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WORKING CAPITAL MANAGEMENT PERFORMANCE OF INDIAN STEEL INDUSTRY

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The present study answers the following questions. The study, besides providing quantitative benchmark, has also identified the companies that have excelled in managing their working capital. How many days of working capital the firms of steel industry under study hold? Does it vary from company to company in the steel industry? Does it vary over a period of time? What are the cash conversion efficiencies, days of operating cycle and days of working capital of steel industry in India? Do they vary from company to company? How has it varied over a period of time?

Working capital is the life blood of all business. The management of working capital in a firm is considered to be one of the most important tasks of the financial managers. It involves decisions relating to current assets and current liabilities. Majority of the business failures are caused by the inefficiency of financial managers to plan and control properly the current assets and current liabilities. Working capital management consists of the management of sum of all the current asset like cash, receivable, short term investments, raw material, inventory, machinery spares, semi-finished items inventory and finished goods inventory and current liabilities like bills payable. The WCM mainly includes the

following aspects, namely: 1. choice of appropriate sources for financing the current assets 2. preparedness to meet current obligations as and when they mature 3. determination of the right level and composition of current assets and 4. efficient management of the different classes of the current assets and current liabilities. It is important to note that higher liquidity in a firm gives the comfort of meeting short-term liabilities but at the cost of profitability. On the other hand, too little of it may increase the profitability, but at the risk of not meeting the short-run obligation. Working capital management, both in respect of sources and uses, call for a balanced view of the conflicting attributes of profitability and liquidity. The trade

off between profitability and liquidity is the most challenging areas of working capital management. The issues involved in managing working capital of any firm are concerned with the management of the firm's inventory, cash, marketable securities, receivables and payables in order to achieve a proper balance between risk and returns. Too much investment in inventories (days inventories) and receivables (days receivables) reduces profitability. Too little investment in them or aggressive working capital financing strategy increases the risk. The task of the financial manager in managing working capital efficiently is to ensure sufficient liquidity in the operation of the enterprise. The liquidity of a business firm is measured by its abil-

ity to satisfy short-term obligations as they become due. If a firm wants to increase its profitability, it must increase its risk. If it is to decrease risk, it must decrease profitability. The trade-off between these variables is that regardless of how the firm increases its profitability through the manipulation of working capital, the consequence is a corresponding increase in risk as measured by level of NWC. Therefore, there is a need to develop sustainable working capital management practices.

Importance of the Study

It is important to note that in the year 2001, two relevant studies were undertaken by Anand¹ (2001) and REL&CFO Europe² (2001) relating to working capital management (WCM) with two parameters, namely, Days Working Capital (DWC) and Cash Conversion Efficiency (CCE). Another study by Dr. Manoj Anand³ was undertaken with three parameters. The present study is in continuation of the study made by Dr. Manoj Anand to further confirm these quantitative benchmarks to manage the working capital more efficiently and thus create firm value. These are Days Operating Cycle, Days Working Capital and Cash Conversion Efficiency. The motivation behind the inclusion of third (additional) parameter of Days Operating Cycle is to measure the efficiency of managing inventory and receivables.

Objectives of the Study

The present study answers the following questions. The study, besides providing quantitative benchmark, has also identified the companies that have excelled in managing their working capital.

How many days of working capital the firms of steel industry under study hold? Does it vary from company to company in the steel industry? Does it vary over a period of time?

What are the cash conversion efficiencies, days of operating cycle and days of working capital of steel industry in India? Do they vary from company to company? How has it varied over a period of time?

Methodology of the study

This study is based on working capital performance of 25 steel companies in India. Those companies with top sales performance were selected for the purpose of this study. The data used in this study has been taken from the PROWESS database of the CMIE. There are 224 companies in steel industry found in PROWESS database. Among 224 companies, 125 companies do have all the required data. Out of these 125 companies, only 25 companies (20% of the total) were selected for our research study according to their sales performance (25 top sales companies were selected). This study includes the three-years from 2001-02 to 2003-04.

Variables & Parameters used in this study

As stated earlier, the three parameters are used for the purpose of this study to assess the performance of working capital management of sample companies in steel industries in India and they are discussed below

Cash Conversion Efficiency (CCE): It is measured by relating net flows from operating activities to sales revenue. This ratio explains how effectively companies convert revenues to cash flows.

It is, in fact, Cash Operating Margin Ratio (a measure of profitability or returns). It is also sometimes described as speed of a firm's engine that takes the firm on the growth path. It is important that higher the size of this ratio, higher is the speed of the engine. Since the ratio indirectly captures the efficiency of overall working capital management of a firm, it is taken as a benchmark, an indicator of working capital management efficiency of corporate India.

Days of Operating Cycle (DOC): It is Raw Material Inventory (day's consumption) plus Finished Goods inventory (day's cost of sales) plus Receivables (day's sales). DOC shows the efficiency with which a firm manages its inventory and receivables. Lower the DOC better for the firm. DOC varies from industry to industry due to the nature of its production cycle and credit policy. For a meaningful comparison, it is good for a firm to use industry average DOC.

Days of Working Capital (DWC): It is DOC minus Creditors (day's cost of sales). DWC captures liquidity risk. If the creditors exceed the sum of receivables and inventory, DWC is negative. The negative days of working capital implies that company may be following the strategy of running over inventory and collecting its receivables as quickly as possible and paying payables as late as possible without involving significant costs of stretching payables. If it is negative, the probability of firm defaulting in its current obligations is high. DWC is an outcome of working capital financing decision of a firm- whether the inventory

and receivables are financed through supplier's credit or through some other source

Performance Ranking Criteria

As stated earlier, in the work developed by CFO & REL Consultancy, two parameters, namely, CCE and DWC were given equal weights. Another study by Dr. Manoj Anand experimented with another new (additional) parameter and different weights in the overall score to have better picture of Working Capital Management Performance of Steel Industry in India. In the second study, three parameters - CCE, DOC and DWC (absolute value) with the weight 0.50, 0.25 and 0.25 respectively were used. It is believed that the presence of these three parameters in the overall working capital performance criteria with the weights assigned will capture the dynamics of risk-returns trade off. Further, to develop an overall score for ranking of working capital management performance, it was found that the absolute value of DWC is more appropriate as an indicator of working capital management performance. The reason is that both a very high negative DWC and a very high positive DWC are undesirable and do not indicate good performance of a firm. That is to say, the lower the absolute DWC, better it is.

The overall ranking has combined CCE, DOC, and absolute value of DWC. Since DOC and absolute DWC are distinctly different from CCE, the present study has assigned a weight of 0.50 to CCE (in tune with earlier works) and the remaining weight is equally distributed between DWC and DOC. Accordingly, a weight of 0.25 each

has been assigned to days of operating cycle and days of working capital measures. Therefore, the weights assigned are according to the relative importance based on value judgments. To convert CCE, DOC and DWC into one meaningful additive score, each is normalized thus.

***Normalized CCE= [(Highest Overall CCE - Company CCE) / (Highest overall CCE - Lowest overall CCE)]**

A company with a zero normalized CCE would be considered as a best performer.

*** Normalized DOC= [(Lowest Overall DOC - Company DOC) / Overall DOC - Highest Overall DOC]**

Lower normalized DOC represents better performance on this account.

*** Normalized DWC= [(Lowest Overall Absolute DWC - Company Absolute DWC) / (Lowest Overall Absolute DWC - Highest Overall Absolute DWC)]** A company with a lower normalized DWC would be considered a better performer in this regard.

Thus the overall rank for working capital performance is; [(Highest Overall CCE - Company CCE) / (Highest overall CCE - Lowest Overall CCE)] * 0.50 + [(Lowest Overall DOC - Company DOC) / (Lowest Overall DOC - Highest overall DOC)] * 0.25 + [(Lowest Overall Absolute DWC - Company Absolute DWC) / (Lowest Overall Absolute DWC - Highest Overall Absolute DWC)] * 0.25.

If a company gets the lowest overall score, then it would be ranked high for its overall working capital management performance.

Definitions used for this study

Sales: It is the total sales/services

during the year, including material goods sale but excluding excise duties & sales tax sales of by-product are included, but sale scrap is excluded.

Cash Flow From Operations: It is the cash profit/loss attributable to normal operations after accounting for working capital changes.

Raw Material Inventory (as day's consumption): Year end Raw Material Inventory / (Annual Raw material cost / 365)

Finished Goods Inventory (as day's cost of sales): Year end Finished Goods Inventory (Annual Cost of Sales / 365)

Receivables (as day's sales): Year end Receivables / (Annual Sales / 365)

Creditors (as day's cost of sales): Year end Creditors / (Annual Cost of Sales / 345).

Cash Conversion Efficiency (CCE): It is measured by relating net flows from operating activities to sales revenue, answers how well companies convert revenues to cash flows

Days Operating Cycle (DOC): It is raw material inventory (day's consumption) plus finished goods inventory (day's cost of sales) plus receivables (day's sales).

Days Working Capital (DWC): It is DOC minus Creditors (day's cost of sales).

Analysis and Result of the Study: As stated earlier, this study has estimated CCE, DOC and DWC for 25 top steel companies from 2001-02 to 2003-04. The analysis is made by taking simple average of three parameters for each company in steel sector.

Cash Conversion Efficiency: Study was done on Cash Conversion Efficiency ratio of steel companies during the year 2001-02 to

2003-04. It is significant to note that higher the size of this ratio (CCE) higher the efficiency. Thus in the year 2001-02, Tata Iron & Steel Co Ltd occupied the first place with the ratio of 9.28; next position has gone to Sunflag Iron & Steel Ltd with the ratio of 9.07. This is followed by Rashtriya Ispat Nigam Ltd, Bhushan Steel & Strips Ltd and Bhushan Ltd etc. Shree Precoated Steels Ltd got the last place in CCE efficiency with the ratio of -23.55.

In the second year of study period (2002-03), first place in efficiency of CCE has gone to Mukand Ltd with the ratio of 75.51 (last year this company was in 19th place). Lloyds Steel Inds. occupied the second place in 2002-03 with the ratio of 65.35 against 22nd place during last year. This is followed by Essar Steel Ltd, Kalyani Steel Inds. Ltd and Indian Seamless Steels & Alloys Ltd etc... Last place (25th) has gone to Bhuwalka Steel Inds. Ltd with the ratio of 7.16 while the Indian Iron Steel Co. Ltd got 24th place. Tata Iron & Steel Co Ltd, which got first place in the last year got 14th place.

In the year 2003-04 Tata Iron & Steel Co. Ltd again progressed to first place (with the ratio of 32.46) from 14th place during last year. Steel authority of India Ltd with 29.31 ratio got the second place but during the last two years (2001-02, 2002-03) its rank was 18th and 17th place respectively. This is followed by Rashtriya Ispat Nigam Ltd, Jindal Vijayanagar Steel Ltd and Essar Steel Ltd etc. Last place (25th) was occupied by Indian Iron & Steel Ltd with the ratio of -3.24 while National Steel & Agro Inds. Ltd with the ratio of -0.89 got the

25th place. The three year average performance of CCE reveals the fact that the first place was occupied by the Essar Steel Ltd with the ratio of 29.66. In the three-year study period, its rank was 7th place in 2001-02 with the ratio of 3.70, 3rd place in 2002-03 with the ratio of 64.89 and 5th place in 2003-04 with the ratio of 20.41. However its rank was above 7th in all the years of study period. From this analysis it is inferred that Essar Ltd has higher efficiency in managing the CCE ratio among the top 25 companies. Next position was occupied by Mukand Ltd with the ratio of 23.83 and it was at 19th place in 2001-02 with the ratio of -5.23, 1st place in 2002-03 with the ratio of 75.51. The three years average performance reveals that last place (25th) was occupied by Shree Precoated Steels Ltd with the ratio of -1.33. Its position was at 25th place in 2001-02 with the ratio of -23.55, 19th place in 2002-03 with the ratio of 13.83 and 17th place in 2003-04 with ratio of 5.71.

According to three years average (rank) of CCE, top 10 companies are - Essar Steel Ltd, Mukand Ltd, Lloyds Steel Inds. Ltd, Tata Iron & Steel Co. Ltd, Kalyani Steels Ltd, Jindal Vijayanagar Steel Ltd, Rashtriya Ispat Nigam Ltd, Sunflag Iron & Steel Ltd, Steel Authority of India Ltd and Bhushan Steel & Strips Ltd. b.

Days Operation Cycle

The performance of Days Operation Cycle of Steel Companies during the period from 2001-02 to 2003-04 was analysed. It explains the efficiency of the steel industries in managing its inventory and receivables. It is significant to note that lower ratio (days) of DOC

is better. The analysis shows the fact that in the year 2001-02, Viraj Alloys Ltd occupied the first place with the days of 56 and next place has gone to Indian Iron Steel Co. Ltd with the days of 80. This was followed by Steel Co Gujarat Ltd, Bhuwalka Steels Inds. Ltd and Avery Cycle Inds. Ltd etc. Lloyds Steel India Ltd with the days of 467 got 24th place and Essar Steel Ltd occupied the last place in DOC performance with the days of 615. In the year 2002-03, first place was secured by Bhuwalka Steels Inds. Ltd with the days of 141. But during last year (2001-02), its rank was at 4th place with the days of 96. The Steel Authority of India Ltd occupied the second place with the days of 217 against 16th place in the last year. This was followed by Rashtriya Ispat Nigam Ltd, Tata Iron & Steel Co. Ltd and Viraj Alloys Ltd etc. National Steel & Agro Inds. Ltd got the last place with the days of 25839 while the Lloyds Steel Inds. Ltd got 24th place with the days of 6698.

In the last year of study period (2003-04) Viraj Alloys Ltd again progressed to first place with the days of 33 but its rank was at 5th place in last year with the days of 329. Indian Iron Steel Co. Ltd occupied next place with the days of 67. But during last two years, its rank was at 2nd place in 2001-02 with the days of 80 and 19th place in 2002-03 with the days of 1258. This was followed by Steelco Gujarat Ltd, Ispat Industries Ltd and Avery Cycle Inds. Ltd etc. Bhuwalka Steels India Ltd got the last place with the days of 1342.

With reference to three-year average performance of DOC during

study period, first place has gone to Viraj Alloys Ltd with the days of 139. During these three years of study period, its rank was 1st place in 2001-02 with the days of 56, 5th place in 2002-03 with the days of 329 and again 1st place in 2003-04 with the days of 33. However its rank was above 7 in all years. From the analysis, it is important to note that Viraj Alloys Ltd has higher efficiency in managing the DOC days among top 25 steel companies in India during the study period. Next place has gone to Rashtriya Ispat Nigam Ltd with the days of 159 but during three years of study period, its rank was at 13th place in 2001-02 with the days of 147, 3rd place in 2002-03 with the days of 217 and 8th place in 2003-04 with the days of 113. The three years DOC average reveals that last place has gone to National Steel & Agro Inds. Ltd with days of 8699 and this firm was at 6th position in 2001-02 with the days of 114, 25th place in 2002-03 with the days of 25839 and 14th place in 2003-04 with the days of 145. According to three-year average (DOC) rank, top 10 companies are – Viraj Alloys Ltd, Rashtriya Ispat Nigam Ltd, Steel Authority of India Ltd, Tata Iron & Steel Co. Ltd, Jindal Vijayanagar Steel Ltd, Bhushan Steel & Strips Ltd, Lloyds Steel Inds. Ltd, Bhushan Ltd, Jindal Iron & Steel Co. Ltd and Sunflag Iron & Steel Ltd.

Day's Working Capital

The Days of Working Capital of steel companies during the period from 2001-02 to 2003-04 was studied. It is significant to note that both very high negative DWC and very high positive DWC are un-

desirable and they do not indicate good performance of a firm. However, lower the absolute DWC, better in the DWC efficiency. The analysis shows that in the year 2001-02, Mahindra Ugine Steel Co. Ltd got the first place with the days of 17. Uttam Galva Steels Ltd occupied next position (2nd) with the days of 19. This was followed by Indian Iron Steel Co. Ltd, Jindal Vijayanagar Steel Ltd and Steelco Gujarat Ltd etc. Essar Steel Ltd stands in the last place with the days of 610 while the Lloyds Steel India Ltd got 24th place with the days of 345.

In the second year (2002-03) Sunflag Iron & Steel Ltd got the first place with the days of -2 against 17th place in the last year with the days of 94. Second place was taken by Jindal Iron & Steel Co Ltd with the days of 8. During previous year (2001-02) its rank was in 6th place with the days of 35. This is followed by Bhushan Ltd, Bhushan Steel & Strips Ltd, and Kalyani Steels Ltd etc. National Steel & Agro Inds. Ltd got last place with the days of 25232 while the Mukand Ltd got 24th place with the days of 1738.

In third year of study period (2003-04), Sujana Metal Products got the first place with the days of 0.00 from 14th place during last year (2002-03). The Steelco Gujarat Ltd occupied next position (second) with the days of -14 against 21st place in the last year (2002-03). This was followed by Jindal Vijayanagar Steel Ltd, Viraj Alloys Ltd, Uttam Galva Steels Ltd etc... Last place (25th) was held by the Bhuwalka Steel Inds. Ltd with the days of 1338; its rank was at 13th place in year 2002-03 with the days of -375.

The three-year average performance of DWC during study period first place has gone to Aati Steel Ltd with the days of -16, its rank was 19th place in 2001-02 with the days of 112, 10th place in 2002-03 with the days of -275 and 22nd place in 2003-04 with the days of 114. The above analysis clearly reveals the fact that Aati Steel Ltd has higher efficiency in managing the DWC among top 25 steel companies in India during the study period. Jindal iron & Steel Co. Ltd occupied second place with the days of 35 and its rank was at 6th place in 2001-02 with the days of 35, 2nd place in 2002-03 with the days of 8 and 14th place in 2003-04 with the days of 62. The three-year average of DWC analysis shows that last place has gone to National Steel & Agro Inds. Ltd with the days of 8454 but its rank was at 9th place in 2001-02 with the days of 59, 24th place in 2002-03 with the days of 25232 and 16th place in 2003-04 with the days of 72. According to three years average (rank) of top 10 steel companies are – Aati Steel Ltd, Jindal Iron & Steel Co. Ltd, Bhushan Ltd, Bhushan Steel & Strips Ltd, Sunflag Iron & Steel Ltd, Viraj Alloys Ltd, Sujana Metal Products, Shree Precoated Steels & Ailloys Ltd, Indian Iron Steels Co. Ltd, Ispat Industries Ltd.

Overall Working Capital Performance Rank:

The details regarding the overall working capital performance rank of Indian steel companies for the period 2001-02 to 2003-04 was examined. The overall ranking has captured the dynamics of trade-off between risk and returns made by the steel industries in India. It is clear from the analysis that in

the year 2001-02, Shree Precoated

Steels Ltd got the first place in overall working capital performance rank with the ratio of 181.80. Next place has gone to Sujana Metal products with the ratio of 153.27. Tata & Steel Co Ltd has the last place with the ratio of 6.00 while the Sunflag Iron & Steel Ltd got the 24th place.

In the second year (2002-03), National Steel & Agro Inds. Ltd occupied the first place in overall working capital performance rank with ratio of 97.17, but its position was 17th place with the ratio of 45.25. Indian Iron Steel Co. Ltd has occupied second place with the ratio of 50.47 against the 15th place in the last year with the ratio of 49.02. This was followed by Bhuwalka Steel Inds. Ltd, Viraj Alloys Ltd and Rashtriya Ispat Nigam Ltd. Mukand Ltd slipped down to last place with the ratio of 4.10 but the Essar Steel Ltd with the ratio of 9.76 got 24th place.

In the third year (2003-04), Bhuwalka Steel Inds. Ltd occupied the 1st place with ratio of 89.78 but its rank was 10th place in 2001-02 with the ratio of 60.07 and 3rd place in 2002-03 with the ratio of 49.63. Mukand Ltd earned second place with the ratio of 51.99 against 25th place in the last year. This was followed by National Steel & Agro Inds. Ltd, Indian Iron Steel Co. Ltd and Mahindra Ugine Steel Co. Ltd etc. Last place (25) was held by the Tata Iron & Steel Co Ltd with the ratio of 4.26 and its rank was at 25th place in 2001-02 with ratio of 6.00 and 16th place in 2002-03 with the ratio of 39.37. Steel Authority of India Ltd got the 24th place with the ratio of 7.53.

The three-year average of overall

working capital performance rank

during study period shows the fact that the first place was occupied by Shree Precoated Steels Ltd with the ratio of 89.56. In these three year of study period its rank was at 1st in 2001-02 with the ratio of 181.80, 7th in 2002-03 with the ratio of 45.82 and 8th in 2003-04 with the ratio of 41.05. However its rank was above 9th in the three-year study period. From this analysis, it is inferred that Shree Precoated Steels Ltd has higher efficiency in overall working capital performance. Second place has gone to Sujana Metal Products with the ratio of 73.00 and this is followed by Bhuwalka Steel Inds. Ltd, Lloyds Steel Inds. Ltd National Steel & Agro Inds. Ltd etc. Tata Iron & Steel Co. Ltd was the last in overall working capital performance with the ratio of 16.54. During the three-year study period its rank was at 25th in 2001-02 with ratio of 06.00, 16th place in 2002-03 with ratio of 39.37 and again in 25th place in 2003-04 with the ratio of 04.26. According to three years average of working capital overall performance, top 10 steel companies are Shree Precoated Steels Ltd, Sujana Metal Products, Bhuwalka Steel Inds. Ltd, Lloyds Steel Inds. Ltd, National Steel & Agro Inds. Ltd, Indian Seamless Steels & Alloys, Viraj Alloys Ltd, Ispat Industries Ltd, Mukand Ltd, and Indian Iron Steel Co. Ltd.

Conclusion:

The present study has attempted, by using CCE, DOC and DWC, to assess the working capital management performance of top 25 steel companies in India. In the

light of the analysis, the study

provides their estimates using top 25 companies over the period 2001-02 to 2003-04 for each company and for each year. This would be useful in benchmarking and evaluating the performance of working capital management of companies. It is felt that this exercise would help the company to manage their working capital better and add value to the firm.

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