



An Analysis of Liquidity Position of Selected Ferro Alloy Producing Units In India

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ABSTRACT

The Indian Steel industry has huge potential considering the fact that the per capita consumption of steel in India is very low as compared to major nations of the world and as it has been estimated that India would be the fastest growing economy in the world. In such scenario it also become important to analyse the position and performance of the associated industries. One of the closely associated industry with Steel is Ferro Alloy industry so it becomes very imperative to analyze the status of Ferro Alloy industry of the India. Therefore the objective of this study is to analyse the status of the manganese base Ferro Alloy producing units with respect to Liquidity position of the Ferro Alloy industry. For the purpose of this study, four manganese base Ferro Alloy producing units has been identified. The three ratios in the liquidity ratio category has been calculated using the data collected from annual, websites etc. for the period extent 2005-2015. In the study it is found that Liquidity position of the selected Ferro alloy units is extent uniform upto maximum and it seems sound as far as current ratio and quick ratio is concerned, however there is scope of improvement in case of cash ratio. Further, it is concluded that there is no significant difference in the liquidity ratios of sample units.

KEYWORDS

Ferro alloys, Liquidity, Current Ratio, Quick ratio, Cash Ratio.

INTRODUCTION

Steel industry is the backbone of any Nation since as steel plays vital role in the overall development of the nation especially in the growth of infrastructure sector. The Indian Steel industry has done remarkably well after the independence but still this industry has huge scope to grow mainly because of the growing domestic demand. India, though is the fourth largest producer of Steel in the world, the consumption of Steel in India is much lower than its potential. In case of India the per capita consumption was just 59.4kg in the year 2014 which was very low as compared to developed countries like United States, Canada, France and Germany where it was 331.4kg, 428.5kg, 193.6kg and 473kg respectively for the same year. therefore, The potential of growth of this industry is evident and when this industry would be also growing the industries associated with the Steel industry would be having great chance to grow. One of the closely associated industry with Steel is Ferro Alloy industry so it becomes very imperative to analyze the status of Ferro Alloy industry of the India.

The Indian Ferro Alloy industry is highly fragmented and many small units are operating in this sector. Further, there are many types of Ferro Alloys which are produced with different objectives. There are two major groups of alloys namely Bulk and Noble Ferro Alloys. Bulk Ferro Alloys is the group of Ferro alloy where Ferro alloys are made using the metals such as Manganese, Chromium, Silicon and Nickel to produce the Ferro alloys like Ferro manganese, Ferro chrome, Ferro silicon silico manganese etc. and other is Noble Ferro Alloys which are used in much smaller proportion for addition of Vanadium, Molybdenum, Tungsten, Zirconium, Titanium, Boron, Tantalum, Magnesium Silicon and extra Low Carbon Ferro Chrome etc.

For the purpose of this study the selected Manganese based Ferro Alloy producing units are considered since as these types of bulk Ferro Alloys contributes more to the total production of Ferro Alloys as compared to other Ferro Alloys in India. The purpose of this study is to analyse the status of the manganese base Ferro Alloy producing units with respect to

Liquidity of the units.

REVIEW OF LITERATURE

Rooh Ollah Arab, Seyed Saadat Masoumi and Azadeh Barati, in the paper "Financial Performance of the Steel Industry in India: A Critical Analysis" evaluates the financial performance of Indian steel producer namely Tata Steel Ltd., Jindal Steel & Power Ltd., J S W Steel Ltd., Bhushan Steel Ltd. and Steel Authority of India Ltd. In this study, authors analysed the financial performance of above identified steel companies with respect to Liquidity, Solvency, Activity and Profitability. The authors concluded that there is significant difference in the financial performance of identified units in the steel industry in India with regard to Liquidity, Solvency, Activity and Profitability Position.

"In a Comparative Study of Financial Performance of SAIL and TATA Steel Ltd", Dr. Vivek Singla analysed the working capital and profitability of SAIL and TATA Steel Ltd with an objective of evaluating the overall working capital management, the profitability and trends in financial performance of these companies. The study covers a period of five years from 2007-08 to 2011-12. The method used by the author for comparison is ratio analysis. Based on the study, it was concluded that TATA Steel's performance is better than SAIL.

Dr. Monika Maheshwari has conducted a study on the topic titled-"Measuring Efficiency and Performance of Selected Indian Steel Companies in the Context of Working Capital Management". This study was carried out with the understanding that an efficient working capital management is necessary for achieving both liquidity and profitability of a company. For the purpose of the research, author has selected major and significant players of the Indian steel industry representing the public and private sector viz. Steel Authority of India Ltd., Tata Steel Ltd., JSW Steel Ltd. and Essar Steel Ltd. with an objective to measure working capital managing efficiency of selected Indian steel companies. From this study, the author reveals that the over all performance of all selected steel companies has been quite satisfactory during the study period with certain

variations like in spite of all adverse economic conditions and competition Tata Steel Ltd. is able to show impressive profits and posting good EBIT margin while SAIL is fetching highest average return on capital employed.

Pramod Prabhakar Kamble has carried out "A Study of Financial Analysis of MRF Ltd". The period of ten years was taken for this purpose. On analyzing the financials of MRF Ltd., the author concluded that the liquidity position, short term solvency position and profitability is satisfactory. Further, the progress made by the company during the last 10 years is exceptionally well and the company is growing speedily.

Henry W. Collier, Timothy Grai, Steve Haslitt, Carl B. McGowan, Jr. in their research paper- "An Example of the Use of Financial Ratio Analysis: The Case of Motorola" demonstrated the use of actual financial data for financial ratio analysis. Evaluating Motorola relative to the semiconductor industry, it has been found that with respect to telecommunications equipment industry, Motorola has a better liquidity position. Thus, authors concluded that financial ratio analysis is complicated for companies that do not readily fall into a single industry.

In a paper of 'A brief history of Indian iron and steel industry', the author K.N.P. Rao has described the journey of Indian Steel industry.

In the paper "Indian Ferro Alloy Industry- Present Status and Future Outlook" the authors C.N. Harman and N.S.S.RamaRao, discussed in detail about the evolution of the Indian Ferro alloy industry in a phased manner.

OBJECTIVES

The core objective of this study is to analyze the efficiency of selected Ferro Alloy producers in terms of liquidity management. Thus the objectives of the study are as under:-

1. To study the liquidity position of the selected Ferro Alloy producing units.
2. To find whether the liquidity position is uniform among the selected Ferro Alloy producing units.
3. To compare the liquidity status of the selected Ferro Alloy producing units.

RESEARCH METHODOLOGY

NATURE AND SOURCE OF THE DATA: - The data is mainly collected from secondary sources which includes the annual reports and websites of selected Ferro Alloy producers. Various books, research papers, news articles along with the websites and reports of agencies like world steel organization, Indian Ferro Alloy Producers' Association, US government Geological department, Indian Bureau of Mines (IBM) are also referred for framing conceptual framework of the paper.

SAMPLE SIZE AND PERIOD : - The data for a period of eleven years i.e. from FY 2004-05 to FY 2014-15 of identified units is taken for this study. As Ferro Alloy industry is very fragmented, the scope of this study covers the manganese based Ferro Alloy producers only. The four manganese base Ferro Alloy producing units which are identified are as under:-

MEL/ CFP:- MEL (stands for Maharashtra Electros melt Ltd), now become CFP i.e. Chandrapur Ferro Alloy plant on account of merger of MEL with SAIL w.e.f.. 13th july 2011. has been one of the largest producer of manganese base Ferro alloys. In this paper CFP henceforth would be referred as MEL only since for the majority of the study period it was MEL.

Hira Ferro Alloys: It is an active contributor in the production of manganese based Ferro alloys in modern steel making and refining. It is listed in BSE, Indore, Delhi and Chennai stock exchange, India and one of pioneer to produce Ferro alloys in India.

Impex Ferro Alloys:- The company was incorporated in **1995** with the intention to set up a plant for manufacturing

Silico Manganese and Ferro Manganese.

Maithan Alloys Ltd:- It is among India's leading manufacturers and exporters of niche value-added manganese alloys. The company has emerged as a reputed provider of customised manganese alloys to large and growing steel companies the world over.

TOOLS AND TECHNIQUES:- The ratio analysis technique has been used to analyse the liquidity position of the identified units. The liquidity ratios which are used in this study are as under:-

- Current Ratio:-
- Quick Ratio and
- Cash Ratio

The variables used in the study are quantitative variables. The one way ANOVA test is carried out for the purpose of Hypothesis testing.

FORMULATION OF HYPOTHESIS :-The hypotheses are formulated taking into account the objective of the study. The hypotheses for this study are as follows:-

1. **H1:-** There is significant difference in the Current asset to current liability ratios of the sample units.
2. **H1:-** There is significant difference in the Quick ratios of the sample units.
3. **H1:-** There is significant difference in the Cash ratios of the sample units.

DATA ANALYSIS AND HYPOTHESIS TESTING

Current Ratio: -

When all the components of current assets are added and same is divided by the current liability, the current ratio is obtained. The mathematical representation of the current ratio is as follows:

Current Ratio= Current Asset/ Current Liability

The current ratio for the study period has been calculated and demonstrated in table 1 as under:-

Table:-1

Current Ratio (in fraction)				
Years	MEL	Hira Ferro Alloys	Impex Ferro Alloys	Maithan Alloys
2004-05	1.31	4.11	2.44	1.72
2005-06	1.40	2.92	2.61	2.08
2006-07	1.69	2.11	2.52	2.42
2007-08	1.64	1.87	2.14	1.94
2008-09	1.93	3.05	1.89	2.06
2009-10	2.55	3.03	2.03	1.80
2010-11	3.26	1.55	1.24	1.44
2011-12	2.44	1.18	1.29	1.56
2012-13	1.01	1.22	1.25	1.54
2013-14	3.28	1.42	1.04	1.70
2014-15	3.10	1.43	1.40	1.94

Source:- Calculated using the data of annual reports and data received through communication with the identified units.

From the table above it is evident that the current ratio of the sample units for the given period was never reported below 1:1. There is up and down i.e. fluctuating movement of current ratio. The Hira Ferro Alloys has the highest average current ratio during this period i.e. 2.17:1, MEL has just below it i.e. 2.15:1. Impex Ferro alloys and Maithan Alloys have 1.80:1

and 1.84:1 average current ratio respectively. The standard current ratio is 2:1. And all the sample units on an average basis has shown current ratio near to the standard current ratio, indicating the efficient management of current liabilities and current assets. Moreover, in none of the year the sample units have shown the current ratio below 1:1. This suggests that all the sample units were able to meet the short term obligations using their current assets.

Quick Ratio

The current assets also comprises of the inventory portion but inventory are the current assets which can't be readily converted into cash and therefore to get more clear picture about ability of the company to easily meet its obligations, the inventory can be excluded. The current asset except the inventory is called as quick asset and when quick asset is divided by the current liabilities we get quick ratio.

The mathematical representation of the quick ratio is as follows:

Quick Ratio= (Current Asset-Inventories)/ Current Liability
The quick ratios for the given period for the identified units are presented in the table 2.

Table 2

Quick Ratio(in fraction)				
Years	MEL	Hira Ferro Alloys	Impex Ferro Alloys	Maithan Alloys
2004-05	0.69	2.39	0.70	0.62
2005-06	0.57	1.76	1.03	1.44
2006-07	0.68	1.25	0.90	0.97
2007-08	1.24	1.16	1.14	0.80
2008-09	1.32	1.63	1.09	1.20
2009-10	1.88	1.58	1.11	1.37
2010-11	2.18	0.87	0.66	0.88
2011-12	0.40	0.70	0.68	1.07
2012-13	0.08	0.89	0.75	0.98
2013-14	0.17	0.73	0.71	1.02
2014-15	0.07	0.67	0.99	1.37

Source:- Calculated using the data of annual reports and data received through communication with the identified units

From the table above it is evident that the quick ratio of the identified units follows the same trend. The average quick ratio for MEL, Hira Ferro Alloys, Impex Ferro Alloys and Maithan Ferro Alloys for the given period was 0.84:1 , 1.24:1, 0.89:1 and 1.07:1 respectively. The standard quick ratio is 1:1 and out of four identified units two namely Hira Ferro alloys and Maithan Ferro Alloys successfully maintained the quick ratio above the standard.

Cash Ratio: -

A cash ratio is the improved or refined version of the quick ratio. It is the ratio of company's cash and cash equivalent assets to its total liabilities. This ratio indicates the extent to which readily available funds can pay off current liabilities. The mathematical representation of the quick ratio is as under:

Quick Ratio= (Current Asset-Inventories)/ Current Liability
The cash ratios for the given period for the identified units are presented in the table 3.

Table 3

Cash Ratio (in fraction)				
Years	MEL	Hira Ferro Alloys	Impex Ferro Alloys	Maithan Alloys
2004-05	0.08	0.33	0.18	0.06
2005-06	0.26	0.07	0.25	0.93
2006-07	0.11	0.07	0.16	0.17
2007-08	0.81	0.07	0.18	0.07
2008-09	0.60	0.07	0.13	0.09
2009-10	1.07	0.03	0.12	0.25
2010-11	1.10	0.02	0.08	0.18

2011-12	0.22	0.12	0.08	0.26
2012-13	0.00078	0.26	0.10	0.11
2013-14	0.00299	0.06	0.07	0.12
2014-15	0.00220	0.04	0.03	0.08

Source:- Calculated using the data of annual reports and data received through Communication with the identified units

The average cash ratio for the study period was 0.39:1 for MEL, 0.10:1 for Hira Ferro Alloys, 0.13:1 for the Impex Ferro Alloys and 0.21:1 for Maithan Alloys. The standard Cash ratio is considered as 0.5:1. This indicates that all the sample units are below the standard benchmark.

HYPOTHESIS TESTING:-

For the purpose of testing the hypothesis the one way ANOVA method has been used. As one way ANOVA is used company wise data is considered. The three hypotheses formulated are tested one by one as under:-

First Hypothesis:-

H0:- There is no significant difference in the current asset to current liability ratios of the identified Ferro Alloy producing units.

H1:- There is significant difference in the current asset to current liability ratios of the identified Ferro Alloy producing units.

On applying one way ANOVA to table 1 we get following results:

Source of Variation	SS	df	MS	Fcal	F crit
Between Groups	1.2678401	3	0.42261336	0.833929438	2.83874
Within Groups	20.270941	40	0.50677353		
Total	21.538781	43			

Here, the F Calculated comes out to be 0.8339 with degree of freedom (3,40) at 5% level of significance whereas F critical is 2.8387. This shows that F Calculated is less than the F Critical and therefore we accept the null hypothesis and thus it implies that there is no significant difference in the current asset to current liability ratios of the identified Ferro Alloy producing units.

Second hypothesis:

H0- There is no significant difference in the quick ratios of the identified Ferro Alloy producing units

H1:- There is significant difference in the quick ratios of the identified Ferro Alloy producing units.

On applying one way ANOVA to table 2 we get following results:

Source of Variation	SS	df	F	F crit
Between Groups	1.079843177	3	1.556	2.83874541
Within Groups	9.25315511	40		
Total	10.33299829	43		

Since F- Calculated i.e. 1.556 is smaller than F tabular 2.8387 at 5% level of significance with degree of freedom (3,40), we accept the null hypothesis. Thus there is no significant difference in the quick ratios of the identified Ferro Alloy producing units

Third hypothesis:

H0- There is no significant difference in the cash ratios of the identified Ferro Alloy producing units

H1:- There is significant difference in the cash ratios of the identified Ferro Alloy producing units.

On applying one way ANOVA to table 3 we get following results:

Source of Variation	SS	df	MS	F	F crit
Between Groups	0.54262087	3	0.180873625	2.777164401	2.838745
Within Groups	2.60515546	40	0.065128886		
Total	3.14777633	43			

At 5% level of significance with degree of freedom (3,40); the calculated F is 2.777164401 is less than F critical 2.838745 and hence null hypothesis is accepted. It implies that there is no significant difference in the cash ratios of the identified Ferro Alloy producing units.

CONCLUSIONS

All the identified Ferro Alloy producing units on an average basis have shown current ratio near to the standard current ratio with very small deviation, indicating the efficient management of current liabilities and current assets on overall basis. Hira Ferro Alloys has the highest average current ratio during this period i.e. 2.17:1 whereas MEL has just below it i.e. 2.15:1. From the hypothesis testing it is concluded that there is no significant difference in the current asset to current liability ratios of the identified Ferro Alloy producing units.

In case of quick ratio also all the sample units have perform well to maintain their quick ratio near to the benchmark on an average basis. However, these units struggle little bit in maintaining Cash ratio close to benchmark. This suggests that in Ferro Alloy industry cash and bank balance has small proportion of current assets.

Further, it was found that there is no significant difference in the quick ratios as well as in the cash ratios of the identified Ferro Alloy producing units.

Thus, it is concluded that Liquidity position of the selected Ferro alloy units is extent uniform upto maximum and it seems sound as far as current ratio and quick ratio is concerned, however there is scope of improvement in case of cash ratio.

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