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A TREND ANALYSIS OF LIQUIDITY MANAGEMENT EFFICIENCY IN SELECTED PRIVATE SECTOR INDIAN STEEL INDUSTRY

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ABSTRACT

Since privatisation, to ensure swift economic development it was deemed essential that a sound steel production program on a formidable basis must be formulated. Accordingly, the private sector has set up many more integrated steel plants and enhanced the existing plants to increase current production capacity. To some extent the priority given by the country failed to flourish due to poor capacity, under-utilisation and poor consumption. Working capital is accountable for poor capacity, under-utilisation and poor consumption. The competence of the working capital in terms of short-term liquidity is of foremost significance in the case where we examine performs and guiding principle presently overcoming in an industry with a view to finding out whether they are reasonable or require enhancement. Keeping this in view, a study of liquidity trend analysis of the selected private sector steel companies is undertaken in the present work.

KEY WORDS

Liquidity Management, Working Capital Components, Trend Analysis, Private Sector Indian Steel Industry.

1.1 INTRODUCTION

The Government of India has been extending its helping hands to regulate the inadequate resources with a view to drawing up a unified and well co-ordinate industrial infrastructure for achieving a balanced and speedy economic growth in the country, since independence. Indian economic growth increased on an average from 3.6 per cent to 6 per cent during the pre-liberalisation period. After economic reforms these rate of growth increased from 6 per cent to 8.1 per cent¹. Since privatisation policy (July 1991), the Government of India has opened up the floodgates for multinationals to participate in the domestic market of the country.

In such a changed economic environment, the private sector investment was automatically increased. But the production capacity and growth rate in the private sector did not increase promptly due to under-utilisation and poor financial management. Improper management of working capital in terms of liquidity, solvency, operating efficiency and profitability is accountable for inadequate financial performances.

Management of working capital has profitability and liquidity implications. Hence, working capital proposes a familiar front for profitability and liquidity management. The principal objective of the present paper is to conduct a study on the overall efficiency of the management of working capital with special reference to short-term liquidity. Liquidity refers to the ability of a concern to meet its short-term obligations as and when they become due. Liquidity plays a significant role in the successful functioning of a business firm. A firm should ensure that it does not suffer from lack-of or excess liquidity to meet its short-term compulsions. Shortfall in liquidity results in bad credit ratings, and finally it may result in the closure of the company. At the same time a very high degree of liquidity is also bad, as idle assets earn nothing.

After some investigation, steel Industry has been singled out for research in the present study. This is definitely the backbone of economic growth in any industrial country. A thick relationship has been found between the level of economic growth and the quantum of steel consumption in developed as well as developing countries. Since privatisation, to ensure swift economic development it was deemed essential that a sound steel production program on a formidable basis must be formulated. Accordingly, the private sector has set up many more integrated steel plants and enhanced the existing plants to increase current production capacity. To some extent the priority given by the country failed to flourish due to poor capacity, utilisation and consumption. The per capita steel consumption in India is about 30 kg, which is very low compared to the other countries like; China where per capita consumption has already exceeded 180 kg whereas world average is over 400 kg in the developed countries².

According to the industry experts' current available resource and production capacity is under utilised as demonstrated by per capita consumption. This call for a full diagnosis of the malady, that is identification, analysis and quantification of the interfering constraints in achieving full utilisation of the capacities, thus opens a vast field for research and enquiry. In the present study, therefore; an attempt has been made to examine and evaluate the management of short-term liquidity of the private sector companies as a factor accountable for poor performance in the steel industry in India.

1.2 OBJECTIVES OF THE STUDY

More specifically it seeks to dwell upon mainly the following issues:

- To observe the liquidity position and area of weaknesses, if any, of the selected companies under the study;
- To examine the trends of working capital as well as test of competency of the working capital;
- To make some suggestions and specific recommendations for improvement of the liquidity management.

1.3 METHODOLOGY OF THE STUDY

We select two private sector steel companies operating in India in the present study i.e., (i) Tata Steel Ltd. (ii) Lloyds Steel Industries Ltd. The study relates to a period of 9 years, starting from 1997-98 and ending on 2005-06. For the purpose of study only secondary data have been

used. The study is based on the secondary data obtained from the audited balance sheets and profit & loss accounts and also the annual reports of the respective companies. Besides, the facts, figures and findings advanced in similar earlier studies and the government publications are also used to supplement the secondary data. In the course of analysis in this study, various accounting and statistical tools and techniques have been used. Accounting techniques includes ratio analysis, while among statistical techniques the A.M., S.D., C.V, test of significance (chi-square test), trend indices, time series analysis. The use of all these techniques at different places has been made in the light of requirement of analysis.

1.4 MEANING OF LIQUIDITY

The term 'Liquidity' means the debt-paying ability of a concern when it becomes due. Liquidity may be defined as "The ability to realise value in money - the most liquid among all assets. It has two dimensions – (a) the time required to convert the assets into money and (b) the certainty of the realised price³⁰. Corporate liquidity covers the quantum of current/liquid assets, their structure, the circular flow of these assets and technical solvency in the sense of measuring the extent of current assets as cover over short-term obligations.

1.5 LIQUIDITY TRENDS

In working capital analysis, the direction of change over a period of a year is of crucial importance. Trend analysis of ratios indicates the direction of change. The term 'trend' is very commonly used in day to day conversation. Trend is the basic tendency of production, sales, income, current assets, and current liabilities etc., to grow or decline over a given period of time. In accounting, trend is generally computed trend ratios or by trend percentages. Trend ratios are the basic tool for trend analysis of an enterprise.

The analysis of a series of trend ratios provides only a view regarding increase and decrease or rate of increase and decrease. It does not depict that increase or decrease is favourable or adverse. To make a view that a trend of liquidity is satisfactory or not it is better to compare it with trend values. To find out the trend values of working capital components, straight-line trend under least square method of time series data should be calculated and analysis of trend should be made after a comparative study of both trend ratios and trend values as base.

1.6 FINDINGS OF THE STUDY

With a view to investigating analysis liquidity trend, we explore net working capital trend followed by current assets trend and current liabilities trend. All of them under the period of study are given one by one in the paragraphs that follow.

1.6.1 Net Working Capital Trend

Net working capital trend is one of the devices for measuring liquidity. As a measuring rod of efficiency or otherwise of the trend analysis of liquidity, net working capital trend analysis is highly relevant as it presents the composite reflection of the trend analysis of current assets and current liabilities. The direction of change in working capital position over the period of time is an indication of the effectiveness or ineffectiveness of the working capital management. The working capital trend of the companies under the study is analysed in the sub-sections as below.

TATA STEEL LTD.

Net working capital, its indices and trend values of net working capital of Tata Steel Ltd. are presented in Table 1.

Table 1: Actual Working Capital, Indices of Working Capital and Trend Values of Working Capital of Tata Steel Ltd.

Year	Actual Working Capital	Indices	Trend Values (Y _c)*	Difference
1997-98	1735.03	100.00	1253.91	481.12
1998-99	917.59	52.89	949.67	-32.08
1999-00	431.53	24.87	645.43	-213.90
2000-01	251.78	14.51	341.19	-89.41
2001-02	1089.24	62.78	36.95	1052.29
2002-03	494.22	28.49	267.29	-226.93
2003-04	1477.30	85.15	571.53	-905.77
2004-05	1161.29	66.93	875.77	-285.52
2005-06	959.83	55.32	1180.01	220.18

Source: CMIE database

* Y_c stands for computed values of working capital based on the least squares equation in the form of $Y_c = a + bX$, where the equation comes to $Y_c = 1558.15 - 304.24X$ with origin at the year 1997-98; X unit = 1 year and Y unit = rupees in crore.

From the very beginning to the year 2000-01, the net working capital decreased continuously, it was increased significantly during the year 2001-02 and thereafter it decreased significantly in terms as negative up to the year 2005-06. As a result, the working capital indices are 52.89 in 1998-99, 24.87 in 1999-00 and 14.51 in 2000-01 that is less than 100 (taking base year indices) as well as its previous year as compared to the base year, 1997-98 as due to considerable decrease in working capital components. However, the indices of working capital significantly decreased to (-) 24.89 in 2002-03, (-) 85.15 in 2003-04, (-) 66.93 in 2004-05 and (-) 55.32 in 2005-06 in comparison to 1997-98, the base year. This is due to noteworthy decreased in the working capital of Tata Steel Ltd.

The linear least squares trend values of net working capital are shown in Table 1. Yearly Rs. 31.03 crore decreases net working capital. The trend values of net working capital were more than actual values of working capital throughout the period under study except 1997-98, 2001-02 and 2005-06. In 2001-02 and 2003-04 the difference between trend value and actual value is too high. The negative deviations were significant due to a decrease in current assets and also a simultaneous increase in current liabilities.

To test the significance between the differences of the actual values and trend values of working capital in the company, χ^2 -test has also been applied. It can be observed that the tabulated value of χ^2 is 15.50 at 5% level of significance with 8 degrees of freedom, while the calculated

value of χ^2 is 28485.60. As the calculated value of χ^2 is more than the tabulated value of χ^2 , it shows that the difference between the actual values and trend values of working capital is noteworthy.

LLOYDS STEEL INDUSTRIES LTD.

Net working capital, its indices and trend values of net working capital of Lloyds Steel Industries Ltd. are presented in Table 2.

Table 2: Actual Working Capital, Indices of Working Capital and Trend Values of Working Capital of Lloyds Steel Industries Ltd.

Year	Actual Working Capital	Indices	Trend Values (Y_c) [*]	Difference
1997-98	391.39	100.00	47.19	344.20
1998-99	138.32	35.34	16.16	122.16
1999-00	6.22	1.59	- 14.87	21.09
2000-01	- 95.80	- 24.48	- 45.90	- 49.90
2001-02	- 136.01	- 34.75	- 76.93	- 59.08
2002-03	- 142.58	- 36.43	- 107.96	- 34.62
2003-04	- 160.91	- 41.11	- 138.99	- 21.92
2004-05	- 99.38	- 25.39	- 170.02	70.64
2005-06	- 241.16	- 61.62	- 201.05	- 40.11

Source: CMIE database

* Y_c stands for computed values of working capital based on the least squares equation in the form of $Y_c = a + bX$, where the equation comes to $Y_c = 78.22 - 31.03X$ with origin at the year 1997-98; X unit = 1 year and Y unit = rupees in crore.

Table 2 shows that the net working capital registers a decreasing trend through out the study period. The net working capital indices from 1998-99 to 2005-06 are 35.34, 1.59, (-) 24.48, (-) 34.75, (-) 36.43, (-) 41.11, (-) 25.39 and (-) 61.62 respectively in comparison to 1997-98, the base year. The indices of net working capital decreased due to decrease in inventories and a remarkable increase in current liabilities.

The linear least squares trend values of working capital are shown in Table 2. Working capital is decrease by yearly Rs. 31.03 crore. The trend values of net working capital were negative except first two years. The negative figure indicates net working capital decreased significantly. The trend values of net working capital were less than actual values of net working capital in the year 1997-98, 1998-99, 1999-00 and 2004-05 due to a decrease in current assets and also a simultaneous increase in current liabilities.

To test the significance between the differences of the actual values and trend values of working capital in the company, χ^2 -test has also been applied. It can be observed that the tabulated value of χ^2 is 15.50 at 5% level of significance with 8 degrees of freedom, while the calculated value of χ^2 is 3252.59. As the calculated value of χ^2 is more than the tabulated value of χ^2 -test, it shows that the difference between the actual values and trend values of working capital is significant.

1.6.2 TREND OF CURRENT ASSETS

As already discussed, a change in trend over a period of time is of crucial importance. Therefore, an analysis has been made to know about the trend in current assets of various private sectors steel companies under the study. In addition to this, the existing current assets' position has also been examined.

TATA STEEL LTD.

Current assets, current assets indices and trend values of current assets of Tata Steel Ltd. are portrayed in Table 3.

Table 3: Actual Current Assets, Current Assets Indices and Trend Values of Current Assets of Tata Steel Ltd.

Year	Actual Current Assets	Indices	Trend Values (Y_c) [*]	Difference
1997-98	3451.06	100.00	3057.36	393.70
1998-99	3264.99	94.61	3158.22	106.77
1999-00	3069.95	88.96	3259.08	-189.19
2000-01	3246.05	94.06	3359.94	-113.89
2001-02	3130.43	90.71	3460.80	-330.37
2002-03	3679.66	106.62	3561.66	118.00
2003-04	2868.08	83.11	3662.52	-794.44
2004-05	4127.31	119.60	3763.38	363.93
2005-06	4309.68	124.88	3864.24	445.44

Source: CMIE database

* Y_c stands for computed values of current assets based on the least squares equation in the form of $Y_c = a + bX$, where the equation comes to $Y_c = 2956.50 + 100.86X$ with origin at the year 1997-98; X unit = 1 year and Y unit = rupees in crore.

The current assets mark a fluctuating and poor trend throughout the period under study from 1997-98 to 2005-06. The indices of current assets were less than the base year in 1998-99 to 2001-02 and also in 2003-04 and the last two years indices were 119.60 and 124.88. Inventories and receivables cause the increase or decrease in indices of current assets.

The linear least squares trend values are also presented in Table 3. The yearly increase in current assets comes to Rs. 100.86 crore. The differences between actual values and trend values are significant only in 2003-04 of the study period. However, the differences are negative in the years 1999-00 to 2001-02 and 2003-04 while in the remaining years the differences is positive. The negative deviation of the years 2001-02 and 2003-04 is comparatively higher in the period under study and it is due to a decrease in the level of inventory and receivables by the company. All deviations of current assets are mainly due to fluctuations in the inventories and receivables. So, it is observed that inventories and receivables have played a crucial role in the fluctuations of current assets as compared to its trend values.

χ^2 -test has been helpful to test the significance of differences between actual values and trend values of current assets. The calculated value of χ^2 comes to 363.46, while the tabulated value of χ^2 is 15.50 at 5% level of significance with 8 degrees of freedom, which shows that the differences between the actual and trend values of current assets in the company are significant. This is the indication of well management of working capital for the payment of immediate matured obligations.

LLOYDS STEEL INDUSTRIES LTD.

Current assets, current assets indices and trend values of current assets of Lloyds Steel Industries Ltd. are portrayed in Table 4.

It is clear from Table 4 that current assets marked a decreasing trend throughout the study period. The indices of current assets were very low compare to the base year and they were less than 100 in all year. The indices of current assets were 82.84, 72.66, 74.31, 65.78, 61.30, 61.13, 49.57 and 51.48 respectively from 1998-99 to 2005-06. Inventories and receivables cause the increase or decrease in indices of current assets. The linear least squares trend values are also presented in Table 4. The yearly decrease in current assets comes to Rs. 65.21 crore. The differences between actual values and trend values are not significant in any year. However, the differences are negative in the years 1998-99 to 2002-03 while in the remaining years the differences are positive. The positive deviation is highest in the year 2005-06 during the period under study and it is due to an increase in the level of inventory and receivables by the company. All deviations of current assets are mainly due to fluctuations in the inventories and receivables. So, it is observed that inventories and receivables have played a crucial role in the fluctuations of current assets as compared to its trend values.

Table 4: Actual Current Assets, Current Assets Indices and Trend Values of Current Assets of Lloyds Steel Industries Ltd.

Year	Actual Current Assets	Indices	Trend Values (Y_c) [*]	Difference
1997-98	882.76	100.00	868.06	14.70
1998-99	731.28	82.84	802.85	- 71.57
1999-00	641.40	72.66	737.64	- 96.24
2000-01	656.01	74.31	672.43	- 16.42
2001-02	580.70	65.78	607.22	- 26.52
2002-03	541.12	61.30	542.01	- 0.89
2003-04	539.64	61.13	476.80	62.84
2004-05	437.58	49.57	411.59	25.99
2005-06	454.46	51.48	346.38	108.08

Source: CMIE database

* Y_c stands for computed values of current assets based on the least squares equation in the form of $Y_c = a + bX$, where the equation comes to $Y_c = 933.27 - 65.21X$ with origin at the year 1997-98; X unit = 1 year and Y unit = rupees in crore.

To test the significance of differences between actual values and trend values of current assets, χ^2 -test has been applied. The calculated value of χ^2 comes to 64.39, while the tabulated value of χ^2 is 15.50 at 5% level of significance with 8 degrees of freedom, which shows that the differences between the actual and trend values of current assets in the company are significant.

1.6.3 TREND OF CURRENT LIABILITIES

An analysis has been designed to know the changes of current liabilities of the various private sectors Iron and Steel enterprises in India under the study from 1997-98 to 2005-06 in the following sub-sections.

TATA STEEL LTD.

Current liabilities, indices of current liabilities and trend values of current liabilities of Tata Steel Ltd. are portrayed in Table 5.

It is clear from the Table 5 that current liabilities holds a increasing except 2001-02 and 2005-06 as compare to the previous year. The in dices of current liabilities are increases from 136.79 in 1998-99 to 307.08 in 2005-06, as compare to 1997-98, as base year. It happened due to increase in current liabilities.

Table 5: Actual Current Liabilities, Indices Current Liabilities and Trend Values of Current Liabilities of Tata Steel Ltd.

Year	Actual CL & Prov.	Indices	Trend Values (Y_c) [*]	Difference
1997-98	1716.03	100.00	1581.76	134.27
1998-99	2347.40	136.79	2042.27	305.15
1999-00	2638.42	153.75	2502.78	135.64
2000-01	2994.27	174.49	2963.29	30.98
2001-02	2041.19	118.95	3423.80	- 1382.61
2002-03	4173.38	243.20	3884.31	289.07
2003-04	4345.38	253.22	4344.82	0.56
2004-05	5288.60	308.19	4805.33	483.27
2005-06	5269.51	307.08	5265.84	3.67

Source: CMIE database

* Y_c stands for computed values of current liabilities based on the least squares equation in the form of $Y_c = a + bX$, where the equation comes to $Y_c = 1121.25 + 460.51X$ with origin at the year 1997-98; X unit = 1 year and Y unit = rupees in crore.

Table 5 shows the linear least squares trend values of current liabilities of the company and it is yearly increase by Rs. 460.51 crore. The trend values of current liabilities are not significant in 2001-02 of the study period. The differences are negative only in the year 2001-02 while the differences are positive in the remaining years. It was due to increases in current liabilities in this period. χ^2 -test has been applied to test the significance of differences between actual values and trend values of current liabilities. The calculated value of χ^2 is 693.11 while the tabulated

value comes to 15.50 at 5% level of significance with 8 degrees of freedom, which shows that, the difference between actual and trend values is significant. This shows that current liabilities available in the business not suit the business conditions.

LLOYDS STEEL INDUSTRIES LTD.

Current liabilities, indices of current liabilities and trend values of current liabilities of Lloyds Steel Industries Ltd. are portrayed in Table 6.

Table 6: Actual Current Liabilities, Indices Current Liabilities and Trend Values of Current Liabilities of Lloyds Steel Industries Ltd.

Year	Actual CL & Prov.	Indices	Trend Values (Y_c)*	Difference
1997-98	491.37	100.00	597.57	- 106.17
1998-99	592.96	120.67	609.40	- 16.44
1999-00	635.18	129.27	621.26	13.92
2000-01	751.81	153.00	633.12	118.69
2001-02	716.71	145.86	644.98	71.73
2002-03	683.70	139.14	656.84	26.86
2003-04	700.55	142.57	668.70	31.85
2004-05	536.96	109.28	680.56	- 143.60
2005-06	695.62	141.57	692.42	3.20

Source: CMIE database

* Y_c stands for computed values of current liabilities based on the least squares equation in the form of $Y_c = a + bX$, where the equation comes to $Y_c = 585.68 + 11.86X$ with origin at the year 1997-98; X unit = 1 year and Y unit = rupees in crore.

The current liabilities show an increasing trend up to 2001-02 and thereafter a fluctuating trend up to the year 2005-06. Indices of current liabilities are higher than the base year in all year and these are 120.67, 129.27, 153.00, 145.86, 139.14, 142.57, 109.28 and 141.57 from 1998-99 to 2005-06. It happened due to fluctuation and increase in current liabilities.

The linear least squares trend values of current liabilities in the company are shown in Table 6. The current liabilities yearly increase by Rs. 11.86 crore. The difference of actual and trend values of current liabilities are not significant throughout the period under study. The differences are negative in the years 1997-98, 1998-99 and 2004-05, while the differences are positive in the remaining years.

χ^2 -test has been applied to test the significance of differences between actual values and trend values of current liabilities. The calculated value of χ^2 is 82.77 while the tabulated value comes to 15.50 at 5% level of significance with 8 degrees of freedom, which shows that, the difference between actual and trend values is significant.

1.7 SUGGESTIONS AND RECOMMENDATIONS OF THE STUDY

This is the ultimate stage in which several proposals and suggestions have been offer; to overcome the noticeable problems in the study.

Actual values of working capital must have to be increased by making additional investment specifically in the form of raw materials for solution to the problem of raw materials inventory in case of all the selected companies under the study except TSL and LSIL.

Overall inventory management is required to be progressed in case of all the selected steel companies by way of proper application of inventory control system, such as, EOQ, JIT, ABC analysis, etc. and improvement of their sales management so as to reduce stock piling of finished goods.

Proper composition of net current assets should be sustained by means of the indexes of the Indian steel companies.

On the whole, receivable management is not good enough in case of the entire selected companies under the study. Solution to the enormous problem of receivables management, an effective professional co-ordination between sales, production and finance departments is called for. On time billing, timely reminders to defaulting customers and immediate action should be ensured. The investment in loans and advances should be minimised to the extent possible.

Suitable awareness should be pre-arranged with careful examination of payment policy for the improvement of the management of payables in case of the entire companies. It should be made by way of prompt payment policy, keeping no idle cash in hand or investment, finance from long-term source and taking short-term loan with lower interest. However, it should repay in one accounting year, otherwise harm profitability. Proper administration of net current assets should be indispensable for smooth running of business. At the same time, maximisation of assets as well as minimisation of liabilities should be preserved.

Appropriate symphony of working capital components should always be maintained in which profitability are not affected. It should be prepared through global steel indexes.

1.8 LIMITATIONS OF THE STUDY

The study endures from certain limitations. In spite of our best efforts, we could not avoid them because of many practical constraints. Hence, we could not but accept the possibility of a certain degree of error.

Study solely depends on the published financial data, so it is subject to all limitations that are inherent in the condensed published financial statements. We have selected operating two private sector steel companies but not considered all the operating units as sample, which may leave some grounds of error.

Again, our study is based on the data and information relating to the year 1999-00 to 2007-08, that is, nine years period. But, even these data and information do not appear widespread. We are fully conscious that many more data and information would have made our study more exhaustive.

Inflation could not be taken into contemplation in the present study. It was not possible to convert the relevant financial data into their present values because of non-availability of sufficient information required for the purpose.

Study is purely based on private sector steel companies, we could not compare with the data and information of efficiently managed public sector companies for testing of liquidity position and its efficiency.

Special ratios used in the study are taken from CMIE data base.

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Hoping an appropriate consideration.

With sincere regards

Thanking you profoundly

Academically yours

Sd/-

Editor