are such in which the demand of these product remains in the whole year but the production will be done in a particular season as sugar industry, woolen industry and cola industries in India. In those types of industries, a large amount of liquidity is required in the productive season.

(3) Production Polices

No business concern can fully on cash sales. It has to sale on credit, If the credit period is less and collection department in efficient than more liquid resources is required. If the collection period is long than high amount of liquid capital is required. Thus, the ordering policy of a concern dictated the amount of liquid capital.

(4) Size of Business

The size of business is an important factor in determination of liquid capital. A large scaled production industry needs large amount of liquid capital in comparison to productive institute of small size.

(5) Period of Operating Cycle

The business concern having large gestation proportion period needs of large amount of liquid capital, because their periodical operating cycle is of a greater period. While industry having a operating cycle of a very short period need a lesser amount of liquidity. In the first case, the concern has to keep a larger amount of capital in liquid form to pay current liabilities. Thus, the amounts of liquidity depend upon the period of operating cycle.

(6) Proportion of Raw Material in Cost

The concern having large proportion of raw materials in its production need higher liquidity, because, the concerns have to pay higher amount of purchases of raw materials in seasonal business. The concern needs higher stock of raw materials and in that case they needs higher amount of liquidity.

(7) Credit Availability and Purchasing Time

The condition relating to credit decided by the creditors affects the amount of working capital. The business concern in which easy credit is available, lesser amount of working capital is required. Similarly, if we have liberal credit facilities from the bank, we may run business with a small working capital.

Secondly, the time of purchasing also decides the amount of working capital. If the total raw materials is purchased at the beginning that is on the time of new crops coming in the market. We require a higher amount of liquid capital in that month in the next month that is maximum amount of liquid capital requirements

(8) Fluctuation of Business Activities

If the business activity fluctuates, a higher amount of liquid capital is required. In the boom period, the demand condition increases together with the increase in prices. In this situation, the business concern requires sufficient inventory of raw materials. Contrary to this during the depression business activities become sluggish and a lesser amount of liquid capital to be sufficient.

(9) Growth Rate of Business

The growth in existing business and the tendency of expansion directly affected the amount of liquid capital. If the growth rate and expansion is low, lower amount of working of capital may be sufficient but if the expansion is done at a higher rate than larger amount of fund is needed for fixed assets as well as for current assets.

(10) Amount of Profit and Dividend Policy

Ploughed back of profit is an important source of working capital provided that profit is earned in cash. Therefore, in the concerns in which profit-earning capacity is due to good production and marketable securities management and monopoly, they need a lesser amount of liquid capital. On the other hands, if the profit earning capacity is low, higher amount of working capital is required.

(11) Other Resources

Beside the above factor various other points are responsible for the amount of liquid capital: -

- (a) Role of industrial development;
- (b) Means of transport and communication;
- (c) Political stability;
- (d) Market condition; and,
- (e) Condition of supplies etc.

TECHNIQUE OF LIQUIDITY MANAGEMENT :

There are some specific techniques of liquidity management and process for speedy collection of receivable from customers and slowing disbursement. We discuss in the present section.

(1) Speedy Cash Collection

In managing cash efficiency, the cash inflow process can be accelerated through systematic Planning and refined techniques. There are two broad approaches to do this. In the first place, the customers should be encouraged to pay as quickly as possible. Secondly, the payment from customers should be converted into cash without any delay.

(2) Rapid Payment by Customer

One ways to ensure rapid payment by customers is prompt billing. What the customer has to pay, the period of payment, etc., should be notified accurately and in advance. The use of mechanical devices for billing along with the enclosure of a self addressed return envelope will speed-up payment by customer. Another, and more important, technique to encourage prompt payment by customers is the practice of offering trade discount. The availability of discount, as discussed earlier, implies considerable saving to the customers. In their anxiety to avail of the facilities, the customers would be eager to make payment early.

(3) Early Conversion of Payment in Cash

Once the customer makes the payment by writing a cheque in favors of the business concern, the collection will be expedited by prompt encashment of the cheque. It can be recalled that there is a long lag between the time a cheque is prepaid and mailed by the customer and the funds are included in the cash reservoir of the companies.

The early conversion of payment into cash, as a technique to speed-up collection of accounts receivable, is done to reduce the time lag between posting of the cheque by the customer and the realization of money by the concerns. The postal float, lethargy and bank float are collectively referred to as deposit float. " *The term deposit float id defined as the sum of cheques written by customers that are not yet usable by the firm.*"⁴ The collection of accounts receivable can be considerably accelerated, by reducing transit, processing and collection time. An important the cash management technique is reduction in deposit float

(4) Concentration Banking

In this system of decentralized collection of accounts receivables, large companies, which have a large number of branches at different place, select some of these, which are strategically located as collection centers for receiving payment from customers. Under this

arrangement, the customers are required to send their payments to the collection center covering the area in which they live and these are deposited in the local amount of the concerned collection center, after meeting local expenses. *"A concentration bank is one with which the firm has a major account usually a disbursement account."*⁵ Concentration banking is a system of decentralized billing and multiple collection points is a useful technique to expedite the collection of account receivables. It reduces the time needed in the collection process by reducing the mailing time.

*"The mailing time is saved both in respect of sending the bill to the customers as well as in the receipt of payment. Another advantage is that concentration permits the firm to 'store' its cash more efficiently."*⁶

(5) Lock-Box System

The lock-box system is like concentration banking in that the collection is decentralized and is done at branch level. But they differ in one very important respect. While the customer sends the cheque, under the concentration banking arrangement, to the collection centers, he sends them to a post office box under the lock-box system. The lock-box system is an important is the concentration baking system. In other words, the processing time with in the firm before depositing a cheque in the bank is eliminated.

The use of concentration banking and lock-box system accelerates the collection of receivables it in involves a cost. While in the case of the former, the cost is in terms of the maintenance of multiple collection centers compensation to the bank for services represent the cost associated with the latter. Thus, *the lock-box system, as a method of collection of receivables, has a two-fold advantage: (i) the bank performs the clerical task of handling the remittances prior to deposits, services which the bank may be able to perform at a lower cost; (ii) the process of collection through the banking system begins immediately upon the receipt of the cheque / remittance and does not have to wait until the firm completes its processing for internal accounting purposes."*⁷

(6) Slowing Disbursement

Apart from speedy collection of accounts receivable, the operating cash requirement can be reduced by slow disbursements of Accounts payable. It may be recalled that a basic strategy of cash management is to delay payment as long as possible without impairing the credit rating / standing of the firm. In fact, slow disbursements represent a source of funds requiring no interest payments. There are several techniques to delay payment of accounts

payable, namely; (A) Avoidance of early payments; (B) Centralized disbursement; (C) float; and, (D) Accruals.

(A) Avoidance of Early Payments

One way to delay payments is to avoid early payments. According to the terms of credit, a firm is required to make a payment within a stipulated period. It entitles a firm to cash discounts. If, however, payments are delayed beyond the due date, the credit standing may be adversely affected so that the firm would find it difficult to secure trade credit later. Thus, a firm would be advised not to pay early i.e. before the due date.

(B) Centralized Disbursements

Another method to slow down disbursement is to have centralized disbursement. The head office should make all the payments from a centralized disbursement account. Such an arrangement would enable a firm to delay payments and conserve cash for several reasons. Firstly, it involves an increase in transit time. Secondly, the reason for reduction in operating cash requirement is that since the firm has a centralized bank account, a relatively smaller total cash balance will be needed.

(C) Float

A very important technique of slow disbursement is float. The term float refers to the amount of money tied up in cheques that have been written, but have yet to be collected and encashed. Alternatively, float represents the difference between the bank balance and book balance of cash of a firm. The difference between the as shown by the concern record and the actual bank balance is due to transit and processing delays. There are three ways of float as below:

- (a) Paying from a distant bank.
- (b) Cheque-encashment analysis and,
- (c) Bank draft.

(D) Accruals

The potential tool for stretching accounts payable is accrual which is defined as current liabilities that represent services or goods received by a concern but not yet paid for. The longer the period after which payments are made, the greater the amount of free financing and the smaller the amount of cash balance required.

RELATIONSHIP BETWEEN LIQUIDITY AND PROFITABILITY :

Liquidity has an important relationship with profitability. If we have enough liquid resources, we may be able to get benefit of cash discount on purchases and consequently that will result in increasing profits. If we cannot pay the creditors for goods in the given period, we have to pay interest on the amount of purchases. Thus, shortage of liquid resources will result in low of cash discount and payment of interest. Both the losses will certainly decrease over profits. Secondly, we may keep the stock at desired manners and that will benefit us in circulation of business activities. Contrary to this, if we are not able to keep sufficient stock due to shortage of liquid resources, then the production cycle may not be continued and that will result in heavy losses.

Liquid resources of a business concern for all over to expand huge business activities more, and less in financial. In case of steel industry in India, the management of liquid resources plays a greater role because in comparison to others industries, this industry has capacity to pay its obligations promptly.

SIGNIFICANCE OF A STUDY FOR STAKEHOLDERS :

The above study is made for the point of all live participants who are interested in the routine of the business organization. Those are as under.

(1) Management Point of View:

The above study plays vital role in providing such information to the management, which needs for planning decision-making and control e.g. operational efficiency analysis provides gross profit, operating expenses analysis and profit margin. Asset management outlines asset turnover, working capital under inventory turnover, accounts receivable and payable profitability position shows return on assets, earning before interest and taxes (EBIT), and return on assets. Gesternberg stated that “management can measure the effectiveness of its own policies and decisions, determine the advisability of adopting new policies and procedures and documents to owners as result of their management efforts”⁸

(2) Important to Investor:

According to Erich A.Helfert “Importance of performance lies for owners/potential investors should know easily. The financial position of the company by return on net worth, return on common equity, Earnings per share, Cash flow per share, Dividend yield, dividend coverage, Price earning ratio, market to book value, Pay out/retention”⁹. The potential investors of the business organization in turn are interested in the current features.

(3) Creditors Point of View:

Creditors doing business with company simply study its performance by current ratio, acid test ratio, and debt to assets, equity and capitalization, interest coverage and principal coverage before lending the finance. The study of these describes real features of business organization to the creditors.

(4) Government Point of View:

Government has significance to study liquidity productivity and financial efficiency of an individual organization or industry as a whole. Taxes, revenues, financial assistance, sanctioning, subsidy, to a business organization or industry as well as price fixing policies, frame outlines the key role of study for the Government lies in planning, decision making and control process.

(5) Employees and Trade Unions Point of View:

Employees are resources of the company and are interested to know the financial position and profit of the company. Generally they analyze by the comparison between past and present performance, profit margin and cash flow of the company. Trade unions are interested to know the data of financial performance pertaining to their demands for increase in wages, salaries, facilities, and social welfare.

(6) Society and Others:

Society and others are including in external environment of the company and every business organization has a greater responsibility towards society.

In this context performance should be studied through various types of social elements such as customers investors, media, credit institutions, labour bureaus, taxation authorities, economists are interested for the study of a business organisation while society as whole also looks forward to know about the social contribution, i.e., environmental obligations, social welfare etc.

EVALUATION METHODS:

A study of liquidity, productivity and financial efficiency through profitability is made by using the following tools and techniques

[1] Ratio Analysis :

Ratios analysis is the process of determining and presenting in arithmetical terms the relationships figures and groups of figures drawn from these statements. A ratio expresses the results on the basis of comparison of two figures in numerical terms.

A ratio is a statistical yardstick that provides a measure of relationship between two accounting figures. According to Batty “Accounting ratios describe the significant relationship which exists between figures shows on a balance sheet in a profit and loss account in a budgetary control system or in any other part of accounting organization.”¹⁰

The ratio is customarily expressed in following ways:

1. It may be obtained by dividing one value by other. This expression is known as “Times”
2. If hundred then the unit of multiply the above expression becomes percentage.
3. It may be expressed in the form of “proportion” between the two figures or known as pure ratio.
4. It may also be depicted in the form of graphs like ratio graph.

Importance:

A ratio is known as symptom like blood pressure. The pulse rate of the temperature of an individual often ratio analysis is used as a devices to diagnose the financial position of an enterprise. It shall point out if the financial condition is very strong, good, partly good, and poor. As such the ratio analysis is a powerful tool of financial analysis through it economic and financial position of a business unit can be fully x-rayed.

Ratio analysis becomes meaningful to judge the financial condition and profitability. Performance of a firm only when there is comparison of present in fact analysis involves two types of comparison. First a comparison of present ratio with past and expected future ratios for the same firm, the second method of comparison involves comparing the ratio of the firm with those of similar firms of with industry average at the same point of time.

Further “Ratio analysis” presents the figures in which the net result of the financial position and problems is concentrated. They provide a co-ordinate frame of reference for the financial manage. They tell the entire story of the ‘Financial adventures of the enterprise as heap of financial date are buried them. They simplify the comprehensive of financial statistics.

On the basis of above it may be concluded that ratios are very important for interpretation as they give valuable and very useful information about business.

Limitations:

Every flower of rose has its own beauty in spite of numberless thorns in the same way ratio analysis has a variety of advantages, though it is not free from limitations, some of which are as below:

1. The formula for calculating each ratio is not well standardized.
2. No standard ratios are available for evaluating the significance of each ratio.
3. Ratio ignores non-monetary factors like general economic climate, government and management policies, which vitally affect the financial health of the enterprise.
4. If too many ratios are calculated, they are likely to confuse, Instead of revealing meaningful conclusions.
5. The ratios are generally calculated from the past financial statement and thus, are no indicators of future.
6. Ratios are not exact measure of financial situation as the balance sheet and profit and loss account are based on accounting conventoons, personal judgments and recorded facts.

As ratios are simple to calculate, there is a tendency to over employ them, which lead to accumulation of mass data. However significant the ratio may they cannot replace business efficiency and decision-making. They do not provide mechanical solution to business problems.

Classification of Ratio:

Some writes have described that there are as many 42-business ratios. First of all it is necessary to ascertain the ratios for a particular study. The financial ratios may be classified in the various ways. If the nature and objective of calculating each ratio is given then the customary and convenient classification from the point of view of management and investors will be:

[A] Liquidity Ratio

These ratios throw the light upon the liquidity position of a concern the main ratios are:

1. Current Ratio,
2. Quick Ratio,
3. Absolute Liquidity Ratio,
4. Current assets to Total assets Ratio,
5. Debtors to Sales Ratio ,
6. Working Capital Turnover Ratio ,

7. Debt - Equity Ratio,
8. Propriety Ratio

[B] Profitability Ratio

These ratios X-ray the profit making ability of the enterprise. They may calculate either on the basis of operating profit or net profit. These ratios are of two types first related to sales and second profitability. The main efficiency ratios are

1. Net Profit Margin
2. Net profit ratio
3. Return on gross capital employed
4. Return on net capital employed
5. Return on net worth
6. Return on Shareholder's Equity
7. Return on Equity Capital
8. Earning Per Share,
9. Dividend Percentage,
10. Dividend Pay-out Ratio,
11. Dividend Yield Ratio
12. Total Assets Turnover
13. Fixed Assets Turnover
14. Current Assets Turnover

(C) Management of receivable

Management of trade credit is commonly known as Management of Receivables. Receivables are one of the three primary components of working capital, the other being inventory and cash, the other being inventory and cash. Receivables occupy second important place after inventories and thereby constitute a substantial portion of current assets in several firms. The capital invested in receivables is almost of the same amount as that invested in cash and inventories. Receivables thus, form about one third of current assets in India. Trade credit is an important market tool. As, it acts like a bridge for mobilization of goods from production to distribution stages in the field of marketing. Receivables provide protection to sales from competitions. It acts no less than a magnet in attracting potential customers to buy the product at terms and conditions favourable to them as well as to the firm. Receivables management demands due consideration not financial executive not only because cost and risk are associated with this investment but also for the reason that each rupee can contribute

to firm's net worth. The important and commonly used receivable management ratios are as under:

1. Size of Receivables
2. Growth in Annual Sales and Receivables
3. Size of Debtors
4. Size of Receivables
5. Size of Loan and Advances
6. Average Receivables Turnover Ratio
7. Receivables of Sales Ratio
8. Average Collection Period

(D) Management of cash

The term cash management refers to the management of cash resource in such a way that generally accepted business objectives could be achieved. In this context the objectives of a firm can be unified as bringing about consistency between maximum possible profitability and liquidity of a firm. Cash management may be defined as the ability of a management in recognizing the problems related with cash which may come across in future course of action, finding appropriate solution to curb such problems if they arise, and finally delegating these solutions to the competent authority for carrying them out. The choice between liquidity and profitability creates a state of confusion. It is cash management that can provide solution to this dilemma. Cash management may be regarded as an art that assists in establishing equilibrium between liquidity and profitability to ensure undisturbed functioning of a firm towards attaining its business objectives. The important and commonly used cash management ratios are as under:

1. Cash to Current Assets Ratio,
2. Cash to Sales Ratio,
3. Cash Turnover Ratio,
4. Cash Position Ratio,
5. Net Cash Flows to Current Liabilities Ratio,
6. Coverage of Current Liabilities Ratio,

[2] Trend Analysis

Trend analysis technique is useful to analyze the firm financial position and to put the absolute figures of financial statement in more understandable form over a period of years.

This indicates the trend of such variable as sales cost of production, profit assets and liabilities.

The different approaches of trend analysis are as follow:

1. **COMMON SIZE VERTICAL ANALYSIS and**
2. **COMMON SIZE HORIZONTAL ANALYSIS**

Trend analysis helps the analyst and management to evaluate the performance, efficiency and financial condition of an enterprise.

1.COMMON SIZE VERTICAL ANALYSIS

All the statement may be subject to common size vertical analysis a figure from the same year's statement is compared with the basic figure selected from the statement should be converted in to percentage to some common base. The common size vertical income statement and balance sheets of group of companies covered by this study are given in the study.

2.COMMON SIZE HORIZONTAL ANALYSIS

When asking horizontal analysis, a figure from the account is expressed in terms of same account figures from selected base year. It is calculation of percentage relation that each statement then bears to the same item in the base year. Horizontal analysis can help the analysis to determine how an enterprise has arrived at its current position.

The technique of common size statement is very useful when we wish to compare the performance of one company with that of another for presentation of the data in percentage form since it eliminates problems relating to differences in organization size.

[3] Comparative statement Analysis

Statement prepared in a form reflecting financial data for two or more periods are known as comparative statements. The data must first be properly set before comparison in the preparation of comparative financial statement uniformity is essential otherwise comparison will be vitiated. Comparative financial statement is very useful to the analyst because they contain not only the data appearing in a single statement but also information necessary for the study of financial and operating trends over a period of a year. They indicate the direction of the movement in respect of financial position and operating results. Comparison of absolute figures has no significance if the scale of operations of one company is much different from that of others.

1.comparative Balance-Sheet:

Increase and decrease in various assets and liabilities as well as in proprietor's equity or capital brought about by the conduct of a business can be observed by a comparison of balance sheets at the beginning and end of the period. Such observation often yield considerable information, which is of value informing an opinion regarding the progress of the enterprise and in order to facilitate comparison a simple device known as the "comparative balance Sheet" may be used.

2.Comparative Income Statement:

As income statement shows the net profit or net loss resulting from the operations of a business for designated period of time. A comparative income statement shows the operating result for a number of accounting periods so that changes in absolute data from one period to another may be started in terms of money and percentage. The comparative income statement contains the same columns as the comparative balance sheet and provides the same type of information.

As the income statement presents the review of the operating activities of the business and the comparative balance sheet shows the effect of operation of its assets and liabilities. The latter contains a connecting link between the balance sheet and income statement. Income statement and balance sheet are contemporary documents and they highlight certain important facts.

[4] Cash Flow Analysis

The balance sheet is in the nature of a showing the position of a firm at a particular moment of time. The business process is very dynamic with transactions occurring regularly, each of which affects in some way, the immediately preceding financial position. A balance sheet therefore, merely provides the picture of a fleeting condition at a point of time and if balance sheets drawn at different time are compared any difference found between the closing and beginning figures would be the result of various transaction taking place during the interim period. The business process involves a continuous inflow and outflow of cash. This cash flow analysis helps the analysis to appraise the impact of the management's decision on the business during a given period of time.

[5] Other Techniques of Analysis

Several other techniques like fund flow analysis and break-even analysis are also some time useful for analysis. The use of various statistical techniques is also used frequently for financial analysis, providing a more scientific analysis. The tools generally applied are

moving average, index number, range, Standard deviation, correlation, regression and analysis of time series. Diagrammatic and graph orientations are often used in financial analysis. Graphs provide a simplified way of presenting the data and often give much more vivid understandable of trends and relationships. Pie graphs bar diagrams and other simple graphs are often used for financial analysis.

REFERENCES :

1. **Prasanna Chandra (1988): Financial Management, Theory and Practice Tata McGraw Hill Publishing Company Limited, New Delhi, and Pg. 260**
2. **M.Y.Khan & P.K.Jain (1982): Financial Management, Tata McGraw Hill Publishing Company Limited, New Delhi, and Pg. 624.**
3. **Joy, O. M. (1977): Introduction to Financial Management, Home Wood III, Richard D. Irwin, Pg. 406.**
4. **Joy, O. M., (1977) : Introduction to Financial Management, Op. Cit., Pg. 431**
5. **Van Home, C F (1974) : Financial Management and Policy, New Delhi, Prentice-Hall, Pg. 423**
6. **Solomon, E. and J. J. Pringle, (1977) : An Introduction to Financial Management, Santa Mouice, Cailf, Goodyear Publishing Company, Pg. 181**
7. **M. Y. Khan & P. K. Jain (1982) : Financial Management, New Delhi. Op. Cit, Pg.683.**
8. **CHARLES W.GRESTERNBERG “Financial organization and management of Busiones”4th end. Asia publishing House, New Delhi, 1960, P.365 .**
9. **ERICH A. HELFERT “Techniques of financial analysis” 6th, Universal Book stall, New Delhi, 1989, p.22.**
10. **BATTY J.: Management accountancy, MacDonald and Evans ltd., London, 1975,p.63**

CHAPTER-2

Profile of Steel Industry in India

Particular	Page No.
Introduction	25
History of Steel	25
The global Steel Industry	26
Contribution of Countries to Global Steel Industry	27
Steel Industry in India	28
Demand of Steel in India	29
Supply of Steel in the Indian Market	30
Risk Factors	30
Steel Production in India	31
Production Function and Input	33
Fixed and Variable Inputs	34
Total and Average costs	35
Average cost and Economies of scales	35
Economies of scale and oligopoly	36
Economies of scale and international trade	36
Export and Import of Steel form India	37
Exports of Iron & Steel	38
Subsidies and Issues of competitiveness	39
Major players of Steel in India	40
Swot analysis of the Steel Industry	46
Expected Growth	47
Factors Holding Back the Indian Steel Industry	48
Recent Financial crisis and Indian steel Industry	49
Reference:	50

INTRODUCTION :

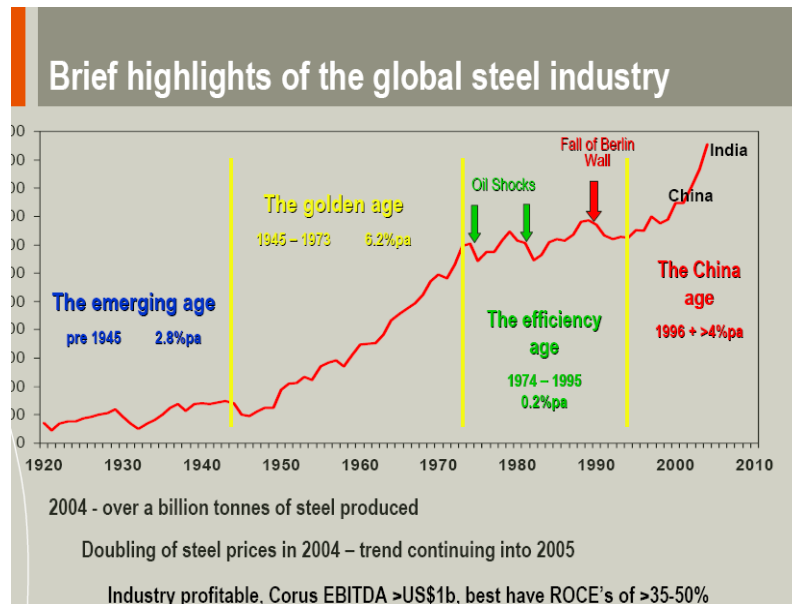
Steel is crucial to the development of any modern economy and is considered to be the backbone of human civilization. The level of per capita consumption of steel is treated as an important index of the level of socioeconomic development and living standards of the people in any country. It is a product of a large and technologically complex industry having strong forward and backward linkages in terms of material flows and income generation. All major industrial economies are characterized by the existence of a strong steel industry and the growth of many of these economies has been largely shaped by the strength of their steel industries in their initial stages of development. Steel industry was in the vanguard in the liberalization of the industrial Sector and has made rapid strides since then. The new Greenfield plants represent the latest in technology. Output has increased, the industry has moved up in the value chain and exports have raised consequent to a greater integration with the global economy. The new plants have also brought about a greater regional dispersion easing the domestic supply position notably in the western region. At the same time, the domestic steel industry faces new challenges. Some of these relate to the trade barriers in developed markets and certain structural problems of the domestic industry notably due to the high cost of commissioning of new projects. The domestic demand too has not improved to significant levels. The litmus test of the steel industry will be to surmount these difficulties and remain globally competitive.

HISTORY OF STEEL:

Steel was discovered by the Chinese under the reign of Han dynasty in 202 BC till 220 AD. Prior to steel, iron was a very popular metal and it was used all over the globe. Even the time period of around 2 to 3 thousand years before Christ is termed as Iron Age as iron was vastly used in that period in each and every part of life. But, with the change in time and technology, people were able to find an even stronger and harder material than iron that was steel. Using iron had some disadvantages but this alloy of iron and carbon fulfilled all that iron couldn't do. The Chinese people invented steel as it was harder than iron and it could serve better if it is used in making weapons. One legend says that the sword of the first Han emperor was made of steel only. From China, the process of making steel from iron spread to its south and reached India. High quality steel was being produced in southern India in as early as 300 BC. Most of the steel then was exported from Asia only. Around 9th century AD, the smiths in the Middle East developed techniques to produce sharp and flexible steel

blades. In the 17th century, smiths in Europe came to know about a new process of cementation to produce steel. Also, other new and improved technologies were gradually developed and steel soon became the key factor on which most of the economies of the world started depending.

Chart-2.1



THE GLOBAL STEEL INDUSTRY:

The current global steel industry is in its best position in comparing to last decades. The price has been rising continuously. The demand expectations for steel products are rapidly growing for coming years. The shares of steel industries are also in a high pace. The steel industry is enjoying its 6th consecutive years of growth in supply and demand. And there is many more merger and acquisitions which overall buoyed the industry and showed some good results. The supreme crisis has lead to the recession in economy of different countries, which may lead to have a negative effect on whole steel industry in coming years. However steel production and consumption will be supported by continuous economic growth.

CONTRIBUTION OF COUNTRIES TO GLOBAL STEEL INDUSTRY:

The countries like China, Japan, India and South Korea are in the top of the above in steel production in Asian countries. China accounts for one third of total production i.e. 419m ton, Japan accounts for 9% i.e. 118 m ton, India accounts for 53m ton and South Korea is accounted for 49m ton, which all totally becomes more than 50% of global production. Apart from this USA, BRAZIL, UK accounts for the major chunk of the whole growth.

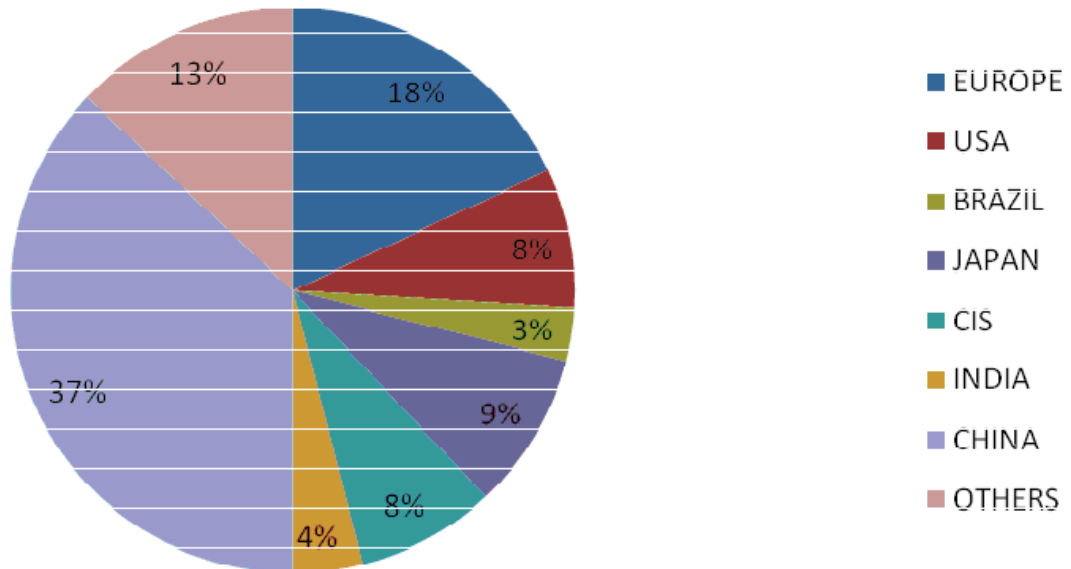
Table NO.2.1

Country Wise Crude Steel Production During The Year Of 2007-08

Country	Crude Steel Production (mtpa)
CHINA	272.5
JAPAN	112.7
UNITED STATES	98.9
RUSSIA	65.6
SOUTH KOREA	47.5
F.R.GERMANY	46.4
UKRAINE	38.7
BRAZIL	32.9
INDIA	32.6
ITALY	28.4

Chart no.2.2

STEEL PRODUCTION



STEEL INDUSTRY IN INDIA:

Steel has been the key material with which the world has reached to a developed position. All the engineering machines, mechanical tools and most importantly building and construction structures like bars, rods, channels, wires, angles etc are made of steel for its feature being hard and adaptable. Earlier when the alloy of steel was not discovered, iron was used for the said purposes but iron is usually prone to rust and is not so strong. Steel is a highly wanted alloy over the world. All the countries need steel for the infrastructural development and overall growth. Steel has a variety of grades i.e. above 2000 but is mainly categorized in divisions – steel flat and steel long, depending on the shape of steel manufactured. Steel flat includes steel products in flat, plate, sheet or strip shapes. The plate shaped steel products are usually 10 to 200 mm and thin rolled strip products are of 1 to 10 mm in dimension. Steel flat is mostly used in construction, shipbuilding, pipes and boiler applications. Steel long Category includes steel products in long, bar or rod shape like reinforced rods made of sponge iron. The steel long products are required to produce concrete, blocks, bars, tools, gears and engineering products. After independence, successive governments placed great emphasis on the development of an Indian steel industry. In Financial Year 1991, the six major plants, of which five were in the public sector, produced 10 million tons. The rest of India steel production, 4.7 million tons, came from 180 small

plants, almost all of which were in the private sector. India's Steel production more than doubled during the 1980s but still did not meet the demand in the mid-1990s, the government was seeking private-sector investment in new steel plants. Production was projected to increase substantially as the result of plans to set up a 1 million ton steel plant and three pig-iron plants totaling 600,000 tons capacity in West Bengal, with Chinese technical assistance and financial investment. The commissioning of Tata Iron & Steel Company's production unit at Jamshedpur, Bihar in 1911-12 heralded the beginning of modern steel industry in India. At the time of Independence in 1947 India's steel production was only 1.25 Mt of crude steel. Following independence and the commencement of five year plans, the Government of India decided to set up four integrated steel plants at Rourkela, Durgapur, Bhilai and Bokaro. The Bokaro plant was commissioned in 1972. The most recent addition is a 3 Mt integrated steel plant with modern technology at Visakhapatnam. Steel Authority of India (SAIL) accounts for over 40% of India's crude steel production. SAIL comprises of nine plants, including five integrated and four special steel plants. Of these one was nationalized and two were acquired; several were set up in collaboration with foreign companies. SAIL also owns mines and subsidiary companies.

DEMAND OF STEEL IN INDIA:

Driven a booming economy and concomitant demand levels, consumption of steel has grown by 12.5 per cent during the last three years, well above the 6.9 percent envisaged in the National Steel Policy. Steel consumption amounted to 58.45 mt in 2006-07 compared to 50.27 mt in 2005-06, recording a growth rate of 16.3 per cent, which is higher than the world average. During the first half of the current year, steel consumption has grown by 16 per cent. A study done by the Credit Suisse Group says that India's steel consumption will continue to grow by 17 per cent annually till 2012, fuelled by demand for construction projects worth US\$ 1 trillion. The scope for raising the total consumption of steel in the country is huge, as the per capita steel consumption is only 35 kgs compared to 150 kg in the world and 250 kg in China. With this surge in demand level, steel producers have been reporting encouraging results. For example, the top six companies, which account for 70 percent of the total production capacity, have recorded a year-on-year growth rate of 13.4 per cent, 15.7 per cent and 11.7 per cent in net sales, operating profit and net profit, respectively, during the second quarter of 2007-08 We expect strong demand growth in India over the next five years, driven by a boom in construction (43%-plus of steel demand in India). Soaring demand by sectors

like infrastructure, real estate and automobiles, at home and abroad, has put India's steel industry on the world steel map.

Table No. 2.2
Demand And Growth Of Steel Industry

YEAR	DEMAND(in mt)	GROWTH IN %
2000-2001	34.444	
2001-2002	36.037	4.625
2002-2003	40.471	12.32
2003-2004	43.062	6.4
2004-2005	45.387	5.4
2005-2006	50.257	10.73
2006-2007	58.45	16.3

SUPPLY OF STEEL IN THE INDIAN MARKET:

Over the past ten years India's crude steel output rose nearly 7% per year to 55.3 million tons, while global crude steel output increased by 4% (Germany managed an increase of just under 1% p.a.) Although India is the world's eighth largest steel producer, its 3%-plus share of global steel output is still very low; it is roughly the same as Ukraine's share of world steel production. China, the world's biggest steelmaker, produces nearly ten times as much as India. In 2005 India's crude steel output of 46.5 million tons was 8% higher than in 2004; only in China was the growth rate considerably higher at 15%. By contrast, production volumes fell in the US and the EU-25 by nearly 5% and roughly 4% respectively. In the first five months of 2006 Indian steel production continued to expand unabated, rising 10% yoy. We forecast a significant increase in output by the Indian steel industry over the medium term. The entire industry's contribution to gross domestic product should rise in the coming years to more than 30% – compared to just fewer than 27% at present. The growth drivers are the expanding client industries automotive engineering (production up 16% p.a. between 2000 and 2005), mechanical engineering (up 10% p.a.) and construction (up 6% p.a.).

RISK FACTORS :

Even though India is now one of the world's top ten steelmakers its domestic output is insufficient to meet the demand in all segments. In 2005, some 4.7 million tons of steel were imported, compared with only 2.2 million ten years earlier (an annual increase of 8%). The

growth in Indian import demand in 2005 of around 2 million tons is roughly equivalent to the total annual output of Hungary. Low steel prices smooth the way for imports from Russia, Ukraine and Kazakhstan. The geographical proximity of Japan, South Korea and China makes them important suppliers as well. We do not expect India to be self-sufficient in many segments over the medium term. There are several reasons for this: firstly, steel consumption is rising very fast as a consequence of the prospective dynamic economic growth. Secondly, there is demand for high-quality products which India will not be able to supply in sufficient quantities for the foreseeable future. These include products with surface finishing that helps them to be more durable and retain their value for longer. In general, the trend towards weight-optimized components persists; this improves the prospects for Western European exporters in the Indian market. As a member of the WTO (since 1995) India is obliged to gradually abolish import restrictions, so importing steel should be far less problematic in future.

STEEL PRODUCTION IN INDIA:

India is one of the few countries where the steel industry is poised for rapid growth. India's share in world production of crude steel increased from 1.5% in 1981 to around 3.5 % in 2004. While plant closures and privatization are rare in India, the private sector is considered to be the engine of growth in the steel industry and technological changes and modernization are taking place in both the public and the private sector integrated steel plants in India. Steel production of India accounted for 14.33 million tons in 1990-91, which gradually increased to 36.12 million tonnes in 2003-04, as shown in Table III. The Indian steel industry got a giant importance in the recent past when the Tata Steel purchased the Corus steel. Today India plays a significant role in the production of steel in the world. The Indian steel industry is growing at 8.74 % of CAGR. Steel demand continued to remain upbeat in 2008-2009 with consumption of finished steel growing by a decent 6.8% during April-may 2008. During a same period import surged by a healthy 10 % to 0.7 million tonnes. While export reported a 33% decline to 0.6 million tonnes. While imports and consumption of finished steel reported a healthy rise, production of the steel continued to rise at a tepid pace. During April 2008 finished steel output rose by a modest 3.8 %. Further in may it increased by 5.2%. Aggregate production growth during April-may stood at 5.1 % In view of no major capacities coming on-stream we estimate finished steel production to touch 60 million tonnes in 2008-2009. On the basis for last year of 52.7 million tonnes, the steel

production growth for 2008-2009 comes to around 14 %. However the joint plant committee has been revising its annual figures upwards for the last 2-3 years. In the event of an upward revision in the figures of 2007-2008, the actual growth in steel production in 2008-2009 would turn out to be less as compared to our estimates.

Table No. 2.3
Steel Production In India

(IN MILLION TONNES)

PRODUCTION OF FINISHED CARBON STEEL (In million tonnes)				
Year	Main Producers	Secondary Producers	Grand Total	% of share of Secondary Producers
1991-92	7.96	6.37	14.33	14.5%
1992-93	8.41	6.79	15.20	44.7%
1993-94	8.77	6.43	15.20	42.3%
1994-95	9.57	8.25	17.82	46.3%
1995-96	10.59	10.81	21.40	50.6%
1996-97	10.54	12.18	22.72	53.6%
1997-98	10.44	12.93	23.37	55.32%
1998-99	9.86	13.24	23.82	57.32%
1999-2000	11.20	15.51	26.71	58.07%
2000-2001	12.51	17.19	29.7	57.88%
2001-2002	13.05	17.58	30.63	57.4 %
2002-03	14.39	19.28	33.67	57.27 %
2003-04	15.19	21.00	36.19	58.03 %
2004-05	15.61	24.44	40.05	61.02 %
2005-06 (Prov.)	16.236	26.400	42.636	61.92 %
2006-07	17.390	32.000	49.390	64.79 %
2007-08 (Apr-Jan 08)	14.675	31.900	46.575	68.49 %

PRODUCTION FUNCTION AND INPUTS:

Production of a product (or a set of products) is generally based on a technological relationship—amounts of certain factors of production (inputs) are converted into a product based on some technological constraints. The technological relationship is termed by economists as the "production function." In more technical terms, the production function can be defined as the function that shows the most output that existing technology permits the manufacturing firm to extract from each quantity of inputs. The production function thus summarizes the characteristics of existing technology at a given time. For example. Suppose Better Steel Corporation decides to produce a certain quantity of steel. It can do so in many different ways. It can choose from among available technological choices: it can use open-

hearth furnaces, basic oxygen furnaces, or electric furnaces. Similarly, Better Steel Corporation can choose from various types of iron ore and coal. Given that Better Steel has decided to produce a certain quantity of steel, which production technique will it use; that is, what particular combination of inputs will it decide on? An economist's answer to this question is: the one that minimizes the firm's costs and maximizes its profits. Given that a technology has been chosen, in general, as inputs used in the production of a commodity increase the total output increases as well. It is useful to understand different kinds of inputs.

FIXED AND VARIABLE INPUTS :

Primarily, there are two kinds of inputs—fixed and variable. A plant and a factory shed are examples of fixed inputs (or factors) of production. These inputs are called "fixed" inputs as the quantities needed of these inputs remain fixed, up to point, as the quantity produced of the product (the output) increases. Using the steel industry as an example, a blast furnace used in producing steel is considered a fixed input—Better Steel Corporation can produce more steel by using more raw materials, and get more production out of the existing blast furnace. It should be noted that fixed input does remain fixed for all levels of output produced. As the scale of production increases, the existing plant may no longer suffice. Suppose that the blast furnace chosen by the steel firm can, at the very maximum, produce 100,000 tons of steel per day. If Better Steel Corporation needs to supply 150,000 tons of steel per day (on average), it has to add to capacity—that is, it has to install a new blast furnace. Thus, even a "fixed input" does not remain fixed forever. The period over which a fixed input remains fixed is called the "short run." Over the "long run," even a fixed input varies.

Inputs that vary even in the short run are called "variable" inputs. In the above example of steel manufacturing, iron ore serves as a variable input. Given the fixed input (the blast furnace in this case), increasing the quantity of the variable input (iron ore) leads to higher levels of output (steel).

For a manufacturing firm, it is not important what combination of fixed and variable inputs is used. As a firm is interested in maximizing profits, it would like to minimize costs for any given level of output produced. Thus, costs associated with inputs (both fixed and variable) are the main concern of the firm engaged in the production of a particular commodity.

TOTAL AND AVERAGE COSTS:

A manufacturing firm, motivated by profit maximization, calculates the total cost of producing any given output level. The total cost is made up of total fixed cost (due to the expenditure on fixed inputs) and total variable cost (due to the expenditure on variable inputs). Of course, the total fixed cost does not vary over the short run—only the total variable cost does. It is important for the firm also to calculate the cost per unit of output, called the "average cost." The average cost also is made up of two components—the average fixed cost (the total fixed cost divided by the number of units of the output) and the average variable cost (the total variable cost divided by the number of units of the output). As the fixed costs remain fixed over the short run, the average fixed cost declines as the level of production increases. The average variable cost, on the other hand, first decreases and then increases—economists refer to this as the U-shaped nature of the average variable cost. The U-shape of the average variable cost (curve) occurs because, given the fixed inputs, output of the relevant product increases more than proportionately as the levels of variable inputs used increase—this is caused by increased efficiency due to specialization and other reasons. As more and more variable inputs are used in conjunction with the given fixed inputs, however, efficiency gains reach a maximum—the decline in the average variable cost eventually comes to a halt. After this point, the average variable cost starts increasing as the level of production continues to increase, given the fixed inputs. First decreasing and then increasing average variable cost leads to the U-shape for the average variable cost (curve). The combination of the declining average fixed cost (true for the entire range of production) and the U-shaped average variable cost results in the U-shaped behavior of the average total cost (curve), often simply called the average costs.

AVERAGE COST AND ECONOMIES OF SCALE:

Economies of scale are defined in terms of the average cost per unit of output produced. When the average cost is declining, the producer of the product under consideration is reaping efficiency gains due to economies of scale. So long as the average cost of production is declining the firm has an obvious advantage in increasing the output level (provided, there is demand for the product). Ideally, the firm would like to be at the minimum average cost point. However, in the short run, the firm may have to produce at an output level that is higher than the one that yields the minimum average total cost.

When a firm has to add to production capacity in the long run, this may be done by either duplicating an existing fixed input (for instance, a plant) or increasing the size of the plant. Usually, as the plant size increases, a firm is able to achieve a new minimum average cost point (lower than the minimum average cost achieved with the previous smaller capacity) plant.

For example, in the case of Better Steel Corporation, the average cost per ton of steel at the minimum average cost point with the larger blast furnace may be 20 percent less than the average cost at the minimum average cost point with smaller blast furnace. Thus, in the long run, a firm may keep switching to larger and larger plants, successively reducing the average cost. One should, however, be warned that due to technological constraints the average cost is assumed to start rising at some output level even in the long run—that is, the average cost curve is U-shaped even in the long run.

Therefore, while looking at the average cost per unit of output is the key to understanding economies of scale, it is useful to remember that the average cost declines up to a point in the short run, and it may decline even more in the long run (also up to a point), as higher and higher levels of output are produced.

ECONOMIES OF SCALE AND OLIGOPOLY:

An oligopoly is a market form in which there are only a few sellers of similar products. Low costs of production (cost per unit or the average cost) can only be achieved if a firm is producing an output level that constitutes a substantial portion of the total available market. This, in turn, leads to a rather small number of firms in the industry, each supplying a sizable portion of the total market demand.

ECONOMIES OF SCALE AND INTERNATIONAL TRADE:

Participating in foreign trade is considered an important way to reap advantages of unrealized potential of economies of scale. Usually, foreign trade is based on specialization—each country specializing in production of goods and services in which it has the comparative advantage. With the possibility of the benefits from economies of scale, there are advantages in engaging in specialization and foreign trade even if there is no difference among countries with respect to the economic efficiency with which they produce goods and services. As an example, suppose that a country may experience economies of scale in producing a particular

commodity (for instance, steel). However, this country is producing this commodity at such a low output level that the average cost per unit of the output is high. Due to the high average cost it does not have the comparative advantage in exporting this product to foreign countries. Now, assume that this country specializes in production of this commodity and exports to another country. The other country does the same—it specializes in the production of another product (say, aluminium) and exports to the first country. Thus, the first country specializes in the production of steel and the second country specializes in the production of aluminium. If economies of scale exist in steel and aluminum industries, firms can serve the *combined* markets of both countries and supply both goods at lower prices (assuming some of the advantages of lower costs are passed on) than if they only reach their respective domestic markets. This is a major argument for an international economic association such as the European Common Market. In addition to the pure economies of scale in production, there are "economies of scale" in learning associated with specialization in the foreign trade context. In this the average cost per unit goes down as economic efficiencies increase due to learning. In the aircraft and machine tool industries, manufacturers are well aware of reductions in average costs due to learning. It has been estimated that the average cost per unit of new machine tools tends to decline by 20 percent each time the cumulated output is doubled, due to improvement in efficiency through learning by individuals and organizations. In an industry where learning is an important factor in causing economies of scale, there are advantages in one country specializing in the production of that product. In such a case, specialization can reduce average costs and retail prices to lower levels than if each nation attempts to be self-sufficient in the products subject to economies of scale in learning.

EXPORT AND IMPORT OF STEEL FROM INDIA

The steel exports of India over the decade have the compounded annual growth rate (CAGR) of 22.27% against CAGR of imports of steel, which accounted 14.20% in the respective period. In 1991-92, very inception of the Liberalization, the steel exports amounted to 368 thousand tons, which increased year-by-year and reached to 5221 thousand tonnes in 2003-04. It accounted for thirteen-fold increase over the period. The Annual growth rates of exports of steel for the period showed the fluctuating trend, which ranged between -14.41% in 1994-95 and 101.36 in 1992-93. In 2003-04, the growth rate was 15.87 %.

EXPORTS OF IRON & STEEL :

- Iron & Steel are freely exportable.
- Advance Licensing Scheme allows duty free import of raw materials for exports.
- Duty Entitlement Pass Book Scheme (DEPB) introduced to facilitate exports. Under this scheme exporters on the basis of notified entitlement rates, are granted due credits which would entitle them to import duty free goods. The DEPB benefit on export of various categories of steel items scheme has been temporarily withdrawn from 27th March 2008, to increase availability in the domestic market.
- Exports of finished carbon steel and pig iron during the last four years and the current year is as :

Table No.2.4

Finished Carbon Steel And Pig Iron

(Qty. in Million Tonnes)		
years	Finished (Carbon) Steel	Pig Iron
2002-2003	4.506	0.629
2003-2004	4.835	0.518
2004-2005	4.381	0.393
2005-2006	4.478	0.440
2006-2007(Prov. estimated)	4.750	0.350
2007-2008(April-June 07) (Prov. estimated)	1.310	0.120

On the other hand, the imports are also growing. In 1991-92, the imports of steel amounted to 1043 tonnes. But in 1999-2000, it touched 2200 tonnes, which is the highest import of steel in India, and then the imports went down and reached 1650 tonnes in 2003-04. In 1991-92, the year of liberalization, the imports of steel in India exceeded over the exports of steel. But

in the following years the trend changed. From 1997-98, India exported steel and steel products which was more than its imports of steel and steel products

SUBSIDIES AND ISSUES OF COMPETITIVENESS :

Government support to the steel sector has been substantially reduced in India. A bulk of the state support came in the form of Freight Equalisation Scheme (FRS), whereby the domestic steel prices were sought to be uniform by a system of cross-subsidisation of transportation cost. However, FRS was abolished in 1992. Programmes such as the steel development Fund were also alleged to have conferred benefits and have been countervailed in countries.

India does not provide direct subsidies for exports, although indirect subsidies on the nature of exemption from tax and import duty are provided. The government has established some schemes to reduce or remove the anti export bias inherent in the system on indirect taxation. Some of the schemes administered with the above purpose, allow importer to benefit from tariff exemption, especially on imports. The detail of some of such schemes, and how they are treated by select countries, are detailed below. The Government of India implements the Export Promotion of Capital Goods (EPCG) scheme which provides for a reduction or exemption of customs duties and an exemption from excise taxes on imports of capital goods. Under this programme, producers may equip equipment at reduced rates of duty by meeting certain export commitments. The EPCG scheme has been countervailed in the US, Canada, as well as the EU. Countervailing duty investigating agencies have also determined the Indian income-tax exemption scheme providing income-tax exception on profits from export sales as a countervailing subsidy. The income-tax benefits-related export activities are incorporated in sections 80HHC, 10A and 10B of the Income Tax Act. Export credit on more favourable terms has been a long prevailing export-incentive programme in India.

The reserve bank of India has accordingly issued directions to commercial Banks to provide export credit both at pre- and post-shipment stages. Pre-shipment credit, also known as packaging credit, is advanced by commercial banks to exporters for purchase of raw material or the finished product upon the presentation of confirmed export orders or letters of credit. In the case of post-shipment credit, the credit is granted to an exporter against either shipping bills or drawback claims. India also administers a number of duty drawback schemes that allow for the remission or drawback of import charges levied on inputs that are consumed in the production of an exported product. Schemes such as duty Entitlement pass book Scheme (DEPB) and Duty free Replenishment certificate (DFRC) fall under this category. The

rationale for operating such schemes is to ensure that manufacturers should not be made to bear the costs of import charges on imported goods that are never sold within the manufacturer's domestic market. These duty drawback schemes cannot be classified as export subsidies per se. However, the administration of the schemes in certain cases have been determined or confer export subsidy by various countervailing duty investigations to the extent they have resulted in a remission or drawback of import charges in excess of those levied on inputs that are consumed in the production of the exported product.

MAJOR PLAYERS OF STEEL IN INDIA:

1.Public Sector

(A) Steel Authority of India Limited (SAIL)

Steel Authority of India Limited (SAIL) is a company registered under the Indian Companies Act, 1956 and is an enterprise of the Government of India. It has five integrated steel plants at Bhilai (Chhattisgarh), Rourkela (Orissa), Durgapur (West Bengal), Bokaro (Jharkhand) and Burnpur (West Bengal). SAIL has three special and alloy steel plants viz. Alloy Steels Plant at Durgapur (West Bengal), Salem Steel Plant at Salem (Tamilnadu) and Visvesvaraya Iron & Steel Plant at Bhadravati (Karnataka). In addition, a Ferro Alloy producing plant Maharashtra Elektros melt Ltd. at Chandrapur, is a subsidiary of SAIL. SAIL has Research & Development Centre for Iron & Steel (RDCIS), Centre for Engineering & Technology (CET), SAIL Safety Organisation (SSO) and Management Training Institute (MTI) all located at Ranchi; Central Coal Supply Organisation (CCSO) at Dhanbad; Raw Materials Division (RMD), Environment Management Division (EMD) and Growth Division (GD) at Kolkata. The Central Marketing Organisation (CMO), with its head quarters at Kolkata, coordinates the country-wide marketing and distribution network.

(B) Rashtriya Ispat Nigam Ltd. (RINL)

RINL, the corporate entity of Visakhapatnam Steel Plant (VSP) is the first shore based integrated steel plant located at Visakhapatnam in Andhra Pradesh. The plant was commissioned in August 1992 with a capacity to produce 3 million tonne per annum (mtpa) of liquid steel. The plant has been built to match international standards in design and engineering with state-of-the-art technology incorporating extensive energy saving and pollution control measures. Right from the year of its integrated operation, VSP established its presence both in the domestic and international markets with its superior quality of products. The company has been awarded all the three International standards certificates,

namely, ISO 9001:2000, ISO 14001: 1996 and OHSAS 18001: 1999. RINL was accorded the prestigious 'Mini Ratna' status by the Ministry of Steel, Govt. of India in the year 2006 and the company is gearing up to complete the ambitious expansion works to increase the capacity to 6.3 mtpa by 2009. RINL has prepared a road map to expand the plant's capacity up to 16 mtpa in phases.

(C) Metal Scrap Trade Corporation Ltd. (MSTC)

MSTC Ltd. (formerly Metal Scrap Trade Corporation Ltd.) was set up on the 9th September, 1964 as a canalizing agency for the export of scrap from the country. With the passage of time, the company emerged as the canalizing agency for the import of scrap into the country. Import of scrap was de-canalized by the Government in 1991-92 and MSTC has since then moved on to marketing ferrous and miscellaneous scrap arising out of steel plants and other industries and importing Coal, Coke, Petroleum products, semi finished steel products like HR Coils and export primarily Iron ore. The Company has also established an e-auction portal and undertakes e-auction of Coal, Diamonds and Steel Scrap and has developed an e-procurement portal in house.

(D) Ferro Scrap Nigam Ltd. (FSNL)

FSNL is a wholly owned subsidiary of MSTC Ltd. with a paid up capital of Rs. 200 lakh. The Company undertakes the recovery and processing of scrap from slag and refuse dumps in the nine steel plants at Rourkela, Burnpur, Bhilai, Bokaro, Visakhapatnam, Durgapur, Dolvi, Duburi & Raigarh. The scrap recovered is returned to the steel plants for recycling/ disposal and the Company is paid processing charges on the quantity recovered at varying rates depending on the category of scrap. Scrap is generated during Iron & Steel making and also in the Rolling Mills. In addition, the Company is also providing Steel Mill Services such as Scarfing of Slabs, Handling of BOF Slag, etc.

(E) Hindustan Steelworks Construction Ltd. (HSCL)

HSCL was incorporated in June 1964 with the primary objective of creating in the Public Sector an organization capable of undertaking complete construction of modern integrated Steel Plants. HSCL had done the construction work of Bokaro Steel Plant, Vizag Steel Plant and Salem Steel Plant from the inception till commissioning and was associated with the expansion and modernization of Bhilai Steel Plant, Durgapur Steel Plant, IISCO (Burnpur) and also Bhadravati Steel Plant. With the tapering of construction activities in Steel Plants,

the company intensified its activities in other sectors like Power, Coal, Oil and Gas. Besides this, HSCCL diversified in Infrastructure Sectors like Roads/Highways, Bridges, Dams, Underground Communication and Transport system and Industrial and Township Complexes involving high degree of planning, co-ordination and modern sophisticated techniques. The company has developed its expertise in the areas of Piling, Soil investigation, Massive foundation work, High rise structures, Structural fabrication and Erection, Refractory, Technological structures and Pipelines, Equipment erection, Instrumentation including testing and commissioning. The company has also specialized in carrying out Capital repairs and Rebuilding work including hot repairs of Coke Ovens and Blast Furnaces and other allied areas of Integrated Steel Plants.

(F) MECON LTD.

MECON is one of the leading multi-disciplinary design, engineering, consultancy and contracting organization in the field of iron & steel, chemicals, refineries & petrochemicals, power, roads & highways, railways, water management, ports & harbors, gas & oil, pipelines, non ferrous, mining, general engineering, environmental engineering and other related/diversified areas with extensive overseas experience. MECON, an ISO: 9001- 2000 accredited company, registered with World Bank (WB), Asian Development Bank (ADB), European Bank for Reconstruction and Development (EBRD), African Development Bank (AFDB), and United Nations Industrial Development Organization (UNIDO), has wide exposure and infrastructure for carrying out engineering, consultancy and project management services for mega projects encompassing architecture & town planning, civil works, structural works, electric, air conditioning & refrigeration, instrumentation, utilities, material handling & storage, computerization etc. MECON has collaboration agreements with leading firms from the USA, Germany, France, Italy, Russia, etc. in various fields. The authorized share capital of the company is Rs. 10,400 lakh (previous year Rs. 4,100 lakh) against which the paid up capital is Rs. 10,313.84 lakh (previous year Rs. 4,013.84 lakh). All the shares are held by the Government of India.

2.Private Sector

The private sector of the Steel Industry is currently playing an important and dominant role in production and growth of steel industry in the country. Private sector steel players have contributed nearly 67% of total steel production of 38.08 million tonnes to the country during the period April-December, 2007. The private sector units consist of both major steel producers on one hand and relatively smaller and medium units such as Sponge iron plants, Mini Blast Furnace units, Electric Arc Furnaces, Induction Furnaces, Rerolling Mills, Cold-rolling Mills and Coating units on the other. They not only play an important role in production of primary and secondary steel, but also contribute substantial value addition in terms of quality, innovation and cost effective.

(A)TATA STEEL LTD.

Tata Steel has an integrated steel plant, with an annual crude steel making capacity of 5 million tonnes located at Jamshedpur, Jharkhand. Tata Steel has completed the first six months of fiscal 2007-08 with impressive increase in its hot metal production. The hot metal production at 2.76 million tonnes is 4.6% more compared to the corresponding period of the previous year. The crude steel production during the period was 2.43 million tonnes which is marginally lower than the production of 2.45 million tonnes last year. The saleable steel production was at a lower level during the period April September, 2007 (2.34 million tonnes) compared to the corresponding period of last year (2.36 million tonnes). Tata Steel is continuing with its programme of expansion of steel making capacity by 1.8 million tonnes to reach a rated capacity of 6.8 million tonnes. The Project is reported to be moving ahead of schedule and is likely to be commissioned by May 2008 against the original schedule of June 2008. The Company has planned to take the capacity to 10 million tonnes by the fiscal year 2010. Tata Steel's Greenfield projects in Orissa and Chattisgarh are progressing on schedule with placement of equipment order for Kalinganagar Project in Orissa and commencement of the land acquisition process. Jharkhand Project is awaiting announcement of Relief & Rehabilitation policy of the State Government.

(B)ESSAR STEEL LTD.

Essar Steel Holdings Ltd. (ESHL) is a global producer of steel with a footprint covering India, Canada, USA, the Middle East and Asia. It is a fully integrated flat carbon steel manufacturer—from iron ore to ready-to-market products. ESHL has a current global capacity of 8 million tonnes per annum (MTPA). With its aggressive expansion plans in India and other parts of Asia and North America, its capacity is likely to go up to 25 MTPA by

2012. Its products find wide acceptance in highly discerning consumer sectors, such as automotive, white goods, construction, engineering and shipbuilding. Essar Steel Ltd., the Indian Company of Essar Steel Holdings Limited, is the largest steel producer in western India, with a current capacity of 4.6 MTPA at Hazira, Gujarat, and plans to increase this to 8.5 MTPA. The Indian operations also include an 8 MTPA beneficiation plant at Bailadilla, Chattisgarh which has world's largest slurry pipeline of 267 km to transport beneficiated Iron Slurry to the pellet plant, and an 8 MTPA pellet complex at Visakhapatnam. The Essar Steel Complex at Hazira in Gujarat, India, houses the world's largest gas-based single location sponge iron plant, with a capacity of 4.6 MTPA. The complex also houses the steel plant and the 1.4 MTPA cold rolling complexes. The steel complex has a complete infrastructure setup, including a captive port, lime plant and oxygen plant. Essar Steel produces highly customized value-added products catering to a variety of product segments and is India's largest exporter of flat products, selling close to half of its production to the highly demanding US and European markets, and to the growing markets of South East Asia and the Middle East. The company's products conform to quality specifications of international quality certification agencies, like ABS, API, TUV Rhine Land and Lloyd's Register. Essar Steel is the first Indian steel company to receive an ISO 9001 and ISO 14001 certification for environment management practices. Essar Steel utilizes Hot Briquetted Iron-Direct Reduced Iron (HBIDRI) technology supplied by Midrex Technology, USA along with four 150 tonnes DC electric arc furnaces imported from Clecim, France. The Hazira unit of Essar Steel is equipped with 5.5 million tonnes per annum (MTPA) hot briquetted iron plant, 4.6 MTPA electric arc furnace, 4.6 MTPA continuous caster, 3.6 MTPA hot strip mill and 1.4 MTPA Cold Rolling Mill. During the year 2007-08, Essar was awarded costs ISO/TS 16949 and OHSAS 18000 certification.

(C) JSW STEEL LTD.

JSW Steel is a 3.8 MTPA integrated steel plant, having a process route consisting broadly of Iron Ore Beneficiation – Pelletisation – Sintering – Coke making – Iron making through Blast Furnace as well as Corex process – Steel making through : BOF- Continuous Casting of slabs – Hot Strip Rolling – Cold Rolling Mills. JSW Steel has a distinction of being certified for ISO-9001:2000 Quality Management System, ISO-14001:2004 Environment Management System and OHSAS 18001:1999 Occupational Health and Safety Management System. The capacity as on 1.11.2007 stood at 3.8 MTPA and the capacity is likely to rise to 6.8 MTPA by 2008, and further to 9.6 MTPA by 2010.

(D) JINDAL STEEL & POWER LTD. (JSPL)

Jindal Steel & Power Limited is one of the fast growing major steel units in the country. The Raigarh plant of JSPL has a present capacity of 1.37 million tonne per annum (MTPA) sponge iron plant, 2.40 MTPA Steel Melting Shop (SMS), 1.0 MTPA plant Mill, 2.30 sinter plant, 0.8 MTPA coke oven and a 330 Mega Watt captive power plant. During the year 2006-07, the company produced 1.19 million tonnes of sponge iron, 0.8 million tonnes of various steel products, 0.57 million tonnes of hot metal and 0.21 million tonnes of rolled products. The performance of JSPL during April-October 2007-08 was 0.68 million tonnes of sponge iron, 0.72 million tonnes of steel products (slabs/blooms/billets/rounds), 0.68 million tonnes of hot metal, 0.27 million tonnes of rolled products and 0.11 million tonnes of plates

(E) ISPAT INDUSTRIES LTD. (IIL)

IIL has set up one of the largest integrated steel plants in the private sector in India at Dolvi in Raigad District, Maharashtra with a capacity to manufacture 3 million tonnes per annum of hot rolled steel coils (HRC). The Dolvi complex also boasts of an ultra modern blast furnace (setup by a group company Ispat Metallics India Ltd.) capable of producing 2.0 million tonnes per annum of Hot Metal/ Pig Iron, a 2.0 million tonnes capacity Sinter Plant (newly commissioned) and a DRI plant with a capacity of 1.6 million tonnes per annum. The complex boast of an ultra modern captive jetty which meets the plants' requirement with regard to import of various raw material. In the coming years, after augmenting necessary infrastructure facility, it has planned to export the goods from the captive jetty. Further, the complex envisages adding a 110 MW captive power plant (which will use the Blast Furnace gas) in near future.

The integrated steel plant is using the converter-cum-electric arc furnace route (CONARC process) for producing steel. In this project, IIL have uniquely combined the usage of hot metal and DRI (sponge iron) in the electric arc furnace for production of liquid steel for the first time in India. For casting and rolling of liquid steel, IIL has the state-of-the art technology called compact strip production (CSP) process, which was installed for the first time in India and produces high quality and specifically very thin gauges of Hot Rolled Coils.

Table No.2.5

Market Share Of Leading Players In Iron And Steel Industry

COMPANY	PRODUCTION OF STEEL (IN MILLION TONNES)	MARKET SHARE (IN PERCENTAGE TERMS)
SAIL	13.5	32%
TISCO	5.2	11%
RNIL	3.5	8%
ESSAR,ISPAT,JSWL	8.4	19%
OTHERS	14.5	30%
TOTAL	45.1	100%

SWOT ANALYSIS OF THE INDUSTRY :

Strengths

1. Availability of iron ore and coal
2. Low labour wage rates
3. Abundance of quality manpower
4. Mature production base

Weaknesses

1. Unscientific mining
2. Low productivity
3. Coking coal import dependence
4. Low R&D investments
5. High cost of debt
6. Inadequate infrastructure

Opportunities

1. Unexplored rural market
2. Growing domestic demand
3. Exports
4. Consolidation

Threats

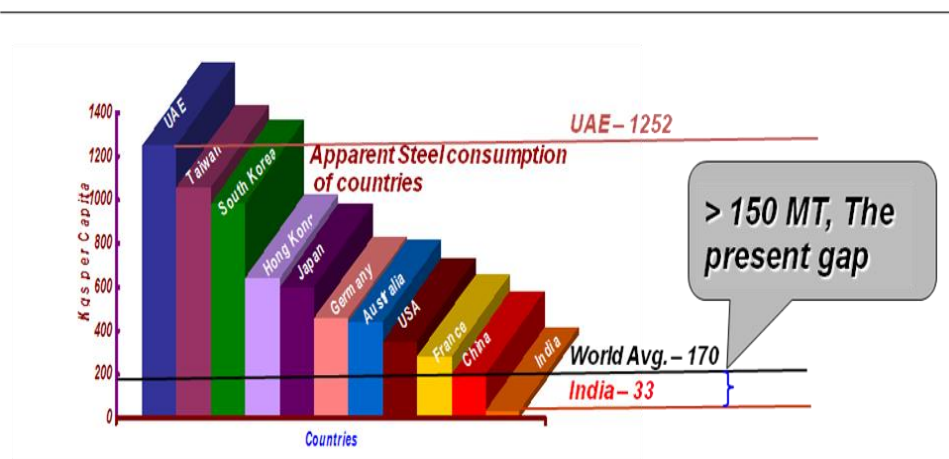
1. China becoming net exporter
2. Protectionism in the West
3. Dumping by competitors.

EXPECTED GROWTH :

The International Iron and Steel Institute(IISI) has forecasted that the steel demand will go of from 1.12 billion ton to 1.19 billion ton in 2008.And this will further increase in a higher rate up to 2010.In India the growth will be more prominent because of the growth in Real estate, Aviation, Manufacturing, Automobile sectors. Graphs

Chart 2.3

Growth in key sectors will drive the steel demand



Key Sectors driving growth

- Infrastructure development
- Housing and urban development
- High degree of urbanizations
- High demand in the auto sector
- Capacity building in steel making

Only awaiting the right trigger.

FACTORS HOLDING BACK THE INDIAN STEEL INDUSTRY:

The growth of the Indian steel industry and its share of global crude steel production could be even higher if they were not being held back by major deficiencies in fundamental areas. Investment in infrastructure is rising appreciably but remains well below the target levels set by the government due to financing problems.

1. Energy supply

Power shortages hamper production at many locations. Since 2001 the Indian government has been endeavoring to ensure that power is available nationwide by 2012. The deficiencies have prompted many firms with heavier energy demands to opt for producing electricity with their own industrial generators. India will rely squarely on nuclear energy for its future power generation requirements. In September 2005 the 15th and largest nuclear reactor to date went on-line. The nuclear share of the energy mix is likely to rise to roughly 25% by 2050. Overall, India is likely to be the world's fourth largest energy consumer by 2010 after the US, China and Japan.

2. Problems procuring raw material inputs

Since domestic raw material sources are insufficient to supply the Indian steel industry, a considerable amount of raw materials has to be imported. For example, iron ore deposits are finite and there are problems in mining sufficient amounts of it. India's hard coal deposits are of low quality. For this reason hard coal imports have increased in the last five years by a total of 40% to nearly 30 million tons. Almost half of this is coking coal (the remainder is power station coal). India is the world's sixth biggest coal importer. The rising output of electric steel is also leading to a sharp increase in demand for steel scrap. Some 3.5 million tons of scrap have already been imported in 2006, compared with just 1 million tons in 2000. In the coming years imports are likely to continue to increase thanks to capacity increases.

3. Inefficient transport system

In India, insufficient freight capacity and a transport infrastructure that has long been inadequate are becoming increasingly serious impediments to economic development. Although the country has one of the world's biggest transport networks – the rail network is twice as extensive as China's – its poor quality hinders the efficient supply of goods. The story is roughly the same for port facilities and airports. In the coming years a total of USD 150 bn is to be invested in transport infrastructure, which offers huge potential for the steel industry. In the medium to long term this capital expenditure will lay the foundations for seamless freight transport.

RECENT FINACIAL CRISIS OF INDIAN STEEL INDUSRRY:

We have witnessed in last few months, the unfolding of financial crises starting from United States and expanding world over. The exact magnitude and extent of the crises is fiercely debated among the financial experts. However, this real impact on economy can easily be observed across many, if not all sectors. The steel industry has not been spared with the impacts of the financial crises. The total market valuation of Arcelor Mittal ,Nippon steel and JEE has dropped by approx \$165 billion. The price of billet in Dubai market has dropped from its height of \$125/ton in June 2008 to a recent low of \$350 /ton. One of the steepest drops witnessed in recent history. The wide spread drop in demand for all types of steel required companies to cur production globally. Arcelor Mittal, one of the largest steel producers, alone has recently announced more than 30% reduction in production. It is only human to be frustrated and uncertain of the future. However, over long term, do we really need to be? We explored the steel production data going back to 1900 during last 100 years the worst drop (13.52%) in steel industry accrued between 1979-82.

This four year drop in global steel production is horrendous. However, if we look at year over year growth changes in steel industry during a 100 year period from 1900 to 2000 a more optimistic picture emerges. There is not even one instance when industry saw a consecutive four year of negative year over year growth. The worst case situation is three years of declining year over year growth during 1930-32, 1944-46, and 1980-82. Extending the past patterns of data to predict future is fraught with peril. It is none the less an important reminder to us that during tumultuous 100 year period the steel industry has been able to successfully weather world wars ,recession and crises of all the genre. Steel is a resilient industry. It is not to say that the current financial crises should not be taken seriously. It should be however, if history holds the chances the impact of current crises extending beyond 2009 are low. The leading steel companies should take these opportunities to improve their operational efficiency and effectiveness to better prepare themselves for impending growth in coming years.

REFERENCES :

Website:

1. [www.capital line .com](http://www.capitalline.com)
2. www.economictimes.com
3. www.blonnet.com
4. www.moneycontrol.com
5. www.reportgallery.com
6. www.annualreportservice.com
7. www.pwcglobal.com
8. www.nse-india.com
9. www.ft.com
10. www.sebi.in
11. www.sec.gov
12. www.business-standard .com
13. in.finance.yahoo.com

CHAPTER-3
Research Design

Particular	Page No.
Problem Identification	52
Survey of the Existing Literature	53
The Research Methodology	56
Hypothesis	56
Hypothesis for study	57
Universe of Study	58
Period of study and data collection and data analysis	59
Chapter Plan	61
Limitation of the Study	64
Reference	65

PROBLEM IDENTIFICATION:

Steel is crucial to the development of any modern economy and is considered to be the backbone of human civilization. The level of per capita consumption of steel is treated as an important index of the level of socioeconomic development and living standards of the people in any country. It is a product of a large and technologically complex industry having strong forward and backward linkages in terms of material flows and income generation. All major industrial economies are characterized by the existence of a strong steel industry and the growth of many of these economies has been largely shaped by the strength of their steel industries in their initial stages of development. Steel industry was in the vanguard in the liberalization of the industrial Sector and has made rapid strides since then. The new Greenfield plants represent the latest in technology. Output has increased, the industry has moved up in the value chain and exports have raised consequent to a greater integration with the global economy. The new plants have also brought about a greater regional dispersion easing the domestic supply position notably in the western region. At the same time, the domestic steel industry faces new challenges. Some of these relate to the trade barriers in developed markets and certain structural problems of the domestic industry notably due to the high cost of commissioning of new projects. The domestic demand too has not improved to significant levels. The litmus test of the steel industry will be to surmount these difficulties and remain globally competitive.

Financial soundness and profitability of a business enterprise largely depend upon the working capital management of firm. Working capital comprises of different components like raw material, work in progress, debtor, bills receivable and cash etc. The management of receivable is very crucial in order to control collection cost and bad debt. The cash management is also very significant because firm should have optimum level of cash during the year. The raw material and work in progress and finished goods are very important part of inventory therefore they should be properly managed. Another problem of the industry is short fall in electricity supply and heavy electric charges. It also makes effect on cost of production and financial position. The objectives of financial analysis can be classified on the basis of persons interested in the analysis as (a) External and (b) Internal. An external analyst has to depend upon the published information of financial statements, which are not enlightening themselves. While internal analysis knows everything regarding information provided in financial statements.

Study of financial statement analysis always is made objectively. Generally, external analysts use information as per their requirement. Financier would like to know profitability. Management would be interested in the operational efficiency liquidity position and profitability. The various stakeholders of business enterprises like management, investors, bankers, financial institutions, creditors, employees, government, economist, prospective investor's etc., look at sound financial position of the business enterprise.

SURVEY OF THE EXISTING LITERATURE :

There is wide range of literature available on financial performance analysis of different companies in conforming to its dynamic value and significance of intuitive nature. A good dealing in analytical part of literature exists at broad levels like size and technology, problem Associated with productivity, financial performance, and capacity utilization. Relevant existing literature and studied have been clipped below. A researcher has studied of this literature for gaining insight into the problem,

Miss Nandini Jaimini published an article "Evaluation of cash management performance of the selected Textiles Mills in Rajasthan" in "Indian Journal of Public enterprise" in 1988-89. She made analysis of selected textiles units by using various liquidity ratios and concluded that the inadequate cash balance to meet their currently maturing obligations. She suggested various measures to overcome this deficit of working capital.

R.S Tiwari published an article "Cost reduction in cement industry" in the "Management accountant" in Nov 1998. The article includes suggestion for reduction and control of cost factors.

In the year 1988 one book published on "working capital structure of private enterprises" by J.Panda and A.K. Satapathy. It covers a study of 10 private sectors Company engaged in production of cement. The study covers the various aspects of working capital period from 1965 to 1985. He had analyzed working capital position of selected units as a whole and as well as individual analysis. Finally He had made suggestions for the better utilization of various components of working capital.

Dr.Pramod Kumar published a Book in 1991, "Analysis of Financial statements of Indian industries." The study covered the 17 private, 5 state owned and 1 central public sector companies. He studied analysis of activities, assessment of profitability, return on capital

investment, Analysis of financial structure, Analysis of fixed assets and working capital. In this research he revealed various problems of cement industries and suggested remedies for the problems .He also suggested for the improvement of profitability and techniques of cost control.

Dr Sanjay Bhayani published a book in 2003, “Practical financial statement analysis” The study covered 16 public limited cement companies in private sector. He made study of analysis of profitability, working capital, capital structure and activity of Indian cement industry. In his research he revealed various problems of cement industries and suggested remedies for the problems .He also suggested for the improvement of profitability and techniques of cost control.

Chakravarty and reddy made study on ratio analysis as major tool for financial performance by studying 22 ratios of productivity, profitability proprietary, liquidity and turnover groups of the industries for the period from 1961 to 1971.

Poddar presented two important books in 1962 and 1966 in which he elaborated all the facts regarding various aspects of the industry. Institutions as C.M.A., Association of trade and industry, commerce research bureau. Economic times, Tariff commission, National productivity council etc.have made efforts to study the general problems in historical perspective.

Some institute like DGCIS, IEEMA, Commerce research bureau ELCINA. The economic times, CETMA etc have attempted to study the general problem related to industry.

Prof. Amit Mallick and Debasish sur presented an article on tea industry “Working capital and profitability a case study in interrelation which was published in the management accountant, November 1998.It explores the correlation between ROI and several ratios to working capital management. They made analysis of the impact of working capital on profitability by using simple correlation between ROI and each of some important ratios of working capital.

Most of the studies on receivable management in Indian context highlight inefficiency: Khandelwal (1985) investigated the working capital management process and practices among 40 small-scale industries in the state of Rajasthan, between 1975-76 and 1979-80. The study revealed that the management of receivables was highly ineffective and disorderly. It

was found that bills of receivable constituted as much as 50% of total current assets. Highlighting the sickness in the Jodhpur industrial estate, the study attributed the main reason to the inefficient management of working capital. The study also revealed that entrepreneurs had to be educated on the concept of working capital management.

In the year 1988, one book published on “working capital structure of private enterprises” by J.Panda and A.K. Satapathy. It covers a study of 10 private sectors Company engaged in production of cement. The study covers the various aspects of working capital period from 1965 to 1985. He had analyzed working capital position of selected units as a whole and as well as individual analysis. Finally He had made suggestions for the better utilization of various components of working capital.

Dr. Bhayani (2004) has conducted study on working capital and profitability of cement industry and found that profitability is highly influenced by working capital and Linkage between asset management and profitability of Indian Industry.

In their survey among 57 small firms in Canada, 105 largest firms in the US and 39 largest firms in Australia, Khoury et al,(1999) attempted to compare the working capital practice among three nations. The major aspects of the study were working capital policy, cash and equivalents, account recoverable, inventory, accounts and note payable and managing working capital itself. The study revealed that 7 % of the Canadian firms had formal working capital polices and 28.5 % had a cautions working capital policy. Further Canadian firm were learning more on the effect on sales whereas the Australian and the US companies were found to focus more on the impact on the firm’s profit while evaluating the credit worthiness of the customers.

While many studies have noted that receivable management was a neglected area, oppedahl and Richard (1990) examined the causes for such neglect. They found that managements were pre-occupied with capital budgeting projects, which affected the quality of working capital decision. The essay revealed that receivable constituted the most important element of working capital and hence, recommended that the managers need to be very cautious in the management of the same, in order to minimize default risk It is thus possible to note that management of receivable is found inefficient not only in the Indian context but also in other parts of the world. Considering the fact that the refinery industry is poised for unprecedented growth, it is pertinent to examine the trends in various measures of

receivable management in the light of various developments taking place in the place in the economy.

THE RESEARCH METHODOLOGY:

Title of the Problem:

The title of the problem is “**Analysis of liquidity of steel industry in India.**”

Objectives of Study

The broad objectives of the study are to analyse the liquidity position of steel companies in India. The objectives are as under:

1. To analyse liquidity position
2. To study profitability of selected units
3. To analysis the receivable management
4. To examine the cash position
5. To analysis cash flow statement
6. To make suggestions for improvement of financial soundness

HYPOTHESIS:

“A hypothesis is a special proposition, formulated to be tested in a certain given situation as a part of research which states what the researcher is looking for.”¹ In the research study, two hypotheses have been tested, these are as under:

One-way Analysis of Variance Test (ANOVA)

It is useful for inter-unit comparisons. The following null and alternative hypotheses have been tested on the basis of **ANOVA** one-way analysis of variance test.

Null Hypothesis (Ho):

There is no any significant difference among the liquidity, and profitability, ratios of the selected steel units come from identical populations.

The acceptance of the null hypothesis would suggest that there is no significant difference between the productivity of the selected units, which means that the productivity ratios of the units came from identical populations, in such steel units as the comparison of the liquidity, and profitability will have little significance. In contrast, the rejection of the Null hypothesis will reveal that there is significant difference between liquidity, and profitability ratios of the units, suggesting the usefulness of comparisons the level of

significance used in this case will also be at 5 percent, while degrees of freedom was 37 in the present study.

HYPOTHESIS FOR STUDY:

Hypothesis for liquidity management

1. There is no any significant difference in current Ratio of steel units under study.
2. There is no any significant difference in quick ratio of steel units under study.
3. There is no any significant difference in Absolute liquidity ratio of steel units under study
4. There is no any significant difference in Current Assets to Total Assets Ratio of steel units under study.
5. There is no any significant difference in Debtors to Sales Ratio of steel units under study.
6. There is no any significant difference in working capital turnover ratio of steel units under study.
7. There is no any significant difference in debt equity ratio of steel units under study.
8. There is no any significant difference in Proprietary Ratio of steel units under study.
9. There is no any significant difference in fixed asset to net worth ratio of steel units under study.

Hypothesis for profitability management

1. There is no any significant difference in Net Profit Ratio of steel units under study.
2. There is no any significant difference in Return on gross capital employed ratio of steel units under study.
3. There is no any significant difference in Return on Net Capital Employed ratio of steel units under study.

4. There is no any significant difference in Return on Shareholders Fund ratio of steel units under study.
5. There is no any significant difference in Return on Equity Capital Ratio of steel units under study.
6. There is no any significant difference in EPS of steel units under study.
7. There is no any significant difference in percentage of dividend of per share of steel units under study.
8. There is no any significant difference in Dividend Payout Ratio of steel units under study.
9. There is no any significant difference in total assets turnover ratio of steel units under study.
10. There is no any significant difference in fixed assets turnover ratio of steel units under study.
11. There is no any significant difference in current assets turnover ratio of steel units under study.

UNIVERSE OF STUDY:

The universe of the study consists of all the limited steel companies working in India and listed in stock exchanges of India

Sampling

There are about 527 such steel companies which are working in India on 31st march-2000. Out of these 168 companies were listed in stock exchanges of India out of it 7 companies were in A group, among them top 4 companies according to sales were selected as sample for the study. The sample has been selected by considering following factors:

- 1.The data which are available for the period of study i.e. from 2000-01 to 2008-09.
- 2.The companies, which are engaged in production of steel Industry
- 3.The company should be listed in Stock exchanges of India.

PERIOD OF STUDY AND DATA COLLECTION AND DATA ANALYSIS:

The study is based on secondary data taken from published annual reports of steel companies. The published annual reports of companies have been collected from the registered and corporate offices of respective companies. The present study is made for nine years from 1999-2000 to 2008-09. Various publication of steel manufacturer's association, National council for steel and building material (NCB), world steel stock exchange official directory and individual companies have been used for this purpose. Other information related to the industries have been collected from the economics times, financial express, R.B.I. Bulletin, other periodicals, journals and other various documents of companies.

Personal interviewing of the additional director, Chairmen, Directors, Joint president, Company secretary, chief accountant, General Manager Finance, Executives Joint technical advisory (planning), and assistant Director Technical) have conducted to collect some keynote information of the Companies and cement industry.

The figure contained in the annual reports and accounts have been rounded off to crores up to two decimal places. All the collected data have been presented and formulating in the form of condensed balance sheet and income statement. All the ratios and mentioned statement have been analyzed and interpreted.

As conclusion point of view inter -firm comparison has been made for analysis of performance of selected company. Various techniques of analysis e.g. Ratio analysis, Trend analysis, Regression, Graphs, Means, Diagrams Percentage and simple average Methods have used for the presentation and interpretation of the data and at the end on basis of the conclusion, some suggestion have been made for development of performance

The following four companies have been chosen for the study:

- 1. J S W STEEL LTD.**
- 2. JINDAL STEEL & ALLOY LTD.**
- 3. STEEL AUTHORITY OF INDIA LTD.**
- 4. TATA STEEL LTD.**

1. Tools for analysis

For the present study, following tools have been used for analysis liquidity of steel industry in India..

(A) Ratio Analysis:

Ratio is well known and most widely tool of financial analysis can be defined as “the indicated quotient of two mathematical expression.” as operation definition or ratio is the relationship between one item to another in a simple mathematical form.” a ratio is simply one number expressed interims of anther. It is found by dividing one number the base into the other”²

“Generally there are two methods of expressing relationship in ratios”³ (i) The percentage method like 100 percent etc. “Analysis use ratio to connecting different parts of the financial statements in a to find clues about the status of particular aspects of the business”⁴ (ii) The Phrase method such as one and half to one and two for one. Ratio is useful analysis for financial statement. It is conveniently and clearly capsulize the data in a form that is easily understood interpreted as “ratio are simply a means of highlighting in arithmetical terms, the relationship between figures drawn from financial statements”⁵ The technique of ratio analysis is the process of determining and interpreting numerical relationship based on the financial statements

According to Batty “accounting ratio describe the significant relationship which exist between figures shown in a Balance sheet, in a profit and loss account, in a budgetary control system or another part of accounting organization”⁶

It concludes whether the financial condition of a business enterprise is good or bad it is universally used for appraising the performance of a business firm.

There are many techniques which may be used for analysing the liquidity position. These techniques may be classified as follows

(B) Statistical Tools

Statistical tools are utilized for data analysis and interpretation of the firm. A brief outline of the various statistical techniques being used for present study those are:

(1) Index Numbers

“Index number as a number which is used to measure the level of a given phenomenon as compared to the level of the same phenomenon at same standard date”⁷ Index numbers nothing more than a relative number, or a relative which expresses the relationship between two figures, where one of the figures is used as a base present study

indices of sales, production and capacity utilization of selected Steel companies have been found out by taking 1999-2000 as the base year and indices of the rest years have been calculated.

(2) Arithmetic Means

It is called as the average of difference of the values of items from some average of the series. According to Gulerian “the most commonly used average is the arithmetic mean, briefly referred to as the mean”⁸ the mean has been found by adding all the variables and dividing it by the total number of years taken.

(3) Standard Deviation

Standard deviation may be defined as positive square root of the variance. While the variance of a sample is the average square deviation of values from the mean⁹

(4) Diagrammatic and Graphical Presentation of Data

The ratio of different companies was presented through graphs and some diagrams were used to make presentation understandable.

CHAPTER PLAN:

The present study is divided into nine chapters, which are as under:

The present study is divided into eight chapters, which are as under:

Chapter-1

Conceptual Framework of Liquidity Management

This chapter deals with the conceptual framework of Liquidity Management, Meaning of Liquidity Management, Principles of Liquidity Management, Techniques of Liquidity Management, Relationship between Liquidity and Profitability about the Study is given.

Chapter-2

Profile of Steel Industry in India

This chapters covers a brief profile steel industry, history of steel industry- global steel industry- demand and supply of steel in India, production of steel in India-cost and revenue concept-export and import, major players of steel-competition analysis-merger and acquisition- swot analysis- expected growth- factor holding back to Indian steel- and factor

for financial crisis- critical success factors- global perspective and outlook which includes facts and figure about exports- import and production capital of Indian steel industry.

Chapter – 3

Research Design

This chapter covers Problem Identification, Survey of Existing Literature- Statement of Problem, Objectives of the study-Hypothesis, Universe of Study, Sampling Design, Period of Study- Data collection and data analysis, Tools and techniques for analysis of working capital management and Limitations of the study.

Chapter-4:

Analysis of Liquidity

This chapter deals with Concept of Liquidity Analysis - Importance of Liquidity Analysis - Determinant of Liquid Capital- Structure of Liquid Assets - Structure of liquid Liabilities - Liquidity analysis steel Companies in India – liquidity analysis through ratios like-current ratio-quick ratio-absolute ratio- Current Assets to Total Assets Ratio – debt to Sales Ratio - working capital turnover ratio debt equity ratio - Proprietary Ratio - fixed asset to net worth ratio

Chapter-5:

Analysis of Profitability

This chapter deals with Meaning of Profitability- Concept of Profitability- Measurement of Profitability- Accounting Profitability-Value - Aided Profitability-Du-Pont Control Chart- Management Achievement Chart -Weakness of Profitability - Profit Margin- (I) Net Profit Margin -Return on Investment-Return on Capital Employed -Gross Return on Capital Employed -Net Return on Capital Employed-Return on Shareholder's Equity-Return on Equity Capital-Earning Per Share-Dividend Policy-Dividend Percentage-Dividend Pay-out Ratio-Dividend Yield Ratio -Assets Turnover Ratio-Total Assets Turnover-Fixed Assets Turnover-Current Assets Turnover-ANOVA –test.

Chapter-6:

Analysis of Receivable Management

This chapter deals with concept of receivable management-goals of receivable management-credit procedure of payment-optimum credit policy-credit evaluation and control of accounts receivable-analysis with the help of ratios and ANOVA test.

Chapter – 7

Analysis of Cash Management

This chapter deals motives of cash management-motives of holding of cash management-objectives of cash management-functions of cash management-cash planning- cash forecasting and cash budgeting –cash control techniques-cash discrepancy-cash shortage and cash deficit-determining the optimum cash balance-managing the cash flows-accelerating cash collections-decentralized collections-lock box system-controlling disbursement-playing the float and control and review.- Scope of Cash Management- Size of Cash- Components of Cash- Control of Cash flows- Cash to Current Assets Ratio-Cash to Sales Ratio-Cash Turnover Ratio-Cash Position Ratio-Adequacy of Cash-Current Ratio-liquid ratio-Net Cash Flows to Current Liabilities Ratio -Coverage of Current Liabilities 'Ratio.

Chapter-8

Analysis of Cash Flow

This chapter deals with cash flow statement analysis of selected companies.

Chapter-9

Summary, Findings and Suggestions

This chapter gives its emerging conclusion based on the analysis carried out and points out the variations if any from the literature. Besides, it also gives concrete suggestions for enhancing profitability, for financial soundness, for cost reduction and control and liquidity position

LIMITATIONS OF THE STUDY:

1. This study is based on secondary data taken from published annual reports of selected cement companies.
2. There are deferent approaches to measure the working capital, liquidity, inventory, receivable management, cash management and financial management f working capital in this regard expert views differ from one other.
3. The different views have been applied in the calculation of different ratios.
4. The present study is largely based on ratio analysis. It has its own limitations.

REFERENCES:

1. MICHAEL V.P. "Research methodology in management" Himalayan Publishing house, Bombay, 1985,p.No.107
2. ANTHONY ROBERT R. "Management accounting-Text and cases"Richard D.Irwin inc.illinois, 1964,p.297
3. SHARMA R.P. "Corporate financial structure"printwell publishers, Jaipur-302004, p.6
4. PERSON HUNT, WILLIAMS M. CHARLES AND DONALDSON GORDON "Basic Business Finance-Text and cases, Richard D.Irwin inc.illinois, 1966, p.141
5. POWAL L.S. AND KUMAR VINOD "Financial statements analysis and prediction of future of return: A case study of engineering industry", Chartered accountant, 11th May 198,P.988
6. BATTYJ."MANAGEMENT ACCOUNTACY" Orient longmens, New Delhi, 1966, P.394.
7. KOTHARI C.R. "Research Methodology –"Methods and techniques" Wishwa Prakashan, New Delhi, 1997,p.18
8. GULERIAN R.C "statistic for decision making" W.B. Saunders Company, Philadelphia, P.29-30.
9. STEVENSON W.J.Op.Cit.P.p. -30-30.

CHAPTER- 4

Analysis of Liquidity

Particular	Page No.
Introduction	67
Liquidity Management	68
Determinant of Liquid Capital	68
Structure of Fixed Assets	71
Liquidity Analysis of Steel Industry	74
Conclusion	105
Reference	106

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 to ensure money for day to day business operations. Hence the flow of current assets 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 on 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 an 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 advanced 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 maintains proper while on the other it helps 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 require 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.*"¹

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.*"²

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 reduces 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 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 or 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 other 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."*³ 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. ⁴ 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 Currents Assets

The balance sheet of a company comprises of many other 'turns 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-term loan through cash credit mainly for the purpose of acquisition of assets. These loans are to be paid back 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."*⁶

9.Provisions

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."⁷ "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."⁸ 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 enterprises⁹ 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 over capitalizationTM 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 then 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.

Table 4.1
Current 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	0.35	0.39	0.27	0.35	0.75	0.95	1.08	1.02	0.70	0.44	0.82	0.24	1.08	0.27
JS&AL	0.39	0.46	0.47	0.22	0.09	0.08	0.12	0.15	n.a	n.a	0.11	0.06	0.47	0.08
SAIL	0.84	0.79	0.63	0.79	0.85	1.34	1.37	1.64	1.91	2.08	1.53	0.44	2.08	0.63
TSL	0.83	0.81	1.01	0.71	0.53	0.57	0.65	1.63	0.51	0.66	0.76	0.43	1.63	0.51
avg.	0.60	0.61	0.60	0.52	0.56	0.74	0.81	1.11	1.04	1.06	0.81	0.22	1.11	0.52
s.d	0.27	0.22	0.31	0.28	0.34	0.54	0.54	0.70	0.81	0.90	0.58	0.18	0.90	0.22

Sources: Annual Reports and Accounts from 2000-01 to 2006-07.

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

ANOVA						
Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	1.698946	9	0.188772	0.734049	0.674743	2.235982
Within Groups	7.200625	28	0.257165			
Total	8.899571	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 ratio does not differ significantly.

Chart no.4.1



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)

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

Sources: 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 0.17times. 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 down ward 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 0.70times. 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 down ward 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.

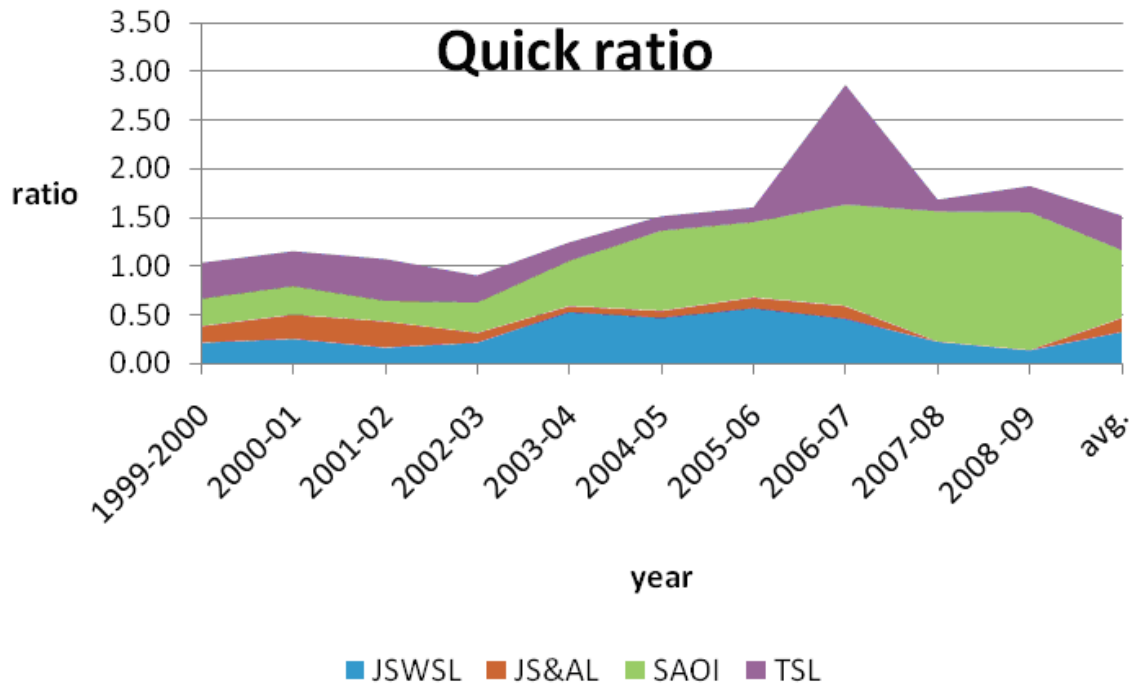
- **Alternative hypothesis:** There is a significant difference in quick ratio of steel units under study.
- **Level of Significance:** 5 percent
- **Critical value:** 2.24
- **Degree of freedom:** 37

Table No.4.4
One Way Anova Test Of Quick Ratio

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	0.959718	9	0.106635	0.814328	0.607559	2.235982
Within Groups	3.666567	28	0.130949			
Total	4.626284	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 quick ratio does not differ significantly .

Chart No.4.2



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

$$\text{Absolute Liquidity Ratio} = \frac{\text{Absolute Liquid Assets}}{\text{Current Liabilities}}$$

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)

companies											(Ratio in Times)			
	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	0.11	0.14	0.18	0.41	0.94	1.07	0.87	1.32	0.93	0.53	0.65	0.43	1.32	0.11
JS&AL	0.00	0.04	0.44	0.42	0.00	-0.01	-0.04	0.00	n.a	n.a	0.11	0.18	0.44	-0.04
SAIL	0.47	0.42	0.16	0.34	0.73	0.79	0.31	0.47	0.57	0.33	0.46	0.20	0.79	0.16
TSL	0.41	0.49	0.57	0.50	0.66	0.72	0.68	0.74	0.79	0.73	0.63	0.13	0.79	0.41
avg.	0.25	0.27	0.34	0.42	0.58	0.64	0.45	0.63	0.76	0.53	0.46	0.23	0.83	0.16

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

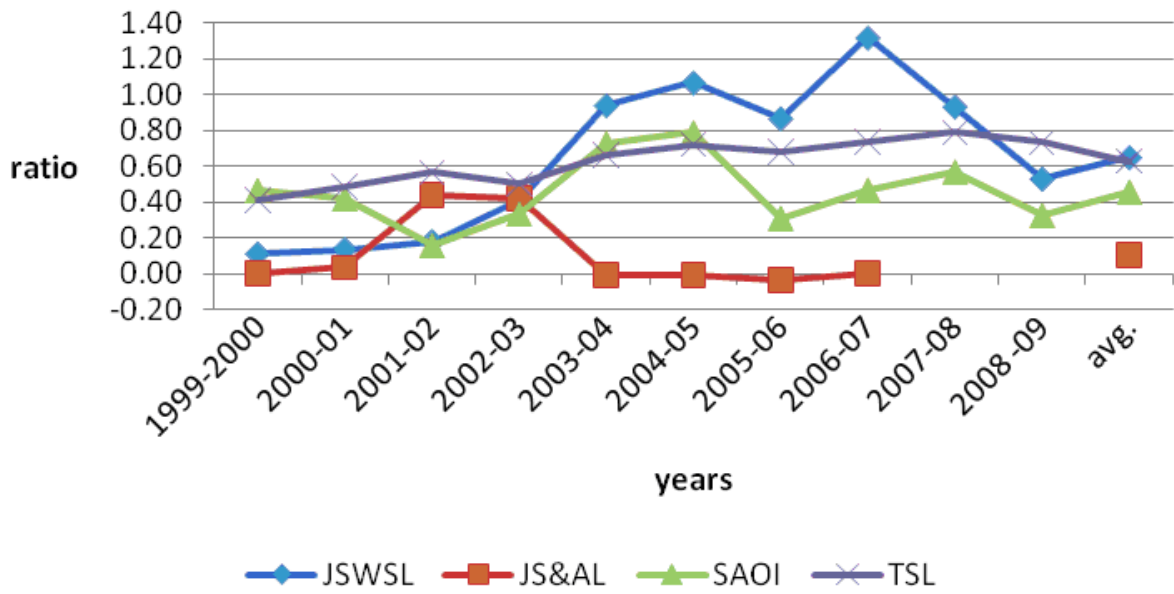
Table No.4.6
One Way Anova Test Of Absolute Liquidity

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	0.98583	9	0.109537	0.988383	0.471151	2.235982
Within Groups	3.103074	28	0.110824			
Total	4.088904	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 Absolute liquidity ratio does not differ significantly .

Chart No. 4.3

Absolute liquidity ratio



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.

$$\text{Current assets to total assets} = \frac{\text{Current assets}}{\text{Total assets}}$$

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

Table 4.7
Current Assets To Total Assets 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	0.11	0.10	0.10	0.11	0.16	0.23	0.23	0.20	0.16	0.15	0.15	0.05	0.23	0.10
JS&AL	0.37	0.43	0.42	0.20	0.08	0.07	0.17	-0.42	n.a	n.a	0.17	0.25	0.43	-0.42
SAIL	0.31	0.33	0.31	0.33	0.37	0.52	0.55	0.61	0.65	0.64	0.46	0.14	0.65	0.31
TSL	0.26	0.27	0.26	0.29	0.23	0.25	0.26	0.50	0.24	0.31	0.29	0.08	0.50	0.23
avg.	0.27	0.28	0.27	0.23	0.21	0.27	0.30	0.22	0.35	0.37	0.27	0.13	0.45	0.06

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)

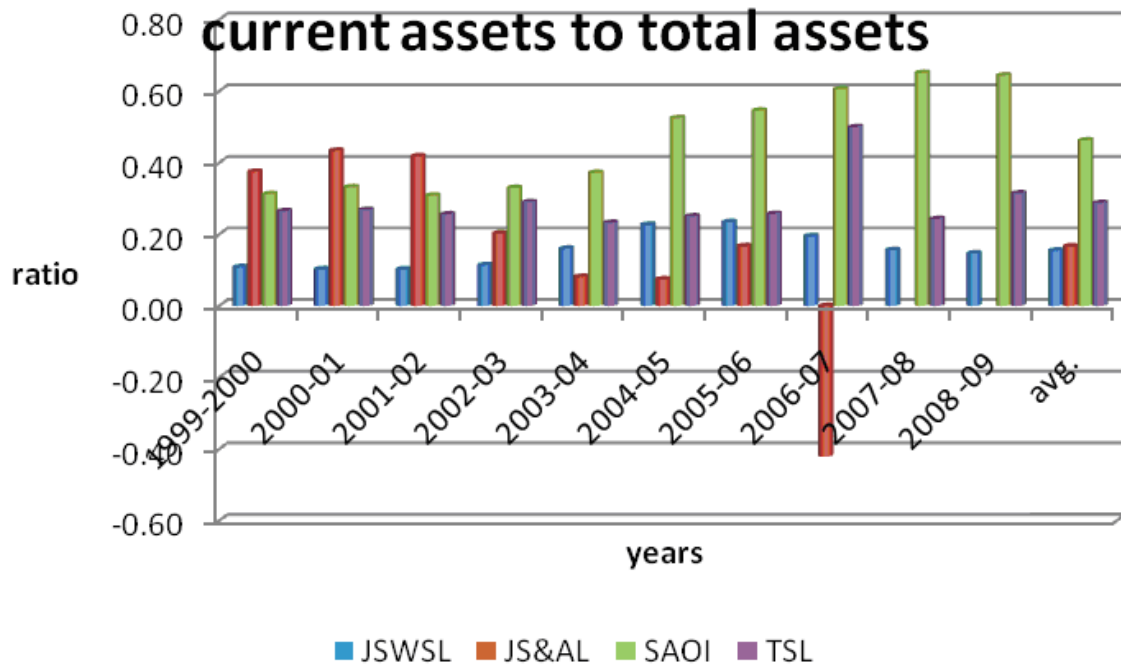
- **Null Hypothesis:** There is no any significant difference in Current Assets to Total Assets Ratio of steel units under study.
- **Alternative hypothesis:** There is a significant difference in Current Assets to Total Assets Ratio of steel units under study.
- **Level of Significance:** 5 percent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

Table No.4.8
One Way Anova Test Of Current Assets To Total Assets 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	0.081682	9	0.009076	0.192916	0.993119	2.235982
Within Groups	1.317266	28	0.047045			
Total	1.398947	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 to Total Assets ratio does not differ significantly.

Chart No. 4.4



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 4.9
Debtors To Sales 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	0.51	0.33	0.19	0.15	0.17	0.13	0.22	0.11	0.07	0.07	0.20	0.13	0.51	0.07
JS&AL	0.66	0.15	0.16	0.06	0.04	0.06	1.02	1.06	n.a	n.a	0.40	0.44	1.06	0.04
SAIL	0.18	0.18	0.15	0.15	0.11	0.10	0.10	0.10	0.12	0.12	0.13	0.03	0.18	0.10
TSL	0.22	0.20	0.15	0.12	0.07	0.06	0.05	0.05	0.04	0.06	0.10	0.07	0.22	0.04
avg.	0.39	0.22	0.16	0.12	0.10	0.08	0.35	0.33	0.08	0.08	0.21	0.17	0.49	0.06

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

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

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	0.513945	9	0.057105	1.040024	0.434423	2.235982
Within Groups	1.537407	28	0.054907			
Total	2.051351	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 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)

companies												(Ratio in Times)			
	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	-1.31	-1.98	-2.18	-5.09	38.49	535.86	16.15	51.89	-11.84	-4.08	61.59	167.94	535.86	11.84	
JS&AL	-1.42	14.34	-6.93	-2.84	-1.65	-1.42	-0.12	-0.14	n.a	n.a	-3.61	4.85	-0.12	14.34	
SAIL	10.62	18.23	34.62	-22.80	-13.43	10.53	8.61	5.11	3.87	3.06	-1.08	16.89	18.23	34.62	
TSL	170.91	31.19	13.63	-8.93	-6.06	-7.07	-9.24	4.50	-5.73	-7.84	11.30	57.21	170.91	31.19	
avg.	44.70	-7.32	-7.52	-9.91	4.34	134.47	3.85	15.34	-4.56	-2.95	17.05	61.72	181.22	23.00	

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 L was -34.62 in 2001-02 and maximum ratio was 18.23 in 2000-01 with an average of -1.08 times. In TSL ratio ranged between minus -31.19 and minus 170.91 during the year 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

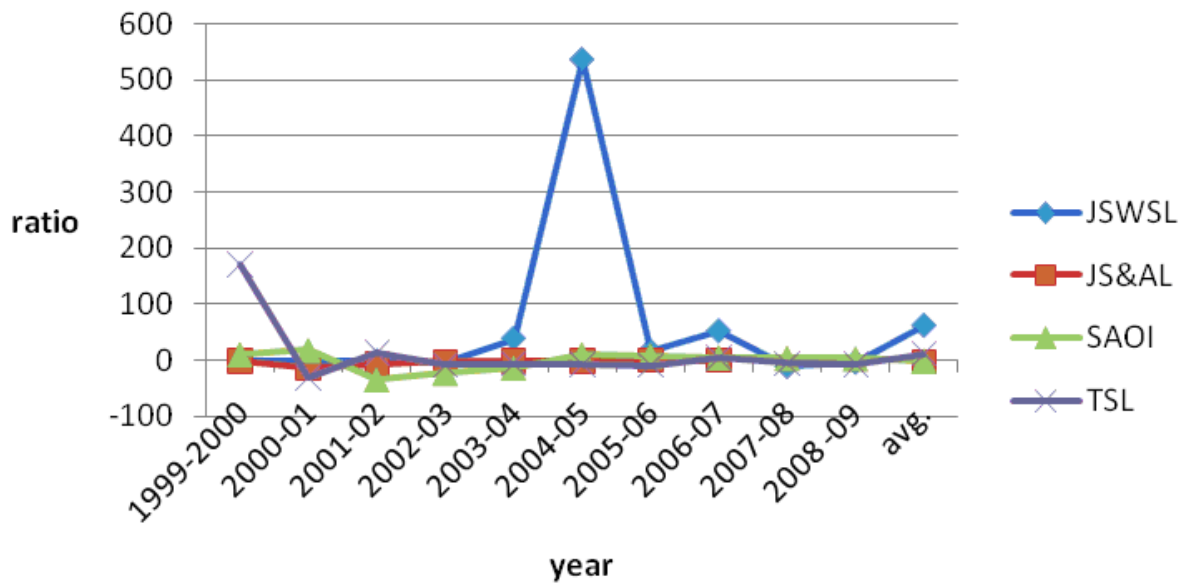
Table No.4.12
One Way Anova Test Of Working Capital Turnover Ratio

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	0.513945	9	0.057105	1.040024	0.434423	2.235982
Within Groups	1.537407	28	0.054907			
Total	2.051351	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 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. "¹¹ 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 safety 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)

(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	4.11	8.9	18.55	18.83	4.38	1.27	1.01	0.77	0.98	1.42	6.02	7.13	18.83	0.77
JS&AL	1.84	2	1.11	0.29	0.27	0.24	0.74	-0.12	n.a	n.a	0.80	0.79	2.00	-0.12
SAIL	3.12	3.34	6.02	6.23	1.72	0.5	0.27	0.19	0.09	0.24	2.17	2.41	6.23	0.09
TSL	1.33	1.18	1.37	1.33	0.78	0.4	0.26	0.71	0.66	0.9	0.89	0.40	1.37	0.26
avg.	2.6	3.855	6.7625	6.67	1.7875	0.6025	0.57	0.3875	0.57667	0.85333	2.47	2.68	7.11	0.25

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 2000-01to -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 a 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 a highly fluctuant standard deviation. In the last three years, the company had invested net worth in fixed assets, so the company is advised not to increase this ratio to have a good rate of return on net worth. The company has more financial charges burden.

Debt Equity Ratio (ANOVA-Test)

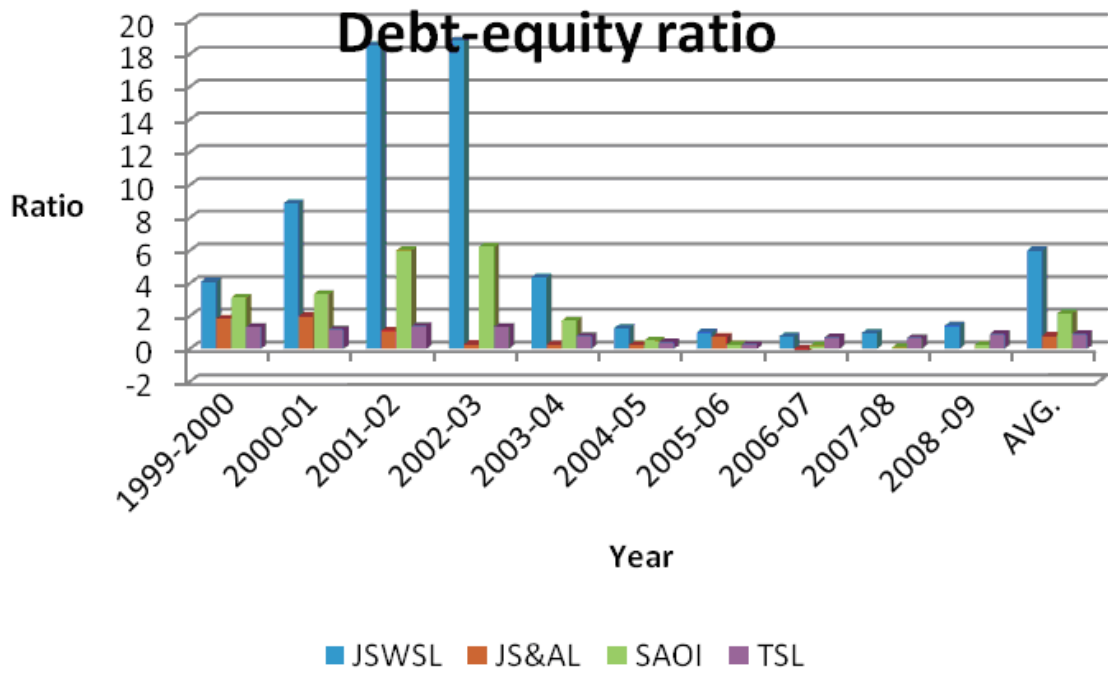
- **Null Hypothesis:** There is no any significant difference in debt equity ratio of steel units under study.
- **Alternative hypothesis:** There is a significant difference in debt equity ratio of steel units under study.
- **Level of Significance:** 5 percent
- **Critical value:** 2.24
- **Degree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

Table 4.14
Debt Equity Ratio (ANOVA-Test) Debt

<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	217.9276	10	21.79276	1.379878	0.235103	2.153156
Within Groups	489.5908	31	15.79325			
Total	707.5184	41				

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



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:

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

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

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

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)

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 2008-2009

The above Table No. 4.15 showed the ratio of rerun 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 down ward 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

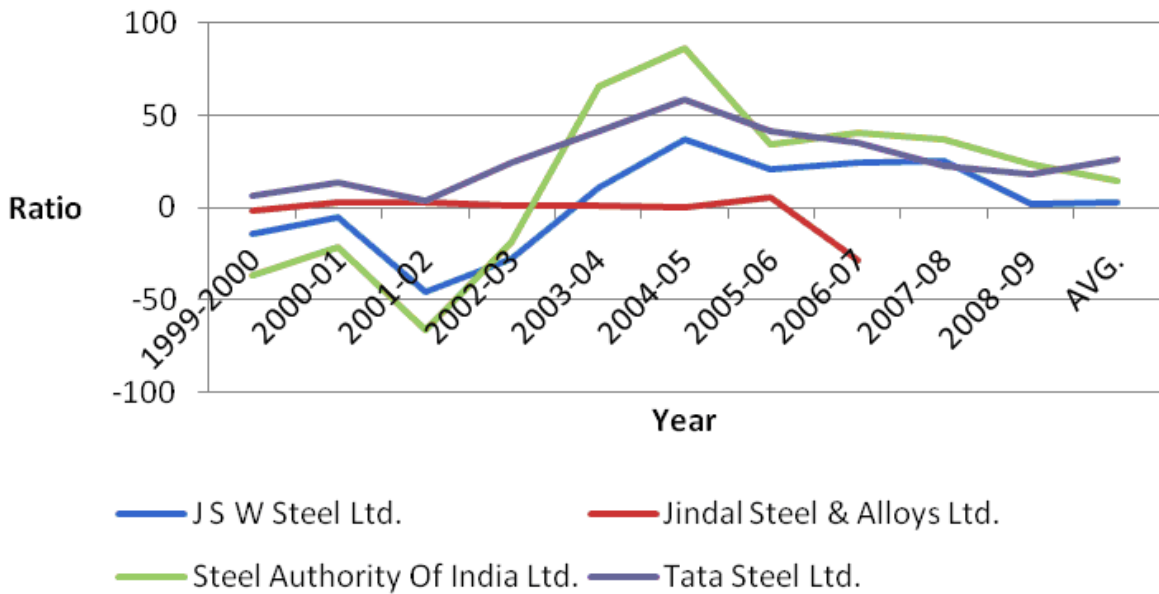
Table 4.16
Proprietary Ratio (ANOVA Test)

<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	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 Proprietary Ratio does differ significantly.

Chart No-4.8

Proprietary Ratio



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)

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

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

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 2008-09. 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)

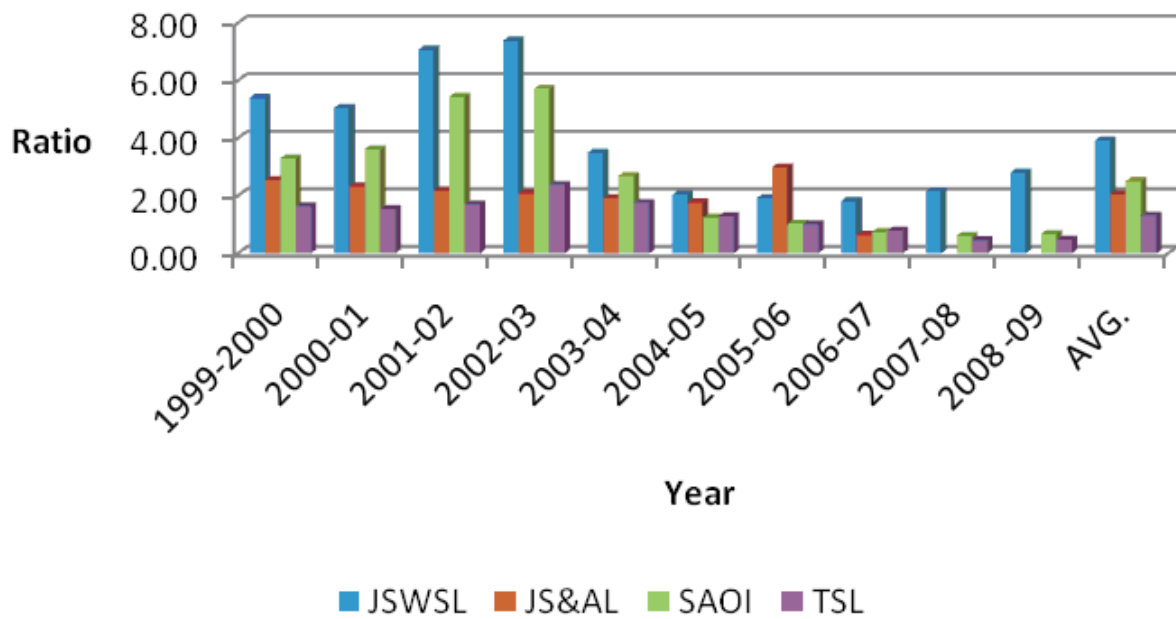
- **Null Hypothesis:** There is no any significant difference in fixed asset to net worth ratio of steel units under study.
- **Alternative hypothesis:** There is a significant difference in fixed asset to net worth ratio of steel units under study.
- **Level of Significance:** 5 percent
- **Critical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

Table 4.18
Fixed Asset to net 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	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 fixed asset to net worth ratio does differ significantly.

Chart No-4.9
Fixed assets to Networth



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:

1. Ramamoorthy, V. E. (1976) : Working Capital Management, Madras: Institute of Financial Management and Research, Pg. 58
2. Pandey, I. M (1980): Accounting Journal, Concepts of Earning Power, Voll. V, Rajasthan Accounting Association, Pg. 479
3. Anthony, R. N. (1970): Management Accounting Text and Cases. Illiosis, Richard D. Irwin, Inc. Pg. 4303.
4. Howard, B. B. & Upton, M. (1953): Introduction to Business Finance, New York, McGraw Hill Bookco, Inc., Pg. 188
5. Hampton, j. j. (1983) : Financial Decision Making Concept, Problem and Cases, New Delhi, Prentice Hall of India Pvt. Ltd., Pg. 504
6. Michael Firth, (1976) : Management of Working Capital, London, and The McMillan press Limited, Pg. 111
7. A.B.R. Choudhary : Op. Cit., P.17
8. N.LHingorani, A.R. Ramanathan & T.S. Grewal : Op. Cit., P.17
9. R.K. Yorston, R.K. Smyth E.B. Brown & W.G. Rodger Advance Accounting, (Australia ; The Law Book Co., 3rd Ed., 1953), P.13
10. Walker & Boughn : Financial Planning & Policy, (Harper International, 1874). P.51
11. N.K. Kulshrestha : Analysis of Financial Statement of Indian Paper Industry (Aligarh: Navman Prakashan, 1972), P.152
12. S.N. Maheshwari : Management Accounting and Financial Control, Op. Cit., P.B78

- 13. Gerstenbery, C.W. : Financial Organization & Management of business,
(Bombay: Asia Publishing House, 1962),P.181**
- 14. Anil B. Roy Choudhary : Analysis and Interpretation of Financial Statements
Through Financial Ratios, Op. Cit., P.24**
- 15. J.I. Bogen : Op. Cit**

CHAPTER-5
Analysis of Profitability

Particular	Page No.
Introduction	109
Meaning and definition of Profitability	109
Concept of Profitability	110
The DuPont Control Chart	116
Management Achievement Chart	118
Weakness of Profitability	121
Analysis of Profitability	123
Conclusion	161
Reference	162

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"¹ Weston and Brigham defines profitability as "the net surplus of a large number of policies and decisions."²

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."³ 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 Sales**

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

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."⁵ 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."⁶

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."⁷ 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."⁸ 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."⁹

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."™ 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."^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

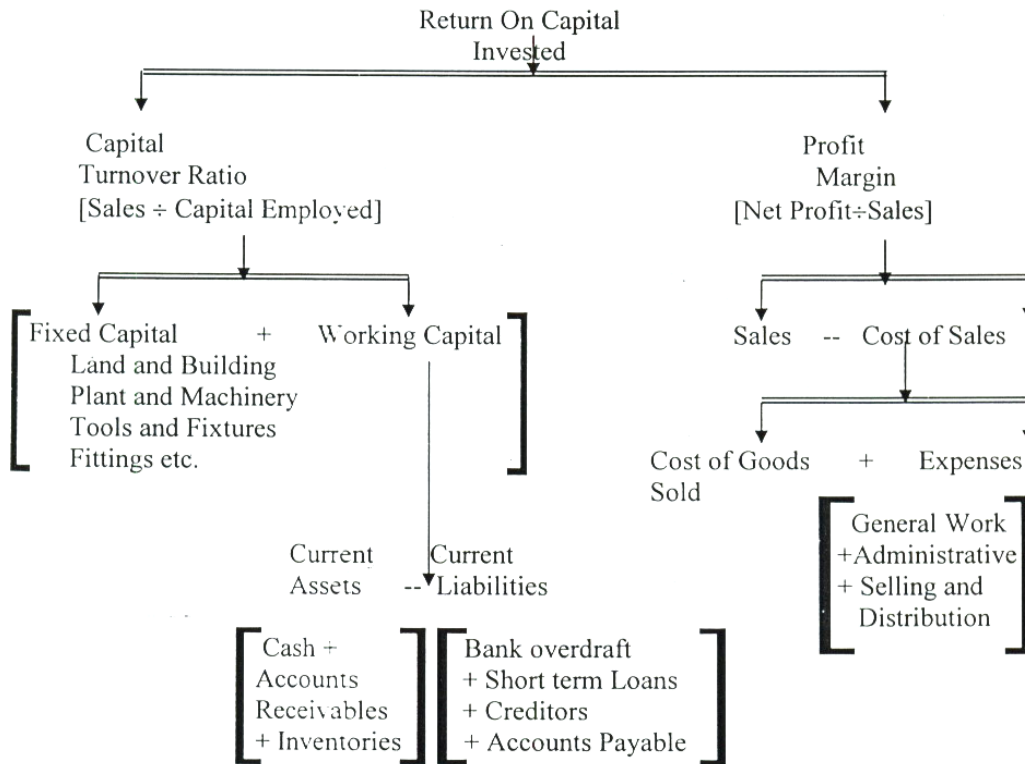
can be expressed as profit before tax plus employees cost, depreciation and interest. The application of value added belongs largely to four parties mentioned below: -

- ⇒ **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,*

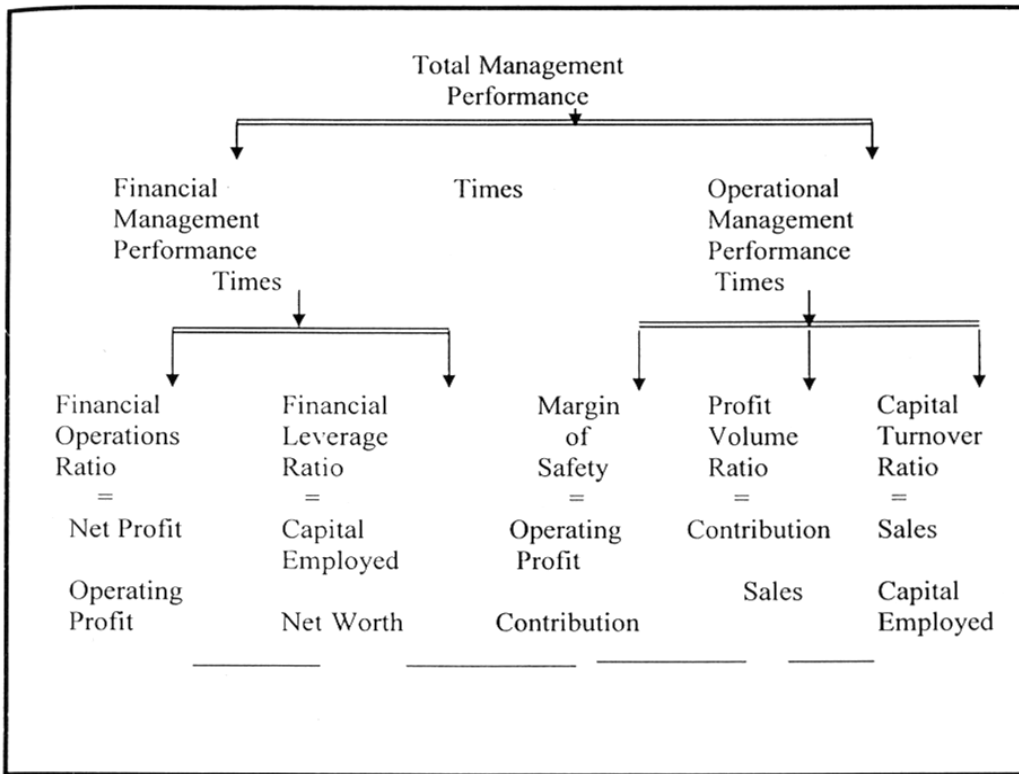
calculations are made on the ratios of return on investment, assets turnover and profit margins for comparable companies"^{*2} James C. Van Home correctly remarks, "Profitability ratios are of two types; those showing profitability in relation to sales, and those showing profitability in relation to investment"TM. 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."TM This statement clearly emphasizes the importance of profitability.

MANAGEMENT ACHIEVEMENT CHART:

Kenneth R. Rickey.¹⁵ 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,"¹⁶ 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

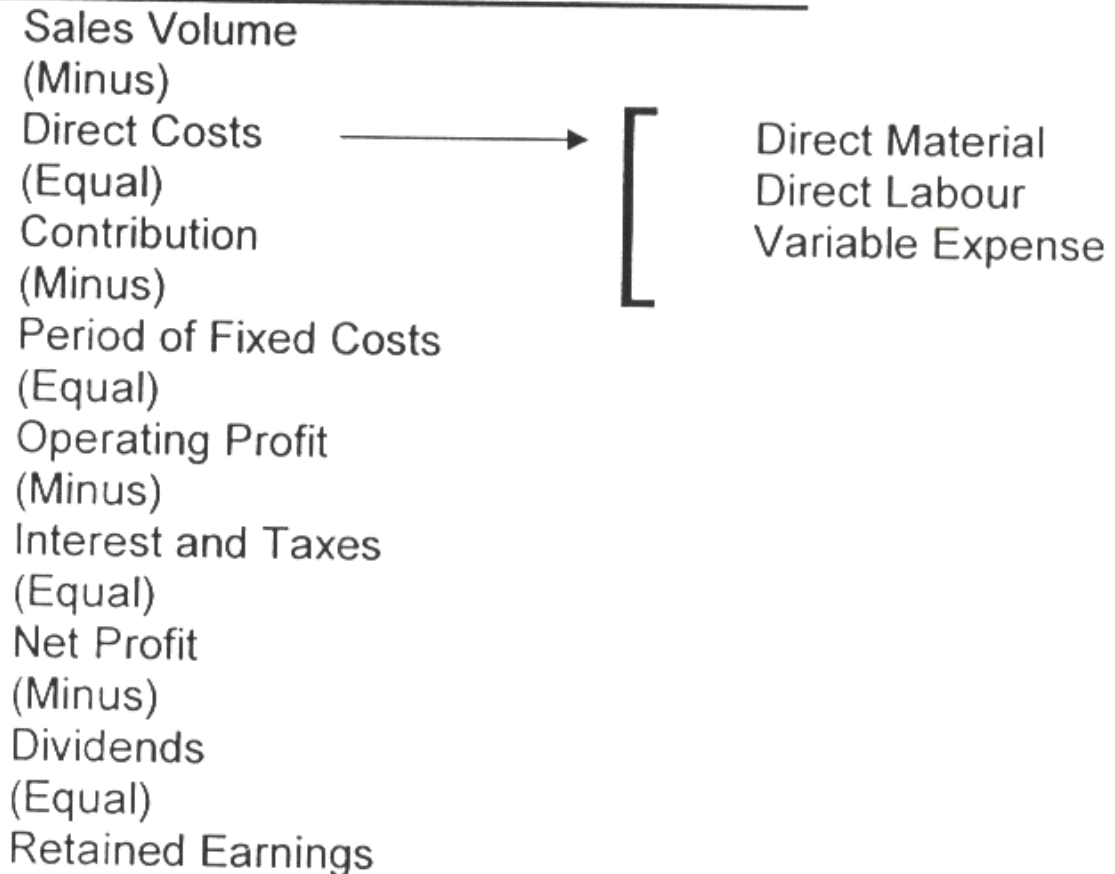
The product of financial operation ratio and financial leverage ratio calculates the performance of financial management. Financial operations ratio is computed by dividing net profit by operating profit. Net profit is arrived at after making adjustments for interest, taxes, profit or loss on sale of 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 ³¹



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."*TM 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'¹ is looked upon as a term of abuse since some firms always act to maximize profits at the cost of employees, customers and society.¹⁸ 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".¹⁹ Profit margins is the return generated by the company's assets and represents the difference between revenues and total expenditure."²⁰ 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." ²¹

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*"²² 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."²³ 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"²⁴ 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."²⁵ 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'²⁶. 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.'²⁷ 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

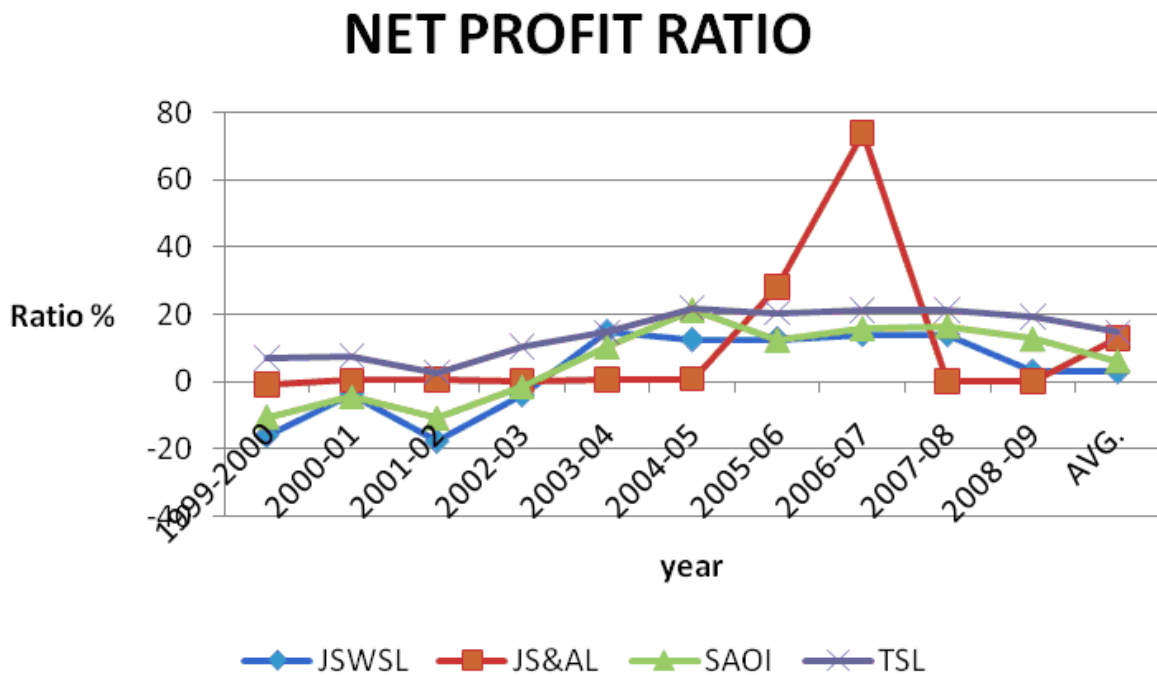
Degree of freedom: 37

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."*²⁸ 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*²⁹ preferred the term 'Group Capital', *R. Worwick Dobson*³⁰ 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."³¹
 - (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.'² Anyhow, no unanimity of any kind exists regarding the concept of the term, 'return'. J. Batty³³ 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'¹. 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

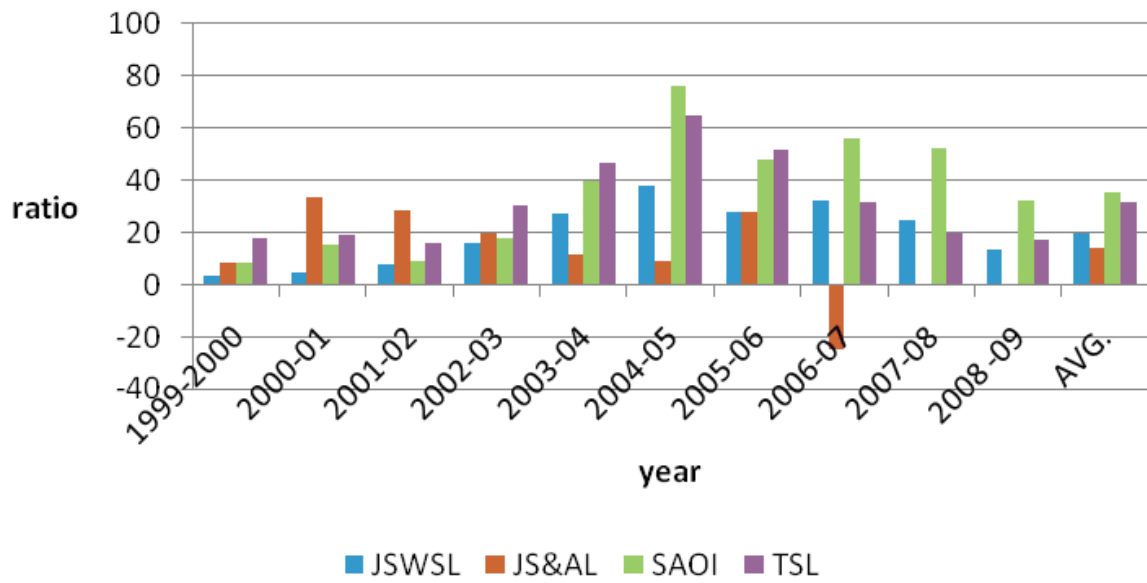
Table No.5.4
Return On Gross Capital Employed Ratio (Anova Test)

<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 1.01percent 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 7.71percent 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

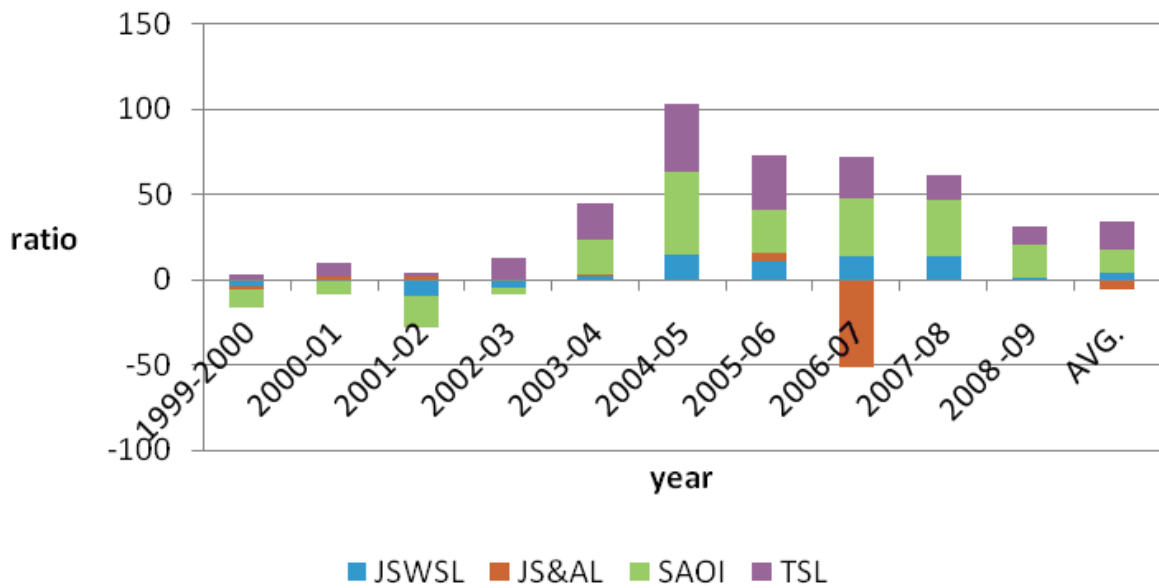
Table No.5.6
Return On Net Capital Employed Ratio (Anova Test)

Source of Variation	SS	df	MS	F	P-value	F crit
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.*"³⁵ 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'³⁸ 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

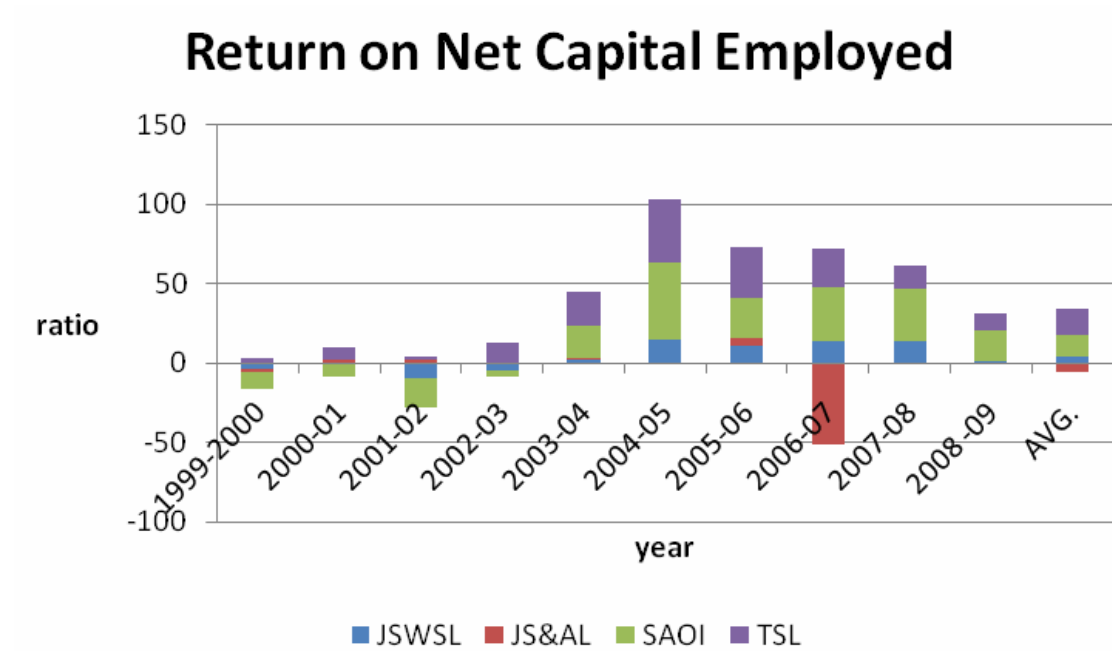
- ❖ **Null Hypothesis:** There is no any significant difference in Return on Shareholders Fund ratio of steel units under study.
- ❖ **Alternative hypothesis:** There is a significant difference in Return on Shareholders Fund ratio of steel units under study.
- ❖ **Level of Significance:** 5 percent
- ❖ **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."³⁹ 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

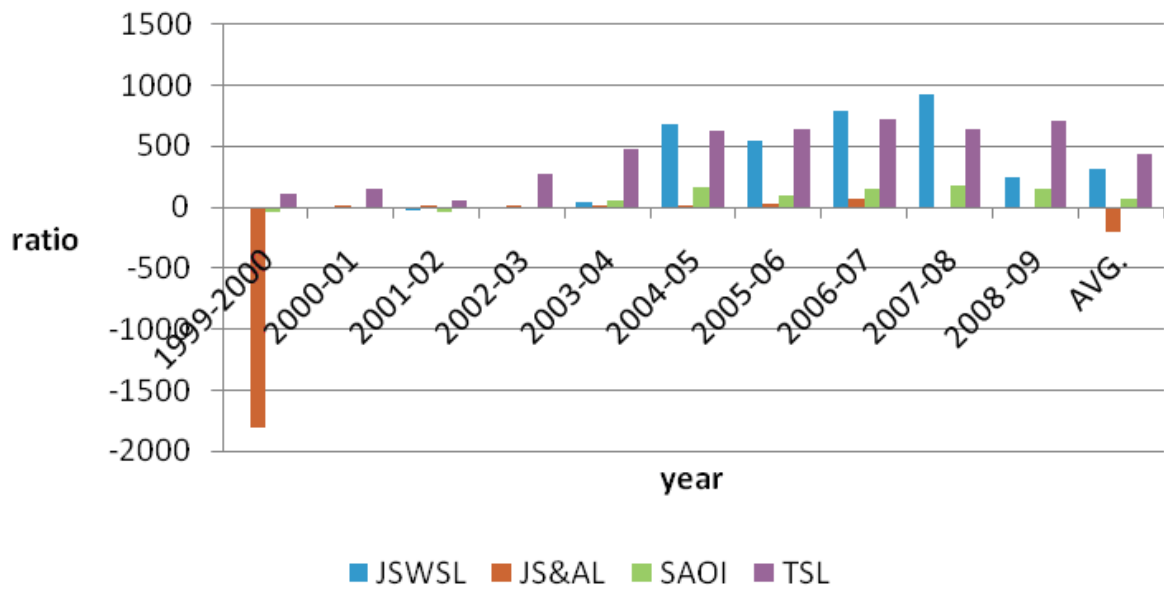
Table No.5.10
Return On Equity Capital Ratio (Anova Test)

<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." ⁴⁰ 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

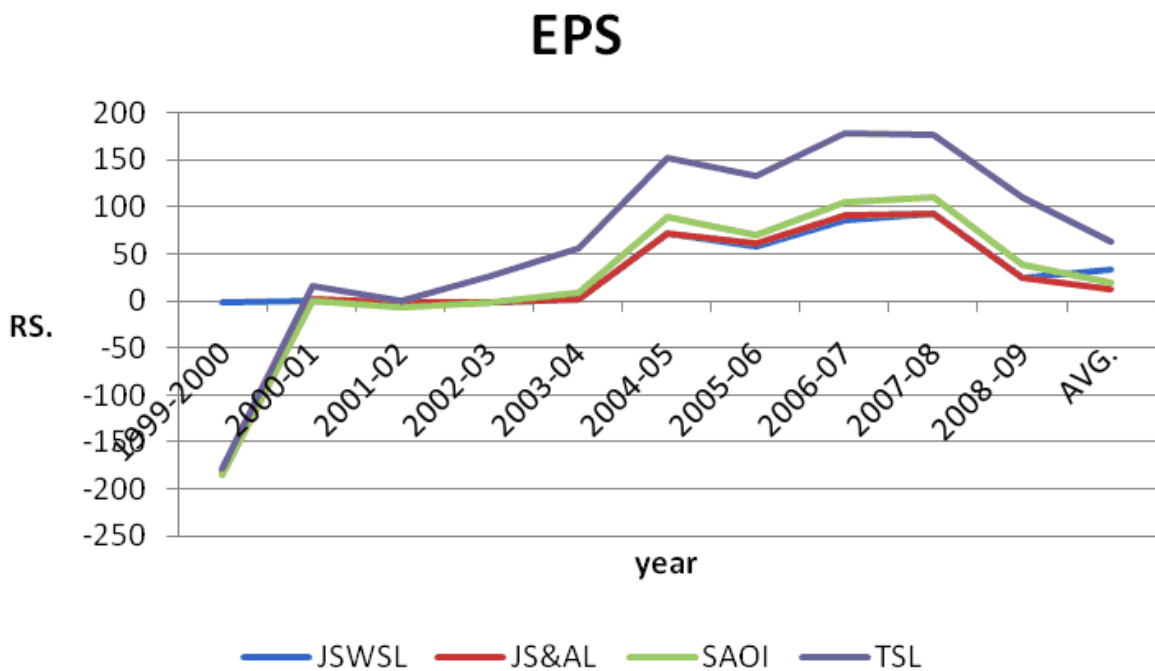
- ❖ **Null Hypothesis:** There is no any significant difference in EPS of steel units under study.
- ❖ **Alternative hypothesis:** There is a significant difference in EPS of steel units under study.
- ❖ **Level of Significance:** 5 percent
- ❖ **Critical value:** 2.24
- ❖ **Degree of freedom:** 37

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 is 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'*²

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

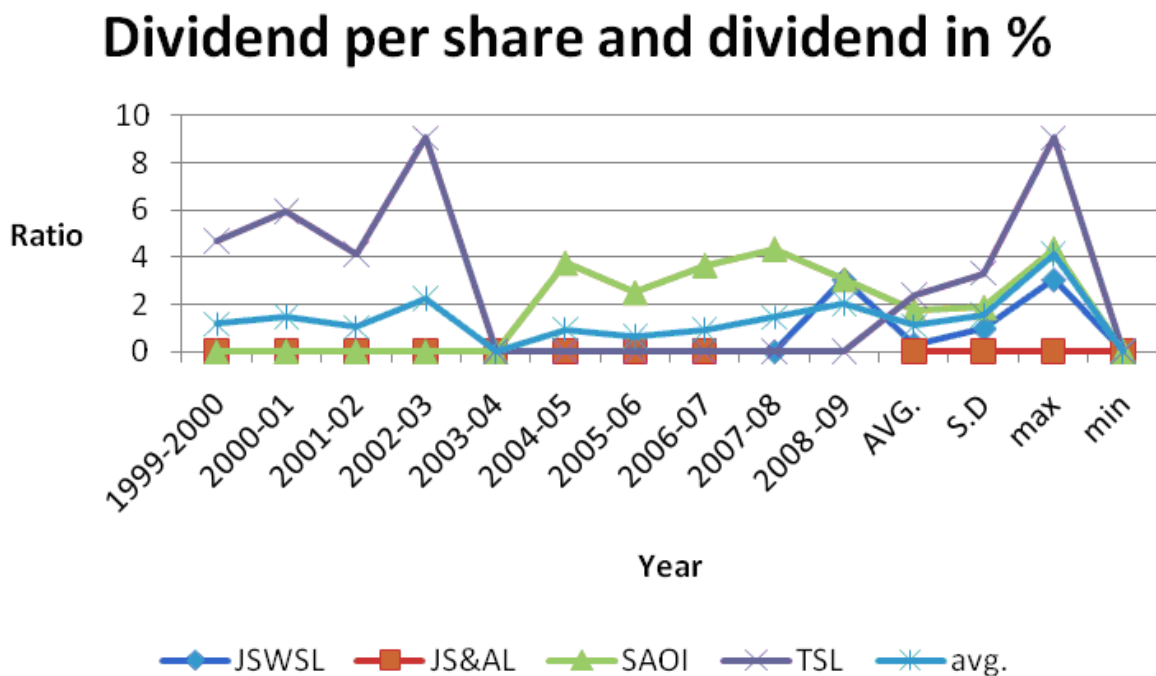
- ❖ **Null Hypothesis:** There is no any significant difference in percentage of dividend of per share of steel units under study.
- ❖ **Alternative hypothesis:** There is a significant difference in percentage of dividend of per share of steel units under study.
- ❖ **Level of Significance:** 5 percent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

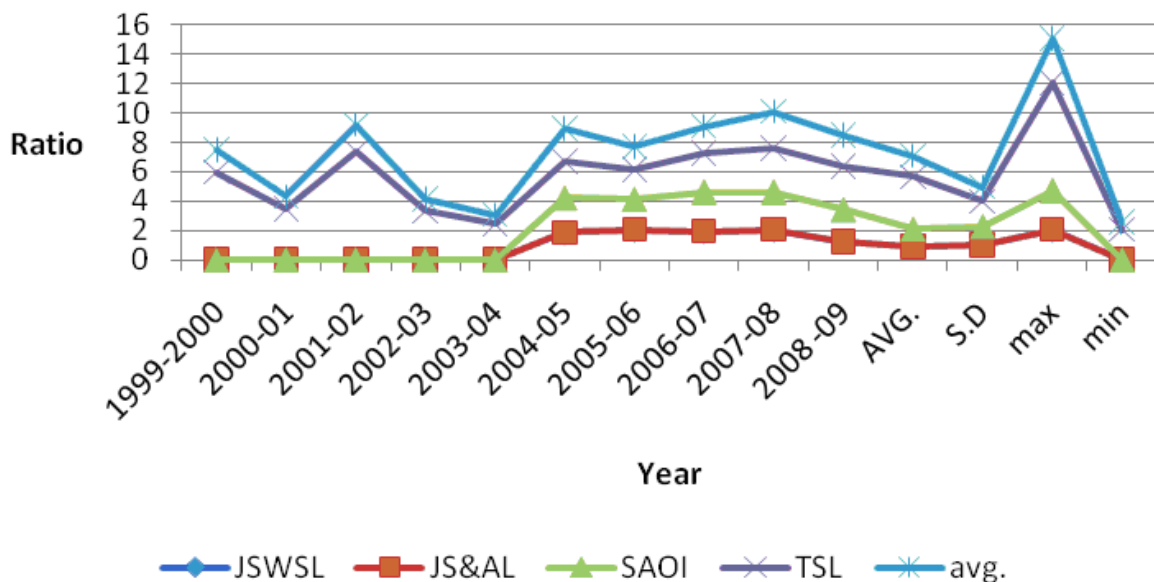
Table No.5.16
Dividend Payout Ratio (Anova Test)

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

Dividend payout ratio



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"⁴³ 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."⁴⁴ 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

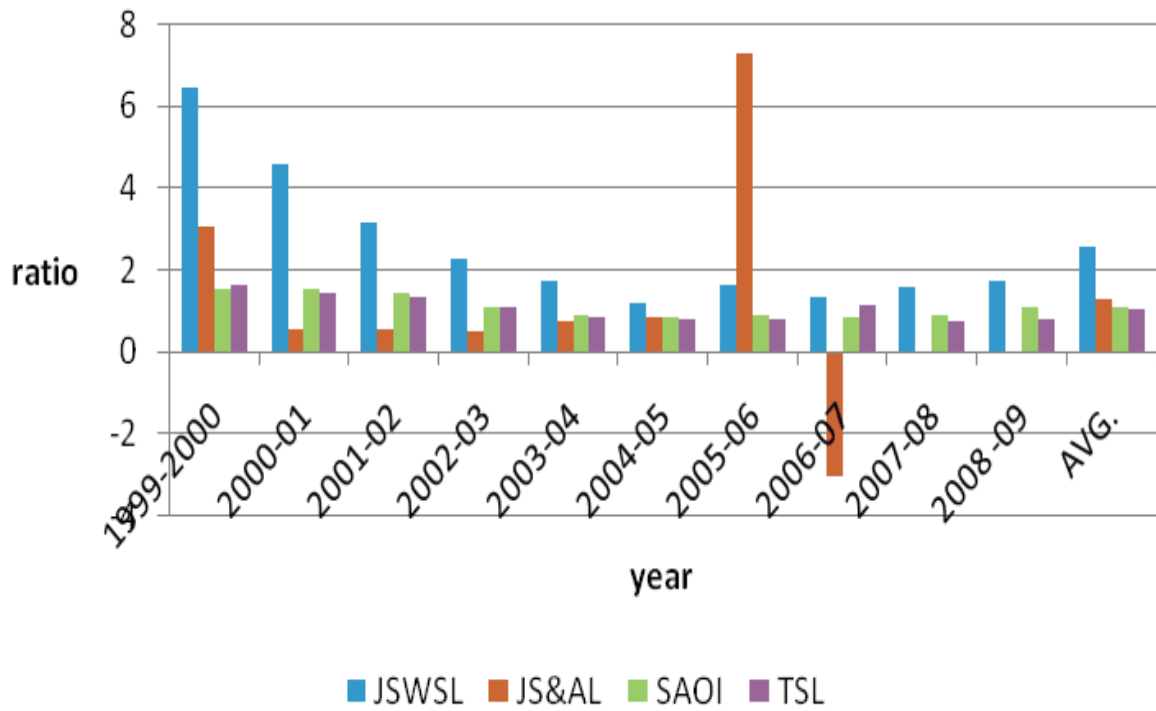
Table No.5.18
Anova Test Of Total Assets Turnover Ratio

Source of Variation	SS	df	MS	F	P-value	F crit
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."⁴⁵ 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.)"⁴⁶ 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.⁴⁷

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

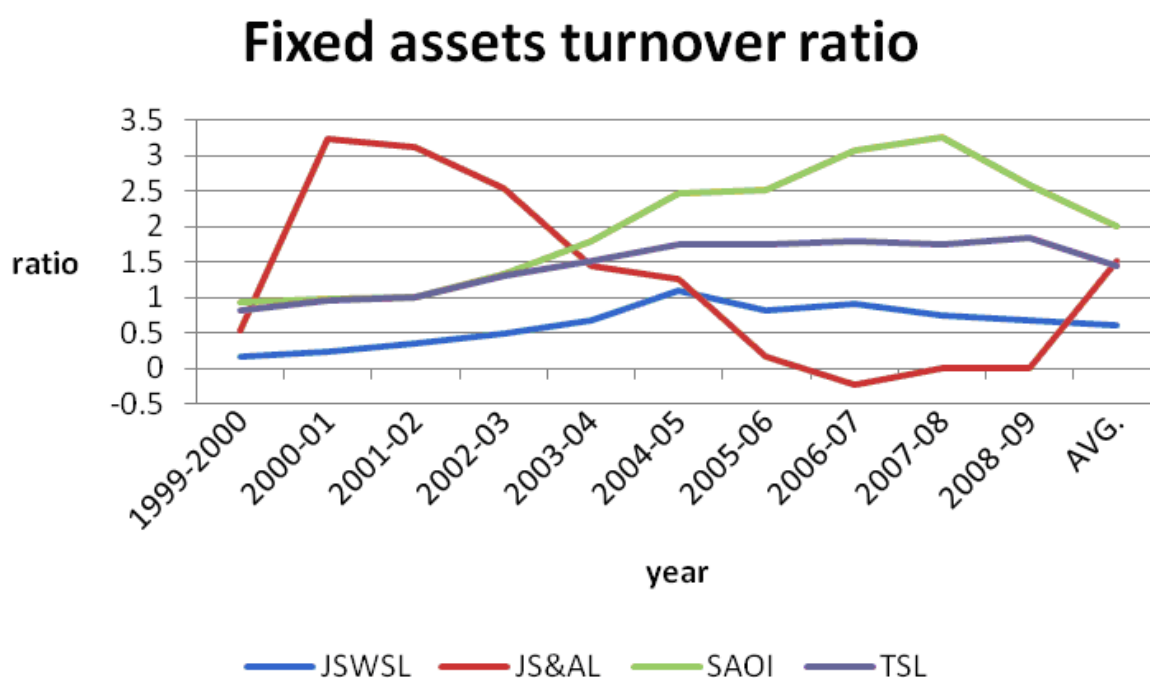
- ❖ **Null Hypothesis:** There is no any significant difference in fixed assets turnover ratio of steel units under study.
- ❖ **Alternative hypothesis:** There is a significant difference in fixed assets turnover ratio of steel units under study.
- ❖ **Level of Significance:** 5 percent
- ❖ **Critical 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."⁴⁸ 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 1999-2000 to 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 6.63 times with a standard deviation of 0.89 times. The ratio was found highest of 16.40 times in 2002-03 and very lowest of 0.78 times in 2006-07. The current assets turnover ratio in from 1999-2000 to 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 3.04 times in 2003-04 and very lowest of 1.43 times in 2007-08. The current assets turnover ratio in from 1999-2000 to 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

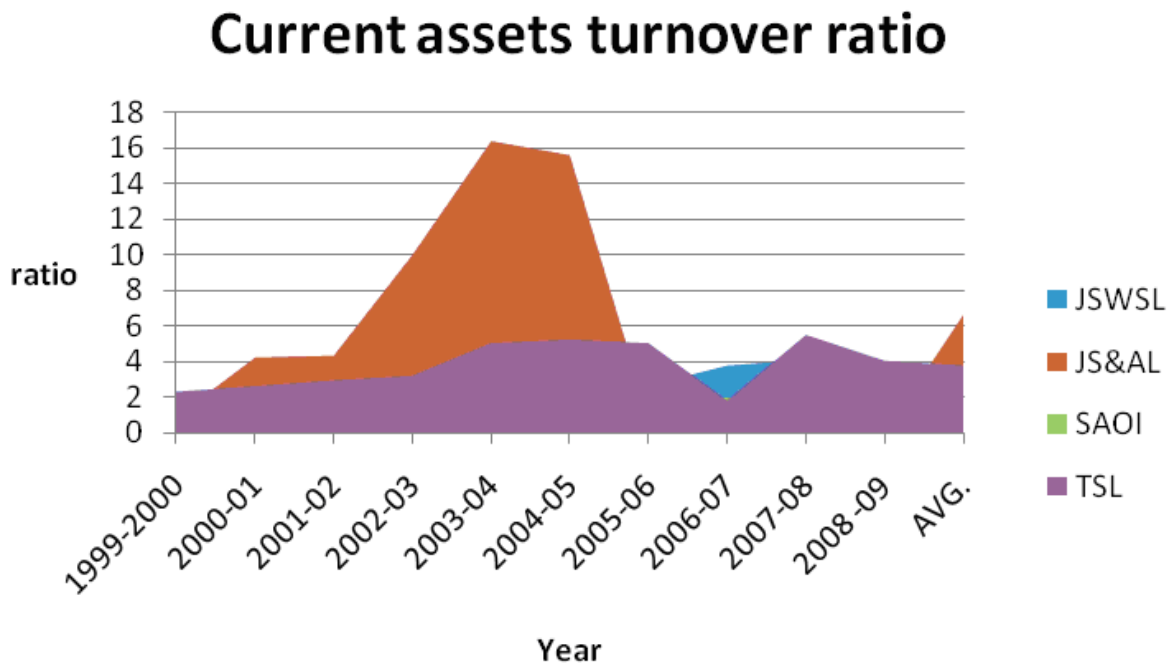
Table No.5.22

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.

REFERENCE:

1. Bion B. Howard & Miller Upton : Introduction to Business Finance, Op. Git., P. 147
2. J.F. Weston & E.F. Brigham : Essential of Managerial Finance, Op.Git, P.48
3. Sam R. Goodman : Op. Git., P.29
4. R.S. Kulshrestha : Profitability in India's Steel Industry during the Decade 1960-70, A Thesis Submitted to University of Rajasthan, P.83
5. Pearson Hunt, et. al, :Basic Business Finance-Text and Cases, OP, Cit.,P.13
6. Richard M. Lynch et. aLAccounting for Managerial Planning and Control, (New Delhi: Tata McGraw Hill Publishing Co. Ltd., 1983), P.331
7. C. Mean Cardiner : "Collective Capitalization and Economic Theory", The Science Magazine, August 16, 1957
8. Earnest Dale:American Economics Review,"The Social & MoraleResponsibility of the Executive in the Large Corporation, May, 1961, P.540
9. D.C. Jain:The Chartered Accountant, "Concept of Value Added", May, 1987, P.54
10. T.P. Gosh The Indian Journal of Commerce', "Reporting of Business Health: An Alternative Approach Based on Value Added Cash Flow", Vol. XXXVII, No. 138, January-March 1984, P.19
11. N.L. Hingorani, A.R. Management Accounting (New Delhi: S.Chand Ramanathan & T.S. & Sons, 1980), P.123 Grewal
12. Howard & Upton Op. Git, P.150
13. J.C. Van Home Fundamental of Financial Management, Op. Cit., P.40
14. Lbid P.43
15. Kenneth, R. Rickey How Accountants can Help Management quoted in S.C. Kuchhil,, Financial Management, (Allahabad: Chairtungya Publishing House, 1982), P.64
16. Keenth, R. Rickey NAA Bulletin, "How Accountants Can Help Management Manage," (July, 1963), P.P. 25-36
17. Nelson A. Tom & Miller Paul Modern Management Accounting, Op. Cit, P.51
18. I.M. Pandey Op. Cit., P. 517

19. S.C. Kuchhal Indian Management. "Ratio Charts for Top Management", (May-June, 1968), P.P. 44-50
19. S.C. Kuchhal Financial Managements, Op. Cit., P.71
20. Egra Soloman & John J. Pringle 'An Introduction to Management, Indian' Edition, (New Delhi: Prentice Hall of India Pvt. Ltd., 1978), P.89
21. S.B. Chowdhary 'Management Accountancy', (New Delhi: Kalyani Publishers, 1977), P.45
22. R.N. Anthony & J.S. Reece Management Accounting, (Illinois: R.D. Irwin, 1975), P.248
23. N.L.Hingorani, A.R. Ramanathan & T.S.G.rewal Op. Cit., P.127
24. J.C. Van Home 'Financial Management and Policy', Op. Cit., P.726
25. M.Y. Khan & P.K. Jain Financial Management, (New Delhi: Tata McGraw Hill Publishing Co. Ltd., 1982), P.139
26. I.M. Pandey 'Accounting Journal', "Concept of Earning Power", VollV April 1980, (Rajasthan Accounting Association).
27. R.D. Kennedy & S.Y. Mullen Financial Statements-form, Analysis and Interpretation, Op. Cit., P.53
28. M.M. Krishan Corporation Finance-An Introduction to Principle and Practices, (New York: Harper & Row, 1975), P. 180
29. M. Copeland Ronald, E. Dasher, Paul & Dairson L. Dale Financial Accounting, (New York: John Wiley & Sons, 1976), P.431
30. R. Warwick Dobson Letter Published in Cost Accountant (Vol. 38, No.12, December, 1960), P.142
31. J. Singh & R. Paul Op. Cit, P.84
32. Ibid P. 83
33. J. Betty Management Accounting (London: McDonald & Evan, 1971), P.382
34. J.R. Brown & L.R. Howard Principles and Practice of Management Accountancy, (London: McDonald & Evans Ltd., 1975), P.630
35. Kreps Jr. H. Clifton & Wacht F. Richard Financial Administration, (Hinsdale, Illinois: Dryden Press, 1975), P.46
36. R.N. Anthonay & J.S. Reece Management Accounting-Text & Cases, Op. Cit, P.346
37. Manmohan & S,N. Goyal 'Principles of Management Accounting', (Agra: Sahitya Bhawan, 1979), P. 144

38. **J-f. Weston & E.F. Brigham Managerial Finance Op. Cit, P. 88**
39. **Bierman, Jr., Harold & Alien R. Derbin 'Financial Accounting¹, An Introduction, Op. Cit. P. 364 40 I.M. Pandey Op. Cit., P.524**
41. **A. Basant & C. Raj Corporate Financial Management, (New Delhi: Tata McGraw Hill Publishing Co., Ltd., 1978), P.154**
42. **E.E. Lincoln Applied Business Finance, Op. Cit., P. 714**
43. **J.R. Monga Topics in Financial Accounting, (New Delhi: National Publishing House, 1981), P.51**
44. **J, Singh & R. Paul Management Accounting (Allahabad: Kitab Mahal, 1982), P.30**
45. **J.I. Bogen Financial Hand Book, Op.Cit, PP.751-752**
46. **I.M. Pandey Op.Cit., P.121**
47. **N.K. Kulshrestha Analysis of Financial Statements of Indian Paper Industry, Ph.D. Thesis, University of Rajasthan, Jaipur, 1972**
48. **H.G. Guthmann Op. Cit., P.121**

CHAPTER:- 6
Analysis of Receivable Management

Particular	Page No.
Introduction	166
Meaning and definition	166
Factors affecting the size of receivables	172
Principal of Credit and Management	175
Objectives of Credit Management	177
Aspect of Credit Policy	178
Determination of Credit Policy	179
Collection of Accounts Receivables	186
Types of Collection Efforts	187
Degree of Collection Efforts	187
Collection Follow-up System	188
Credit control	189
Control of receivable	190
Payment Pattern Approach	191
Analysis of Credit Discount Costs	192
Computation	193
Receivables Management in selected steel companies in India	193
Reference	205

INTRODUCTION:

Management of trade credit is commonly known as Management of Receivables. Receivables are one of the three primary components of working capital, the other being inventory and cash, the other being inventory and cash. Receivables occupy second important place after inventories and thereby constitute a substantial portion of current assets in several firms. The capital invested in receivables is almost of the same amount as that invested in cash and inventories. Receivables thus, form about one third of current assets in India. Trade credit is an important market tool. As, it acts like a bridge for mobilization of goods from production to distribution stages in the field of marketing. Receivables provide protection to sales from competitions. It acts no less than a magnet in attracting potential customers to buy the product at terms and conditions favourable to them as well as to the firm. Receivables management demands due consideration not financial executive not only because cost and risk are associated with this investment but also for the reason that each rupee can contribute to firm's net worth.

MEANING AND DEFINITION:

When goods and services are sold under an agreement permitting the customer to pay for them at a later date, the amount due from the customer is recorded as accounts receivables; So, receivables are assets accounts representing amounts owed to the firm as a result of the credit sale of goods and services in the ordinary course of business. The value of these claims is carried on to the assets side of the balance sheet under titles such as accounts receivable, trade receivables or customer receivables. This term can be defined as "debt owed to the firm by customers arising from sale of goods or services in ordinary course of business." ¹ According to Robert N. Anthony, "Accounts receivables are amounts owed to the business enterprise, usually by its customers. Sometimes it is broken down into trade accounts receivables; the former refers to amounts owed by customers, and the latter refers to amounts owed by employees and others". ²

Generally, when a concern does not receive cash payment in respect of ordinary sale of its products or services immediately in order to allow them a reasonable period of time to pay for the goods they have received. The firm is said to have granted trade credit. Trade credit thus, gives rise to certain receivables or book debts expected to be collected by the firm in the near future. In other words, sale of goods on credit converts finished goods of a selling firm into receivables or book debts, on their maturity these receivables are realized and cash

is generated. According to prasanna Chandra, "The balance in the receivables accounts would be; average daily credit sales x average collection period." ³

The book debts or receivable arising out of credit has three dimensions:⁷-

- It involves an element of risk, which should be carefully assessed. Unlike cash sales credit sales are not risk less as the cash payment remains unreceived.
- It is based on economics value. The economic value in goods and services passes to the buyer immediately when the sale is made in return for an equivalent economic value expected by the seller from him to be received later on.
- It implies futurity, as the payment for the goods and services received by the buyer is made by him to the firm on a future date.

The customer who represent the firm's claim or assets, from whom receivables or book-debts are to be collected in the near future, are known as debtors or trade debtors. A receivable originally comes into existence at the very instance when the sale is affected. But the funds generated as a result of these sales can be of no use until the receivables are actually collected in the normal course of the business. Receivables may be represented by acceptance; bills or notes and the like due from others at an assignable date in the due course of the business. As sale of goods is a contract, receivables too get affected in accordance with the law of contract e.g. Both the parties (buyer and seller) must have the capacity to contract, proper consideration and mutual assent must be present to pass the title of goods and above all contract of sale to be enforceable must be in writing. Moreover, extensive care is needed to be exercised for differentiating true sales from what may appear to be as sales like bailment, sales contracts, consignments etc. Receivables, as are forms of investment in any enterprise manufacturing and selling goods on credit basis, large sums of funds are tied up in trade debtors. Hence, a great deal of careful analysis and proper management is exercised for effective and efficient management of Receivables to ensure a positive contribution towards increase in turnover and profits.

When goods and services are sold under an agreement permitting the customer to pay for them at a later date, the amount due from the customer is recorded as accounts receivables; so, receivables are assets accounts representing amounts owed to the firm as a result of the credit sale of goods and services in the ordinary course of business. The value of these claims is carried on to the assets side of the balance sheet under titles such as accounts receivable, trade receivables or customer receivables. This term can be defined as "debt owed

to the firm by customers arising from sale of goods or services in ordinary course of business." ¹ According to Robert N. Anthony, "Accounts receivables are amounts owed to the business enterprise, usually by its customers. Sometimes it is broken down into trade accounts receivables; the former refers to amounts owed by customers, and the latter refers to amounts owed by employees and others". ²

Generally, when a concern does not receive cash payment in respect of ordinary sale of its products or services immediately in order to allow them a reasonable period of time to pay for the goods they have received. The firm is said to have granted trade credit. Trade credit thus, gives rise to certain receivables or book debts expected to be collected by the firm in the near future. In other words, sale of goods on credit converts finished goods of a selling firm into receivables or book debts, on their maturity these receivables are realized and cash is generated. According to prasanna Chandra, "The balance in the receivables accounts would be; average daily credit sales x average collection period." ³

The book debts or receivable arising out of credit has three dimensions:⁷-

- It involves an element of risk, which should be carefully assessed. Unlike cash sales credit sales are not risk less as the cash payment remains unreceived.
- It is based on economics value. The economic value in goods and services passes to the buyer immediately when the sale is made in return for an equivalent economic value expected by the seller from him to be received later on.
- It implies futurity, as the payment for the goods and services received by the buyer is made by him to the firm on a future date.

The customer who represent the firm's claim or assets, from whom receivables or book-debts are to be collected in the near future, are known as debtors or trade debtors. A receivable originally comes into existence at the very instance when the sale is affected. But the funds generated as a result of these sales can be of no use until the receivables are actually collected in the normal course of the business.

Receivables may be represented by acceptance; bills or notes and the like due from others at an assignable date in the due course of the business. As sale of goods is a contract, receivables too get affected in accordance with the law of contract e.g. Both the parties (buyer and seller) must have the capacity to contract, proper consideration and mutual assent must be present to pass the title of goods and above all contract of sale to be enforceable must be in writing. Moreover, extensive care is needed to be exercised for differentiating true sales form what may appear to be as sales like bailment, sales contracts, consignments etc.

Receivables, as are forms of investment in any enterprise manufacturing and selling goods on credit basis, large sums of funds are tied up in trade debtors. Hence, a great deal of careful analysis and proper management is exercised for effective and efficient management of Receivables to ensure a positive contribution towards increase in turnover and profits.

Instruments Indicating Receivables

Harry Gross⁴ has suggested three general instruments in a concern that provide proof of receivables relationship. They are briefly discussed below: -

Open Book Account

This is an entry in the ledger of a creditor, which indicates a credit transaction. It is no evidence of the existences of a debt under the Sales of Goods.

Negotiable Promissory Note

It is an unconditional written promise signed by the maker to pay a definite sum of money to the bearer, or to order at a fixed or determinable time. Promissory notes are used while granting an extension of time for collection of receivables, and debtors are unlikely to dishonor its terms.

Increase in Profit

As receivables will increase the sales, the sales expansion would favorably raise the marginal contribution proportionately more than the additional costs associated with such an increase. This in turn would ultimately enhance the level of profit of the concern.

Meeting Competition

A concern offering sale of goods on credit basis always falls in the top priority list of people willing to buy those goods. Therefore, a firm may resort granting of credit facility to its customers in order to protect sales from losing it to competitors. Receivables acts as an attracting potential customers and retaining the older ones at the same time by weaning them away firm the competitors.

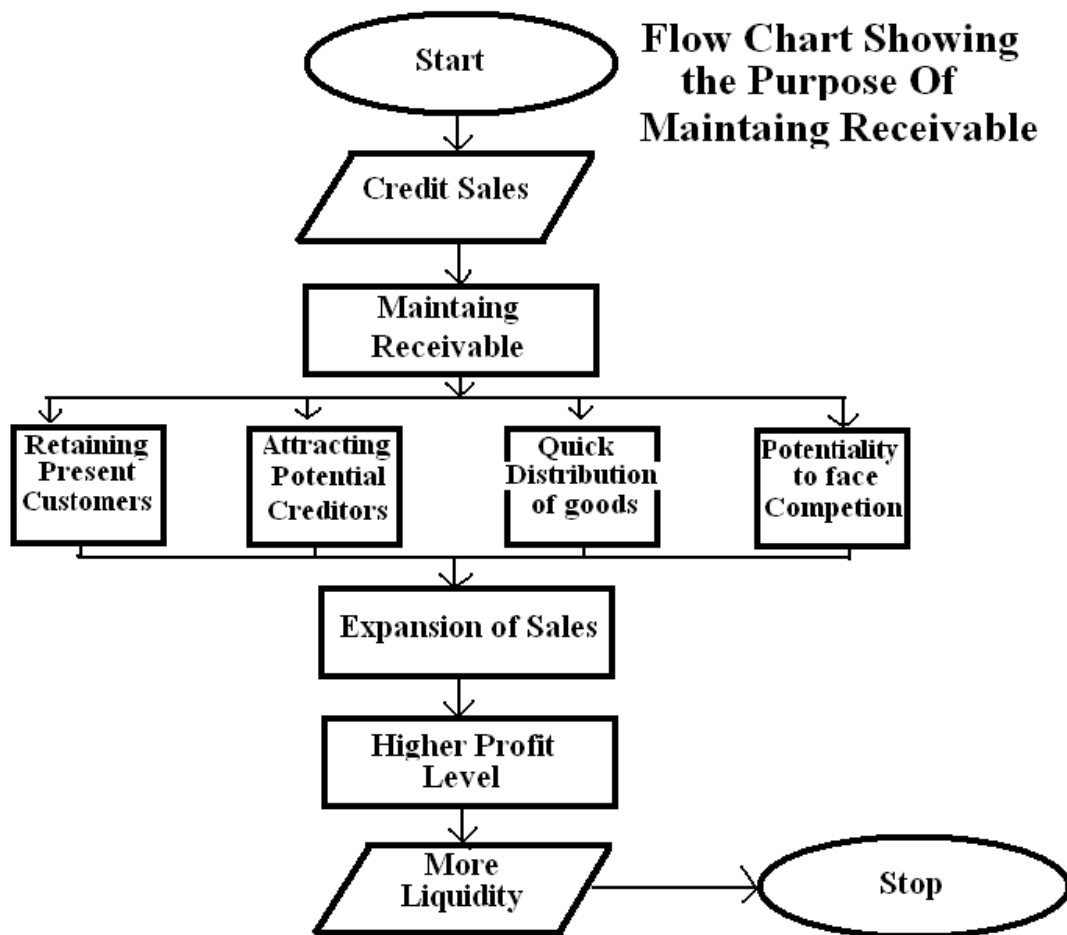
Augment Customer's Resources

Receivables are valuable to the customers on the ground that it augments their resources. It is favoured particularly by those customers, who find it expensive and cumbersome to borrow from other resources. Thus, not only the present customers but also the Potential creditors are attracted to buy the firm's product at terms and conditions favourable to them.

Speedy Distribution

Receivables play a very important role in accelerating the velocity of distributions. As a middleman would act quickly enough in mobilizing his quota of goods from the productions place for distribution without any hassle of immediate cash payment. As, he can pay the full amount after affecting his sales. Similarly, the customers would hurry for purchasing their needful even if they are not in a position to pay cash instantly. It is for these receivables are regarded as a bridge for the movement of goods form production to distributions among the ultimate consumer. ;

Figure No.6.1



Miscellaneous

The usual practice companies may resort to credit granting for various other reasons like industrial practice, dealers relationship, status of buyer, customers requirements, transits delay etc. In nutshell, the overall objective of making such commitment of funds in the name of accounts receivables aims at generating a large flow of operating revenue and earning

more than what could be possible in the absence of such commitment. Figure 6.1 further provides an easy explanation to the purpose for which they are maintained.

Cost of Maintaining Receivables

Receivables are a type of investment made by a firm. Like other investments, receivables too feature a drawback, which are required to be maintained for long that it known as credit sanction. Credit sanction means tie up of funds with no purpose to solve yet costing certain amount to the firm. Such costs associated with maintaining receivables are detailed below: -

1. Administrative Cost

If a firm liberalizes its credit policy for the good reasons of either maximizing sales or minimizing erosion of sales, it incurs two types of costs:

(A) Credit Investigation and Supervision Cost.

As a result of lenient credit policy, there happens to be a substantial increase in the number of debtors. As a result the firm is required to analysis and supervises a large volume of accounts at the cost of expenses related with acquiring credit information either through outside specialist agencies or form its own staff.

(B) Collection Cost

A firm will have to intensify its collection efforts so as to collect the outstanding bills especially in case of customers who are financially less sound. It includes additional expenses of credit department incurred on the creation and maintenance of staff, accounting records, stationary, postage and other related items.

2. Capital Cost

There is no denying that maintenance of receivables by a firm leads to blockage of its financial resources due to the tie log that exists between the date of sale of goods to the customer and the date of payment made by the customer. But the bitter fact remains that the firm has to make several payments to the employees, suppliers of raw materials and the like even during the period of time lag. As a consequence, a firm is liable to make arrangements for meeting such additional obligations from sources other than sales. Thus, a firm in the course of expanding sales through receivables makes way for additional capital costs.

3. Production and Selling Cost

These costs are directly proportionate to the increase in sales volume. In other words, production and selling cost increase with the very expansion in the quantum of sales. In this respect, a firm confronts two situations; firstly when the sales expansion takes place within the range of existing production capacity, in that case only variable costs relating to the production and sale would increase. Secondly, when the production capacity is added due to expansion of sales in excess of existing production capacity. In such a case incremental production and selling costs would increase both variable and fixed costs.

4. Delinquency Cost

This type of cost arises on account of delay in payment on customer's part or the failure of the customers to make payments of the receivables as and when they fall due after the expiry of the credit period. Such debts are treated as doubtful debts. They involve: -

- (i) Blocking of firm's funds for an extended period of time,
- (ii) Costs associated with the collection of overheads, remainders legal expenses and on initiating other collection efforts.

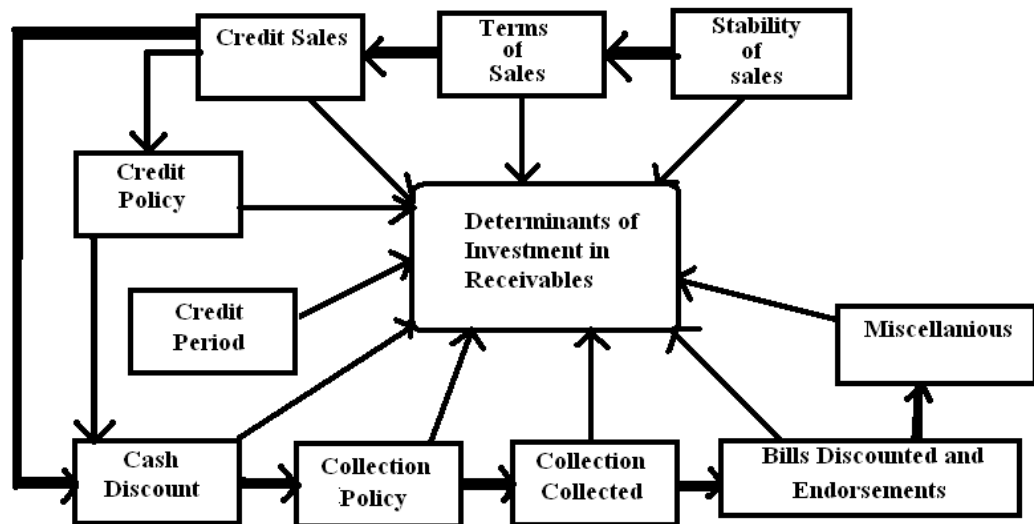
5. Default Cost

Similar to delinquency cost is default cost. Delinquency cost arises as a result of customers delay in payments of cash or his inability to make the full payment from the firm of the receivables due to him. Default cost emerges a result of complete failure of a defaulter (customer) to pay anything to the firm in return of the goods purchased by him on credit. When despite of all the efforts, the firm fails to realize the amount due to its debtors because of him complete inability to pay for the same. The firm treats such debts as bad debts, which are to be written off, as cannot be recovers in any case.

FACTORS AFFECTING THE SIZE OF RECEIVABLES:

The size of receivables is determined by a number of factors for receivables being a major component of current assets. As most of them varies from business the business in accordance with the nature and type of business. Therefore, to discuss all of them would prove irrelevant and time consuming. Some main and common factors determining the level of receivable are presented by way of diagram in figure given below and are discusses below :

Figure. 6.2



Stability of Sales

Stability of sales refers to the elements of continuity and consistency in the sales. In other words the seasonal nature of sales violates the continuity of sales in between the year. So, the sale of such a business in a particular season would be large needing a large a size of receivables. Similarly, if a firm supplies goods on installment basis it will require a large investment in receivables.

Terms of Sale

A firm may affect its sales either on cash basis or on credit basis. As a matter of fact credit is the soul of a business. It also leads to higher profit level through expansion of sales. The higher the volume of sales made on credit, the higher will be the volume of receivables and vice-versa.

The Volume of Credit Sales

It plays the most important role in determination of the level of receivables. As the terms of trade remains more or less similar to most of the industries. So, a firm dealing with a high level of sales will have large volume of receivables.

Credit Policy

A firm practicing lenient or relatively liberal credit policy its size of receivables will be comparatively large than the firm with more rigid or signet credit policy. It is because of two prominent reasons: -

- A lenient credit policy leads to greater defaults in payments by financially weak customers resulting in bigger volume of receivables.

- A lenient credit policy encourages the financially sound customers to delay payments again resulting in the increase in the size of receivables.

Terms of Sale

The period for which credit is granted to a customer duly brings about increase or decrease in receivables. The shorter the credit period, the lesser is the amount of receivables. As short term credit ties the funds for a short period only. Therefore, a company does not require holding unnecessary investment by way of receivables.

Cash Discount

Cash discount on one hand attracts the customers for payments before the lapse of credit period. As a tempting offer of lesser payments is proposed to the customer in this system, if a customer succeeds in paying within the stipulated period. On the other hand reduces the working capital requirements of the concern. Thus, decreasing the receivables management.

Collection Policy

The policy, practice and procedure adopted by a business enterprise in granting credit, deciding as to the amount of credit and the procedure selected for the collection of the same also greatly influence the level of receivables of a concern. The more lenient or liberal to credit and collection policies the more receivables are required for the purpose of investment.

Collection Collected

If an enterprise is efficient enough in encasing the payment attached to the receivables within the stipulated period granted to the customer. Then, it will opt for keeping the level of receivables low. Whereas, enterprise experiencing undue delay in collection of payments will always have to maintain large receivables.

Bills Discounting and Endorsement

If the firm opts for discounting its bills, with the bank or endorsing the bills to the third party, for meeting its obligations. In such circumstances, it would lower the level of receivables required in conducting business.

Quality of Customer

If a company deals specifically with financially sound and credit worthy customers then it would definitely receive all the payments in due time. As a result the firm can comfortably do with a lesser amount of receivables than in case where a company deals with customers having financially weaker position.

Miscellaneous

There are certain general factors such as price level variations, attitude of management type and nature of business, availability of funds and the lies that play considerably important role in determining the quantum of receivables.

PRINCIPLES OF CREDIT MANAGEMENT:

Joseph L. Wood is of the opinion, "The purpose of any commercial enterprise is the earning of profit, credit in itself is utilized to increase sale, but sales must return a profit."⁵ The primary objective of management or receivables should not be limited to expansion of sales but should involve maximization of overall returns on investment. So, receivables management should not be confined to mere collection or receivables within the shortest possible period but is required to focus due attention to the benefit-cost trade-off relating to numerous receivables management.

In order to add profitability, soundness and effectiveness to receivables management, an enterprise must make it a point to follow certain well-established and duly recognized principles of credit management."The first of these principles relate to the allocation of authority pertaining to credit and collections of some specific management. The second principle puts stress on the selection of proper credit terms. The third principles emphasizes a through credit investigation before a decision on granting a credit is taken. And the last principle touches upon the establishment of sound collection policies and procedures."⁶ In the light of this quotation the principles of receivables management can be stated as: -

1. Allocation or Authority

The determination of sound and effective credit collection policies management. The efficiency of a credit management in formulation and exestuation of credit and collection policies largely depends upon the location of credit department in the organizational structure f the concern. The aspect of authority allocation can be viewed under two concepts. As per the first concept, it is placed under the direct responsibility of chief finance officer for it being a function primarily financed by nature. Further, credit and collection policies lay direct influence on the solvency of the firm. "For these reasons the credit and collection function should be placed under the direct supervision of the individuals who are responsible for the firm's financial position." "There are other who suggest that business firms should strictly enforce upon their sales departments the principles that sales are insolate until the

value thereof is realised⁸ Those favoring this aspect plead to place the authority of allocation under the direct charge of the marketing executive or the sales department. To conclude "the reasonability to administer credit and collections policies may be assigned either to a financial executive or to a marketing executive or to both of them jointly depending upon the organizational structure and the objectives of the firm."⁹

2. Selection of Proper Credit Terms

The receivables management of an enterprise is required to determine the terms and conditions on the basis of which trade credit can be sanctioned to the customers are of vital importance for an enterprise. As the nature of the credit policy of an enterprise is decided on the basis of components of credit policy. These components include; credit period, cash discount and cash discount period. In practice, the credit policy of firms, vary within the range of lenient and stringent. A firm that tends to grant long period credits and its debtors include even those customers whose financial position is doubtful. Such a firm is said to be following lenient credit policy. Contrary to this, a firm providing credit sales for a relatively short period of time that too on highly selective basis only to those customers who are financially strong and have proven their credit worthiness is said to be following stringent credit policy.

3. Credit Investigation

A firm if desires to maintain effective and efficient receivables management of receivables must undertake a thorough investigation before deciding to grant credit to a customer. The investigation is required to be carried on with respect to the credit worthiness and financial soundness of the debtors, so as to prevent the receivables for falling into the category of bad debts later on at the time of collection. Credit investigation is not only carried on beforehand. But in the case of firms practicing liberal credit policy such investigation may be required to be conducted when a debtors fails to make payments of receivables due on him even after the expiry of credit sale so as to save doubtful debts from becoming bad debts.

4. Sound Collection Policies and Procedures

Receivables management is linked with a good degree of risk. As a few debtors are slow payers and some are non-payers. How-so-ever efficient and effective a receivables management may be the element of risk cannot be avoided altogether but can be minimized to a great extent, it is for this reason the essence of sound collection policies and procedures arises. A sound collection policy aims at accelerating collection from slow payer and

reducing bad debts losses. As a good collection policies ensures prompt and regular collection by adopting collection procedures in a clear-cut sequence.

OBJECTIVES OF CREDIT MANAGEMENT:

The objective of receivables management is to promote sales and profit until that is reached where the return on investment in further finding of receivable is less than the cost of funds raised to finance that additional credit (i.e., cost of capital). The primary aim of receivables management is not in minimizing the value of the firm while maintaining a reasonable balance between risk (in the form of liquidity) and profitability. The main purpose of maintain receivables is not sales maximization nor is for minimization of risk involved by way of bad debts. Had the main objective being growth of sales, the concern, would have opened credit sales for all sort of customers. Contrary to this, if the aim had been minimization of risk of bad debts, the firm would not have made any credit sale at all. That means a firm should indulge in sales expansion by way of receivables only until the extent to which the risk remains within an acceptably manageable limit.

All in all, the basic target of management of receivables is to enhance the overall return on the optimum level of investment made by the firm in receivables. The optimum investment is determined by comparing the benefits to be derived from a particular level of investment with the cost of maintaining that level. The costs involve not only the funds tied up in receivables, but also losses from accounts that do not pay. The latter arises from extending credit too leniently.

A brief inference of objectives of management of receivables may be given as under: -

- To attain not maximum possible but optimum volume of sales.
- To exercise control over the cost of credit and maintain it on a minimum possible level.
- To keep investments at an optimum level in the form of receivables.
- To plan and maintain a short average collection period.

Granting of credit and its proper and effective management is not possible without involvement of any cost. These costs are credit administrative expenses bad debts losses, opportunity costs etc. As mentioned before these costs cannot be possibly eliminated altogether but should essentially be regulated and controlled. Elimination of such costs simply mean reducing the cost of zero i.e. no credit grant is permitted to the debtors. In that case firm would no doubt escape from incurring these costs yet the other face of coin would reflect that the profits foregone on account of expected rise in sales volume made on credit

amounts much more than the costs eliminated. Thus, a firm would fail to materialize the objective of increasing overall return of investment. The period goal of receivables management is to strike a golden mean among risk, liquidity and profitability turns out to be effective marketing tool. As it helps in capturing sales volume by winning new customers besides retaining to old ones.

ASPECT OF CREDIT POLICY:

The discharge of the credit function in a company embraces a number of activities for which the policies have to be clearly laid down. Such a step will ensure consistency in credit decisions and actions. A credit policy thus, establishes guidelines that govern grant or reject credit to a customer, what should be the level of credit granted to a customer etc. A credit policy can be said to have a direct effect on the volume of investment a company desires to make in receivables.

A company falls prey of many factors pertaining to its credit policy. In addition to specific industrial attributes like the trend of industry, pattern of demand, pace of technology changes, factors like financial strength of a company, marketing organization, growth of its product etc. also influence the credit policy of an enterprise. Certain considerations demand greater attention while formulating the credit policy like a product of lower price should be sold to customer bearing greater credit risk. Credit of smaller amounts results, in greater turnover of credit collection. New customers should be least favored for large credit sales. The profit margin of a company has direct relationship with the degree or risk. They are said to be inter-woven. Since, every increase in profit margin would be counterbalanced by increase in the element of risk. As observed by Harry Gross, "Two very important considerations involved in incurring additional credit risk are: the market for a company's product and its capacity to satisfy that market. If the demand for the seller's product is greater than its capacity to produce, then it would be more selective in granting credit to its customers. Conversely, if the supply of the product exceeds the demand, the seller would be more likely to lower credit standards with resulting greater risk."¹⁰ Such a conditions would appear in case of a company having excess capacity coupled with high profitability and increased sales volume.

Credit policy of every company is at large influenced by two conflicting objectives irrespective of the native and type of company. They are liquidity and profitability. Liquidity can be directly linked to book debts. Liquidity position of a firm can be easily improved without affecting profitability by reducing the duration of the period for which the credit is

granted and further by collecting the realized value of receivables as soon as they fails due. To improve profitability one can resort to lenient credit policy as a booster of sales, but the implications are: -

1. Changes of extending credit to those with weak credit rating.
2. Unduly long credit terms.
3. Tendency to expand credit to suit customer's needs; and
4. Lack of attention to over dues accounts.

DETERMINATION OF CREDIT POLICY:

The evaluation of a change in a firm's credit policy involves analysis of:

1. Opportunity cost of lost contribution.
2. Credit administration cost and risk of bad-debt losses.

Above Figure shows that contrary relationship that exists between the two costs. If a company adopts stringent credit policy, there occurs considerable reduction in the level of profitability (shown by curve AB) by the liquidity position stands story (represented by CD Curve). However, the firm losses in terms of contribution due to higher opportunity cost resulting form lost sales. Yet, the credit administrative cost & risk of bad debt losses are quite low. Contrary to this, a company resorting to liberal credit policy has it profitability curve AB rising above liquidity curve CD disclosing that its profitability level is quiet high but the problem of liquidity becomes evident as a result of heavy investment in receivables due to increased sales. Besides this, the opportunity costs of such a firm declines as the firm raptures lost contribution. But the credit administrative costs increase as more accounts are to be handled and also there is rise in risk of bad debt losses. The point E in the figure denotes the state of equilibrium between profitability curve (AB) and Liquidity curve (CD) depicting that the operating profits are maximum. So, point E provides the firm with an appropriate credit policy determined by tradeoff between opportunity costs and credit administrative cost and bad debt losses.

As a matter of fact, point E may not necessarily be representative of optimum credit policy. Optimum credit policy does not mean the point at which balance between liquidity and profitability can be maintained. Instead, an optimum credit policy is one that maximizes the firm's is achieved when marginal rate of return i.e. incremental rate of return on investment becomes equal to marginal cost of capital i.e. incremental cost of funds used to

finance the investment. The incremental rate of return is obtained by dividing incremental investment in receivables. While the incremental cost of funds, is the rate of return expected by firm granting the credit. This rate of return is not equal to borrowing rate. As in case of firm following loose credit policy, higher rate of return means higher risk of invest in A/c's receivables due to slow paying and defaulting accounts.

To sum up, in order to achieve the goal of maximizing the value of the firm the evaluation of investment in receivables accounts should involve the following four steps:

1. Estimation of incremental operating profit,
2. Estimation of incremental investment in accounts receivables,
3. Estimation of the incremental rate of return of investment,
4. Comparison of incremental rate of return with the required rate of return.

The reality, it is rather a different task to establish an optimum credit policy as the best combination of variables of credit policy is quite difficult to obtain. The important variables of credit policy should be identified before establishing an optimum credit policy. The three important decisions variables of credit policy are:

1. Credit terms,
2. Credit standards, and
3. Collection policy.

1. Credit Terms

Credit terms refer to the stipulations recognized by the firms for making credit sale of the goods to its buyers. In other words, credit terms literally mean the terms of payments of the receivables. A firm is required to consider various aspects of credit customers, approval of credit period, acceptance of sales discounts, provisions regarding the instruments of security for credit to be accepted are a few considerations which need due care and attention like the selection of credit customers can be made on the basis of firms, capacity to absorb the bad debt losses during a given period of time. However, a firm may opt for determining the credit terms in accordance with the established practices in the light of its needs. The amount of funds tied up in the receivables is directly related to the limits of credit granted to customers. These limits should never be ascertained on the basis of the subjects own requirements, they should be based upon the debt paying power of customers and his ledger

record of the orders and payments. There are two important components of credit terms which are detailed below:-

- (A) Credit period and
- (B) Cash discount terms

(A) Credit period

According to Martin H. Seiden, "Credit period is the duration of time for which trade credit is extended. During this time the overdue amount must be paid by the customers."¹¹ The credit period lays its multi-faced effect on many aspects the volume of investment in receivables; its indirect influence can be seen on the net worth of the company. A long period credit term may boost sales but it's also increase investment in receivables and lowers the quality of trade credit. While determining a credit period a company is bound to take into consideration various factors like buyer's rate of stock turnover, competitors approach, the nature of commodity, margin of profit and availability of funds etc.

The period of credit differs from industry to industry. In practice, the firms of same industry grant varied credit period to different individuals. as most of such firms decide upon the period of credit to be allowed to a customer on the basis of his financial position in addition to the nature of commodity, quality involved in transaction, the difference in the economic status of customer that may considerably influence the credit period.

The general way of expressing credit period of a firm is to coin it in terms of net date that is, if a firm's credit terms are "*Net 30*", it means that the customer is expected to repay his credit obligation within 30 days. Generally, a free credit period granted, to pay for the goods purchased on accounts tends to be tailored in relation to the period required for the business and in turn, to resale the goods and to collect payments for them.

A firm may tighten its credit period if it confronts fault cases too often and fears occurrence of bad debt losses. On the other side, it may lengthen the credit period for enhancing operating profit through sales expansion. Anyhow, the net operating profit would increase only if the cost of extending credit period will be less than the incremental operating profit. But the increase in sales alone with extended credit period would increase the investment in receivables too because of the following two reasons: -

- (i) Incremental sales result into incremental receivables,
- (ii) The average collection period will get extended, as the customers will be granted more time to repay credit obligation.

Determining the options credit period, therefore, involves locating the period where marginal profit and increased sales are exactly off set by the cost of carrying the higher amount of accounts receivables.

(B) Cash Discount Terms

The cash discount is granted by the firm to its debtors, in order to induce them to make the payment earlier than the expiry of credit period allowed to them. Granting discount means reduction in prices entitled to the debtors so as to encourage them for early payment before the time stipulated to the i.e. the credit period. According to Theodore N. Beckman, "Cash discount is a premium on payment of debts before due date and not a compensation for the so called prompt payment,"² Grant of cash discount beneficial to the debtor is profitable to the creditor as well. A customer of the firm i.e. debtor would be realized from his obligation to pay Soon that too at discounted prices. On the other hand, it increases the turnover rate of working capital and enables the creditor firm to operate a greater volume of working capital. It also prevents debtors from using trade credit as a source of working capital.

Cash discount is expressed is a percentage of sales. A cash discount term is accompanied by (a) the rate of cash discount, (b) the cash discount period, and (c) the net credit period. For instance, a credit term may be given as "1/10 Net 30" that mean a debtor is granted 1 percent discount if settles his accounts with the creditor before the tenth day starting from a day after the date of invoice. But in case the debtor does not opt for discount he is bound to terminate his obligation within the credit period of thirty days.

Change in cash discount can either have positive or negative implication and at times both. Any increase in cash discount would directly increase the volume of credits sale. As the cash discount reduces the price of commodity for sale. So, the demand for the product ultimately increase leading to more sales. On the other hand, cash discount lures the debtors for prompt payment so that they can relish the discount facility available to them. This in turn reduces the average collection period and bad debt expenses thereby, brining about a decline in the level of investment in receivables. Ultimately the profits would increase. Increase in discount rate can negatively affect the profit margin per unit of sale due to reduction of prices. A situation exactly reverse of the one stated above will occur in case of decline in cash discount.

As pointed out by N.K. Agarwal, 'we market out or products through established dealers. If sometimes payment is not received within the credit period, it is just not possible to deny discount as it would spoil business relations.'³ Yet, the management of business enterprises should always take note of the point that cash discount, as a percentage of invoice prices, must not be high as to have an uneconomic bearing on the financial position of the concern. It should be seen in this connection that terms of sales include net credit period so that cash discount may continue to retain its significance and might be prevented from being treated by the buyers just like quantity discount. To make cash discount an effective tool of credit control, a business enterprise should also see that is allowed to only those customers who make payments at due date. And finally, the credit terms of an enterprise on the receipt of securities while granting credit to its customers. Credit sales may be got secured by being furnished with instruments such as trade acceptance, promissory notes or bank guarantees.

2. Credit Standards

Credit standards refers to the minimum criteria adopted by a firm for the purpose of short listing its customers for extension of credit during a period of time. Credit rating, credit reference, average payments periods a quantitative basis for establishing and enforcing credit standards. The nature of credit standard followed by a firm can be directly linked to changes in sales and receivables. In the opinion of Van Home, "There is the cost of additional investment in receivables, resulting from increased sales and a slower average collection period."¹⁴

A liberal credit standard always tends to push up the sales by luring customers into dealings. The firm, as a consequence would have to expand receivables investment along with sustaining costs of administering credit and bad-debt losses. As a more liberal extension of credit may cause certain customers to the less conscientious in paying their bills on time. Contrary, to these strict credit standards would mean extending credit to financially sound customers only. This saves the firm from bad debt losses and the firm has to spend lesser by a way of administrative credit cost. But, this reduces investment in receivables besides depressing sales. In this way profit sacrificed by the firm on account of losing sales amounts more than the cost saved by the firm.

Prudently, a firm should opt for lowering its credit standard only up to that level where profitability arising through expansion in sales exceeds the various costs associated

with it. That way, optimum credit standards can be determined and maintained by inducing tradeoff between incremental returns and incremental costs.

Analysis of Customers

The quality of firm's customers largely depends upon credit standards. The quality of customers can be discussed under two main aspects; average collection period and default rate.

- (i) **Average Collection Period:** It is the time taken by customers bearing credit obligation in materializing payment. It is represented in terms of the number of days, for which the credit sales remains outstanding. A longer collection period always enlarges the investment in receivables.
- (ii) **Default Rate:** This can be expressed in terms of debt-losses to the proportion of uncontrolled receivables. Default rate signifies the default risk i.e. profitability of customers failure to pay back their credit obligation.

I.M. Pandey ¹⁵ has cited three Cs of credit termed as character, capacity and condition that estimate the likelihood of default and its effect on the firms' management credit standards. Two more Cs have been added³⁵ to the three Cs of I.M. Pandey, namely; capital and collateral. All the five Cs of credit are discussed below in brief.

- (iii) **Character:** Character means reputation of debtor for honest and fair dealings. It refers to the free will or desire of a debtor of a firm to pay the amount of receivables within the stipulated time i.e. credit period. In practice, the moral of customer is considered important in valuation of credit. The character of customer loses its importance if the receivable is secured by way of appropriate and adequate security.
- (iv) **Capacity:** Capacity refers to the experience of the customers and his demonstrational ability to operate successfully. It is the capacity particularly financial ability of a customer to borrow from other sources in order to discharge his obligations to honor contract of the firm.
- (v) **Capital;** Capital refers to the financial standing of a customer. Capital acts as a guarantee of the customers' capacity to pay. But, it should be noted that a customer may be capable of paying by means of borrowing even if his capital holding are scarce.
- (vi) **Collateral:** Collaterals are the assets that a customer readily offers to the creditor (i.e. firm granting credit) as a security, which should be possessed by the firm in the event

of non-payment by the customer. A firm should be particular with regards to the real worth of assets offered to it as collateral security

- (vii) Conditions: Conditions refer to the prevailing economic and other conditions, which can place their favorable or unfavorable impact on the ability of customer to pay.

A firm must ensure that its customers have completely and accurately furnished with the above stated information. As a matter of precaution a firm should carry out credit investigation on its own level. This involves two basic steps:

- The first step involves obtaining credit information from internal and external source. Internal sources includes filling up various documents (pertaining to the financial details of the credit applicants) and records (that fulfill formalities related with extension of credit) of a concern. The external sources of information are financial statements, bank references, sales representatives' report, past experience of the concern etc.
- The second step involves analysis of credit information obtained in respect of the applicant for deciding the grant of credit as well as its quantum. A concern is free to adopt any procedure that suits its needs and fulfill the desired requirements, as there are no established procedures for analysis of information. But, it must be born in mind that the analysis procedure shall be competent enough to suit both the qualitative and quantitative aspects of the applicant. Qualitative aspect refers to customer's character, goodwill and credit worthiness. While the quantitative aspect is based on the factual information available from the applicants finances statements, his past records and the like factors. As a matter of fact the ultimate decision of credit extension and the volume of credit depend upon the subjective interpretations of his credit standing.

No doubt, credit investigation involves cost. So, it shall be conducted as per the requirements of the situations. But the fact cannot be ignored that a credit decision taken in the absence of adequate and proper investigation to save costs related with such investigation proves much more costly due to bad debts, excessive collection costs etc. Thus, credit investigation is justified on such grounds. A firm can thereby, gainfully employ such information in classifying the customers in accordance with their credit-worthiness and estimate the probable default risk. This shall also be referred to while formulating the credit standards of business enterprises.

3. Collection Policy

Collection policy refers to the procedures adopted by a firm (creditor) collect the amount of from its debtors when such amount becomes due after the expiry of credit period. R.K. Mishra States, "A collection policy should always emphasize promptness, regulating and systematization in collection efforts. It will have a psychological effect upon the customers, in that; it will make them realize the obligation of the seller towards the obligations granted. "¹⁶ The requirements of collection policy arises on account of the defaulters i.e. the customers not making the payments of receivables in time. As a few turnouts to be slow payers and some other non-payers. A collection policy shall be formulated with a whole and sole aim of accelerating collection from bad-debt losses by ensuring prompt and regular collections. Regular collection on one hand indicates collection efficiency through control of bad debts and collection costs as well as by inducing velocity to working capital turnover. On the other hand it keeps debtors alert in respect of prompt payments of their dues. A credit policy is needed to be framed in context of various considerations like short-term operations, determinations of level of authority, control procedures etc. Credit policy of an enterprise shall be reviewed and evaluated periodically and if necessary amendments shall be made to suit the changing requirements of the business. It should be designed in such a way that it co-ordinates activities of concerns departments to achieve the overall objective of the business enterprises.¹ finally, poor implementation of good credit policy will not produce optimal results.

COLLECTION OF ACCOUNTS RECEIVABLES:

Despite of firm's best precautionary efforts in escaping the bad and doubtful debts, there always exist certain number of unpaid accounts on the due date. Three-well-known causes of failure of such payments on the part of debtors (i.e. firm's customer) can be sited as:

- It may happen at times that the due date of payment slips from debtors mind and he delays in making good the payments at the right time.
- It may incidentally occur at the time of grant of credit that a firm fails to access and interpret the character, capacity, capital, Collateral and conditions correctly and appropriately.
- There may arise a considerable change in the financial position of a debtor after the credit has been granted to him by the firm.

All the above stated reasons compel a firm to formulate a collection programme to obtain recovery or receivables from delinquent account. Such programme may consist of following steps:

- Monitoring the state of receivables,
- Dispatch of letters to customers whose due date is near.
- Telegraphic and telephone advice to customers around the due date.
- Threat of legal action to overdue accounts, and
- Legal actions against overdue accounts.

TYPES OF COLLECTION EFFORTS:

A well-established collection policy always attempts at enlisting a clear-cut guidelines in order of a sequence that too in precise terms for collection of overdue from the customers. As a cord of suggestion, the sequence adopted must be capable of brining effectiveness and efficiency in collection policy. For instance, if the credit period granted to customer lapses but he does not pay. The firm should begin with a polite letter of reminder reflecting demand of payment. This may be followed by telegram or telephone or even a personal visit by firm's representative. After that a firm may proceed for legal action if the amount of receivables will remains unpaid. It should be noted that as an account becomes more and more overdue, the collection efforts becomes more personal and strict. But before initiating any legal action, the financial position of the debtor must be considered. A legal action against a customer, who bears a wear financial condition would be of no good to the firm, instead will cause customers bankruptcy reducing the chance of even a marginal amount of payment. Thus, a concern should face such a situation with patient and try to settle the account by accepting a reduced payment.

DEGREE OF COLLECTION EFFORTS:

The efforts on collection policy can be better explained by categorizing the collection efforts of a company as strict, liberal and lenient. Strict collection policy is characterized by debtor's payment on or before the due date. As a result many times debtor benefits himself with cash discount. Whereas, a lenient policy is featured by defaulters in payments of Receivables, forfeiture of cash discount etc. Such customers are often Vied future supplies, charged with interest for the period of default and May even undergo legal action pertaining to the payment of overdue amount.

A rigorous collection policy shortens the average collection period, pulls down sales and bad-debt percentage along with increasing collection expenses. A relaxed collection programme would push up sales and bad-debts percentage, lengthen the average of collection period and reduce collection expenses but enhances credit administrative cost.

A concern must make use of financial default and risk analysis; it is willing to favour liberal credit policy. Similarly, a firm can help being cautious while adopting strict collection policy for, it may offend tie customers forcing them to switch over to the competitors. Between the two extremes of rigorous and soft collection policies, there also exists flexible collection policy, which involves reminding the customers through correspondence before the due date. Optimum collection policy may be achieved by comparing costs and benefits, which will be consistent with the goal of attaining maximum value of the firm.

COLLECTION FOLLOW-UP SYSTEM:

The element of regularity is always desired in connection efforts, which primarily depends upon two pre-requisites; the development of suitable system of collection and the establishment of a congenial collection follow-up system.

As far as development and adoption of suitable collection period is concerned, it varies from industry to industry or at times from firm to firm. Therefore a congenial collection follow-up system can be established through various practices. Some of them are mentioned below:

1. Accounts Receivable Report

This device is regarded as highly useful in timely collections of receivables from debtors. It makes a successful attempt at keeping a keen eye over almost all outstanding accounts of the firm. Hence, enabling a firm to initiate appropriate and timely measure against defaulters as per the guidelines framed by the collection policy of a concern,

2. Ledger Plan or Card Tickler System

In order to establish a sound collection follow-up system ledger plan of the collection follow-up system is based on the creditor's ledger record. The card tickler system involves maintenance of cards in the name of each delinquent filed date wise in a proper sequence. The card specifies information regarding the amount, terms due date, collection actions taken so far etc. at length in detail.

3. Computer and Credit Management

Of late the use of computers has also come in vogue for the purpose or credit management. Computer helps a great deal in availing essential up-to-date information. For a

quick access to various sort of information's of all information's previously placed on receivable ledger can be placed on punched cards or tapes. Computer can also provide report on summary of all billings, payments, discount taken, amount still owned etc. In addition taken, amount still owned etc. In addition to this complete report on delinquent accounts can be obtained along with timely and accurate information regarding the five Cs of the customer. Further special reports can be prepared for a particular span of period supplemented with categorization and comparison of customer as well as adopted credit policies.

CREDIT CONTROL:

Credit control is a complex process, which costs both time and administrative costs. Broadly, speaking, the function of credit control incorporates the following elements: -

1. Checking customer's credit worthiness.
2. Prompt invoicing and follow up
3. Credit insurance,
4. Financial statements, and
5. Use of electronic data processing equipment.

1. Checking Customers Credit Worthiness

This step relates to applicants ability to pay for the goods or services opted by him. The decision pertaining to credit grant and its volume largely depends upon this assessment. The assessment can be done on the basis of financial soundness, general behavior, past records, business habits and traits. Trade reference, banker's records available with the geriatric etc. are a few of certain elements that provide relevant information for conducting this assessment.

2. Prompt Invoicing and Follow-up

This is an executive action involving prompt issue of invoice and equally close follow-up action. A continuous personal attention is required for reviewing amounts of bills receivables. Methods are selected among the various possible alternatives available to ensure that the time period is minimum between realization of payments and converting it into bank's credit account.

3. Credit Insurance

This point pertains to credit exports. As credit sales does not fall under any credit insurance policy coverage in India. It is export credit guarantee department, which formulates

appropriate rules and issues credit insurance policies for exports on payments of a nominal premium. These facilities are of high importance for credit control of exports.

4. Financial Statements

Financial statement is an important document that presents desirable sources of information to the seller regarding the financial position of customer for credit control. For the companies carrying out seasonal business, interim statements instead of financial statements are preferred. For acquiring authenticated information audited financial statement should be favoured rather than unaudited figures enclosing possibility of fraud. . . .

5. Use of Electronic Data Processing Equipment

In the modern world, the importance of computers cannot be possibly denied. Electronic data processing equipment holds its own individual importance in providing timely and accurate information pertaining to the status of accounts. The computer can provide a vast array of detailed information, previously impractical to obtain that may be useful not only to the credit manager but to other management as well. In addition to processing data the computer can be programmed to make certain routine credit decisions.

CONTROL OF RECEIVABLES:

Control or receivables largely depends upon the system of credit control practiced by a business enterprise. It becomes a part of organization obligation to obtain full and relevant information complete in all respect before deciding upon the right customer for the right amount of credit grant. Whenever an order is placed by an applicant financial position and credit worthiness becomes essential. Only after ensuring the degree of safety an order should be accepted and delivered.

A firm is expected to prepare sales invoice and credit notes as early as possible; side by side it should also ensure that they are dispatched at specified regular intervals for effective control of receivables. It is always considered good on the part of firm it is keep as separate ledger for the accounts of based and doubtful debtors. Such segregation not only helps in easy assessment of the position of bad and doubtful debtors in relation to the total debtor's position. A considerable amount of reduction in debtors can be achieved by offering cash discount to the customers.

Even in case of export sales, segregation of credit sales into separate ledger adds effectiveness to control of receivables. Sometimes large contracts, payable by installments, involve credit for several years. The price fixed in these cases should be sufficiently high not

only to cover export credit insurance, but also to cover a satisfactory rate of interest on the diminishing balances of debt expected to the outstanding during the credit period.

There are two methods of controlling accounts receivables, which are traditional in nature; days sales outstanding and ageing schedule. Though they are popularly used but they suffer from a serious deficiency. Both these methods are based on aggregation of sales and receivables due to which the changes in the pattern of payment cannot be easily detected. In order to overcome this drawback of traditional methods, a firm can make use of payments pattern approach.

PAYMENT PATTERN APPROACH:

The payment pattern approach is the key issue in controlling accounts receivables as it focuses on payment behavior. This approach is pioneered by B.R. Stone.¹⁷ W.G. Lewellen and R.W. Johnson.¹⁸ Pattern of payments are expressed mostly in terms of proportions and at times as percentage. In general:

$$P_i = P_0 + P_1 + P_2 + P_3 + \dots + P_n$$

Here, P_i represent the proportion of credit sales paid in T month and " n " is the payment horizon. And also,

$$P_0 + P_1 + P_2 + P_3 + \dots + P_n = 1$$

This is the payment pattern which is related to receivables pattern given as

Where, ' R_i ' represent the receivables collected at the end of T months and ' n ' denotes the horizon. Aggregation the receivables and payments, we obtain:

$$R_i = 1 - (P_0 + P_1 + P_2 + P_3 + \dots + P_n) + P_i$$

A conversion matrix is prepared to show the credit sales in each month relating it to the pattern of collection associated with it.

The payment pattern approach is dependent of sales level. It simply involves matching collections and receivables to sales in the month or origin. As a result this approach is free from the limitation observed in traditional methods. Moreover, this method is capable of presenting payment pattern on monthly basis as against combined sales and payment patterns. The main drawback, which we come across in this method, is that conversion matrix cannot be prepared only on the basis of published financial statements like traditional

methods; it also requires internal financial data. Still payment pattern does not require as much data as required in case of ageing schedule method.

ANALYSIS OF CREDIT DISCOUNT COSTS:

This analysis holds its own distinct utility for buyers and sellers. The main purpose of conducting this analysis is to have a fair idea about the amount of financial cost that will be borne by:

- (i) The seller, while granting such discount if the customer pays within the discount period allowed to him.
- (ii) The customer, in case he fails to make good the advantage of discount available to him.

Harry Gross has presented at length some selected credit terms and their equivalent effective annual interest rates suggesting the costs expected to be forgone by neglecting to pay within the stipulated discount period. The table 6.1 illustrates those terms and annual interest rates:

Table 6.1
Relationship Of Credit Terms And
Effective Per Annum Interest Rates

Credit Terms	Effective Per Annum Interest Rates
1/2 % 10 Days Net 30 Days	9%
1% 10 Days Net 30 Days	18%
2% 10 Days Net 30 Days	36%
2% 10 Days Net 60 Days	14%
2% 30 Days Net 60 Days	24%
2% 30 Days Net 120 Days	8%
3% 10 Days Net 30 Days	54%
5% 10 Days Net 120 Days	16%
6% 10 Days Net 60 Days	43%
8% 10 Days Net 120 Days	26%

Source: Harry Gross. P.83

COMPUTATION:

The following steps are involved in computation of the effective per annum interest rates applicable on equivalent credit terms: -

- **Calculate the number of days occurring between the last days of**
- **Discount period and the end of credit period.**
- **Divide 360 days by the number of days obtained in step.**
- **Multiply the above quotient by the rate of discount**

For illustration, if credit terms are "8/10 Net 120", then its effective annual interest rate will be:

$$\frac{360 \times 8}{(120-10)100} = 26\% \text{ approximately}$$

RECEIVABLES MANAGEMENT IN SELECTED STEEL COMPANIES IN INDIA:

For a successful credit management, it is essential for a firm to formulate its credit and collection policies directed towards the achievement of the objectives of effective use of the capital invested. For evaluating the extent of success attained by firm in their efforts the following criteria have been followed:

1.Size of Receivables.

As discussed before in this chapter there are many factors influencing the volume of receivables. But the level of enterprises credit sales is the most important determinant in this respect. Any increase or decrease in the level of sales would bring about proportionate increase or decrease in the magnitude of receivables. An efficient credit control, however, prevents faster growth in receivables vis-a-vis sales. Table 6.2 shows the size of receivables in selected steel companies during 1999-2000 to 2008-09 along with the percentage of receivables to current assets.

Table 6.2
Size of Receivables Of steel Companies in India.
(From 1999-2000 to 2008-2009)

(Rs. In crores))

company	JSWSL		JS&AL		SAIL		TSL	
	Receivable	% of C.A	Receivable	% of C.A	Receivable	% of C.A	Receivable	% of C.A
1999-2000	471.89	72.45	30.53	57.77	2893.38	36.66	1359.45	50.83
2000-01	440.71	69.02	41.41	64.88	2899.01	35.62	1456.1	52.69
2001-02	386.94	59.44	39.64	68.83	2330.68	34.02	1168.55	44.97
2002-03	419.87	57.83	11.59	58.92	2859.49	40.3	1125.9	36.58
2003-04	627.01	62.65	4.37	68.17	2764.57	34.45	838.92	35.27
2004-05	911.9	48.27	4.89	89.56	3095.29	21.81	881.73	28.96
2005-06	1496.61	58.23	6.14	83.88	3132.79	20.18	877.43	25.69
2006-07	1024.45	41.4	6.8	82.22	3940.43	20.06	939.98	8.53
2007-08	885.95	28.94	N.A	N.A	5421.04	20.81	913.66	22.58
2008 -09	1027.88	26.67	N.A	N.A	5750.85	16.9	1487.42	22.35
AVG.	769.32	52.49	18.17	71.78	3508.75	28.08	1104.91	32.84
S.D	362.07	15.8	16.21	32.05	1168.86	8.82	252.77	13.97
max	1496.61	72.45	41.41	89.56	5750.85	40.3	1487.42	52.69
min	386.94	26.67	4.37	57.77	2330.68	16.9	838.92	8.53

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

The size of receivable of all the steel companies shows fluctuating trend throughout study period. The minimum size of receivable in JSWSL is 386.94 (2001-02), JS&AL is 4.37 (2003-04), SAIL is 2330.68 (2001-02), and TSL is 838.92 (2003-0407). The maximum size of receivable in JSWSL is 1496.61 (2000-01), JS&AL is 41.41 (2003-04), SAIL is 5750.85 (2008-09), and TSL is 1487.4 .The study of the composition of receivable is a very important tool to evaluate the management of receivables. It assists to show the point where receivables are concentrated most.

The receivable to current assets of all the steel companies shows fluctuating trend throughout study period. The minimum size of receivable to current assets in JSWSL is 26.67 (2008 -09), JS&AL is 57.77 (1999-2000), SAIL is 16.9 (2008 -09), and TSL is 8.53 (2006-07). The maximum size of receivable to current assets in JSWSL is 72.45 (1999-2000), JS&AL is 89.56 (2004-05), SAIL is 40.3 (2008-09), and TSL is 52.69 in (2000-01).The study of the composition of receivable to current assets is a very important tool to evaluate the management of receivables. It assists to show the point where receivables are concentrated most.

2.Growth in Average Annual Sales and Receivables.

Indexes of sales and receivables for a length of time discloses certain facts with regards to the credit policy adopted by an enterprise e.g. If sales observe an upward trend with downward trend of debtors, it shows that the firms credit policy is capable of stimulating sales. But a condition contrary to this would have unfavorable effect both on sales and operating profits. Where as if there is upward trend both sale and receivables, it indicates that credit terms are liberal which have induced existing customers to purchase more besides attracting new customers resulting in increased sales and receivables. Under such circumstance there is possibility that receivables may grow faster than sales. This disproportionate growth in receivables results in loss rather than profit, due to inclusion of debtors of low and suspected credit standing. Table 6.3 shows the growth in annual sales and receivables in selected steel companies during 1999-2000 to 2008-09 along with the indices.

Table 6.3
Index Of Growth In Annual Sales And Receivables
Of Steel Companies In India.
(From 1999-2000 To 2008-2009)
(In Indices)

company	JSWSL		JS&AL		SAIL		TSL	
year	indices of receivable	sales indices	indices of receivable	sales indices	indices of receivable	sales indices	indices of receivable	sales indices
1999-2000	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
2000-01	93.39	144.82	135.64	581.66	100.19	99.79	107.11	116.90
2001-02	82.00	215.19	129.84	538.52	80.55	95.47	85.96	123.38
2002-03	88.98	299.72	37.96	424.58	98.83	118.59	82.82	159.00
2003-04	132.87	386.26	14.31	226.89	95.55	149.45	61.71	193.59
2004-05	193.24	756.91	16.02	183.88	106.98	195.48	64.86	257.75
2005-06	317.15	731.69	20.11	12.95	108.27	198.51	64.54	278.30
2006-07	217.10	1000.18	22.27	13.88	136.19	241.03	69.14	321.08
2007-08	187.75	1346.64	N.A	N.A	187.36	280.10	67.21	360.43
2008 -09	217.82	1627.73	N.A	N.A	198.76	298.97	109.41	436.03
AVG.	163.03	660.91	59.52	260.29	121.27	177.74	81.28	234.65
S.D	76.73	529.13	53.11	228.67	40.40	76.82	18.59	114.54
max	317.15	1627.73	135.64	581.66	198.76	298.97	109.41	436.03
min	82.00	100.00	14.31	12.95	80.55	95.47	61.71	100.00

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

The table reveals that there was an upward trend both sales and receivable of JSWSL during the study period. The average of sales indices (660.91) and receivables indices (163.03) indicates that the sales grow faster than receivables, which indicates that credit

terms are less liberal. The sales had increasing trend throughout the study period while receivable also indicates increasing trend having some fluctuations. In the beginning of study period the receivable grow faster than sales but at the end of the study period the sales grow faster than receivables which show that the JS&AL's credit policy is capable of stimulating sales. An increasing trend can also be observed in the values of both sales and receivable of SAIL during study period but the receivables grow faster than sales. This disproportionate growth in receivables result in loss rather than profit due to inclusion of debtors of low and suspected credit standing. There was an upward trend both sales and receivable of SAIL during the study period. The average of sales indices (177.74) and receivables indices (121.27) indicates that the sales grow faster than receivables, which indicates that credit terms are less liberal. There was a downward trend both sales and receivable of SAIL during the study period. The average of sales indices of TSL (234.65) and receivables indices (81.28) indicates that the sales grow faster than receivables, which indicates that credit terms are less liberal.

3.Composition of Receivables.

This study of components or receivables is considered as a vital tool for solving purpose of evaluation of management of receivables. Composition of centralization or contraction of receivables. A careful comparison of these points with the size of receivables enables us to apprehend the efficiency or inefficiency of the receivables management. The receivables of steel Industry under the present study are bifurcated into two main heads; trade debtors and loans and advances as given below:

(A) Sundry Debtors

Table 6.4.

The Size Of Sundry's Debtors And The Percentage Of Sundry Debtors To Current Assets In Selected Steel Companies During 1999-2000 To 2008-09 Are Also Displayed.

(In crores)

Size of debtors Ratio	J S W Steel Ltd.		Jindal Steel & Alloys Ltd.		Steel Authority Of India Ltd.		Tata Steel Ltd.	
	Debtors in Rs.	% of C.A	Debtors in Rs.	% of C.A	Debtors in Rs.	% of C.A	Debtors in Rs.	% of C.A
1999-2000	236.4	36.3	26.8	50.6	1817.4	23.0	1182.7	44.2
2000-01	278.3	43.6	36.3	56.9	1687.6	20.7	1279.3	46.3
2001-02	256.9	39.5	26.1	45.3	1389.4	20.3	1073.7	41.3
2002-03	279.6	38.5	6.2	31.6	1660.1	23.4	958.5	31.1
2003-04	406.7	40.6	0.6	10.0	1550.0	19.3	651.3	27.4
2004-05	266.6	14.1	0.1	2.2	1908.5	13.4	581.8	19.1
2005-06	241.3	9.4	0.0	0.1	1881.7	12.1	539.4	15.8
2006-07	245.2	9.9	0.0	0.0	2314.8	11.8	631.6	5.7

2007-08	337.4	11.0	0.0	N.A	3048.1	11.7	543.5	13.4
2008 -09	398.1	10.3	3.7	N.A	3024.4	8.9	636.0	9.6
AVG.	294.7	25.3	10.0	24.6	2028.2	16.5	807.8	25.4
S.D	63.7	15.3	14.0	23.8	585.3	5.4	285.6	14.9
max	406.7	43.6	36.3	56.9	3048.1	23.4	1279.3	46.3
min	236.4	9.4	0.0	0.0	1389.4	8.9	539.4	5.7

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

The table indicates that in J S W Steel Ltd. sundry debtors tend to be fluctuating throughout the study period. The size of debtors ranged between Rs. 406.7 CRORES and Rs. 236.4 CRORES. On an average debtors formed only 025.3 % of the current assets. In Jindal Steel & Alloys Ltd. the amount of debtors shows a decreasing trend having some fluctuations. Sundry debtors were Rs. 26.8 crores in 1999-2000 which decreased to Rs. 0.6 crores in 2003-04 and it was 3.7 crores in the last years of study period. The range of percentage of debtors to current assets had been lowest of 0.00% and the highest of 36.3%. In Steel Authority Of India Ltd. we can observe a fluctuating and increasing trend of size of debtors during the period of study. It ranged between Rs. 3048.1 crores and Rs. 1389.4 crores. The percentage of debtors to current assets had declined in 2003-04 and 2004-05 despite rise in the volume of debtors. This discloses the fact that though the size of debtors had increased but the increase in the size of current assets had been more than that of debtors. Debtors in Steel Authority Of India Ltd constituted only 16.5 % of current assets. Tata Steel Ltd. Showed decreasing trend with an average of Rs. 807.8 crores and standard deviation was Rs. 285.6 crores. The debtor ranged between Rs. 1279.3 and Rs. 539.4. The debtors are 25.4% of current assets

In nutshell, we can conclude that the steel companies had been conservative in nature as they tend to avoid risk factor as much as possible. The percentage of debtors to current assets was the lowest in case of Steel Authority Of India Ltd. followed by J S W Steel Ltd., Jindal Steel & Alloys Ltd. and Tata Steel Ltd.

(B) Loans and Advances

Table 6.4 displays the size of loans and advances in the selected steel companies during 1999-2000 to 2008-09. A long with the trend percentage to provide objective analysis of the data.

Table 6.5
Size Of Loans And Advances Of Steel Companies In India.
(From 1999-2000 To 2008-2009)
(Rs. In crores)

company	JSWSL		JS&AL		SAIL		TSL	
year	loan advances	indices of Loan & advances	loan advances	indices of Loan & advances	loan advances	indices of Loan & advances	loan advances	indices of Loan & advances
1999-2000	3.7	100.0	1.7	100.0	363.9	100.0	395.5	100.0
2000-01	0.6	16.9	1.7	101.8	369.1	101.5	482.5	122.0
2001-02	91.3	2493.7	1.7	101.8	345.4	94.9	532.2	134.6
2002-03	0.0	0.0	0.0	0.0	263.0	72.3	602.0	152.2
2003-04	0.0	0.0	0.0	0.0	395.7	108.8	489.5	123.8
2004-05	0.6	15.8	0.0	0.0	327.8	90.1	1082.4	273.7
2005-06	0.0	0.0	0.0	0.0	285.8	78.5	894.1	226.1
2006-07	3.5	96.2	0.0	0.0	323.9	89.0	2751.3	695.6
2007-08	14.5	395.9		N.A	397.3	109.2	2101.7	531.4
2008 -09	774.3	21154.9		N.A	441.0	121.2	3926.7	992.8
AVG.	88.84	2427.35	0.63	37.95	351.30	96.55	1325.80	335.21
S.D	242.47	6624.91	0.87	48.89	53.79	14.78	1205.27	304.74
max	774.27	21154.92	1.70	101.80	441.02	121.21	3926.74	992.83
min	0.00	0.00	0.00	0.00	263.00	72.28	395.51	100.00

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

It can be seen from the table that JSWSL had a highly fluctuated trend of loans and advances during the study period. The loans and advances were Rs. 3.7 crores in 1999-2000 which increased to Rs. 774.3 crores in 2008-09. The average of indices is 2427.35, showing a healthy increase. JS&AL had also recorded decrease in the volume of loans and advances. The trend remained above 100% for first three years of study period. In SAIL, though the value of loans and advances had observed a continuous increase till 2007-08 (reaching the highest of 441.0 percent). In 2002-03 and 2005-06 the same marginally fell which indicates that SAIL had exercised a reasonable control over the loans and advances. The average of indices during the study period was 96.55percent which shows tremendous decrease. In TSL the loan and advances ranged between Rs. 3926.74 in 2008 -09 and Rs. 395.51 in 1999-2000. The trend of loan and advances was increasing during the study period.

It may be concluded that the average of trend percentage of loans and advances in steel companies disclose that all the four companies had increased the volume of their loans and advances.

4. Accounts Receivable Turnover Ratio:

The receivables turnover ratio shows the relationship between sales and accounts receivables of a company. While calculating this ratio some prefer to divide sales by average book debts for the year (the average of book debts at the beginning and at the end of the year) to get a more reliable indicator. It can therefore be calculated as:

$$\text{Receivables Turnover Ratio} = \frac{\text{Net Sales}}{\text{Average Accounts Receivables}}$$

Where,

$$\text{Average Accounts Receivables} = \frac{\text{Opening} + \text{Closing Receivables}}{2}$$

According to Spiller and German, "The turnover of receivables provides information on liquidity of receivables." It indicates the speed or sloweres with which receivables are converted into cash. It also serves as a primary indicator of efficiency in this area of investment." An efficiency of receivables management lies in a higher turnover ratio. The profitability of the firm can be further maximized through prompt collection of receivables.

An increase in the volume of receivables without corresponding increase in the total current assets may cause decrease in the volume of investment in other components of current assets. Jerome and Sidney are of the opinion. "If the investment in inventory is reduced, it may in turn affect total sales and consequently reduce the profits of the firm.¹²⁰ but a total opposite of this may happen to be true if the investment in receivables is reduced. Table 6.6 carries the figure of accounts receivables turnover ratio in the selected steel companies during 1999-2000 to 2008-09.

Table 6.6
Accounts Receivable Turnover Ratio Of Steel Companies In India.
(From 1999-2000 To 2008-2009)
(Ratio In Times)

company	JSWSL		JS&AL		SAIL		TSL	
	ratio in times	indices	ratio in times	indices	ratio in times	indices	ratio in times	indices
1999-2000	1.97	100.00	1.52	100.00	5.64	100.00	4.53	100.00
2000-01	3.05	155.07	6.51	428.83	5.61	99.60	4.94	109.14
2001-02	5.17	262.44	6.30	414.76	6.68	118.52	6.50	143.53
2002-03	6.64	336.85	16.98	1118.41	6.76	120.00	8.69	191.98
2003-04	5.73	290.70	24.06	1585.10	8.82	156.42	14.21	313.71
2004-05	7.72	391.68	24.06	1585.10	10.30	182.73	18.00	397.39
2005-06	4.54	230.71	0.98	64.38	10.34	183.34	19.53	431.19
2006-07	9.08	460.71	0.95	62.30	9.98	176.98	21.03	464.36
2007-08	14.13	717.27	N.A	N.A	8.43	149.50	24.29	536.30
2008 -09	14.72	747.27	N.A	N.A	8.48	150.42	18.05	398.52
AVG.	7.27	369.27	10.17	669.86	8.10	143.75	13.98	308.61
S.D	4.30	218.35	9.83	647.91	1.83	32.48	7.26	160.30
max	14.72	747.27	24.06	1585.10	10.34	183.34	24.29	536.30
min	1.97	100.00	0.95	62.30	5.61	99.60	4.53	100.00

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

It may be observed from the table that the accounts receivables turnover ratio of JSWSL had fluctuated throughout the period of study from 1999-2000 to 2008-09. The ratio was 1.97 times in 1999-2000 which increased to 3.05 times in 2000-01. In 2001-02 the ratio increased to 5.17 times but thereafter it shows increasing trend and increased to 14.72 times in 2008-09 with an average of 7.27. The average of accounts receivable turnover ratio of JS&AL was 10.17 times. JS&AL had produced the best of turnover ratio among the selected steel companies. It ranged between 24.06 times in 2003-04 and 0.95 times in 2006-07. The receivable turnover ratio of SAIL 4.53 times in 1999-2000 and increased to 18.00 times 2004-05 and then it went down to 8.48 times in 2008 -09. In SAIL there was a fluctuated trend in accounts receivables turnover ratio during the study period. The average of 8.10 times too discloses a very slow speed with which the company's receivables get converted in cash. The average of indices of accounts receivable turnover ratio worked out at 143.75 showing poor performance during study period. The average ratio was 8.10 times in which showed progressive trend during the study period. The ratio was the highest of 10.34 times and lowest of 5.61 times. The receivable turnover ratio was 4.53 times in 1999-2000 and then

it went high to 14.21 times in 2003-04 and then after it has again gone up to 24.29 times in 2007-08 with an average of 13.98 times.

In nut shell, the accounts receivables turnover ratio during the study period was the highest for TSL followed by JS&AL, SAIL and JSWSL. The TSL displayed very good ratio while the JSWSL recorded proportionately very low turnover ratio.

5.Receivables to Sales Ratio

Another method of analyzing the level of investment in receivables is proportion of accounts receivables to sales. This ratio holds considerable importance in indicating the credit and collection policy adopted by a company. A higher ratio indicates greater investment in receivables and slackness in credit collection policies. While a lower ratio points out that a company is practicing strict credit and collection policy resulting in effective receivables management control. Table 6.5 shows the figures indicating receivables to sales ratio in selected steel companies during 1999-2000 to 2008-09.

Table 6.7
Receivable to Sales Ratio Of steel Companies in India.
(From 1999-2000 to 2008-2009)

(Ratio in Percentage)								
company	JSWSL	JS&AL	SAIL	TSL	JSWSL	JS&AL	SAIL	TSL
Ratio	%of Receivable	indices	%of Receivable	indices	%of Receivable	indices	%of Receivable	indices
1999-2000	50.76	100.00	65.88	100.00	17.74	100.00	22.08	100.00
2000-01	32.74	64.49	15.36	23.32	17.81	100.40	20.23	91.63
2001-02	19.34	38.10	15.88	24.11	14.97	84.37	15.38	69.67
2002-03	15.07	29.69	5.89	8.94	14.78	83.34	11.50	52.09
2003-04	17.46	34.40	4.16	6.31	11.34	63.93	7.04	31.88
2004-05	12.96	25.53	5.74	8.71	9.71	54.72	5.56	25.16
2005-06	22.00	43.35	102.33	155.33	9.68	54.54	5.12	23.19
2006-07	11.02	21.71	105.75	160.52	10.02	56.50	4.76	21.54
2007-08	7.08	13.94	N.A	N.A	11.87	66.89	4.12	18.65
2008 -09	6.79	13.38	N.A	N.A	11.79	66.48	5.54	25.09
AVG.	19.52	38.46	40.13	60.90	12.97	73.12	10.13	45.89
S.D	13.39	26.37	42.51	64.53	3.14	17.72	6.80	30.79
max	50.76	100.00	105.75	160.52	17.81	100.40	22.08	100.00
min	6.79	13.38	4.16	6.31	9.68	54.54	4.12	18.65

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

It may be observed from the table that the accounts receivables turnover ratio of JSWSL had fluctuated throughout the period of study from 1999-2000 to 2008-09. The ratio was 50.76 percent in 1999-2000 which decreased to 17.46 percent in 2003-04. In 2005-06 the ratio increased to 22.00 percent but thereafter it shows decreasing trend and reached to 6.79

percent in 2008-09 with an average of 19.52 percent. The average of accounts receivable turnover ratio of JS&AL was 40.13 percent. JS&AL had produced good turnover among the selected steel companies. It ranged between 105.75 percent in 2006-07 and 4.16 times in 2003-04. The receivable turnover ratio of SAIL 17.74 percent in 1999-2000 and decreased to 11.34 percent 2003-04 and then it went down to 9.68 percent in 2005-06. In SAIL there was a fluctuated trend in accounts receivables turnover ratio during the study period. The average of 10.13 percent too discloses a very slow speed with which the company's receivables get converted in cash. The average of indices of accounts receivable turnover ratio worked out at 45.89 showing poor performance during study period. The average ratio was 10.13 percent which showed downward trend during the study period. The ratio was the highest of 22.08 percent and lowest of 4.12 percent. The receivable turnover ratio was 22.08 percent in 1999-2000 and then it went high to 5.56 percent in 2003-04 and then after it has again gone up to 5.54 percent in 2007-08 with standard deviation of 6.80 percent.

In nut shell, the accounts receivables to sales ratio during the study period were the highest for Jindal Steel & Alloys Ltd followed by Tata Steel Ltd., J S W Steel Ltd. and Steel Authority Of India Ltd. The TSL displayed very good ratio while the JSWSL recorded proportionately very low turnover ratio.

6. Average Collection Period

The average collection period refers to the average time lag between sales and collection measurable in terms of number of days. In other words, it may be regarded as rough estimate of number of a debtor. Hence, it is a significant measure of the collection activity and quality of. Collection of book debts is the concluding stage in the function of sales transaction. It is given as:

$$\text{Average Collection Period} = \frac{365}{\text{Turnover of Receivables.}}$$

Prolonged collection period owing to delays and other reasons creates hazards in the way of sustaining business operations because of financial scarcity. Thus, slow paying customers have to be handled. As an old account causes heavy collection expenses and increase the profitability of bad debt losses. Shorter average collection periods signify better credit management and liquidity of accounts receivables. As shorter average collection period means lower of customer. Further, the sooner the firm receives the cash due on sales, the

sooner it can put the money to work for earning interest. That is the cost of a long collection period is a return (interest) lost on these funds. A rule of thumb is that the collection period should not exceed 1/3 times the regular period; that is if the company's typical terms call for payment in net 30 days, it is said that average collection period should not exceed 40 days i.e. $[30 + (30 \times 1/3)]$ Table 6.8 presents the average collection period of selected steel companies during 1999-2000 to 2008-09.

Table 6.8

Average Collection Period Of Steel Companies In India.

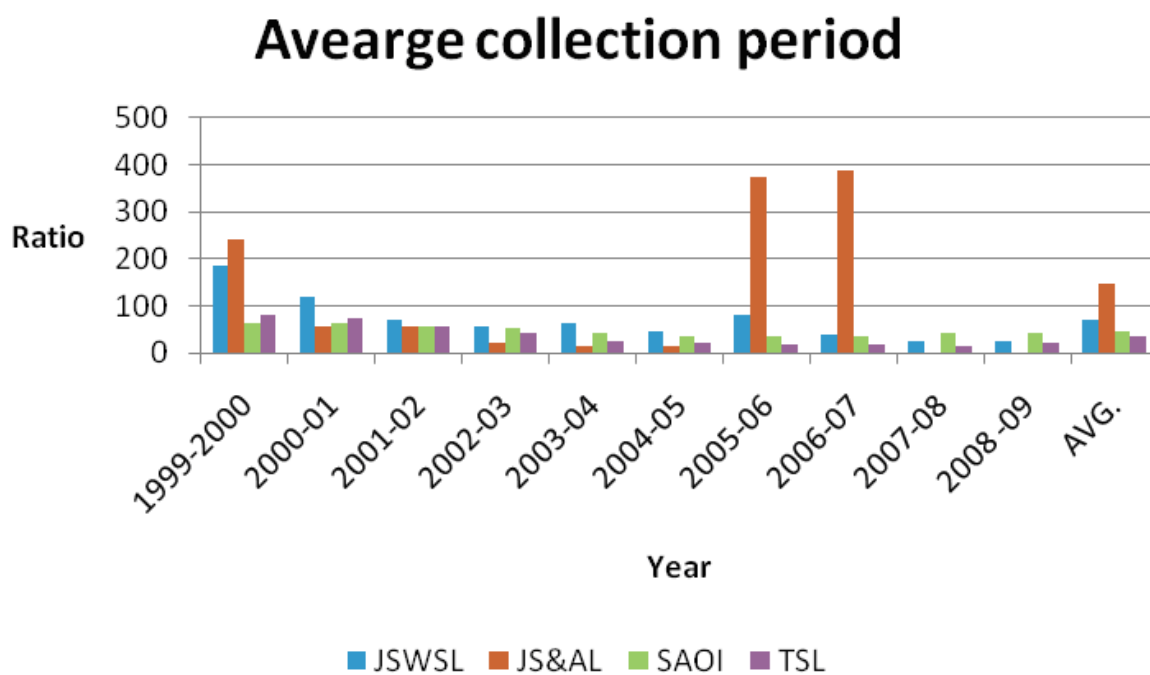
(From 1999-2000 To 2008-2009)

(Period in Days)

Comp anies	1999- 2000	2000 -01	2001 -02	2002 -03	2003 -04	2004 -05	2005 -06	2006 -07	2007 -08	2008 -09	AV G.	S.D	ma x	mi n
JSWS L	185	119	71	55	64	47	80	40	26	25	71. 26	48. 87	185 .29	24. 80
JS&A L	240	56	58	22	15	15	374	386	N.A	N.A.	145 .74	155 .58	386 .00	15. 17
SAIL	65	65	55	54	41	35	35	37	43	43	47. 34	11. 47	65. 01	35. 32
TSL	81	74	56	42	26	20	19	17	15	20	36. 99	24. 82	80. 60	15. 03
avg.	143	79	60	43	36	30	127	120	28	29	75. 33	60. 18	179 .23	22. 58

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

Graph No.6.1



It can be observed from the table JSWSL had a long average collection period of 71.26 day on an average tends to increase the possibility of bad debts losses. A wide variation from 185.29 days to 24.80 days had been registered. JS&AL must be praised for having longest ten seven years's average collection period of 145.74 days. Though during the first four study year this period the ratio had been more than the recorded ten year average. JS&AL had failed to prove the liquidity of accounts receivable. SAIL had a short average collection period of 47.34 days on average indicating towards the solvency of accounts receivables. , on the whole SAO may be regarded as having better credit management and liquidity of accounts receivables. The average collection period of TSL was 36.99 days with standard deviation of 24.8 percent. The ratio showed down ward trend. This indicates that the company may suffer from financial sacristry if prompt credit collection would not be made a practice.

REFERENCES:

- 1. Joy, O.M.: Introduction to Financial Management (Madras: Institute for Financial Management and Research, 1978), P.210.**
- 2. Robert N. Anthony: Management Accounting, Op. Cit., P.291**
- 3. Prasanna Chandra: Financial Management, Op. Cit., P.291**
- 4. Harry Gross: Financing for Small & Medium sized Business, Op. Cit., P.80**
- 5. Joseph L. Wood: Business Finance Hand Book, "Credit & Collection" in Doris Lillian (Ed.), (New York: Prentice Hall, 1953), P.243**
- 6. R.K. Mishra: Problems of Working Capital Op. Cit, P.94**
- 7. C.R. Cook: Credit Policies-Impact on Sales & Profit Cost & Management, (Hemilton, Ontario, Canada, Volume 37, October, 1963, P.387**
- 8. Edward T. Curtis: Credit Department Organization & Operations, (New York: American Management Association Inc., Research Study No. 34, 1959), PP.14-17,**
- 9. R.J. Chambers: Financing Management (Sydney: The Law Book Co., Ltd., 1967), PP.273-274**
- 10. Harry Gross: Op. Cit., P.84**
- 11. Martin H. Seiden: The Quality of Trade Credit, (New York: National Bureau of Economic Research, 1964), P.39**
- 12. Beckman, T.N.: Op. Cit., P.208**
- 13. Agarwal, N.K.: Management of Working Capital, Op. Cit., P.54**
- 14. James C. Van Home: Op. Cit., PP.116-117**
- 15. I.M. Pandey : Op. Cit., P.381**
- 16. R.K. Mishra: Op. Cit., P.99**

CHAPTER: - 7

Analysis of Cash Management

Particular	Page No.
Introduction	207
Meaning and definition	208
General Principles of Cash Management	208
Function of Cash Management	211
Motivation and Holding Cash	213
Financing of cash Shortage and Cost of Running out of cash	214
Financing current Assets	216
Cash Management in selected steel companies in India	217
Reference	229

INTRODUCTION:

"Cash, like the blood stream in the human body, gives vitality and strength to a business enterprises."¹ Though cash hold the smallest portion of total current assets. However, "Cash is both the beginning and end of working capital cycle - cash, inventories, receivables and cash."² it is the cash, which keeps the business going. Hence, every enterprises has to hold necessary cash for its existence."³ Moreover, "Steady and healthy circulation of cash throughout the entire business operations is the basis of business solvency." ^A Now-a-days non-availability and high cost of money have created a serious problem for industry. Nevertheless, cash like any other asset of a company is treated as a tool of profit." Further, "today the emphasis is on the right amount of cash, at the right time, at the right place and at the right cost."⁵ In the words of R.R. Bari, "Maintenance of surplus cash by a company unless there are special reasons for doing so, is regarded as a bad sign of cash management."⁶ As, "holding of cash balance has an implicit cost in the form of its opportunity cost."⁷

Cash may be interpreted under two concepts. In narrow sense, "Cash is very important business asset, but although coin and paper currency can be inspected and handled, the major part of the cash of most enterprises is in the form of bank checking accounts, which represent claims to money rather than tangible property." ⁶ While in broader sense, "Cash consists of legal tender, cheques, bank drafts, money orders and demand deposits in banks. In general, nothing should be considered unrestricted cash unless it is available to the management for disbursement of any nature." ⁹ Thus, from the above quotations we may conclude that in narrow sense cash means cash in hand and at bank but in wider sense, it is the deposit in banks, currency, cheques, bank draft etc. in addition to cash in hand and at bank. "Cash management includes management of marketable securities also, because in modern terminology money comprises marketable securities and actual cash in hand or in bank."¹⁰

"The concept of cash management is not new and it has acquired a greater significance in the modern world of business due to change that took place in the conduct of business and ever increasing difficulties and the cost of borrowing."¹¹ Apart from the fact that it is the most liquid current assets, cash is the common denominator to which all current assets can be reduced because the other current assets i.e. receivables and inventory get eventually converted into cash.¹² This underlines the significance of cash management.

MEANING AND DEFINITION:

The term cash management refers to the management of cash resource in such a way that generally accepted business objectives could be achieved. In this context, the objectives of a firm can be unified as bringing about consistency between maximum possible profitability and liquidity of a firm. Cash management may be defined as the ability of a management in recognizing the problems related with cash which may come across in future course of action, finding appropriate solution to curb such problems if they arise, and finally delegating these solutions to the competent authority for carrying them out. The choice between liquidity and profitability creates a state of confusion. It is cash management that can provide solution to this dilemma. Cash management may be regarded as an art that assists in establishing equilibrium between liquidity and profitability to ensure undisturbed functioning of a firm towards attaining its business objectives.

Cash itself is not capable of generating any sort of income on its own. It rather is the prime requirement of income generating sources and functions. Thus, a firm should go for minimum possible balance of cash, yet maintaining its adequacy for the obvious reason of firm's solvency. Cash management deals with maintaining sufficient quantity of cash in such a way that the quantity denotes the lowest adequate cash figure to meet business obligations. Cash management involves managing cash flows (into and out of the firm), within the firm and the cash balances held by a concern at a point of time. The words, 'managing cash and the cash balances' as specified above does not mean optimization of cash and near cash items but also point towards providing a protective shield to the business obligations. "Cash management is concerned with minimizing unproductive cash balances, investing temporarily excess cash advantageously and to make the best possible arrangement for meeting planned and unexpected demands on the firms' cash."¹³

GENERAL PRINCIPLES OF CASH MANAGEMENT:

Harry Gross has suggested certain general principles of cash management that, essentially add efficiency to cash management. These principles reflecting cause and effect relationship having universal applications give a scientific outlook to the subject of cash management. While, the application of these principles in accordance with the changing conditions and business environment requiring high degree of skill and tact which places cash management in the category of art. Thus, we can say that cash management like any other subject of management is both science and art for it has well-established principles capable of being skillfully modified as per the requirements. The principles of management are follows as -

1. Determinable Variations of Cash Needs

A reasonable portion of funds, in the form of cash is required to be kept aside to overcome the period anticipated as the period of cash deficit. This period may either be short and temporary or last for a longer duration of time. Normal and regular payment of cash leads to small reductions in the cash balance at periodic intervals. Making this payment to different employees on different days of a week can equalize these reductions. Another technique for balancing the level of cash is to schedule its cash disbursements to creditors during that period when accounts receivables collected amounts to a large sum but without putting the goodwill at stake.

2. Contingency Cash Requirement

There may arise certain instances, which fall beyond the forecast of the management. These constitute unforeseen calamities, which are too difficult to be provided for in the normal course of the business. Such contingencies always demand for special cash requirements that was not estimated and provided for in the cash budget. Rejections of wholesale product, large amount of bad debts, strikes, lockouts etc. are a few among these contingencies. Only a prior experience and investigation of other similar companies prove helpful as a customary practice. A practical procedure is to protect the business from such calamities like bad-debt losses, fire etc. by way of insurance coverage.

3. Availability of External Cash

Another factor that is of great importance to the cash management is the availability of funds from outside sources. These resources aid in providing credit facility to the firm, which materialized the firm's objectives of holding minimum cash balance. As such if a firm succeeds in acquiring sufficient funds from external sources like banks or private financiers, shareholders, government agencies etc., the need for maintaining cash reserves diminishes.

4. Maximizing Cash Receipts

Every financial manager aims at making the best possible use of cash receipts. Again, cash receipts if tackled prudently results in minimizing cash requirements of a concern. For this purpose, the comparative cost of granting cash discount to customer and the policy of charging interest expense for borrowing must be evaluated on continuous basis to determine the futility of either of the alternative or both of them during that particular period for maximizing cash receipts. Yet, the under mentioned techniques proved helpful in this context: -

(A) Concentration Banking: Under this system, a company establishes banking centers for collection of cash in different areas. Thereby, the company instructs its customers of adjoining areas to send their payments to those centers. The collection amount is then deposited with the local bank by these centers as early as possible. Whereby, the collected funds are transferred to the company's central bank accounts operated by the head office.

(B) Local Box System: Under this system, a company rents out the local post offices boxes of different cities and the customers are asked to forward their remittances to it. These remittances are picked by the authorized lock bank from these boxes to be transferred to the company's central bank operated by the head office.

(C) Reviewing Credit Procedures: It aids in determining the impact of slow payers and bad-debtors on cash. The accounts of slow paying customers should be reviewed to determine the volume of cash tied up. Besides this, evaluation of credit policy must also be conducted for introducing essential amendments. As a matter of fact, too strict a credit policy involves rejections of sales. Thus, curtailing the cash in flow. On the other hand, too lenient, a credit policy would increase the number of slow payments and bad debts again decreasing the cash inflows.

(D) Minimizing Credit Period: Shortening the terms allowed to the customers would definitely accelerate the cash inflow side-by-side revising the discount offered would prevent the customers from using the credit for financing their own operations profitably.

(E) Others: Introducing various procedures for special handling of large to very large remittances or foreign remittances such as, personal pick up of large sum of cash using airmail, special delivery and similar techniques to accelerate such collections.

5. Minimizing Cash Disbursements

The motive of minimizing cash payments is the ultimate benefit derived from maximizing cash receipts. Cash disbursement can be brought under control by preventing fraudulent practices, serving time draft to creditors of large sum, making staggered payments to creditors and for payrolls etc.

6. Maximizing Cash Utilization

Although a surplus of cash is a luxury, yet money is costly. Moreover, proper and optimum utilization of cash always makes way for achievement of the motive of maximizing cash receipts and minimizing cash payments. At times, a concern finds itself with funds in excess of its requirement, which lay idle without bringing any return to it. At the same time, the concern finds it unwise to dispose it, as the concern shall soon need it. In such conditions, efforts should be made in investing these funds in some interest bearing securities. There are

certain basic strategies suggested by Gitman, which prove evidently helpful in managing cash if employed by the cash management. They are:

"Pay accounts payables as late as possible without damaging the firm's credit rating, but take advantage of the favourable cash discount, if any.

Turnover, the inventories as quickly as possible, avoiding stock outs that might result in shutting down the productions line or loss of sales.

Collect accounts receivables as early as possible without losing future loss sales because of high-pressure collections techniques. Cash discounts, if they are economically justifiable, may be used to accomplish this objective."¹⁴

FUNCTION OF CASH MANAGEMENT:

"Cash management is concerned with minimizing unproductive cash balances, investing temporarily excess cash advantageously and to make the best possible arrangements for meeting planned and unexpected demands on the firm's cash."¹⁵ Cash Management must aim to reduce the required level of cash but minimize the risk of being unable to discharge claims against the company as they arise. All these aims and motives of cash management largely depend upon the efficient and effective functioning of cash management. Cash management functions can be studied under five heads, namely, cash planning, managing cash flow, controlling cash flow, optimizing the cash level and investing idle cash. All these functions are discussed below in details:

1. Cash Planning

Good planning is the very foundation of attaining success. For any management decision, planning is the foremost requirement. "Planning is basically an intellectual process, a menfal pre-disposition to do things in an orderly way, to think before acting and to act in the light of facts rather than of a guess."¹⁶ Cash planning is a technique, which comprises of planning for and controlling of cash. It is a management process of forecasting the future need of cash, its available resources and various uses for a specified period. Cash planning, thus, deals at length with formulation of necessary cash policies and procedures in order to carry on business continuously and on sound lines. A good cash planning aims at providing cash, not only for regular but also for irregular and abnormal requirements.

2.Managing Cash Flows

The heading simply suggests an idea of managing properly the flow of cash coming inside the business i.e. cash inflow and cash moving out of the business i.e. cash outflow. These two are said to be properly managed only, if a firm succeeds in accelerating the rate of cash inflow together with minimizing the cash outflow. As observed expediting collections, avoiding unnecessary inventories, improving control over payments etc. contribute to better management of cash. Whereby, a business can conserve cash and thereof would require lesser cash balance for its operations.

3. Controlling the Cash Flows

As forecasting is not an exact science because it is based on certain assumptions. Therefore, cash planning will inevitably be at variance with the results actually obtained. For this reason, control becomes an unavoidable function of cash management. Moreover, cash controlling becomes essential as it increases the availability of usable cash from within | the enterprise. As it is obvious that greater the speed of cash flow cycle, I greater would be the number of times a firm can convert its goods and ' services into cash and so lesser will be the cash requirement to finance the desired volume of business during that period. Furthermore, every enterprise is in possession of some hidden cash, which if traced out substantially decreases the cash requirement of the enterprise.

4. Optimizing the Cash Level

A financial manager should concentrate on maintaining sound liquidity position i.e. cash level. All his efforts relating to planning, managing and controlling cash should be diverted towards maintaining an optimum level of cash. The foremost need of maintaining optimum level of cash is to meet the necessary requirements and to settle the obligations well in time. Optimization of cash level may be related to establishing equilibrium between risk and the related profit expected to be earned by the company.

5.Investing Idle Cash

Idle cash or surplus cash refers to the excess of cash inflows over cash outflows, which do not have any specific operations or any other purpose to solve currently. Generally, a firm is required to hold cash for meeting working needs facing contingencies and to maintain as well as develop goodwill of bankers.

The problem of investing this excess amount of cash arise simply because it contributes nothing towards profitability of the firm as idle cash precisely earns no returns. Further permanent disposal of such cash is not possible, as the concern may again need this cash after a short while. But, if such cash is deposited with the bank, it definitely would earn a nominal rate of interest paid by the bank. A much better returns than the bank interest can be expected if a company deploys idle cash in marketable securities. There are yet another group of enterprise that neither invest in marketable securities nor willing to get interest instead they prefer to deposit excess cash for improving relations with banks by helping them in meeting bank requirements for compensating balances for services and loans.

MOTIVES OF HOLDING CASH:

Every business transaction whether carried on credit or on cash basis ultimately results in either cash inflow or cash outflows. The pivotal point in present day financial management is to maximize cash generation and to minimize cash outflows in relation to the cash inflows.¹⁷ Keynes postulated three motives for holding cash:-

1. *"Transaction Motive,*
2. *Precautionary Motive, and*
3. *Speculative Motive."*¹⁸

To which one more motive for holding cash has been added:-

4. *Compensation Motive*

1. Transaction Motive

It refers to holding of cash for meeting routine cash requirements and financing transactions carried on by the business in the normal course of action. This motive requires cash for payment of various obligations like purchase of raw materials, the payment of usage and salaries, dividend, income tax, various other operating expenses etc. However, there exists regular and counter inflow of cash in the business by way of return on investments, sales etc. However, cash receipts and cash payments do not perfectly synchronies with each other. Therefore, a firm requires an additional cash balance during the periods when payments are in excess of cash receipts. Thus transaction motive stresses on holding cash to meet anticipated obligations that are not counter balanced by cash receipts due to disparity of timings.

2. Precautionary Motive

Under precautionary motive, the need to hold cash arises for meeting any unforeseen, unpredicted contingencies or unexpected disbursements. Such motives provide a cushion to withstand unexpected cash requirements arising spontaneously at short notice due to various causes. In this regard, two factors largely influence the precautionary cash balance, degree of predictability and availability of short-term credit. If a cash management succeeds in estimating the cash requirements adequately, it escapes from maintaining big cash balance for emergency. Likewise, if a management is capable and efficient enough to borrow the required cash from short-term creditors small balance would be held and vice-versa. 'Ready borrowing power is the best antidote to emergency cash drains and facilitates release of available cash resources for remunerative

3. Speculative Motive

The speculative motive finds its origin out of the desire of an enterprise to avail itself the benefits of the opportunities arising at unexpected moments that do not happen to exist in the normal course of business. This motive represents a positive and aggressive approach. Reasonable cash reserve is maintained by concerns for exploiting profitable opportunities like bulk purchase of raw materials at discounted prices, purchasing securities when interest rates are expected to fall, postpone purchase of raw material if decline in prices is anticipated, etc.

4. Compensation Motive

Such motives require holding cash balance in case the concern enters into some loan agreement with the bank. Bank provides a great variety of services to its customers. For some of such services it charges commission or fee. While for other an indirect compensation is demanded by it by asking its customers to keep a minimum bank balance sufficient to earn a return equal to cost of services provided by it. Such balances are termed as compensating balances.

FINANCING OF CASH SHORTAGE AND COST OF RUNNING OUT OF CASH:

A situation arises, when the cash outflows of a firm exceeds its inflows during a certain period. Such situation creates cash shortage in a firm. Shortage of cash is highly undesirable in all sort of business holding for the reason of dreadful consequences that it bears. A management is deemed to be over-cautious and highly careful while dealing with the problem of cash shortage even if cash inflows are anticipated in the near future; else a

concern may even reach the stage of final liquidation. Cash flow statement should be prepared to acknowledge the repercussions of transactions involving the movement of cash. As "Cash flow statement is made to show the impact of various transactions on the cash position of a firm, it takes into consideration only such transactions that have relationship with cash."²⁰

In case of temporary shortage of cash, a concern is required to procure essential cash immediately for the anticipated short duration, so as to curb it at the very stage instead of sustaining the long-term implication later on. "The immediate source to fall back upon remains the bank credit."²¹ In fact, bank credit is a means to meet cash shortages as well as source of financing the current assets. The various methods from which a [firm can procure funds during the period when its outflows exceed the inflows are stated below - (i) Using bank credit line, (ii) Raising loans from institutions and creditors other than banks. (iii) Liquidity marketable securities, (iv) Resorting to bills discounting schemes, (v) Disposing off surplus fixed assets, (vi) Shedding the quantity of raw materials, (vii) Unloading finished goods even at loss, (viii) By delaying payments.

As a piece of advice, it is recommended by the financial experts that a cash management should not start searching for external finance at the very instance when the cash shortage is anticipated. At the initial stage, a management should take appropriate steps to avoid or minimize the undesirable situation of emerging cash shortage by exercising effective control over internal resources. In this respect, the matters of special consideration that can be gainfully employed by the concern for overpowering the situation of cash shortage are - (i) Increasing efforts to speed up collection, (ii) Reduction in purchase of inventories, (iii) Increasing cash sales, (iv) Selling off redundant assets, (v) Selling short-term investments. (vi) Deferment of capital expenditure, (vii) Postponing and delaying payments

These considerations are nothing but mere use of tact and skill to overcome a shortage of cash. They are much economical than any other resources (internal or external) for they cost neither interest nor any expenses. "Even if an external resource has to be found, this might be seen as a bridging operation pending the ability to bring on stream an alternative internal source."²²

No sooner than a firm becomes aware of approaching shortage of cash than it should concentrate its efforts towards the eradication of such situation. The sooner the shortage is provided for, the better it is. Every concern escapes itself from lending into such a situation as it makes way for numerous costs because of running out of cash. A firm bears not only the burden of unnecessary costs but is subjected to various types of pressures pertaining to its

dealings. All these factors adversely affect the morale of management, causes damages to the hard-earned reputation and financial credit-worthiness etc. A firm is forced to borrow funds at high rates of interest has to accept higher price demand of suppliers, loses cash discount on payments, enter into further negotiations with banks and other financial institutions on account of slow payment.

FINANCING CURRENT ASSETS:

Current assets of enterprises may be financed either by short-term sources or long-term sources or by combination of both. The main sources constituting long-term financing are shares, debentures, and debts from banks and financial institutions. "The long term source of finance provides support for a small part of current assets requirements which is called the working capital margin"²³ Working capital margin is used here to express the difference between current assets and current liabilities. Short-term financing of current assets includes sources of short-term credit, which a firm is mostly required to arrange in advance. Short-term bank loans, commercial papers etc. are a few of its components. Current liabilities like accruals and provisions, trade credit, short-term bank finance, short-term deposits and the like warranting the current assets are also referred to a short-term term sources of finance. Spontaneous financing can also finance current assets, which includes creditors, bills payable, and outstanding receipts. A product firm would always opt for utilizing spontaneous sources fully since it is free of cost. Every concerns that can no more be financed by spontaneous sources of financing has to decide between short-term and long-term source of finance along with relevant proportion of the two. There are three approaches of financing current assets that are popularly used

1. Matching Approach

As the name itself suggests, a financing instrument would offset the current asset under consideration, bearing financing instrument bearing approximately same maturity. In simple words, under this approach a match is established between the expected lives of current asset to be financed with the source of fund raised to finance the current assets. For this, reason a firm would select long-term financing to finance or permanent current assets to finance temporary or variable current assets. Thus, a ten-year loan may be raised for financing machinery bearing expected life of ten years. Similarly, one-month stock can be financed by means of one-month bank loan. This is also termed as hedging approach.

2. Conservative Approach

Conservative approach takes an edge over and above matching approach, as it is practically not possible to plan an exact match in all cases. A firm is said to be following conservative approach when it depends more on long-term financial sources for meeting its financial needs. Under this financing policy, the fixed assets, permanent current assets and even a part of temporary current assets is provided with long-term sources of finance and this make it less risky nature. Another advantage of following this approach is that in the absence of temporary current assets, a firm can invest surplus funds into marketable securities and store liquidity.

3. Aggressive Approach

As against conservative approach, a firm is said to be following aggressive financing policy when depends relatively more on short-term sources than warranted by the matching plan. Under this approach the firm finance not only its temporary current assets but also a part of permanent current assets with short-term sources of finance. In nutshell, it may be concluded that for financing of current assets, a firm should decide upon two important constraints; firstly, the type of financing policy to be selected (whether short-term or long-term and secondly, the relative proportion of modes of financing. This decision is totally based on trade-off between risk and return. As short-term financing is less costly but risky, long-term financing is less risky but costly.

CASH MANAGEMENT IN SELECTED STEEL COMPANIES IN INDIA:

The purpose of the present study would remain half-achieved in the absence of analysis of efficiency of cash management of various steel companies under study, in respect of liquidity of cash and cash position maintained by them. This discussion is forwarded under the following heads: -

1. Size of cash,
2. Components of cash balance,
3. Control of cash flows, and
4. Adequacy of cash.

1. Size of Cash

The size of cash is directly associated with the sales level achieved. There also exists a rule that as sales increase cash also increase but at decreasing rate. However, a sound management system of cash would always attempt at achieving a comparatively lower rate of growth in cash holding than the growth rate of sales. Table 7.1 portrays the quantum of cash held by the selected steel Companies in India from 1999-2000 to 2008-08. The trend percentages are also calculated and shown in the table 7.1.

Table 7.1
Quantum Of Cash of Steel Companies In India.
(From 1999-2000 To 2008-2009)
(Rs. In Crores)

company	J S W Steel Ltd.		Jindal Steel & Alloys Ltd.		Steel Authority Of India Ltd.		Tata Steel Ltd.	
	Cash in Rs. (Crores)	indices	Cash in Rs. (Crores)	indices	Cash in Rs. (Crores)	indices	Cash in Rs. (Crores)	indices
1999-2000	152.36	100.00	0	100.00	2967.57	100.00	1093.02	100.00
2000-01	180.39	118.40	2.95	0	3045.08	102.61	1455.45	133.16
2001-02	283.7	186.20	41.01	0	1150.67	38.77	1154.13	105.59
2002-03	521.5	342.28	37.3	0	2667.74	89.90	2093.15	191.50
2003-04	853.69	560.31	-0.29	0	7202.56	242.71	2887.84	264.21
2004-05	2002.71	1314.46	-0.42	0	8818.5	297.16	3816.83	349.20
2005-06	1863.59	1223.15	-2.2	0	3647.25	122.90	3579.49	327.49
2006-07	3028.15	1987.50	0.04	0	5613.66	189.17	4896	447.93
2007-08	3846.06	2524.32	n.a	n.a	8139.52	274.28	6254.2	572.19
2008 -09	4009.25	2631.43	n.a	n.a	5908.72	199.11	7397.22	676.77
AVG.	1674.14	1098.81	9.80	12.50	4916.13	165.66	3462.73	316.80
S.D	1513.98	993.69	16.57	31.62	2591.87	87.34	2176.81	199.16
max	4009.25	2631.43	41.01	100.00	8818.50	297.16	7397.22	676.77
min	152.36	100.00	-2.20	0.00	1150.67	38.77	1093.02	100.00

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

The table 7.1 indicates that in J S W Steel Ltd. the quantum of cash held by it showed an increasing trend throughout the period of study period. In 1999-2000 J S W Steel Ltd. had a cash balance of Rs. 152.36 crores that increased to Rs. 853.69 crores in 2003-04. The highest

amount of cash was Rs. 4009.25 crores in 2008 -09. it can be mentioned that in J S W Steel Ltd the quantum of cash held did not rise with the increase in the size of business. J S W Steel Ltd though had displayed a variable trend in the beginning but it showed decreasing trend in quantum of cash in the last five years of study. J S W Steel Ltd. had the highest of Rs 41.01 crores and the lowest of Rs. -2.20 crores decrease in quantum of cash as compared to base year amount. In Steel Authority Of India Ltd. on an average, the rise in quantum of cash held seems to be in parity with the increase in size of business except during 2005-06 to 2006-07. Steel Authority Of India Ltd. recorded rise in quantum of cash during last three years of study in comparison with the base year 1999-2000. The quantum of cash in Tata Steel Ltd showed progressive trend with an average of Rs 3462.73 crores. The standard deviation was Rs 2176.81 cores.

In nutshell, it may be concluded that on average in J S W Steel Ltd and Steel Authority Of India Ltd the size of cash had been directly proportionate to the size of business except in few years. In Jindal Steel & Alloys Ltd quantum of cash did not supports the increase in business.

3. Control of Cash flows

The main purpose of keeping cash is to meet day-to-day requirements along with sufficient liquidity and adequate profitability. A financial analyst has come to the conclusion that "business enterprises should keep its cash and near-cash reserves below the requirements of one month's normal expenditure. If cash and near cash reserves happen to be more than this limit, it should be taken for granted that excessive cash is being carried by the concern."²⁴

In fact, a concern should go for optimizing its cash holdings without impairing the overall liquidity requirements. This can be possibly executed only if a firm exercises tight control over cash flows. A concern in this respect may develop a trend or pattern from its past records and experience or a comparative study of its own cash balances with that of other concerns of the same industry may also be conducted for framing a line of control. This may help the concern in determining the extent of cash balances and in avoiding risk of holding excess cash balance in the business. The following ratios are considered helpful in this respect: -

(A)Cash to Current Ratio

A concern shall under all possibilities avoid holding unnecessary cash balance as it affects the profitability of a concern adversely. Moreover, idle cash is devoid of generating any earning as well as it involves cost. Further during inflation cash losses its purchasing power over a time period. A downward trend in this ratio over period of time indicates a

tighter control of cash whereas an upward trend reveals a slack control over cash resources.²⁵ The lower the ratio the greater may be the profitability of the concern.

'In a comfortably financed business it will probably run not 5 to 10 percent of current assets. Since current liabilities are not expected to exceed one-half of the current assets, cash percentage should not run under 10 to 20 percent of the same.'²⁶ Sometimes debtors and cash are taken together in such a case, 'it may be stated in a general way that cash and debtors together should be 50 percent of and stock and other assets should be remaining 50 percent of the total current assets.'²⁷ Table 7.3 shows the cash to current assets ratio in selected steel Companies in India from 1999-2000 to 2008-09.

Table 7.2
Cash to Current Assets Ratio Of steel Companies in India.
(From 1999-2000 to 2008-2009)

(In Percentage)								
cash to current assets	J S W Steel Ltd.		Jindal Steel & Alloys Ltd.		Steel Authority Of India Ltd.		Tata Steel Ltd.	
	Ratio	cash to c.a	indices	cash to c.a	indices	cash to c.a	indices	cash to c.a
1999-2000	23.39	100.00	0.00	0.00	37.60	100.00	40.87	100.00
2000-01	28.25	120.77	4.62	100.00	37.41	99.51	52.67	128.87
2001-02	43.58	186.29	71.21	1540.80	16.79	44.67	44.42	108.69
2002-03	71.82	307.03	189.63	4103.05	37.60	100.00	68.01	166.41
2003-04	85.31	364.67	-4.52	-97.89	89.75	238.70	121.41	297.07
2004-05	106.00	453.13	-7.69	-166.44	62.13	165.26	125.35	306.72
2005-06	72.51	309.98	-30.05	-650.30	23.49	62.48	104.80	256.42
2006-07	122.37	523.12	0.48	10.47	28.57	76.00	44.41	108.66
2007-08	125.61	536.97	n.a	n.a	31.25	83.11	154.53	378.12
2008 -09	104.03	444.72	n.a	n.a	17.36	46.18	111.16	272.00
AVG.	78.29	334.67	27.96	604.96	38.20	101.59	86.76	212.30
S.D	37.21	159.06	64.15	1387.93	22.31	59.35	41.38	101.25
max	125.61	536.97	189.63	4103.05	89.75	238.70	154.53	378.12
min	23.39	100.00	-30.05	-650.30	16.79	44.67	40.87	100.00

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

The table 7.3 presents that J S W Steel Ltd had the increasing cash to current assets ratio during the study period having some fluctuations. The ratio was 23.39 percent in 1999-2000, which was increased to 85.31 per cent in 2003-04. It indicates that the control on cash is not tight during the study period. Jindal Steel & Alloys Ltd had the ratio of cash to current assets varying between 189.63 per cent and -30.05 per cent. Its ten year average had been

27.96 per cent, which indicates lack of control over cash resources. Steel Authority Of India Ltd had desirable level of cash to current assets ratio during the study period as indicated by the ten-year average 38.20 per cent cash management in Steel Authority Of India Ltd cannot be regarded good due to the steep variations evidenced in ten years study. Cash to current assets ratio 40.87 percent in 1999-2000 and increased to 125.35 percent in 2004-05 and in the last 111.16 percent with an average of 86.76 percent. The standard deviation was 41.38 percent. The ratio showed increasing trend during the study period. It may be concluded from the analysis that the steel Companies had very high cash to current assets ratio. They should avoid holding unnecessary cash balance as it affects the profitability and adversely. Further, among the three units selected for the study. Steel Authority Of India Ltd. and Tata Steel Ltd. may regard the J S W Steel Ltd cash management well followed.

(B)Cash to Sales Ratio

It is one of the most important ratios of assessment of control of cash flows. This ratio provides a deep insight into the amount of cash balance held by a concern. In the words of Professor John Sengan, "The increase in sales is generally associated with larger bank balances."²⁸ the growth of which will increase decrease as the size of business increases."²⁹ Table 7.4 illustrates the cash to sales ratio of the selected steel Companies during the study period.

Table 7.3
Cash To Sales Ratio Of Steel Companies In India.
(From 1999-2000 To 2008-2009) (In Percentage)

company	JSWSL		JS&AL		SAOI		TSL	
Ratio	cash to sales	indices	cash to sales	indices	cash to sales	indices	cash to sales	indices
1999-2000	16.39	100.00	0.00	0.00	18.19	100.00	17.75	100.00
2000-01	13.40	81.75	1.09	100.00	18.71	102.83	20.22	113.91
2001-02	14.18	86.53	16.43	1501.53	7.39	40.61	15.20	85.58
2002-03	18.72	114.20	18.96	1732.19	13.79	75.80	21.38	120.44
2003-04	23.78	145.06	-0.28	-25.20	29.55	162.40	24.23	136.48
2004-05	28.46	173.66	-0.49	-45.04	27.66	152.01	24.05	135.48
2005-06	27.40	167.17	-36.67	3350.21	11.26	61.91	20.89	117.67
2006-07	32.57	198.71	0.62	56.84	14.28	78.48	24.77	139.51
2007-08	30.72	187.45	n.a	n.a	17.82	97.92	28.19	158.75
2008 -09	26.50	161.66	n.a	n.a	12.12	66.60	27.56	155.21
AVG.	23.21	141.62	-0.04	-3.74	17.08	93.86	22.42	126.30
S.D	7.03	42.89	14.82	1353.79	7.01	38.55	4.13	23.25
max	32.57	198.71	18.96	1732.19	29.55	162.40	28.19	158.75
min	13.40	81.75	-36.67	3350.21	7.39	40.61	15.20	85.58

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

The table N0.7.4 reveals that on average cash to sales ratio had been 23.21 per cent in JSWSL during the ten years under study. It can be observed that the ratio showed increasing trend and on average increased by 41.62%. It was the lowest at 13.40 percent in 2000-01. JS&AL, on the other side had -0.04 percent of ten years average of cash to sales ratio but the ratio had hiked more during the last three years under study indicating that proportionate rise in cash held by the company had been more than the sales affected by SAOI during these years. SAOI had the highest average of cash to sales ratio (22.42 per cent) among all the selected concerns. It can be observed that TSL had huge amount of cash lying idle, which could have been fruitfully utilized. It may be concluded that the steel companies had high liquid cash position which indicates under utilization of cash. The indices of cash to sales ratio discloses that JSWSL had a good hand in managing his cash affairs during the study period.

(C) Cash Turnover Ratio

It is yet another measure of assessing the sufficient of cash. Cash turnover ratio is calculated by dividing the amount of total sales by the amount of total sales by the amount of total cash available at the end of the accounting year. It indicates the number of days for which the particular amount of cash held was sufficient to finance the business operations. If a firm turnover its cash larger number of times, it can finance a larger volume of sales with relatively lesser cash resources. Thereby, increasing the profitability of a concern. While a declining trend in this ratio exhibits firm's failure utilizing the available resources to its optimum. Table 7.5 provides the figure of cash turnover ratio of steel companies during the study period.

Table 7.4
Cash Turnover Ratio Of Steel Companies In India.
(From 1999-2000 To 2008-2009)

(Ratio in Times)

company	JSWSL		JS&AL		SAOI		TSL	
	Cash turnover ratio	indices	Cash turnover ratio	indices	cash turnover ratio	indices	cash turnover ratio	indices
1999-2000	6.10	100.00	0.00	0.00	5.50	100.00	5.63	100.00
2000-01	7.46	122.32	91.37	100.00	5.35	97.25	4.94	87.79
2001-02	7.05	115.57	6.09	6.66	13.53	246.22	6.58	116.84
2002-03	5.34	87.56	5.27	5.77	7.25	131.92	4.68	83.03

2003-04	4.21	68.94	-362.55	396.80	3.38	61.58	4.13	73.27
2004-05	3.51	57.58	-202.88	222.04	3.62	65.78	4.16	73.81
2005-06	3.65	59.82	-2.73	-2.98	8.88	161.52	4.79	84.98
2006-07	3.07	50.32	160.75	175.93	7.00	127.42	4.04	71.68
2007-08	3.25	53.35	n.a	n.a	5.61	102.12	3.55	62.99
2008 -09	3.77	61.86	n.a	n.a	8.25	150.15	3.63	64.43
AVG.	4.74	77.73	-38.09	-41.68	6.84	124.40	4.61	81.88
S.D	1.63	26.70	148.17	162.16	2.96	53.91	0.94	16.67
max	7.46	122.32	160.75	175.93	13.53	246.22	6.58	116.84
min	3.07	50.32	-362.55	396.80	3.38	61.58	3.55	62.99

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

The table No.7.4 reveals that JSWSL had average cash turnover ratio of 4.74 times. The ratio shows a decreasing trend throughout the period of study having some fluctuations. It was 6.10 times in 1999-2000, which increased to 4.21 times in 2003-04 with an average of 4.74 times. The cash turnover ratio of JS&AL had fluctuated in the beginning of study period and thereafter it showed decreasing trend. The ratio was the highest at 160.75 times in 2006-07 and the lowest at -362.55 times in 2003-04 with the ten year average ratio worked out at 6.84 times. The cash turnover ratio in SAOI had also showed fluctuating trend. It ranged between 13.53 times and 3.38 times. The average of cash turnover ratio had been 6.84 times. The cash turnover of TSL was showing downward trend with an average of 4.61 times. The standard deviation was 0.94 times.

Overall, it may be concluded that there were a very low cash turnover ratio in steel companies under study. It indicates surplus of cash balance. Among the three companies the turnover ratio of SAOI was the best followed by JSWSL, JS&AL and TSL

(D) Cash Position Ratio

It may be calculated as the ratio of cash to current liabilities. It helps in analyzing the level of liquid resources in relation to current obligations. For this purpose, cash is used in broader sense, which includes cash balance, bank balance and marketable securities. A higher cash position ratio implies that the firms are unable to make profitable use of cash resources. So, lower the ratio of cash to current liabilities, favorable it is. While, the standard norm set for cash position ratio is 0.5:1. Table 7.6 reveals the cash position of selected steel companies from 1999-2000 to 2008-09.

Table 7.5**Cash Position Ratio Of steel Companies in India.
(From 1999-2000 to 2008-2009)****(Ratio in Percentage)**

Compa nies	199 9- 200 0	200 0- 01	200 1- 02	200 2- 03	200 3- 04	200 4- 05	200 5- 06	200 6- 07	200 7- 08	20 08 -09	AV G.	S. D	max	mi n
JSWS L	11. 20	13. 69	18. 08	40. 94	94. 08	106. 74	86. 73	131. 93	93. 37	53. 04	64. 98	43. 20	131. 93	11. 20
JS&A L	0.0 0	3.5 7	43. 80	41. 98	0.4 1	- 0.64	- 3.7 2	0.07	n.a	n.a	10. 58	18. 23	43.8 0	3.7 2
SAOI	46. 68	42. 02	15. 76	33. 58	73. 19	78.9 9	31. 00	46.9 4	57. 10	32. 64	45. 79	19. 55	78.9 9	15. 76
TSL	41. 43	48. 61	56. 54	50. 15	66. 46	72.1 7	67. 93	73.7 9	78. 94	73. 39	62. 94	12. 81	78.9 4	41. 43
avg.	24. 83	26. 97	33. 55	41. 66	58. 33	64.3 2	45. 48	63.1 8	76. 47	53. 02	46. 07	23. 45	83.4 2	16. 17

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

It is evident from the table. 7.6 That Cash position of JSWSL sustained its current obligations, as its average cash position ratio had been recorded at 64.98 per cent for the ten-year period under study. The ratio indicates over utilization of liquid funds. Contrary to this, JS&AL had the cash position ratio of 10.58 percent indicating liquid position of cash along with its sufficiency in meeting current obligation. Similar had been the case of SAOI, which had shown very good results during the last three years of study. Among selected steel companies, JSWSL and JS&AL had displayed sufficient liquidity level while the JS&AL had not sufficient cash to meet its current obligations. Table No. 7.6 gives a clear picture of Cash to current liabilities ratio of steelt companies in India by the four companies. In Cash to current liabilities of all the steel companies shows fluctuating trend throughout the study period. The minimum Cash to current liabilities in JSWSL is 11.20 (1999-2000,) JS&AL is - 3.72 (2005-06), SAOI is 15.76 (2001-02), and TSL is 41.43 (1999-2000), the maximum Sales Cash to current liabilities in ACL is 131.93 (2006-07), GSCL is 43.80 (2001-02), SIL is 78.99 (2004-05), and SCL is 78.94 (2007-08),

4. Adequacy of cash

Adequacy of cash is essential for every concern as liquidity and profitability are directly related with it. If a firm fails in realizing it current obligations for the want of sufficient liquidity, it may suffer in terms of bad credit rating, losing creditors' confidence. Contrary to this, too much liquidity will result in unnecessary blocking of cash in current

assets endangering firm's profitability position. Many financial executive's support holding excessive liquidity as an insurance against unforeseen contingencies. While others are of the opinion that 'if the unforeseen contingencies do not occur it may be analogous to say that we pay too much for the fire insurance because we do not have fire'.³⁰ A sound liquid position is of primary concern to the management from the point of view of meeting current liabilities as and when they mature as well as for answering continuity of operations.³¹ A firm is said to have a strong liquidity, it is able: -

- (i) "To meet the claims of short-term creditors when they are due.
- (ii) To maintain sufficient working capital for effective normal operations.
- (iii) To meet current interest and dividend requirements, and
- (iv) To maintain a favorable credit rating."

To test liquidity and solvency the following ratios are being used in the present study:
 - Net Cash Flows to current liabilities ,Coverage of current liabilities

Net cash flow to Current Liability:

Walter has suggested, "Instead of matching current assets with current liabilities i.e. current ratio quick assets with current liabilities i.e. quick ratio, better results can be obtained by matching current obligations with net cash flows."³¹ The net cash flow to current liability ratio is expressed in percentage as:

$$\frac{\text{Net cash flow to Current Liabilities}}{\text{Current Liabilities}} = \frac{\text{Net + operating Profitexp.}}{\text{Current Liabilities}} \times 100$$

The concept forecasts net cash flow is prepared on the ground that it indicates the flow of cash. Whereas, current liabilities indicates only the outstanding obligations on a particular date. Moreover, 'keeping in view the fact that most of the current liabilities continue getting new lease of life and other have payment period of one month or more, every firm maintaining positive net cash flows to current liabilities ratio can be considered and solvency' The higher the ratio, the greater the degree of liquidity and solvency of a firm and vice-versa.

Though no standard as this ratio has been suggested but view of held that "an enterprise to be actually liquid and solvent, should have hundred percent or more net cash flow to current liabilities ratio"³⁹ Table 7.7 gives the percentage of net cash flow to current liabilities of the selected steel Companies in India for the studies during the eight years period.

Table 7.6

Net Cash Flow To Current Liabilities Ratio Of Steel Companies In India.
(From 1999-2000 To 2008-2009)
(Ratio In %)

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	0.006	-0.014	0.007	0.005	0.036	0.001	0.003	0.084	0.010	0.009	0.01	0.03	0.08	0.01
JS&AL	0.000	-0.002	0.001	0.007	0.007	0.006	0.010	0.007	n.a	n.a	0.00	0.01	0.01	0.01
SAOI	0.001	0.038	0.034	0.012	0.155	0.367	0.007	0.287	0.291	0.247	0.14	0.15	0.37	0.03
TSL	-0.054	0.015	0.010	0.037	0.028	0.001	0.008	1.114	0.911	0.112	0.03	0.48	1.11	0.91
avg.	-0.012	0.009	0.009	0.013	0.039	0.090	0.003	0.370	0.203	0.123	0.04	0.17	0.39	0.24

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

The table No.7.6 presents that JSWSL had evidently not satisfactory level of liquidity during the period of study. Though JSWSL faced highly fluctuating trend ranging between -0.01 per cent and 0.08 per cent averaged a Net cash flow to current liabilities ratio of 0.01 per cent. The Net cash flow to current liabilities ratio in JS&AL had also showed fluctuating trend. The ratio was the lowest -0.01 per cent in 2001-02 and the highest 0.01 per cent in 2005-06. The ten-year average ratio worked out at 0.14 percent which indicates that during the study period net cash flow had been not sufficient to cover the current liabilities. SAOI had faced negative ratio of net Cash flow to current liability the ten years under study. It may be concluded that the net cash flow to current liabilities companies were not sufficient to cover current liabilities in SAOI. TSL had average only 0.03 per cent of current liabilities to be met from profit. TSL accounted for carrying out 0.03 per cent current liabilities from the net profit. TSL had faced positive ratio.

Coverage of Current Liabilities

This ratio is also an improvement over current ratio and liquid ratio. Professor Walter calls these computations as tests actual liquidity while current and quick ratios are termed as

technical liquidity and solvency tests. This ratio takes into account the turnover rate of current liabilities and margin of profit on sales. No particular standard for this ratio as been set but a higher ratio is always desirable in the evaluation of liquidity and solvency position of a concern. It is mathematically expressed as:

$$\begin{aligned}
 \text{Coverage of} & & & \text{Turnover of} & & \text{Profit} \\
 \text{Current Liabilities} & = & & \text{Current Liabilities} & \times & \text{Margin} \\
 & & & & & \\
 \text{or} & & & \frac{\text{Sales}}{\text{Current Liabilities}} & \times & \frac{\text{Net Profit}}{\text{Sales}} \\
 & & & & & \\
 \text{i.e.} & & & \frac{\text{Net Profit Margin}}{\text{Current Liabilities}} & &
 \end{aligned}$$

Table 7.7 precisely states the percentage of coverage of current liabilities of the steel companies during the study period.

Table 7.7
Coverage Of Current Liabilities 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	-0.11	-0.04	-0.22	-0.09	0.58	0.46	0.40	0.56	0.42	0.06	0.20	0.31	0.58	0.22
JS&AL	0.00	0.01	0.01	0.01	0.01	0.01	0.03	0.09	n.a	n.a	0.02	0.03	0.09	0.00
SAOI	-0.27	-0.10	-0.23	-0.04	0.26	0.61	0.34	0.52	0.53	0.34	0.20	0.33	0.61	0.27
TSL	0.16	0.18	0.10	0.24	0.40	0.66	0.67	0.64	0.59	0.52	0.42	0.23	0.67	0.10
avg.	-0.06	0.01	-0.09	0.03	0.31	0.44	0.36	0.45	0.51	0.31	0.21	0.22	0.49	0.10

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

The table No.7.7 presents that JSWSL had evidently not satisfactory level of liquidity during the period of study. Though JSWSL faced highly fluctuating trend ranging between 0.58 per cent and 0.22 per cent averaged a Coverage of Current Liabilities Ratio of 0.20 per cent. The Coverage of Current Liabilities Ratio in JS&AL had also showed fluctuating trend. The ratio was the lowest 0.00 per cent in 2002-03 and the highest 0.09 percent in 2006-07. The ten-year average Coverage of Current Liabilities Ratio worked out at 0.02 percent, which indicates that during the study period net cash flow had been not sufficient to cover the current liabilities. SAOI had faced negative ratio of Coverage of Current Liabilities Ratio the ten years under study. It may be concluded that the Coverage of Current Liabilities Ratio companies were not sufficient to cover current liabilities in SAOI. TSL had average only 0.42 per cent of current liabilities to be met from profit. TSL accounted for carrying out 0.42 per cent current liabilities from the net profit. TSL had faced negative ratio.

REFERENCES:

1. B.B. Howard & M. Upton introduction to Business Finance, Op. Cit, P. 188
2. R. K. Mishra; Op. Cit., P. 123
3. J.M. Keynes the General Theory of Employment, Interest & Money, (New York: Harcourt Brae., Javanoich, 1936), PP.170-174
4. B.B. Howard & M. Upton Op. Cit., P.188
5. A. E. Reed Financial Executive, 'Corporate Cash Management', London, October, 1963, P.103
6. R.R. Bari Cash Planning & Management, (New Delhi: Triveni Publications, 1980), P.2
7. K. Brandt, Louis Analysis for financial Management, (New Jersey, Prentice Hall, Inc., Englewood Cliffs, 1971), P.225
8. Paton, W.A. & Dixon, R.L. Essentials of Accounting, (New York: McGraw Hill, 1958), P.16
9. Finney, Harry A & Herbert E. Miller: Principles of Accounting-Intermediate (New Jersey; Prentice Hall, Inc. 1958), P.186
10. Surendra S. Singhri & John A. Kaupisch: Review of Management, Economic & Political Weekly, "Cash Management in a Developing Economy." Vol 5, No.35, (August 29, 1970), P.95
11. Howard B.B. & Upton, M. Op. Cit., P.188
12. Khan, M.Y. Jain, P.K. Financial Management Op. Cit., P.663
13. P. Hunt, C.M. Willeam & G. Donaldson: Basic Business Finance -Text & Cases, (Illinois: Richard D. Irwin, Illrd ed., 1966)
14. Gitman, L.J. Op. Cit., PP.169-170
15. P. Hunt, C.M. William & G. Donaldson: Op. Cit, P.94

CHAPTER: - 8

Analysis of Cash flow

Particular	Page No.
Introduction	231
Meaning of Certain terms	231
Classification of cash flow	231
Information required for cash flow Statement	233
Utility of Cash Flow Statement	233
Limitations of Cash Flow Statement	235
Cash Flow analysis of Steel Companies	236
Reference	245

INTRODUCTION:

Cash flow statement provides information about the cash receipts and payments of a firm for a given period. It provides important information that compliments the profit and loss account and balance sheet. The information about the cash-flows of a useful in providing users or financial statements with a basis to assess the ability of the enterprise to generate cash and cash equivalents and the needs of the enterprise to utilize these cash flows. The economic decisions that are taken by users require an evaluation of the ability of an enterprise to generate cash equivalents and the timing and certainty of their generation. The statement deals with the provision of information about the historical changes in cash equivalents of an enterprise by means of a cash flow statement, which classifies cash flows during the period from operation investing and financing activities.

MEANING OF CERTAIN TERMS:

- Cash comprises cash on hand and demand deposit with banks.
- Cash equivalents are short-term, highly liquid investments that are readily convertible into known amounts of cash and which are subject to an insignificant risk of changes in value. Examples of cash equivalents are, treasury bills, commercial paper etc.
- Cash flows are inflows and outflows of cash and cash equivalents. It means the movements of cash into the organization and movement of cash out of the organization. The difference between the cash inflow and outflow is known as net cash flow, which can be either net cash inflow or net cash outflow.

CLASSIFICATION OF CASH FLOWS :

The cash flow statement during a period is classified into three main categories of cash inflows and cash outflows:

(A) Cash flows from operating activities:

Operating activities are the principal revenue-producing activities of the enterprise and other activities that are not investing and financing activities. Operating activities include cash effects of those transactions and events that enter into the determination of net profit or loss. Following are examples of cash flows operating activities:

1. Cash receipts from the sale of goods and the rendering of services

2. Cash receipts from royalties, fees, commissions, and other revenue
3. Cash payment to suppliers for goods and services
4. Cash payments to and on behalf of employees
5. Cash receipts and payments of an insurance enterprise for premium and claims, annuities and other polity benefits.
6. Cash payments or refunds of income-taxes unless they can be specifically identified with financing and investing activities
7. Cash receipts and payments relating to future contracts, forward contracts, option contracts, and swap contracts when the contracts are held for dealing or trading purposes etc.

(B) Cash Flows from Investing Activities:

Investing activities are the acquisition and disposal of long-term assets and other investments not included in cash equivalents. In other words, investing activities include transactions and events that involve the purchase and sale of long-term productive assets (e.g., land, building, plant and machinery, etc.) not held for re-sale and other investments. The following are examples of cash flows arising from investing activities:

1. Cash payments to acquire fixed assets (including intangibles).
2. These payments include those relating to capitalized research and development costs and self-constructed fixed assets
3. Cash receipts from disposal of fixed assets (including intangibles).
4. Cash payments to acquire shares, warrants, or debt instruments of other enterprises and interests in joint ventures (other than payments for those instruments considered to be cash equivalents and those held for dealing or trading purposes)
5. Cash receipts from disposal of shares, warrants, or debt instruments of other enterprises and interests in joint ventures (other than payments for those instruments considered to be cash equivalents and those held for dealing or trading purposes)
6. Cash receipts from disposal of shares, warrants, or debt instruments of other enterprises and interests in joint ventures (other than receipts from those instruments considered to be cash equivalents and those held for dealing or trading purposes)
7. Cash advances and loans made to third parties (other than advances and loans made by a financial enterprise)
8. Cash receipts from the repayment of advances and loans made to third parties (other than advances and loans of a financial enterprise)

9. Cash receipts and payments relating to future contracts, forward contracts, option contracts, and swap contracts except when the contracts are held for dealing or trading purposes or the receipts are classified as financing activities.

(C) Cash Flows from Financing Activities:

Financing activities are activities that result in changes in the size and composition of the owners' capital (including preference share capital in the case of a company) and borrowings of the enterprise. Following are the examples of cash flows arising from financing activities:

1. Cash proceeds from issuing shares or other similar instruments
2. Cash proceeds from issuing debentures, loans notes, bonds and other short-term borrowing
3. Cash repayments of amounts borrowed
4. Payment of dividend.

INFORMATION REQUIRED FOR CASH FLOW STATEMENT:

The following basic information is needed for the preparation of a cash flow statement:

- **Comparative Balance Sheets:** Balance Sheets at the beginning and at the end of the accounting period indicate the amount of changes that have taken place in assets, liabilities and capital.
- **Profit and Loss Account:** The profit and loss account of the current period enables to determine the amount of cash provided by or used in operations during the accounting period after making adjustments for non-cash, current assets and current liabilities.
- **Additional Data:** In addition to the above statements, additional data are collected to determine how cash has been provided or used e.g. sale or purchase of assets for cash.

UTILITY OF CASH FLOW STATEMENT

The cash flow statement traces the various sources which bring in cash, such as operations, sale of current and fixed assets, issuance of share capital and long term borrowings etc. and the applications which cause outflow of cash, such as, purchase of current and fixed assets, redemption of debentures, preference shares for cash and so on. This statement is designed for account for the change in cash. The advantage of the cash flow statement is illustrated below -

1. Discloses Cash Movement

The primary function carried out by a cash flow statement is to disclose the inward and outward movement i.e. inflow and outflow of cash. It indicates all possible changes in cash position of a firm in quantitative terms accompanied by the reasons to support such changes. Hence, a cash management can exercise full control over cash movement with the help of cash flow statement.

2. Helps in Financial Planning

It plays a vital role in short-term financial planning. It helps in forecasting cash requirements, determining the quantity of required cash in advance, the amount that can be generated from internal sources and the volume expected to be acquired from outside sources. Thus, the future course of action related to cash can be planned in the light of cash flow statement.

3. Aids Internal Financial Management

Cash flow statement is of great help to management in formulating policies related to internal financial management. Since, any information pertaining to the availability of cash from operations can be obtained by means of cash flow statement. Thus, a management can make important decisions involving dividend policy, replacement of assets, repayment of long-term loans etc.

4. Reveals Success or Failure of Cash Planning

It reveals the extent of success or failure of cash planning. As a management may hold comparison of cash flow of current year with projected cash budget of that period, variations, if any with relevant cause may be detected and necessary remedial actions can be initiated.

5. Adds Efficiency to Cash Management

Cash is the very foundation of all business operations. Therefore, a projected cash flow statement provides sufficient guidelines to the management for planning and coordinating financial operations properly, effectively and efficiently.

6. Helps to determine the likely flow of cash.

Projected cash flow statements help the management to determine the likely inflow or outflow of cash from operations and the amount of cash required to be raised from other sources to meet the future needs of the business.

7. Supplemental to funds flow statement.

Cash flow analysis supplements the analysis provided by funds flow statement, as cash is a part of the working capital.

Better tool of analysis-

For payment of liabilities, which are likely to be matured in the near future, cash is more important than the working capital. As such, cash flow statement is certainly a better tool of analysis than funds flow statement for short-term analysis.

LIMITATIONS OF CASH FLOW STATEMENT:

Cash flow statement is an important analytical tool. Yet, it is advised to employ this technique with care and precautions for the purpose of analysis due to the limitations attached to it. These limitations are -

1. Misleading inter-industry comparison -

Cash flow statement does not measure the economic efficiency of one company in relation to another. Usually a company with heavy capital investment will have more cash inflow. Therefore, inter-industry comparison of cash flow statement may be misleading.

2. Misleading comparison over a period of time -

Just because the company's cash flow has increased in the current year, a company may not be better off than the previous year. Thus, the comparison over a period can be misleading.

3. Misleading inter-firm comparison-

The terms of purchases and sales will differ from firm to firm; Moreover, cash inflow does not always mean profit. Therefore, inter-firm comparison of cash flows may also be misleading.

4. Influenced by changes in management policies-

The cash balance as disclosed by the cash flow statement may represent the real liquidity position of the business. The cash can be easily influenced by purchases and sales policies, by making certain advance payments or by postponing certain payments.

5. Cannot be equated with income statements-

Cash flow statement cannot be equated with the income Statement. An income statement takes into account both cash as well as non-cash items. Hence net cash flow does not necessarily mean net income of the business.

6. Not a replacement of other statements-

Cash flow statement is only a supplement of funds flow statement and cannot replace the income statement or the funds flow statement as each one has its own function or purpose of preparation.

7. Others

1. Net cash flow does not necessarily imply the net income of the business. As unlike income statement, cash flow statement takes into account only cash discarding non-cash items from its preview.
2. Cash flow statement no doubt depicts the cash position but the cash balance shown by cash flow statement may not be the true representative of real liquid position of the business. As it can be easily influenced by postponing purchase and other payments.

Despite the drawbacks, of cash flow statement, it is a useful supplementary accounting instrument serving as a barometer in evaluating profitability and financial position of an enterprise

CASH FLOW ANALYSIS OF STEEL COMPANIES:

Cash flow statement is bifurcated into three broad fragments. The heads are formulated because of business activities that give rise to inflow and outflow of cash, namely; operating activities, investing activities and financing activities. Cash flow from operating activities give account of various changes in operating assets like and liabilities like inventory, accounts receivables, suppliers advance etc. Net cash from operating activities is obtained after making adjustments for depreciation and changes in operating assets from net profit before tax and extraordinary items. Second phase is that of investing activities that takes into account purchase and sale of fixed assets, investment in affiliate etc. Again net cash used in investing activities in computed. Finally, net cash from financing activities like dividend paid, bank loan etc. is calculated. The sum total of the heads gives out net increase or decrease in cash as the case may be.

Cash flow analysis of steel companies

Table No. 8.1
Net Cash Flow From Operating Activities (Indirect Method)

(Rs. Crore)

Companies	JSWSL	JS&AL	SAOI	TSL	Avg.
1999-2000	152.36	0	2967.57	1093.02	1053.24
2000-01	180.39	2.95	3045.08	1455.45	1170.97
2001-02	283.7	41.01	1150.67	1154.13	657.378
2002-03	521.5	37.3	2667.74	2093.15	1329.92
2003-04	853.69	-0.29	7202.56	2887.84	2735.95
2004-05	2002.71	-0.42	8818.5	3816.83	3659.41
2005-06	1863.59	-2.2	3647.25	3579.49	2272.03
2006-07	3028.15	0.04	5613.66	4896	3384.46
2007-08	3846.06	N.A	8139.52	6254.2	6079.93
2008 -09	4009.25	N.A	5908.72	7397.22	5771.73
AVG.	1674.14	9.80	4916.13	3462.73	2515.70

S.D	1513.98	16.57	2591.87	2176.81	1574.81
max	4009.25	41.01	8818.50	7397.22	5066.50
min	152.36	-2.20	1150.67	1093.02	598.46

Source: computed from annual reports of respective companies

Chart No 8.1

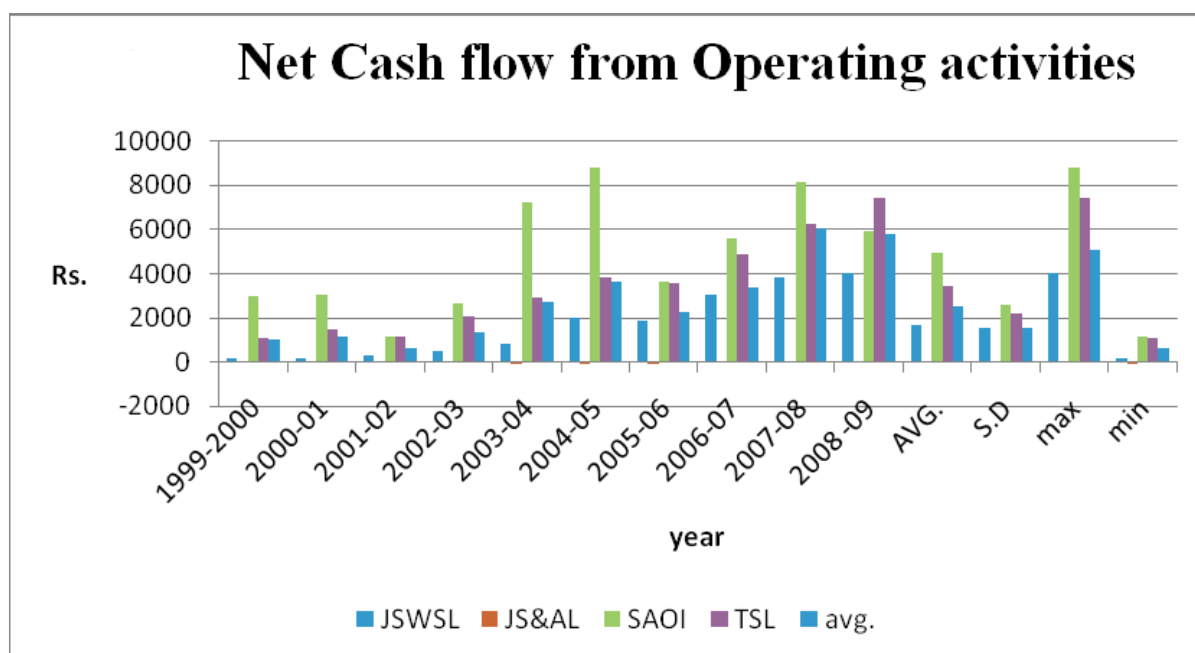


Table No. 8.1 showed Net cash flow from operating activities (indirect method) of selected steel companies of India. The Net cash flow from operating activities of JSWSL was Rs.152.36 crores in 1999-2000 and Rs 853.69 crores in 2003-04 and Rs 4009.25 crores in 2008-09 with an average of Rs 1674.14. The Net cash flow from operating activities of JS&AL was 0.00 crores in 1999-2000 and -0.42 crores in 2004-05 and 0.04 crores in 2006-07 with an average of 9.80 crores. The Net cash flow from operating activities of SAOI was 2967.57 crores in 1999-2000 and 7202.56 crores in 2003-04 and 5908.72 crores in 2008-09 with an average of 4916.13. The Net cash flow from operating activities of TSL was 1053.24 crores in 1999-2000 and 2735.95 crores in 2003-04 and 5771.73 crores and 2008-09 with an average of 2515.70.

Table 8.2

Net Cash Inflow/ (Outflow) From Investment Activities

(Rs. Crore)

Companies /Year	Jswsl	Js&Al	Saoi	Tsl	Avg.
1999-2000	-499.3	0.0	417.3	-809.3	-222.8
2000-01	-573.5	-0.2	133.1	-597.6	-259.5
2001-02	-186.4	-1.2	676.3	-499.7	-2.8
2002-03	-63.5	-2.8	13.3	-785.6	-209.6
2003-04	-54.3	0.4	-339.8	-1882.6	-569.1
2004-05	-409.5	1.1	-240.6	-2604.1	-813.3
2005-06	-1592.7	2.9	-338.0	-2464.6	-1098.1
2006-07	-2450.4	3.4	-587.5	-5429.5	-2116.0
2007-08	-5930.6	N.A	1139.9	29318.6	12129.7
2008 -09	-5837.4	N.A	4406.5	-9428.1	-6557.3
Avg.	-1759.8	0.4	-581.2	-5382.0	-1930.6
S.D	2300.0	1.8	1438.4	8860.5	3150.2
Max	-54.3	3.4	676.3	-499.7	31.4
Min	-5930.6	-2.8	4406.5	29318.6	-9914.6

Source: computed from annual reports of respective companies

Chart No.8.2

Net Cash inflow/(outflow) for investment activities

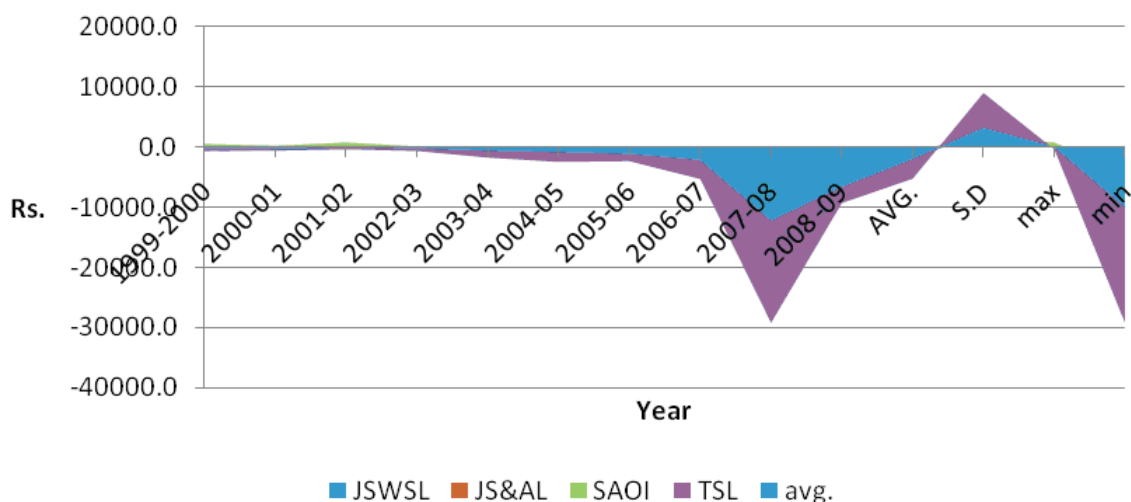


Table No. 8.2 showed Net cash inflow/ (outflow) from investment activities of selected steel companies of India. The Net cash inflow/(outflow) from investment activities of JSWSL was --499.3 crores in 1999-2000 and -54.3 crores in 2003-04 and -5837.4 crores

in 2008-09 with an average of -1759.8. The Net cash inflow/(outflow) from investment activities of JS&AL was -0.2 crores in 2000-01 and 1.1 crores in 2004-05 and 3.4 crores in 2006-07 with an average of 0.4 crores. The Net cash inflow/(outflow) from investment activities of SAOI was 417.3 crores in 1999-2000 and -2604.1 crores in 2004-05 and -9428.1 crores in 2008-09 with an average of Rs. -5382 Crores. The Net cash inflow/(outflow) from investment activities of TSL was -809.3 crores in 1999-2000 and -2604.1 crores in 2004-05 and -9428.1 crores in 2008-09 with an average of Rs.-5382.

Table 8.3

Net Cash Inflow/ (Outflow) From Financing Activities

(Rs. Crore)

Companies	JSWSL	JS&AL	SAOI	TSL	Avg.
1999-2000	355.23	0	-3376.1	-426.54	-861.848
2000-01	374.6	-2.91	-2903.5	-812.04	-835.95
2001-02	-86.6	-39.82	-2078	-674.46	-719.718
2002-03	-463.79	-33.91	-2584.5	-1154.43	-1059.16
2003-04	-767.09	-0.6	-5339.9	-1127.59	-1808.79
2004-05	-1594.59	-1.01	-4481.6	-1216.72	-1823.49
2005-06	-265	-0.09	-3396.8	-1073.23	-1183.77
2006-07	-384.39	-3.88	-1588.9	7926.46	1487.313
2007-08	2125.77	N.A	-2850	15848.07	5041.273
2008 -09	1897.97	N.A	2966.84	3156.42	2673.743
AVG.	119.2	-10.3	-2563.2	2044.6	-102.4
S.D	1145.9	15.2	2228.9	5663.5	2263.4
max	2125.8	0.0	2966.8	15848.1	5235.2
min	-1594.6	-39.8	-5339.9	-1216.7	-2047.8

Source: computed from annual reports of respective companies

Chart No 8.3

Net Cash inflow/(outflow) for financing activities

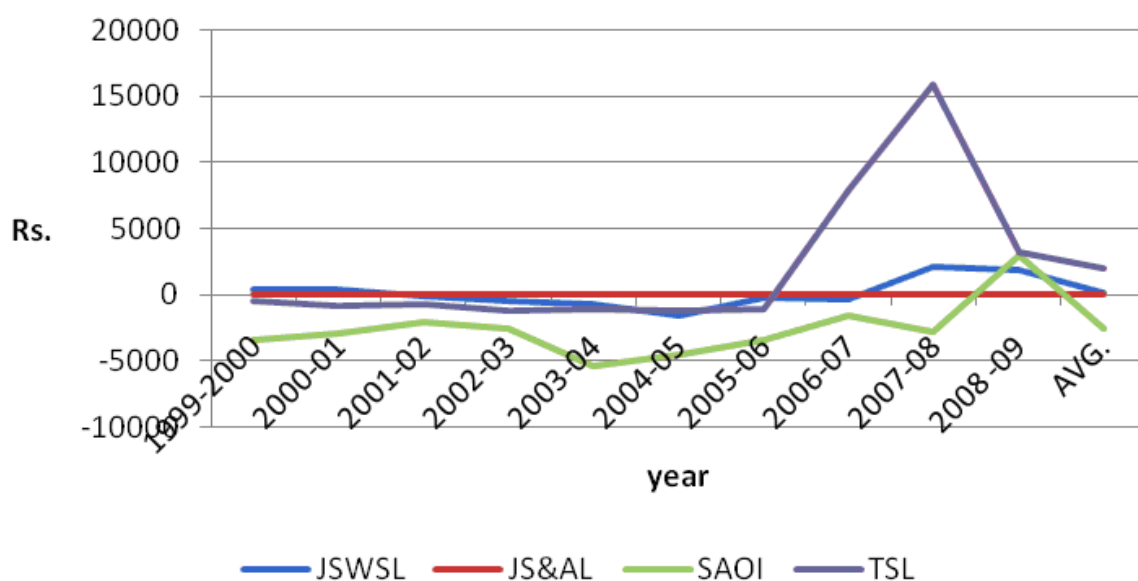


Table No. 8.3 showed Net cash inflow/ (outflow) from financing activities of selected steel companies of India. The Net cash inflow/ (outflow) from financing activities of JSWSL was Rs.355.23 crores in 1999-2000 and Rs.-1594.59 crores in 2004-05 and Rs.1897.97 crores in 2008-09 with an average of Rs.119.2 Crores. The Net cash inflow/ (outflow) from financing activities of JS&AL was -2.91 crores in 2000-01 and -1.01 crores in 2004-05 and -3.88 crores in 2008-09 with an average of -10.3 crores. The Net cash inflow/ (outflow) from financing activities of SAOI was -3376.1crores in 1999-2000 and -4481.6crores in 2004-05 and 2966.84 crores in 2008-09 with an average of -2563.2 The Net cash inflow/ (outflow) from financing activities of TSL was -426.54 -426.54 crores in 1999-2000 and -1216.72 crores in 2004-05 and 3156.42 crores in 2008-09 with an average of 2044.6.

Table 8.4
Net Cash Inflow/(Outflow) Due To Net Increase/(Decrease) In Cash And Cash
Equivalents
(Rs. Crore)

Companies	JSWSL	JS&AL	SAOI	TSL	avg.
1999-2000	8.29	0	8.78	-142.81	-31.435
2000-01	-18.53	-0.18	274.75	45.85	75.4725
2001-02	10.69	-0.05	-251.06	-20.03	-65.1125
2002-03	-5.74	0.63	96.54	153.13	61.14
2003-04	32.3	-0.46	1522.91	-122.38	358.0925
2004-05	-1.33	-0.37	4096.3	-4.02	1022.645
2005-06	5.85	0.58	-87.51	41.67	-9.8525
2006-07	193.32	-0.4	3437.19	7392.96	2755.768
2007-08	41.27	N.A	4149.61	-7216.31	-1008.48
2008 -09	69.79	N.A	4469.09	1125.56	1888.147
AVG.	33.6	0.0	1771.7	125.4	482.6
S.D	61.7	0.4	2024.1	3462.6	1387.2
max	193.3	0.6	4469.1	7393.0	3014.0
min	-18.5	-0.5	-251.1	-7216.3	-1871.6

Source: computed from annual reports of respective companies

Chart No.8.4

Net cash inflow/(outflow) due to net increase/(decrease) in cash and cash equivalents

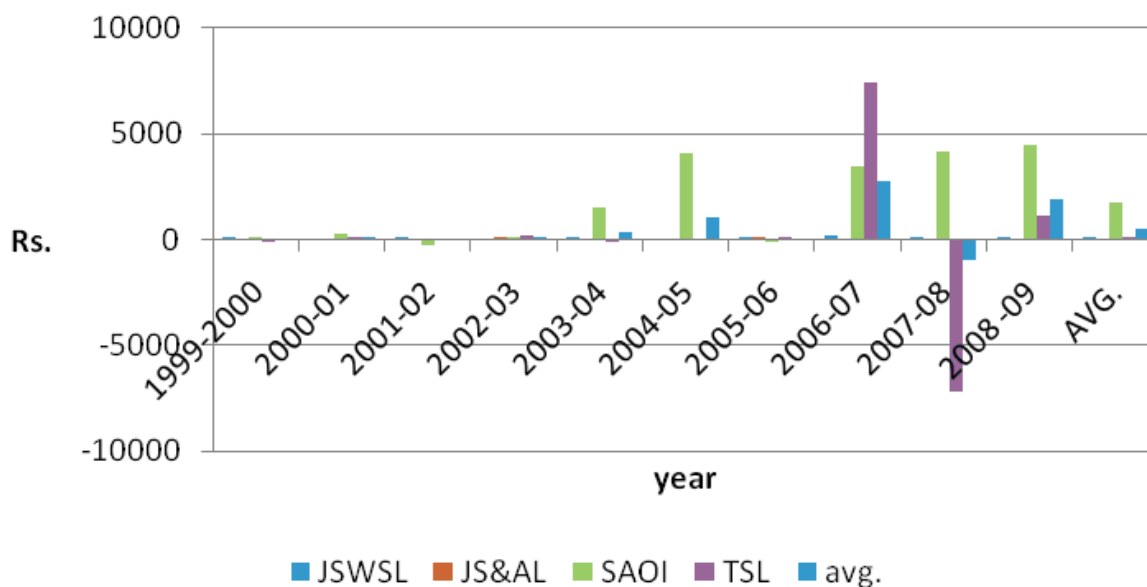


Table No. 8.4 showed Net cash inflow/ (outflow) due to net increase/(decrease) in cash and cash equivalents of selected steel companies of India. The Net cash inflow/(outflow) due to net increase/(decrease) in cash and cash equivalents of JSWSL was 8.29 crores in 1999-2000 and 32.3 crores in 2003-04 and 69.79 crores in 2008-09 with an average of 33.6. The Net cash inflow/(outflow) due to net increase/(decrease) in cash and cash equivalents of JS&AL was -0.18 crores in 2000-01 and -0.37crores in 2004-05 and 0.58 crores in 2005-06 with an average of 0.00 crores. Net cash inflow/(outflow) due to net increase/(decrease) in cash and cash equivalents of SAOI was 8.78 crores in 1999-2000 and 4096.3 crores in 2004-05 and -4469.09 crores in 2008-09 with an average of Rs.1771.7 crores. Net cash inflow/(outflow) due to net increase/(decrease) in cash and cash equivalents of TSL was -142.81 crores in 1999-2000 and -4.02 crores in 2004-05 and -4469.09 crores in 2008-09 with an average of Rs. 125.4 crores.

Table 8.5
Cash Flow Cash Opening Balance

(Rs. Crore)

Companies	JSWSL	JS&AL	SAOI	TSL	avg.
1999-2000	21.52	0	383.9	336.19	185.4025
2000-01	22.59	0.47	392.68	193.38	152.28
2001-02	4.06	0.29	667.43	239.23	227.7525
2002-03	14.75	0.24	416.37	219.99	162.8375
2003-04	9.01	0.87	512.91	373.12	223.9775
2004-05	41.31	0.41	2035.82	250.74	582.07
2005-06	43.23	0.04	6260.15	246.72	1637.535
2006-07	49.08	0.62	6172.64	288.39	1627.683
2007-08	265.55	N.A	9609.83	7681.35	5852.243
2008 -09	306.82	N.A	13759.4	465.04	4843.767
AVG.	77.8	0.4	4021.1	1029.4	1282.2
S.D	111.3	0.3	4744.5	2338.7	1798.7
max	306.8	0.9	13759.4	7681.4	5437.1
min	4.1	0.0	383.9	193.4	145.3

Source: computed from annual reports of respective companies

Chart No. 8.5

Cash flow cash opening balance

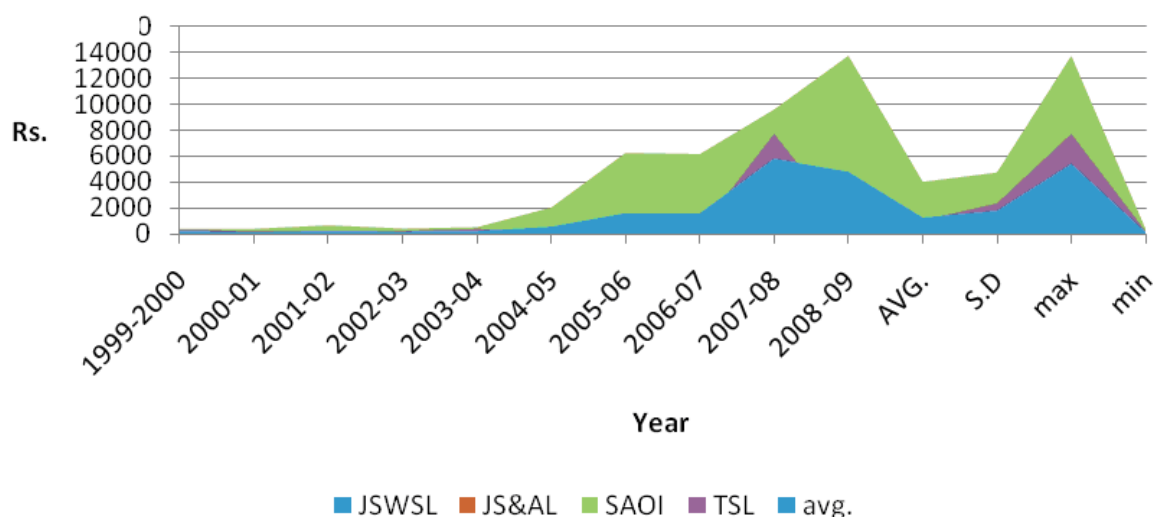


Table No. 8.5 showed Cash flow cash opening balance of selected steel companies of India. The Cash flow cash opening balance of JSWSL was 21.52 crores in 1999-2000 and 41.31 crores in 2004-05 and 306.82 crores in 2008-09 with an average of 77.8. The Cash flow cash opening balance of JS&AL was 0.47 crores in 2000-01 and 0.04 crores in 2004-05 and 0.62 crores in 2006-07 with an average of 0.4 crores. Cash flow cash opening balance of SAOI was Rs.383.9 crores in 1999-2000 and 2035.82 crores in 2004-05 and 13759.4 crores in 2008-09 with an average of 4021.1. Cash flow cash opening balance of TSL was Rs. 336.19 crores in 1999-2000 and Rs. 250.74 crores in 2004-05 and 465.04 crores in 2008-09 with an average of 1029.4 crores.

Table 8.6

Cash Flow Cash Closing Balance

(Rs. Crore)

Companies	JSWSL	JS&AL	SAOI	TSL	avg.
1999-2000	29.81	0	392.68	193.38	153.9675
2000-01	4.06	0.29	667.43	239.23	227.7525
2001-02	14.75	0.24	416.37	219.2	162.64
2002-03	9.01	0.87	512.91	373.12	223.9775
2003-04	41.31	0.41	2035.82	250.74	582.07
2004-05	39.98	0.04	6132.12	246.72	1604.715
2005-06	49.08	0.62	6172.64	288.39	1627.683
2006-07	242.4	0.22	9609.83	7681.35	4383.45
2007-08	306.82	N.A	13759.4	465.04	4843.767
2008-09	376.61	N.A	18228.5	1590.6	6731.913
AVG.	111.4	0.3	5792.8	1154.8	1764.8
S.D	140.5	0.3	6318.2	2331.0	2197.5
max	376.6	0.9	18228.5	7681.4	6571.8
min	4.1	0.0	392.7	193.4	147.5

Source: computed from annual reports of respective companies

Chart No. 8.6

Cash flow cash closing balance

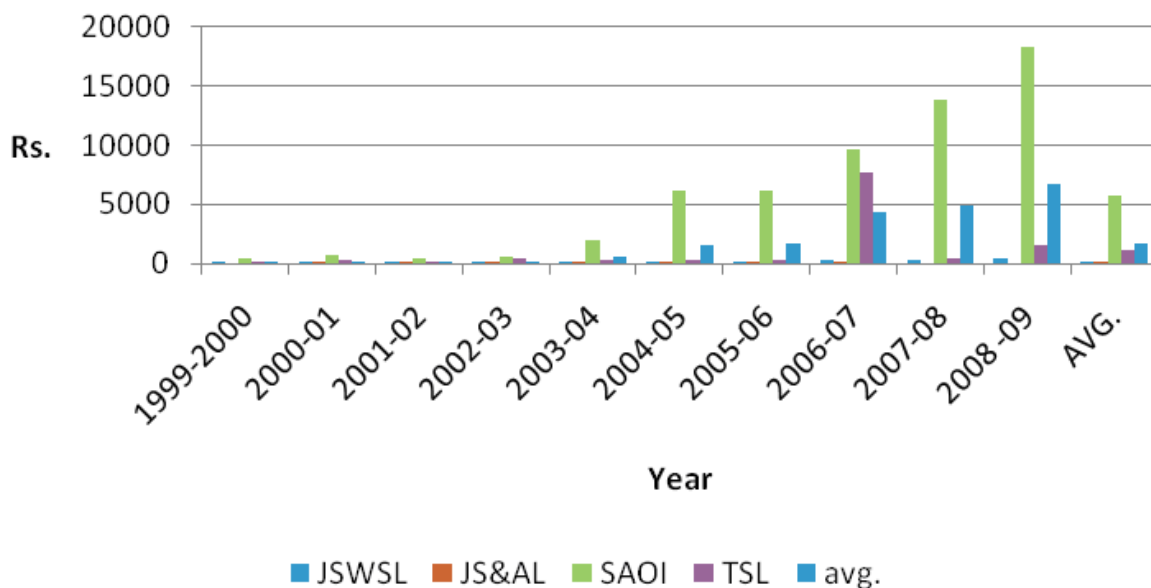


Table No. 8.6 showed Cash flow cash closing balance of selected steel companies of India. The Cash flow cash closing balance of ACL was 29.81 crores in 1999-2000 and 41.31 crores in 2003-04 and 376.61 crores in 2008-09 with an average of 111.4. The Cash flow cash closing balance of JS&AL was zero crores in 1999-2000 and 0.41 crores in 2003-04 and 0.22 crores in 2006-07 with an average of 0.3 crores. Cash flow cash closing balance of SAOI was 392.68 crores in 1999-2000 and Rs. 6132.12crores in 2004-05 and 18228.5 crores in 2008-09 with an average of Rs. 5792.8 Cores. The Cash flow cash closing balance of TSL was 193.38 crores in 1999-2000 and 246.72 crores in 2004-05 and 1590.6 crores in 2008-09 with an average of Rs.1154.8 Crores.

REFERENCES:

- 1. Robert H. Wessles Principles of financial Analysis –A study of financial management the Macmillan company New York 1961**
- 2. Robert H. Wessles, cit ;**
- 3. L.J.Gitman’ Principle of managerial finance (New York: Horper and Row Publishers 1976).**

CHAPTER:- 9
Summary, Findings and Suggestions

Particular	Page No.
Summary of Chapter -1 Conceptual framework of liquidity Management	247
Summary of Chapter -2 Profile of Steel Industry in India	248
Summary of Chapter -3 Research Design	248
Review of Chapter -4 Analysis of Liquidity	249
Review of Chapter -5 Analysis of Profitability	253
Review of Chapter -6 Analysis of Receivable Management	257
Review of Chapter -7 Analysis of Cash Management	261
Review of Chapter -8 Analysis of cash flow	265
Suggestions	267
Bibliography	270

CHAPTER-1

Conceptual framework of liquidity analysis

Present research dealt with the study of “**Analysis of liquidity of steel industry in India**”, which are mainly engaged in the production of different types of steel products.

The study is made to analyze liquidity, profitability, receivables, and cash of an organization. In the interest of getting good working results, every enterprise should have a periodical analysis of its liquidity and working capital. The areas of the analysis are liquidity, profitability, receivable and cash. For that the conceptual framework of Concept of Liquidity Management, Meaning of Liquidity Management, Principles of Liquidity Management, Techniques of Liquidity Management, Relationship between Liquidity and Profitability about the Study is given. The objective of this study is detailed cause and effect study of the efficiency and effectiveness in the use of resources available in the business enterprise. The importance and usefulness of liquidity management. Cash management, receivable management and profitability analysis of business are different for various users of the information such as for financial managers, investor, and shareholders, creditors, employees, Big business Houses, Government, and Society etc. For Financial managers this study is devised to measure the over all effectiveness of their own plans and policies. Investors and Shareholders are interested in the current and long term profitability of their investment. The employees, Shareholders, and Government are interested in the profits of a company. The society also expects to know about the social performance such as environmental obligations, employment, avenues, Social welfare etc.

The techniques, which are commonly used for the study, are such as ratio analysis, trend analysis, comparative statement analysis etc. Statistical techniques are also used for the purpose and they generally include the average, index, ANOVA- one-way analysis of variance, Standard deviation, variance etc. Diagrams, Graphs and Charts are also prepared and made use of.

CHAPTER-2:

Profile of Steel Industry in India

The steel group of companies in India plays an important role in development of the Indian economy, which is mainly engaged in manufacturing the steel products. Therefore, the brief profile of steel industry is given in this chapter. A brief profile steel industry, which includes the introduction, steel industry that is classified as primary producers and secondary (down stream) producers, introduction of steel industry, history of steel industry, global steel industry, demand of steel in India, supply of steel in india,demand supply mismatch, production of steel in india,cost and revenue concept, export and import, major players of steel,comptetion analysis, merger and acquisition, swot analysis, expected growth, factor holding back to Indian steel, and factor for financial crisis, critical success factors , global perspective and outlook which includes facts and figure about exports, import and production capital of Indian steel industry. In the last the brief introduction of selected units has been given, which included the ownership of the industry, main product, and incorporation of years.

CHAPTER-3:

Research Design

The subject of the present study is “Analysis of liquidity of steel industry in India”, which covers the period of the last ten years from 1999-2000 to 2008-09. The study covers the large plants of steel group of companies. The study is based on secondary data published by the steel group of companies in their annual reports and accounts. The main objective of the study is to know the position of steel industry, financial strength, liquidity position, financial efficiency and management of receivable and cash position in relation to total resources of selected units of steel group of companies.

he chapter covers problems related to steel industry, Relevance of the study, Review of the literature, Statement of problem, Objectives of study, Hypothesis of the study, Universe of the study, Period of the study, Sampling design, Data collection method, Tools and Techniques which included Various statistical measures like mean, standard deviation, regression, index number, have been used and least-square trend, qui-square of productivity have been fitted, Kruskal Wallis and one way-analysis of variance test have been applied to

test the validity of two hypotheses namely (1) Null hypothesis (2) Alternative hypothesis., Outline of Study, Finally the limitations of present study have been shown.

CHAPTER-4:

Analysis of Liquidity

The concept of liquidity within a business is vital to the understanding of financial management as it is the basic criteria to test the short-term financial position of the enterprise. Liquidity may be defined as the ability to realize value in money the real liquid asset. It has two dimensions: - The times required converting the assets into money and risks involved. (1).the certainty of the reliable price. Liquidity refers to affirm continuous ability to meet its short-term maturing obligations. Since cash is used to meet a firm's obligations, emphasis is given on holding large investment in current assets which include cash and 'near cash' items like receivables, short-term securities etc. thus, holding relatively large investment in current assets will result in no difficulty in paying the claims of the creditors and others.

According to Muraw Bahadur, "Analysis of liquidity provides the measure of the ability of the enterprise to meet its obligation. It is not sufficient that the final accounts show a profit and the balance sheet a rosy picture of financial health of the enterprise. All this will look meaningless, unless the cash available to meet obligations as and when they mature. The analysis of liquidity should therefore, be taken into consideration, the size of the components of current assets which can be readily converted into cash to meet maturing liability. The size, character and sequence of maturity of liabilities are also of significant importance & deserve due attention." The term liquid asset is used to describe money and assets that are readily convertible into money "Liquidity has two dimensions viz. time and risk." "The time dimension of liquidity concerns the speed with assets other than cash. The risk dimension raises the question of the degree of certainty about the conversion of inventories, receivable, receivable and other into cash with a little sacrifice in price as possible. Viewed from these, all assets will have a degree of liquidity and assets that comprise cash and near cash items in most liquid assets." The liquidity of any business results from its ability to generate cash. "The financially sound company is able to build up a reserve of cash in excess of requirement for operation. This surplus of cash is then available for the financing of expansion and for payment of debts and dividends." The working capital of a business represents the amount of current assets which the enterprise has in excess of the claims of the current creditors and with which, therefore, it is free to work. From this statement it would appear that the greater

the amount of working capital, or net current assets, the greater the degree of liquidity of the business, and so it is alleged that the amount of working capital is a measure of liquidity. The word liquidity was used by the financial accounting standard Board (FASB) “the amount of time that is expected to elapse until an asset is realized or otherwise converted into cash or until a liabilities has been paid”

Liquidity management therefore involves the amount of investment in the group of assets to meet short term maturing obligations-creditors and others. From the point of financing, normally a major portion of the fund required for financing current assets is obtained from long-term sources, equity and for debt, while the rest is met from short-term sources. It goes without saying that if the maturing obligations are met continuously as and when become due, creditors and others will have a feeling of confidence in the financial strength of the firm and this will sustain the credit reputation of the firm and a going firm will accordingly face difficulty in holding a particular level of current assets. But failure to meet such obligations on a continuous basis will affect the reputation, and hence credit worthiness of a firm, which will, in turn, make it more difficult to continue to finance the level of current assets from the short- term sources.

Measurement of liquidity ad trends

Current ratio = Current assets/Current liabilities

This ratio is an indicator of the firm’s commitment to meet its short-term liabilities. Current assets mean the assets that will either be used up or converted into cash within a year’s time or normal operating cycle of the business whichever is longer. Current liabilities means liabilities payable within a year or operating cycle, whichever is longer, out of the existing current assets or by creation of current liabilities. It is an index of the solvency f a concern. An ideal current ratio 2:1. The ratio is considered as a safe margin of solvency due to the fact that if the current assets are reduced to half i.e. one instead of two then also the creditor will be able to get their payments in full. However, a business having seasonal trading activity may show a lower current ratio at certain period of the year.

A very high current ratio is also not desirable since it means less efficient use of funds. This is because a high current ratio means excessive dependent on long-term sources of raising funds. Long-term liabilities are costlier than current liabilities and therefore, this will result in considerably lowering down the profitability of the concern.

The object of ascertainment this ratio is to measure the extent to which payment is to be made in a year. Hence, on the one hand, it is a measure of strength of the working capital positions of a concern and on the other hand it indicates the solvency of the concern.

The current ratio is the index of the concern's financial stability since it shows the extent of the working capital, which in the amount by which current assets exceeds the current liabilities.

Working capital turnover (Sales/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 ratio helps to assess the degree of efficiency in the use of short-term funds for generating sales.

In order to test the efficiency with which working capital is utilized the working capital turnover is calculated. However, a very high turnover of working capital might indicate that the working capital is insufficient for the given volume of business. A very low working capital turnover ratio should clearly be taken to mean that the capital is not sufficient active. So we can say a high ratio indicates that management is aggressive in its use of working capital. However, an excessive high ratio indicates poor working capital management may be inadequate at present sales.

Net working capital to current assets (Net working capital/Current liabilities):-It shows the financing mix that is used for financing the current assets. It also reveals the equity and long term vis-à-vis current liability financed portion of current assets. From the liquidity angle it throws light on the equity and long-term financed asset cushion for a given amount of current liabilities.

For analyzing trend and liquidity of steel Industry following ratios have been computed:-

1. Current ratio and ANOVA test.
2. Quick ratio and ANOVA test .
3. Absolute Liquidity Ratio and ANOVA test.
4. Current Assets to Total Assets Ratio.
5. Debtors to Sales Ratio
6. working capital turnover ratio
7. Debt equity ratio
8. Proprietary ratio.
9. Fixed assets to net worth ratio.

1. The current ratio of JSWSL, JS&AL SAIL and TL was less than the norm of 2:1. It means the solvency position of these companies was poor and precarious. Combined

current ratio of steel industry was 0.81 times. The solvency position was bad and short term creditors' position regarding their claims was not safe because companies had not sufficient funds in the form of current assets to meet their claims. ANOVA test showed that the difference is not significant.

2. In general the quick ratio has been lesser than the norm of 1:1 in JSWSL, JS&AL, and TSL. The financial position regarding the quick ratio of these companies is not very sound. Remaining companies ratio was less than one indicated poor liquidity position. Steel industry as a whole ratio was not more than one which indicated poor liquidity position of companies. ANOVA test showed that the difference is not significant.
3. Absolute quick ratio was Less than standard. It has decreased due to lower profits or losses. Working capital funds are invested in fixed and capital work in process. Therefore company is advised not to invest its liquid funds on long term assets. ANOVA test showed that the difference is not significant.
4. Current assets to total assets ratio was not satisfactory as a whole due to low value current assets; there was insufficient coverage of working capital in companies like JSWSL, JS&AL, SAIL and TSL. However the ratio of SAIL had been near 47% percent which reflects that the liquidity position of this company was little sound. It is suggested remaining (JSWSL, JS&AL and SAIL) companies should try to reduce the volume of current assets. ANOVA test explained that the null hypothesis is accepted and alternative hypothesis is rejected which meant the difference is insignificant.
5. Debtor to sales was the highest in JS&AL followed by JSWSL, SAIL and TSL. There is no proportionate increase in debtors with sales and ANOVA Test resulted that the difference among selected companies was insignificant
6. Analysis of working capital turnover reveals that there was no better utilization of working capital in JSWSL, JS&AL, SAIL and TSL, the turnover was moderate in TSL. There was negative ratio in JS&AL. Utilization of working capital in SAIL was very poor. Hypothesis was tested by using ANOVA test and resulted in insignificant difference.
7. On the basis of above analysis it can be concluded that the highest long term debt equity ratio was of 6.02 times of JSWSL. Followed by SAIL, TSL and JS&AL. The average of combined long term debt-equity ratio of steel industry was 2.47 times. The ratio in JS&AL was 2.00 times and the same was also zero in last two years of study period in JS&AL to negative net worth. Most of the companies under the study did not maintain the standard norm of 1:1. In JS&AL. The ratio was 0.17 times which was lowest among all the companies under the study and the company was more relied on owner's funds.

But there is high financial risk in JSWSL and SAIL. ANOVA test resulted that debt equity ratio does not differ significantly.

8. Return on net worth indicates how well the company has used the resources of the owners. On making an analysis of the performance of the steel units the return on net worth had been on average 10.38. It showed highly fluctuated trend during the whole years of study period. The return on net worth in the covered period ranged between 45.435 in 2004-05 and -26.353 in 2001-02 the steel group of companies under study. JSWSL and JS&AL had to make a struggle for achieving the standard. Other companies under study had however, come up to the standard. On the whole TSL had the highest return on net worth of 26.35 percent on an average in span of ten years followed by SAIL.
9. One way ANOVA test also explains that Return on Net worth Ratio of steel units under study is not deviated .
10. Fixed assets to Net-worth ratio have been calculated for ascertaining the percentage of fixed assets financing by owners of the company. The ratio showed fluctuated and increasing trend throughout the study period. The ratio was ranged between 4.61 times in 2002-03 and 1.00 times in 2006-07 with an average of 2.45 times. The ratio was above the standard norm of 65 percent, which means that the fixed assets were more than the net worth. The ratio in most steel units were very good because most of owner's fund has been utilized in fixed assets which generated good amount of return and increased earning potentiality.
11. One way ANOVA test also explains that Return on Net worth Ratio of steel units under study is significant.

CHAPTER-5:

Analysis of Profitability

Profit planning is an integrated part of overall process of financial planning. The term profitability refers to the ability of a given investment to earn returns from its use. Profitability can be ascertained and analyzed the computation of profits ratio either based on operating profit profits or net profits or both.

In this chapter the concepts of the profit, profitability and rate of return, bases of profitability measuring the profitability in relation to sales and capital employed, shareholders investment and dividend policy of the sample units have been analysis.

Profitability is a measure of the organizations ability to translate to its financial resources into mission related activities. Financial efficacy is desirable in all organization of individual mission. Profitability measures the intensity with which a business uses its assets to generate gross revenue and the effectiveness of producing, purchasing, pricing, financing, and marketing decisions. At the micro level profitability refers to the efficiency with which resources are correctly allocated among competing uses at a point of time. Profitability is a measure of how well an organization has managed certain trade of (risk and return, liquidity and profitability) in the use of its financial efficiency. The present study has been made in order to analysis profitability through ratio of the aluminum of companies in India. The profitability ratios which have been discussed in this chapter are: (1) Gross profit ratio: (2) Operating profit ratio: (3) Net profit ratio: (4) Return on gross capital employed (5) Return on net capital employed (6) Return on net worth (7) A study of earning per equity share of the company under study has been also made

12. The Net profit ratio in steel Companies in was satisfactory. The average ratio of TSL was highest among all the steel Companies. The average ratio of TSL (14.65 percent) followed by JS&AL (13.00)) and SAIL (6.15) JSWSL (2.92). The average ratio of JSWSL and SAIL indicated a very low profitability.
13. ANOVA (F) test indicates that there is significant difference in Net Profit ratio of steel units under study. Hence It can be concluded that there is no high deviation in the Net Profit ratio of steel units under study.
14. The analysis of the return on gross capital employed in individual steel of the study period reveals that it was the highest return on gross capital employed in TSL Followed by SAIL, JS&AL, and SAIL. In JSWSL and JS&AL Return on Gross Capital Employed Ratio of the company was satisfactory during the study period. The average gross capital employed was 25.09% which was quite satisfactory
15. ANOVA Test analysis indicates that there were similarities in Return on Gross Capital Employed Ratio of steel units under study.
16. Return on Net Capital Employed is the best test of overall profitability and efficiency of the business firm. A company with high rate of return on capital employed would be in a position to capitalize; e.g. it can take advantage of all favorable market opportunities.
17. The study shows that returns on capital employed in the steel units in India had marked a fluctuated trend. The average was 7.28 percent in steel units in India. This ratio was satisfactory. On the whole TSL had the highest return net on capital employed of 16.63

percent on an average in a span of ten years followed by JS&AL, JSWSL, and SAIL. As compared to the steel units in India the performance of JSWSL SAIL, and TSL were better. While the performance of JS&AL was lower. In the light of the above discussion it is suggested that JS&AL should undertake cost control measure so that increase net profit before interest and taxes of the company might enhance the return on net capital employed.

- 18.** One way ANOVA test of Return on Net Capital Employed ratio showed that there was not any significant different among the Return on Net Capital Employed ratio.
- 19.** Return on net worth indicates how well the company has used the resources of the owners. On making an analysis of the performance of the steel units the return on net worth had been on average 10.38 percent. It showed highly fluctuated trend during the whole years of study period. The return on net worth in the covered period ranged between 45.435 0 in 2004-05 and -26.353 in 2001-02 the aluminum group of companies under study. JS&AL had to make a struggle for achieving the standard. Other companies under study had however, come up to the standard. On the whole TSL had the highest return on net worth of 26.35 percent on an average in span of ten years followed by SAIL, and JSWSL.
- 20.** One way ANOVA test also explains that Return on Net worth Ratio of steel units under study is not deviated.
- 21.** The return on paid-up capital ratio was showing increasing trend of steel group of companies with an average of 155.27 percent. The ratio ranged between -435.20 percent in 1999-2000 and 582.65 percent in 2007-08. The ratio was the highest in JS&AL followed by JSWSL, TSL and SAIL.
- 22.** The result of ANOVA test showed significant difference.
- 23.** The earning per share registered a fluctuated trend during the period under study. The highest earning per share was in TSL, JSWSL and SAIL. The combined average earning per share of JS&AL indicated worst profitability position of unit.
- 24.** ANOVA Test indicates that there is insignificant difference in earning per share of steel units under study because the calculated value of 'F' is lower than table value.
- 25.** Percentage of dividend per share JSWSL showed fluctuating trend with an average of 0.31. 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. The ratio was zero in most of years.

- 26.** The ANOVA test indicates that the ratio was 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.
- 27.** Dividend payout ratio measures the relationship between the earnings belonging to the ordinary shareholders and the dividend paid to them It can be generalized that the dividend payout ratio of TSL was the highest followed by JSWSL, SAIL and JSWSL. The following companies showed the dividend payout ratio was lower than the average ratio of steel units like SAIL, SAIL and JSWSL.
- 28.** One way ANOVA explains that the difference among selected steel units does not differ.
- 29.** The total assets turnover ratio, which indicates the effectiveness of the utilization of assets, registered a fluctuating trend in almost all the companies under study. The ratio of JSWSL was the lowest 1.18 times in 2004-05 while it was the highest 6.45 times in JSWSL in 1999-2000. The ratio was in most of years more one in JSWSL, SAIL, TSL and JS&AL. The reason responsible for the lower ratio was the increase in the amount of assets because of huge expansion and development programmes. Thus, the addition to investment in various assets could not be resulted in proportionate in sale.
- 30.** The result showed by ANOVA test (F) reveals the difference in total assets turnover ratio were insignificant in all selected companies at the 5 percent level of significant.
- 31.** The fixed assets turnover ratio of JSWSL ranged from 1.09 times 2004-05 and 0.17 times in 1999-2000. The ratio showed fluctuating and mixed trend in almost all the selected steel companies under study during the period under review. The ratio was less than one times in JSWSL .Thus, the ratio suggests that the TSL, were able to utilize its fixed assets properly in generating sales whereas JSWSL failed to maintain the rate on increase in sales as compared to that in fixed assets JS&AL succeeded to a large extent on this front.
- 32.** It is evident from Table no. 5.4 that the difference between Fixed Assets Turnover Ratio in between groups and within groups was significant because the calculated value of 'F' (0.41) was less than the critical value of 'F' (2.15) so, null hypothesis is accepted and alternative hypothesis is rejected. So, it indicates no deviation in Fixed Assets turnover Ratio of steel units under study.
- 33.** The current assets turnover ratio of JSWSL ranged between 4.09 times in 2007-08 and 1.43 times in 1999-2000 indicating a mixed trend in almost all the selected steel units under study during the period under review. The combined average ratio 3.94 times. All the companies made excessive investment in current assets particularly in the form of

inventory and sundry debtor. The ratio was always more than two times in JS&AL and, TSL indicated efficient utilization of current assets.

34. It is evident from Table No.5.6. that the difference between Current Assets Turnover Ratio in between groups and within groups was significant because the calculated value of 'F' (1.28) was lesser than the critical value of 'F' (2.15) so, null hypothesis is accepted and alternative hypothesis is rejected. Therefore, it indicates no deviation in Current Assets Turnover Ratio of steel units under study.

CHAPTER – 6

MANAGEMENT OF RECEIVABLE

Account receivable is most prominent force of the modern business. It is considered as an essential marketing tool, acting as a bridge for the movement of goods through production and distribution stages to customers finally. A firm grants trade credit to protect its sale from the competition and to attract the potential customers to buy its product at favorable terms. When the firm sells its product or services and does not receive cash for it immediately, the firm is said to have granted trade credit to customers. Trade credit thus, creates receivable or book debt, which the firm is expected to collect in the near future. Receivable management, also termed credit management, deals with the formulation of credit policy, in terms of liberal or restrictive, concerning credit standard and credit period, the discount offered for early payment and the collection policy and procedures undertaken. It does so in such a way that taken together these policy variables determine an optimal level of investment in receivables where the return on that investment is maximum to the firm. The credit period extended by business firm usually ranges from 15 to 60 days. When goods are sold on credit, finished goods get converted into accounts receivable (trade debtors) in the books of the seller. In the books of the buyer, the obligation arising from credit purchase is represented as accounts payable (trade creditors). "Accounts receivable is the total of all credit extended by a firm to its customer." Poor management of accounts receivable are : neglect of various overdue accounts, sharp rise in the bad debt expense, and the collection of debts expense and taking the discount by customers even though they pay after the discount date and even after the net date. Since accounts receivable represent a sizable investment on the part of most firms in the case of public enterprises in India it forms 16 to 20 percent of current

assets. Efficient management of these accounts can provide considerable saving to the firm.

Factors involving in Receivable management:-

1. The terms of credit granted to customers deemed creditworthy.
2. The policies and practices of the firm in determining which customers are to be granted credit.
3. The paying practices of credit customers.
4. The vigor of the seller's collection policies and practice.
5. The volume of credit sales.

Credit procedure

For effective management of credit, the firm should lay down clear-cut guidelines and procedures for granting credit to individual customer and collecting the individual accounts. The firm should not follow the policy of treating all customers equal for the purpose of extending credit. The credit evaluation procedure of the individual accounts should involve the following steps:

(1) Credit information :-

In extending credit to the customers, firm would ensure that receivables are collected in full and on the due date. As discussed earlier, investment in receivables involves costs. If the firm fails to collect its receivables, there is a greater loss to the firm-loss of bad debt and cost of investment. Therefore, credit should be granted to those customers who have the ability to make payment on the due date. Collecting credit information involves expenses. The cost of collecting information should, therefore, be less than the potential profitability. In addition to cost, the time required to collect information should also be considered. The decision to grant credit cannot be delayed for long because of the time involved in collection the credit information. Depending on these two factors of time and cost, any or a combination of the following sources may be employed to collect the information.

(a) financial statement:-

One of the easiest ways to obtain information regarding the financial condition and performance of the prospective customer is to scrutinize his financial statements-balance sheet and sheet and the profit and loss account.

(b) Bank references :-

Another source of collecting credit information is the bank where the customer maintains his account. The firm should seek to obtain the information through its bank. Alternatively, the customer can be requested to instruct its banker to provide information required by the firm. Then, the firm can approach the bank. But in India the bankers do not give very clear answers to the enquiries made by the firm.

(c) Trade references :-

The firm can ask the prospective customer to give trade references. The firm may insist to give the names of such persons or firms with whom the customer has current dealings. This is a useful source to obtain credit information at no cost. Many times a sources to obtain credit information at no cost. Many times a customer can furnish misleading references. To guard against this, the honesty and seriousness of the referee should be examined.

(d) Credit bureau reports :-

To get comprehensive and correct information, credit bureau organizations which specialize in providing credit information, are employed in the advanced countries. In India also there is urgent need for such organizations. To begin with, the various trade associations and chambers of commerce can be developed to provide the useful credit information to their members.

(e) Prices and Yields on Securities :-

For listed companies, valuable references can be derived from stock market data. Higher price earning multiple an lower the yield on bank, other thing being equal lower will be the credit risk.

1. Credit investigation

After having obtained the credit information, the firm will get an idea regarding the matters which should be further investigated. The factors that affect the extent and nature of credit investigation are.

- (i) New or existing customers.
- (ii) Business line, background and the related trade risk of customers.
- (iii) Perishable or seasonal product.
- (iv) Credit policies and practices of company.

The firm which is up-to date in credit management can maintain each customer's credit file. A regular examination of the customer's credit file will reveal to the firm the credit standing of the customer. Credit investigation involves cost. But a credit decision without adequate investigation can be more expensive in terms of excessive collection costs and possible bad

debt losses. Therefore, credit investigation should be carried so long as the saving in terms of speedy collections and prevention of bad debt losses resulting from it exceed its costs.

2. Credit analysis :-

In the sequence of the credit appraisal, the next step is to conduct the credit analysis of the applicant. The evaluation of the applicant's financial conditions should be done very carefully. The applicant should be asked to provide the financial statements which will form a basis to analyses the performance and trends of the applicant's business activities.

3. Credit limit :-

Once the firm has taken a decision to extend credit to the applicant, the amount and duration of the credit have to be decided. The decision on the magnitude of credit will depend upon the amount of contemplated sale and the customer's financial strength. The credit line must be reviewed periodically in order to know the development in the account. If the tendencies of slow paying are found, the credit line can be revised downward. At times, a customer may ask for the amount of credit in excess of his credit line. The firm has not only to determine the amount of credit but also the duration of credit. Keeping in view the industry norm, the normal collection period should be determined.

4. Collection procedures :-

The collection procedures of the firm should be clear-cut and well-administered. The purpose of collections policy should be to speed up the collection of dues. If collections are delayed, alternative arrangement of finance to sustain production and sales will have to be made. The chances of bad debts also increase as the collection is delayed.

35. The receivable to current assets of all the steel companies shows fluctuating trend throughout study period. The minimum size of receivable to current assets in JSWSL is 26.67 (2008 -09), JS&AL is 57.77 (1999-2000), SAIL is 16.9 (2008 -09), and TSL is 8.53 (2006-07). The maximum size of receivable to current assets in JSWSL is 72.45 (1999-2000), JS&AL is 89.56 (2004-05), SAIL is 40.3 (2008-09), and TSL is 52.69 in (2000-01).The study of the composition of receivable to current assets is a very

important tool to evaluate the management of receivables. It assists to show the point where receivables are concentrated most.

36. There was an upward trend both sales and receivable of JSWSL during the study period. The average of sales indices (660.91) and receivables indices (163.03) indicates that the sales grow faster than receivables, which indicates that credit terms are less liberal. The sales had increasing trend throughout the study period while receivable also indicates increasing trend having some fluctuations. In the beginning of study period the receivable grow faster than sales but at the end of the study period the sales grow faster than receivables which show that the JS&AL's credit policy is capable of stimulating sales. An increasing trend can also be observed in the values of both sales and receivable of SAIL during study period but the receivables grow faster than sales.
37. Size of loans and advances of JSWSL showed Fluctuating trend during the study period. JS&AL showed decreasing trend with an average 37.95. SAIL showed high fluctuated trend with the range of 121.21 percent and 72.28percent with an average of 96.55. TSL showed increasing trend with an average of 335.21 percent. The standard deviation was 304.74 percent.
38. The accounts receivables turnover ratio during the study period was the highest for TSL followed by JS&AL, SAIL and JSWSL. The TSL displayed very good ratio while the JSWSL recorded proportionately very low turnover ratio.
39. The accounts receivables to sales ratio during the study period were the highest for Jindal Steel & Alloys Ltd followed by Tata Steel Ltd., J S W Steel Ltd. and Steel Authority Of India Ltd. The TSL displayed very good ratio while the JSWSL recorded proportionately very low turnover ratio.
40. Average collection period JS&AL was more than 100 days it means that these companies' efficiency of collection of debt from debtor's was not good. However, Collection period in JSWSL, and SAIL and was more than 50 days indicates that these companies could not collect their debt from the debtors efficiently which also shows an inefficient liquidity position of the companies, as the quality of debtor's was not good.

CHAPTER-7

MANAGEMENT OF CASH

One of the most important areas in the day-to-day management of the firms deals with the management of working capital. Which is defined as all the short-term assets used in daily operations? This consists primarily of cash, marketable securities, accounts receivable and inventory. The balances in these accounts can be highly volatile as they respond very

quickly to changes in the firm's operating environment. A highly liquid firm has sufficient cash to pay its bills at all times. An illiquid firm is unable to pay its bills when due.

In a financial sense, the term cash refers to all money items and sources that are immediately available to help in paying firms bills. On the balance sheet, cash assets include deposits in financial institutions and cash equivalent in money market funds or marketable securities. All highly liquid short-term securities are treated as cash. Most government and corporate securities are treated as cash because they may be liquidated through a telephone call. Cash is the most important current asset for the operations of the business. It is the basic input needed to keep the business running on a continuous basis. It is the money, which the firm can disburse immediately without any restriction. The term cash includes coins, currency, cheques held by the firm and balances in its bank accounts. J.M. Keynes postulated three motives for holding cash viz- transactional motive, precautionary motive, and speculative motive. These can be said to form the basis for cash management in business enterprise. Cash Management is concerned with minimizing unproductive balances, investing temporarily cash advantageously and to making the best possible arrangement to meeting planned and unexpected demand on the firm's cash. It involves managing of cash flows in and out of the firm i.e. cash flows within the firm and cash balances held by the firm at a point of time. Cash management must be thought of in terms of the overall liquidity needs of the firm, specifically its current assets and liabilities. In order to reduce the influence uncertainties with regard to cash needs and to ensure adequate liquidity, firms have to gauge the need for protective liquidity. The efforts involved for this purpose usually take the form of Assessment of the probabilities or odds that each of these will develop within a given period in future, such as 5 years. Assessment of the probabilities and developments creating cash drains will occur at the same time. Assessment of the likely amount of cash drain that will result in each of the contingencies develops. An important policy decision regarding cash management is: what should be the optimal amount of cash balance to consider the form impact of the following factors:

1. The philosophy of the management regarding liquidity and risk of insolvency.
2. The expected cash inflows and outflows based on the cash budget forecasts encompassing long-range and short-range cash needs.
3. The size of sales in relation to fixed asset investment.
4. The degree of deviation between the expected and actual net cash flows.
5. The maturity structure of the firm's liabilities.
6. The firm's ability to borrow at short notice in the event of emergency.

7. Efficient planning and control of cash.
8. The status of the firm's receivables and inventory
9. The credit position of the firm.
10. The nature of business.

“Cash Management must aim to reduce the required level of cash but minimize the risk of being unable to discharge claims against the company as they arise.” Since cash itself is not an asset capable of causing the profit differential for the firm. “It is desirable that cash balance be minimized as much as possible, the maintenance of adequate cash balances in an obvious requirement if a firm's solvency is to be maintained cash management consists basically of having a sufficient quantity of cash yet maintaining a balance at lowest figure adequate to meet current obligations.” Moreover, another important function which Cash Management now-a-days seeks to undertake is to maximize its profits by investing the surplus cash in some marketable securities. “The function of Cash Management, on the one hand starts when a customer writes a cheque to pay the firm on its accounts receivables, and on the other hand, ends when a supplier, an employee or the government releases collected funds from the firm on an account payable or accrual.”

There are five major approaches for effective controls are:

1. Exploitation of techniques of cash mobilization to reduce operating requirement of cash.
2. Major efforts to increase the precision and reliability of cash forecasting
3. Maximum efforts to define and quantify the liquidity reserve needs of the firm.
4. The development of explicit alternative source of liquidity.
5. Aggressive search for more productive uses for surplus money assets.

Some important ratios used as measures of cash control are discussed below: Some of the important technique of controlling cash is cash budgeting, ratio analysis, linear programming goal programming, simulation and portfolio management. Ratio analysis is widely in application. Some of the important ratios used as measures of cash control are discussed below:-

41. The quantum of JSWSL showing increasing trend with an average of Rs. 1674.14 crores. The indices of this company showed increasing trend with an average indices of 1098.81 percent. The cash position was very sound of JSWS.JS&AL showed very bad position of this company with an average of Rs.9.80 crores. SAIL also showed

very good position with positive trend with Rs. 4916.13 crores. Tata Steel Ltd also indicated very good trend with positive indices.

- 42.** Cash to current assets ratio of JSWL showed positive trend with an average 78.29 percent. The ratio ranged 125.61 percent in 2007-08 and 23.39 in 1999-2000. The ratio JS&AL showed bad position of cash in current assets. The ratio in SAIL showed fluctuated trend during the study period with standard deviation of Rs. 22.31 crores and average of 38.20. The ratio varied between 89.75 and 16.79. The ratio of TSL showed increasing trend with an average of 86.76. The cash position was very sound.
- 43.** On average cash to sales ratio had been 23.21 per cent in JSWSL during the ten years under study. It can be observed that the ratio showed increasing trend and on average increased by 41.62%. It was the lowest at 13.40 percent in 2000-01. JS&AL, on the other side had -0.04 percent of ten years average of cash to sales ratio but the ratio had hiked more during the last three years under study indicating that proportionate rise in cash held by the company had been more than the sales affected by SAIL during these years. SAIL had the highest average of cash to sales ratio (22.42 per cent) among all the selected concerns. It can be observed that TSL had huge amount of cash lying idle, which could have been fruitfully utilized.
- 44.** It may be concluded that the steel companies had high liquid cash position which indicates under utilization of cash. The indices of cash to sales ratio discloses that JSWSL had a good hand in managing his cash affairs during the study period.
- 45.** The ratio explains the speed with which cash is turned over. The higher the turn over, the less the cash balances required for any given level of sales; and other things remaining constant, it implies greater efficiency. The ration can also be use to establish the cash balances to be held; once the sales forecasts for various periods have been made, the required cash balance can be calculated, using historical cash turnover figures. However, the ratio shows only what is happening to the cash balance without indicating the imperfections and irregularities, caused in cash flows by the income through sales, which may be partly responsible. On the whole it may be concluded that there were a very low cash turnover ratio in housing finance companies under study. It indicates surplus of cash balance. Among the three companies the turnover ratio of SAIL was the best followed by JSWSL, JS&AL and TSL.
- 46.** In Cash to current liabilities of all the steel companies shows fluctuating trend throughout the study period. The minimum Cash to current liabilities in JSWSL is

11.20 (1999-2000,) JS&AL is -3.72 (2005-06), SAIL is 15.76 (2001-02), and TSL is 41.43 (1999-2000), the maximum Sales Cash to current liabilities in ACL is 131.93 (2006-07), GSCL is 43.80 (2001-02), SIL is 78.99 (2004-05), and SCL is 78.94 (2007-08),

47. The table No.7.8 presents that the ratio Net cash flow to Current Liability JSWSL had evidently not satisfactory level of liquidity during the period of study. Though JSWSL faced highly fluctuating trend ranging between -0.01 per cent and 0.08 per cent averaged a Net cash flow to current liabilities ratio of 0.01 per cent. The Net cash flow to current liabilities ratio in JS&AL had also showed fluctuating trend. The ratio was the lowest -0.01 per cent in 2001-02 and the highest 0.01 percent in 2005-06. SAIL had faced negative ratio of net Cash flow to current liability the ten years under study. TSL had average only 0.03 per cent of current liabilities to be met from profit. TSL accounted for carrying out 0.03 per cent current liabilities from the net profit. TSL had faced positive ratio.

48. Coverage of Current Liabilities Ratio of JSWSL showed negative trend from 1999-2000 to 2002-03. The average ratio was only 0.20. The average ratio was 0.02 in JS&AL with increasing trend. The ratio was negative in the beginning of the year and then after it went up. The average ratio was 0.20 with standard deviation of 0.33 percent. The ratio was showing increasing trend in TSL. The average ratio was 0.42 which showed the cover ability of the current liabilities by net profit.

CHAPTER -8

Analysis of cash flow statement

Cash flow statement provides information about the cash receipts and payments of a firm for a given period. It provides important information that compliments the profit and loss account and balance sheet. The information about the cash-flows of a useful in providing users or financial statements with a basis to assess the ability of the enterprise to generate cash and cash equivalents and the needs of the enterprise to utilize these cash flows. The economic decisions that are taken by users require an evaluation of the ability of an enterprise to generate cash equivalents and the timing and certainty of their generation. The statement deals with the provision of information about the historical changes in cash equivalents of an enterprise by means of a cash flow statement, which classifies cash flows during the period from operation investing and financing activities. Financial working capital needs of a business enterprise are a key are wherein a finance manager can play an active role. The

business concern needs funds to carry on the inventories of raw material, work-in-process and finished goods to pay of wage bills and factory overheads, to pay taxes and insurance and to provide credit facilities to customers. It may also require funds for seasonal requirements, for advertisements, campaigning and for overhauling of plant and equipment.

- 49.** Net operating cash flow from operating activities of JSWSL was showing fluctuated trend throughout the study period. The company is advised to sustain the cash from the operating activities. The net operating cash flow of JS&AL showed high fluctuation with an average of Rs. Crores 1674.14. The JS&AL showed Satisfactory result about the Net operating cash flow from operating activities from 1999-2000 to 2008 -09 .The SAIL indicated positive trend from 2000-01 to 2008-09 .Whereas TSL manifested downward trend throughout the study period.
- 50.** Table No. 7.2 showed Net cash inflow/ (outflow) from investment activities from 2000-01 to 2008-09. The JSWSL and TSL showed negative net cash flow from investing activities which means both firms have invested huge amount in fixed assets. Whereas the JS&AL and SAIL also showed decreasing negative trend with an average of -581.2 and 0.4. And the JSWSL and TSL have also manifested bad position of net cash flow from investing activity.
- 51.** Table No. 7.3 showed Net cash inflow/ (outflow) from financing activities from 2000-01 to 2008-09. The JSWSL showed average cash from financing activities is Rs. 119.2 crores and JS&AL indicated downward trend whereas SAIL also showed downward and negative trend throughout the study period. TSL indicated high fluctuation with an average of Rs. 2044.6 crorer. The JSWSL and TSL also showed high fluctuations in their trends from 2000-01 to 2008-09.
- 52.** Table No. 7.4 showed Net cash inflow/ (outflow) due to net increase/ (decrease) in cash and cash equivalents during the research period. The position of net cash flow was very good in JSWSL. But the position of net cash flow was not good because it was minus. The cash flow was little positive in SAIL whereas cash flow was JS&AL crores in TSL. The cash flow was 33.6 Crores in JSWSL. The TSL showed positive cash flow during the research period.
- 53.** Table No.7.5 showed opening balance of cash flow of steel companies during the research period. The highest cash opening balance was in SAIL followed by TSL, JSWSL, and JS&AL. The opening balance of cash flow of below the industry average of JSWSL, JS&AL and TSL.

54. Closing balance of cash was shown in the Table No. 7.6. The in most of the companies closing balance was positive. The highest closing balance of cash was in JSWSL, UCL, SAIL, and TSL. Whereas SAIL showed Closing balance of cash more than industry average.

SUGGESTIONS:

As a researcher based on analysis has found the following suggestions for the betterment of the selected steel group of companies.

1. The company should try to increase the production so as to get economies of large-scale production. It will assist in raising the rate of return on capital employed.
2. In order to increase the profitability of the companies, it is suggested to control the cost of goods sold and operating expenses.
3. The management should try to adopt cost reduction techniques in their companies to get over this critical situation.
4. The quantum of sales generated should be improved impressively in order better to enjoy better per of the assets and capital employed.
5. The selected steel Group of Companies is the capital intensive in nature but the policy of purchase of fixed assets should be carefully planned and reviewed so that the funds may be properly utilized.
6. The selected steel units should try to match the amount of working with the sales trends. Where there is a deficit of working capital, they should try to build on adequate amount of working capital. Where, there is an excessive working capital, it should be invested either in trade securities or should be used to repay borrowings.
7. The management should try to utilize their production capacity fully in order to reduce factory overheads and to utilize their fixed assets properly.
8. The burden of interest has produced a deteriorating effect and reduced the percentage of net profit. It is suggested that the companies should try to reduce the interest burden gradually by increasing the owner's fund.
9. The few companies, which did not follow a definite policy of financing fixed assets, should follow such policy.
10. To strengthen the financial efficiency, long-term funds have to be used to finance core current assets and a part of temporary current assets. It is better if the companies can reduce the over sized short- term loans and advances eliminates the risk arranging finance regularly.

11. The policy of borrowed financing in selected steel group of companies under study was not proper. So the companies should use wisely the borrowed funds and should try to reduce the fixed charges burden gradually by decreasing borrowed funds and by enhancing the owner's fund. For this purpose companies should enlarge their equity share capital by issuing new equity shares.
12. For regular supply of raw materials and the final product infrastructure facilities are required further improvement.
13. Cost accounting and cost audit should be made mandatory for this units and cost sheet along with annual financing statement should be prepared.
14. The public sector enterprises set up in backward areas were not guided by commercial considerations. They were set up to fulfill the aim of balanced regional development.
15. There has been too much of government interference in policy and day-to-day working and decisions. This leads to delays in decision-making. This should be abolished.
16. There is no incentive to the employees to perform better. Also there is no accountability because no one is held responsible for a failure in achieving targets for this kind of problem responsibility centre should be created.
17. Improper planning and delays in implementation of projects lead to rise in their cost. So properly planning should be made.
18. Public sector enterprises have long enjoyed a monopolistic position. Private sector was not allowed entry. This, in the absence of any competition, means that any performance was good performance. Due to absence of competitor there was no incentive to cut down costs or improve the quality of the product.
19. There is overstaffing in public enterprises. The number of persons employed is more than what is required to run the public enterprises efficiently. This increases the cost and reduces profitability of these enterprises.
20. The steel companies should reduce power and fuel consumption by using low as content coal (imported coal), lignite, agro waste product especially ground nut husk, and beggars should be used as coal substitute.
21. To regularize and optimize the use of cash balance proper techniques may be adopted for planning and control of cash. The investments in inventories should be reduced and need to introduce a system of prompt collection of debts.
22. Selected steel companies should try to use properly their operating assets and should try to minimize their non-operating expenses.

23. The government should minimize the subsidy and encourage the capital market for the steel companies.

BIBLIOGRAPHY:

(A) BOOKS

- Agrawal, N.K. (2003) Management of Working Capital, Sterling Publishers Pvt, Ltd, New Delhi.
- Agrawal, N.P (1983) Analysis of Financial Statements, National Publishing House, New Delhi.
- Anil Kumar (2000): Working Capital Management of Munjal Shows Ltd; in M.Com Dissertation submitted to University of Rajasthan Jaipur
- Anthony, Robert N (1984): Management accounting, Text and Cases, Richard D. Irwin, Inc. Illinois.
- Archer, Stephen H. & D Arrnosio (1987): The Theory of Business Finance, New York and London.
- Batty, J. (Second ed.) Management Accounting, Macdonald & Events Ltd., London.
- Beckman, Theodore N. (1992): Credits and Collection Management and Theory, Me Graw Hill, New Delhi.
- Brigham, Eugene F. and Risks, R Bruce (1998): Readings in Essentials of Management, Finance, Holt, Rinehart and Winston. U.S.A.
- Bucha, Jooseeph and Koenigsberg ernest (1970): Scientific Inventory Management, Prentice Hall of India, Pvt. Ltd., New Delhi.
- Butchest F.F and Hicks C.M (1948): Corporate Finance, New York.
- Chadda, R.S. (1991): Inventory Management in Irid.a, Bombay.
- Chapin, Albert F. (1947) Credit and Collection - Principawls and Practice, New York.
- CME (1996), India's Industrial Sector, Centre for Monitoring Indian Economy Pvt. Ltd.
- CMIE (2000), Corporate Sector, Mumbai, Centre for Monitoring Indian Economy Pvt. Ltd.
- Cumen, Ward S. (1987): Principles of Financial Management, New York.
- Dauten Carl A. (1991): Business Finance- The fundamentals of

- Financial Management Englewood Cliffs, New Jersey.
- Dobler, Donald W. and Leelamer(Jr) (1985): Purchasing and Material Management, New York.
- Donaldson E.F. (1957): Corporate Finance, Ronald Peress Company, New York.
- Ernest, W. Walker (1976): Essentials of Financing Management, Prentice Hall, New Delhi.
- Foster, Louis O. (1942): Introduction to Accounting Richard Irwin, Chicago.
- Foulka, Roy A. (1959): How to Control Accounts Receivable for Greater Profits, New York.
- Foulke, Ray A. (1957): Practical Financial Analysis, Me Graw Hal, New York.
- Gestenberg, Charles W. (1962): Financial Organisation and Management of Business Asia Publishing, Sultan Chand and Sons.
- Gupta, R.K. (1990), Profitability, Financial Structure and Liquidity, Jaipur, Printwell Publishers.
- Guthmann, H.G. (1953): Analysis of Financial Statement, New York.
- Hanson, A.M. (1962): Managerial Problems in Public Enterprises,

Bombay.

- Hartley, W.C.F. (1967): Cash Planning, Forecasting and Controlling, London.
- Herbert, B. Mayo (1978): An introduction to Money and Financial Management, D.C. Health and Company.
- Hingorani, N.L. and Ramanathan, A.R. (1973): Management Accounting Sultan Chand and Sons, New Delhi.
- Homonoff, Richard and Mullins, David Wilery, Jr. (1975): Cash Management, D.C. Health and Company.
- Howard, L.R. (1971): Working Capital - its Management and Control, Mcdonald and Evans Ltd., London.
- Johan, N. Myer (1962): Financial Statement Analysis, Prentice Hall, New Jersey.
- Johnson, R. W. (1971): Financial Management, Allyn and Bacon, Boston.

- Kennedy, Ralph D and McMullan Stewart Y. (1968); Financial
- Statements, Form, Analysis and Interpretations, Richard D. Irwin.
- Illinois.
- Kent, Raymond P (1960); Corporate Financial Management, Richard
- D. Irwin, Illinois.
- Khare, B.d. (1971): Inventory Control, National Productivity Council,
- New Delhi.
- Kuchhal, S. C.: Financial Management, Chaitanya House, Allahabad.
- Kulkarni, P.V. (1983): Financial Management, Himalaya Publishing
- House, New Delhi.
- Kumar, P. (1991): Analysis of Financial Statements of Indian
- Industries, Delhi, Knishka Publishing House.
- Lawrence, D. Schall and Charles W. Haley: Introduction to Financial
- Management, Me Graw Hill Book Company, New York.
- Lerner, Engine M (1963): Reading in Financial Analysis and
- Investment Management, Me Graw Hill Book Company, New York.
- Lincoln, Edmond E (1926): Applied Business Finance, Me Graw ahill,
- New York.
- Mallick, A. K. and Sur. D. (1991): Working Capital Management; A
- case study of Hindustan Lever Ltd. Finance India, Vol. XIII, Delhi.
- Mayor, John. N. (1974): Financial Statement Analysis, Prentice Hall
- of India Pvt. Ltd., New Delhi.
- Mehta D.R. (1974): Working Capital Management, Prentice Hall Inc.
- Englewood clifft.
- Mishra R. K. (1975): Working Capital with Reference to Selected
- Public undertaking in India Publications Pvt. Ltd. Bombay.
- Mitchell, W.E. (1967): cash forecasting, Pennsylvania, International
- Text Book.
- Nagar. K.N. (1974): Basic elements of statistic, Meenakshi
- Prakashan, New Delhi.
- National Association of Management (1965): Credit Management
- Hand Book, Richard, D.Irwin, Wood III.
- National Council of Applied Economic research (1966): Structure of
- Working Capital, New Delhi.

- Nigam, B.M.L. (1983): Advanced Cost Accounting, Himalaya Publishing House, Bombay.
- O'Donnell and Milton, S Goldberg (1964): Accountant Financial Administration, Prentice Hall of India, Pvt. Ltd., New Delhi.
- Pandey, I.M. (1983): Financial Management, Vikas Publishing House Pvt. Ltd., New Delhi.
- Parashar, S.P. (1986): Liquidity Management, New Delhi, Vision Books Pvt. Ltd.
- Park Colin and Gladson John W (1963): Working Capital, Me Millan, Company, New Delhi.
- Robert, N. Anthony (1968): Management Accounting - Text and Cases Richard D. Irwin. Inc.
- Saloman, J. Flink and Donald Granewald (1969): Management, Finance John Wiley and Sons Inc.
- Sharma, B.S. (1974): Financial Planning in Indian Public Sector-A Management Approach, Vikas Publishing House, New Delhi.
- Smith, K.V. (1974): Management of Working Capital, West Publishing Company, New Delhi.
- Star, Martin K. and David W Miller (1962): Inventory Control, Theory And Practice, Englewood Cliffs, Prentice Hall New Jersey.
- Sur, D. (1999), Liquidity Management; A case Study of Tata Tea Ltd, accepted for publication in the book edited- by Dr. P Mohana Rao on Various Aspects of Financial Management.
- Sur, D (2000), Liquidity Management: An Overview of Four Companies in Indian Electricity Industry, accepted for publication in the Management Accountant, ICWAI, Kolkata.
- Sur, D. Biswas Jo and Ganguly P (2001): Liquidity Management in Indian Private Sector Enterprises: A Case study of Indian Primary Aluminium Producing industry in Indian Journal of Accounting VOL XXXII June.
- Thomoas Keens, D.L. (1950): Business Account and How to Read them in Studies in Accounting W.T. Barter, Sweet and Maxwell Ltd.
- Urmila Singh (2002): Working Capital Management (A comparative study of public and private sector industries India) Ph.D. Thesis submitted to University of Rajasthan for Doctor of Philosophy.

- Van Home, J.C. (1996): Financial Management and Policy, New Delhi, Prentice Hall of India.
- Van, Home James C. (1971): Fundamentals of Financial Management Prentice Hall Inc. Englewood Cliffs, New Jersey.
- Vyas, J.N. (1983): Financing and Industrial, N.K. Vyas, Family trust, Ahemdabad.
- Walker, Ernest, W (1976): Essentials of Financing Management, Prentice Hall of India Ltd., New Delhi.
- Walter, E.M. and William Banghu (1996): Financial Planning and Policy, Harper Brother, New York.
- Walter.M.H. (1966): The Profitable Use of Capital in Industry, I.C.W.A., London.
- Ziauddin Khan and Arora R.K. (1975): Public Enterprises in India.

(B) LIST OF PERODICALS

1. DAILIES

1. The Time of India
2. Hindustan Times
3. Rajasthan Patrika
4. The Economic Times
5. The Financial Express
6. Business Line

2. WEEKLIES

1. Business Week
2. Commerce
3. Economic and Political Weekly
4. Indian Finance
5. Indian Trade Journal

3. MONTHLIES

1. Reserve Bank of India - Bulletin
2. State Bank of India - Monthly Review
3. Journal of Industry and Trade

4. QUARTERLIES

1. Indian Economic Journal
2. Reserve Bank of India - Bulletin
3. Indian Journal of Commerce

5. YEARLIES

1. Economic Survey, New Delhi
2. RBI- Annual Report
3. Reserve Bank of India - Report on Currency and Finance

6. OTHER PUBLICATIONS

1. Various Plan