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MEASURING THE EFFICIENCY OF BUSINESS THROUGH CASH MANAGEMENT – A STUDY ON CONSUMER DURABLE SECTOR

Somnath Das*

Abstract *Over the years cash has played a very important role in business, specifically a new one. Cash is the life-blood of every business. Cash may be the liquid currency as well as bank account balances held at different commercial banks. Therefore, cash management is the art as well as the science of managing a company's short-term resources for its ongoing activities, mobilising funds and optimising liquidity. In this contest another important concept which is related with the cash management is the treasury technique which emphasizes the liquidity by different factors and processes which convert immediately into cash for increasing profitability. Inefficient cash management may lead the company to bankruptcy. In this paper we highlighted different perspective by which we can control the corporate cash of the company. They are Cash Conversion Cycle, Cash Holding, and Creditworthiness. Cash conversion cycle can be regarded as the time between purchase of raw materials and collection of cash from debtors. In liquidity management, cash conversion cycle is an important parameter for measuring its efficiency. Cash conversion cycle of a company indicates the efficiency of managing working capital. Such measure can be used in benchmarking competitors or comparing companies. Cash conversion cycle is constructed by deducting the payable deferral period from the addition of inventory conversion period and receivable collection period. In this study we used the model developed by Richards & Laughlin (1980). We measure the relationship between CCC and CR, DTR, ITR, and CTR and also the impact of RONW, size of the organisation and cumulative profitability on CCC. We are living in the age of credit. Without the liberal extension of credit, everything is impossible in the business world. It is an indispensable convenience or a necessity in our scheme of living. Use of credit is a complex phenomenon. At present we are using credit for every aspect of our livelihood and also for smooth running of the business. Giving credit means you are taking risk. In order to compete in today's competitive market credit management helps the organisation for its success. Credit analysis is actually the risk analysis. In this study we tried to give importance on the credit management due to the complex business scenario. In this study we focus our concentration on liquidity, profitability and capital adequacy with the help of Bathory's'risk description model'. The motto of the paper is to control cash so that bankruptcy can be prevented and profitability should be enhanced. In this study we select five companies from consumer durable sector.*

Keyword: *Management of Corporate Cash, Treasury Management, Cash Conversion Cycle and Creditworthiness*

INTRODUCTION

In today's business world, cash performs various functions and acts as storage for earmarked funds. From such pool of funds, money canbe used to meet emergencies. Nowadays, businesses are forced to use credit instead of cash in its routine work. Facilities like bills, draft, credit cards, debit cards, ECS, fund transfer through Internet etc. replace the use of coin and paper currency. Specifically, the term 'cash' refers to the currency plus bank A/C balances held at different commercial banks.

Cash management is both art and science of managing a company's short-term resources to prolong its ongoing activities, mobilising funds and optimising liquidity. The most important elements of cash management are – (a) proper utilisation of current assets and current liabilities of a firm throughout the operating cycle of business; (b) the methodical planning, monitoring and management of the company's collections, disbursements and account balances; (c) the gathering and management of information to use available funds effectively and identify risk. Lack of cash may lead the company to bankruptcy. Therefore, efficient cash management does not mean just only preventing bankruptcy but it helps to improve the profitability and reduces the risk of company.

Cash management is particularly useful for new and growing business. In the present study we discussed another very important parameter of cash management i.e. cash conversion cycle, which can be regarded as time between purchase of raw materials and collection of cash from debtors. In liquidity management, cash conversion cycle is an important tool for measuring its efficiency. Cash conversion cycle of an organisation also indicates the efficiency of managing working capital.

Regulation of cash flow is known as cash control. After projecting the cash flows, the finance manager is sure

* Assistant Professor, Department Of Commerce, Rabindra Mahavidyalaya, Champadanga, Hooghly, West Bengal, India. E-mail: somnath211@yahoo.co.in

that there should not be any differences in the projected and actual figures of cash. By appropriate control of cash flows, the cost of financing should be minimised and operating activities of the organisation will be better. The main techniques of controlling cash flows are accelerating cash inflows and control over cash outflows. Centralisation of cash functions, internal control over cash receipts, and streamlining of banking arrangements stimulate accelerating cash flows. Concentration banking and lock-box system help the streamlining of banking arrangements.

A standard cash management system must have an organisational framework which controls the cash flows. Such framework identifies who is responsible for particular function viz. collecting cash, payment authorisation, making payments, bank accounts and funds transfer between accounts, arranging overdraft facilities and loans, investing cash surpluses, and foreign currency transaction.

Credit availability can solve both of these problems. When the 'real economy' falls into recession, businesses face the additional risk of customers running into financial difficulty and becoming unable to pay invoices – which insists the organisation to use non-operational sources such as bank loans and can push a company over the edge.

Use of credit is a complex phenomenon. But, common people and sometimes experts too can have wrong conception or negative idea about uses and application of credit. 'Buy now-pay later' or promise to pay in future for immediate goods have existed in the earlier agricultural societies. Giving credit means you are taking risk. Credit analysis is actually the risk analysis. The credit analyst must consider the nature and type of the business as well as the applicant in his personal judgement.

It is the age of credit. Nothing can be possible in the world of business without the liberal extension of credit. It is an indispensable convenience or a necessity in our scheme of living. Use of credit is a complex phenomenon. It is not a recent phenomenon. Use of credit can be found as early as 1300 BC in the civilisations of Babylon, Assyria, and Egypt. Today's credit system is the destiny of past's way path of credit system.

In most of the cases it is seen that information pertinent to the credit decision making is not available from the credit applicant. Then the companies are taking decision on the basis of past experience or the general impression of the customer. Proper evaluation of risk regarding credit granting decision becomes very important before the commencement of sales because once the credit is accepted by creditor organisation of its credit applicant, servicing and loss mitigation technique can control the future losses only to a limited extent. The pros and cons of the situation can affect the decision.

Therefore, the data required for the credit analysis must be changed or adjusted subject to the requirement. The next step is to apply some analytical procedure to the financial figure for judging creditworthiness of applicant. To develop the financial as well as statistical technique is fairly recent and still in process. The generally used financial tools are ratio analysis, sources and application of fund analysis, trend analysis, common size statement, and other analysis determining the financial position of the applicant.

REVIEW OF LITERATURE

Leire San Jose, Txomin Iturralde & Amaia Maseda conducted a study on 501 Spanish firms with more than 10 employees (2008). In this study confirmatory factor analysis was used. It was observed that the P-value of the chi-square did not attain the recommended figure. It was due to the size of the sample. But the rest of the indices determined the validity of the model. They opined that cash management was a culture that forms part of the strategy of companies and dependent more on managers themselves than the characteristics of companies.

Joost Bergen undertook a study on 101 companies in Europe, the US and Canada in 2005. The study revealed four cash management models like decentralised liquidity and cash flow management, centralised liquidity and decentralised cash flow management, decentralised liquidity and centralised cash flow management, and centralised liquidity and centralised cash flow management. It was also observed that decentralized organisations had the most to gain, as they were able to achieved considerable efficiencies through the introduction of a more centralised approach – perhaps through an SSC.

M. Theodore Farris, Paul D Hutchison & Ronald W. Hasty (2005) made a study on cash to cash metric. For this they initially considered 21608 companies but later the study was reduced to 5884 firms. This study presented an overview of cash to cash and its calculation, comparisons between product and service industries etc. The study also revealed that cash-to-cash knowledge of managers helped the service industries to improve their liquidity position and overall value.

Pedro Ortin Angel & Diego Prior (2004) made a study on accounting turnover ratios and cash conversion cycle. The main objective of the study was to deduce the amount of days spent completing an operational process from turnover ratios. This study provided additional tools for financial statements analysis in order to get accurate result or working capital management.

Amitava Basu(2011) made a study on eight cement companies using the Bathory's risk description model. The model is developed using four year's data. In this study data

have been collected from secondary sources i.e. The Stock Exchange Official Directory of Bombay Stock Exchange and Capitaline database. In this study the main focus is given to the liquidity, profitability, and capital adequacy. The model also showed that these three ratios influenced the score of individual companies. He also showed that where these factors are good they obtained high score.

OBJECTIVES OF THE STUDY

The presents study is prepared to make an in depth analysis of the selected companies in consumer durable sector in respect of their cash conversion cycle, cash holding and cash flow and credit worthiness during the period of 2002-2011.

More specifically the objectives of our study as a whole are as under:

1. To design an effective cash management policy for smooth cash procurement and disbursement without endangering the operating capability and productivity of the firm.
2. To determine the exact working cash balance in conformity with the nature of the firm and how the temporarily unused fund be invested in interest earning assets.
3. To find out the cash conversion cycle with help of RCP, ICP and PDP of the selected companies through the technique of ratio analysis and other statistical tools.
4. To measure the credit score (CS) and try to establish a relationship among cash conversion cycle, cash holding and creditworthiness.

METHODOLOGY OF THE STUDY

Five popular companies from consumer durable sector have been selected for the study. The data of the selected companies for the period 2002 to 2011 used in this study have been taken from the secondary sources i.e. Capitaline Corporate Database of Capital Market Publishers (I) Ltd. Mumbai.

Cash Conversion Cycle (CCC)

Receivable conversion period, inventory conversion period, and payment of deferral period are used to measure the cash conversion cycle. Shorter cash conversion cycle means better liquidity position of the organisation. Here, we established the relationship between CCC and debtors more than six months, CCC and CR, CCC and inventory turnover ratio, CCC and debtors turnover ratio and CCC and creditors turnover ratio.Efficiency of the inventory management has been measured by inventory turnover ratio (ITR) which is the ratio between cost of goods sold and average stock. Higher ITR means lower CCC. So, ITR is negatively related with CCC. Debtors' turnover ratio (DTR) is the ratio of credit sales to average receivables. Higher DTR indicates lower CCC. Hence, DTR is also negatively related with CCC. Organisation's ability to avail credit facility from suppliers has been measured by creditors' turnover ratio (CTR) which is the ratio of credit purchase to average payables. Low CTR means shorter CCC. Therefore, CCC is positively related with the CTR.

Profitability, size of the organisation, and cumulative profitability can influence the cash conversion cycle of the organisation. In this study profitability has been measured by return on net worth (RONW), size of the organisation has been represented through the amount equal to the log value of total assets. Shareholders fund has been selected in this study as cumulative profitability which consists of equity share capital and reserve surpluses. The log value of shareholders' fund represents the cumulative profitability.

Creditworthiness

To develop a credit evaluation model from the financial statement of the selected companies, we usedBathory's'risk description model' with small changes. In actual model the main influencing factors are accumulated profitability and inventory, but for our purpose we use the cash flow instead of inventory. Eight different ratios are calculated from the financial statement as stated above. In determination of ratios, emphasis has been given on the firms' liquidity, profitability and capital adequacy. For the purpose of our study five companies each from five different sectors are selected, as stated earlier, with the help of purposive sampling procedure. The model is prepared on the basis of ten years data; it will be more predictive and reveals the appropriate creditworthiness of the companies. For analysing the date statistical tools like arithmetic mean, percentage etc. and statistical technique like Pearson's simple correlation analysis and statistical test like 't' test have been applied at appropriate places.

Risk Description Model

1. Net Profit / Capital Employed = Profitability (Annual)
2. Net Tangible assets (Shareholders Fund) / Total Liabilities (Long term + Short term debt) = Profitability (Cumulative)
3. Net Profit / Current Liabilities = Liquidity
4. Normalised working capital / Credit Exposure = Capital Adequacy
5. Equity / Current Liability + Credit exposure = Capital Adequacy
6. Net Assets / Credit exposure = Comfort Margin

7. Total assets / Total liability + Credit exposure = Debt Capacity
8. Net Profit + Depreciation/ Current Debt = Priority debt service ability.

In the first ratio we find out the ratio showing profitability. It is also known as return on capital employed. Here, net profit means profit after tax but before interest. In this ratio net profit is placed on capital employed for the measurement of profitability of the current year. Second ratio is calculated by placing the net tangible assets on total liabilities. Here, net tangible assets signify the shareholders fund and total liabilities is equal to the long-term debt plus total short-term debt.

In the third ratio, we use the net profit to current liabilities ratio as the indicator of liquidity. Net profit of an organisation generally includes some items additional to current assets such as surplus after accounting for depreciation and extra ordinary items. Current liabilities here we consider the items which are payable within a particular accounting period. Another liquidity ratio i.e. fourth ratio is computed by placing normalized working capital to over credit exposure. And normalised working capital is calculated by deducting the stock from net current assets (i.e. net working capital).

Fifth ratio measures the capital adequacy of the companies selected under study. Capital adequacy of the organisation measures the long-term capital or permanent capital. Generally, long-term capital is not used to meet the short-term obligation of the organisation. In the sixth ratio net assets is placed over credit exposure. In the model it is termed as comfort margin. In most of the cases, it produces comparatively high values and probably negative. As we know that stock is a very substantial part of current assets and we deduct stock from net current assets, there is a very high probability of a negative figure.

In the seventh ratio total assets is placed over total liability plus credit exposure. It signifies the debt capacity of the organisation. Here total liabilities include both short-term liabilities and long-term liabilities. In the ratio total liability also includes the credit exposure. It indicates the safety margin taking into consideration of all known obligations including the credit asked by the customer. Finally, in the eighth ratio the treatment of priority debt items is measured by contrasting current debt with financial flow that will be servicing it. Computing gross cash flow from modified accounting information will be difficult without a detailed profit and loss account showing depreciation. In our model eight ratios are taken into consideration by giving equal weight to them.

The resulting formula would be denoted as –

$CS = L^* \sum xi$

CS = Credit Scores

Xi = Variables (I = 1 to 8)

L = Constant Multiplier = 100/8 = 0.125

The developed model is thus = $0.125^*\sum xi$

Risk Description Model

Here, NWC = Normalised Working Capital, NTA = Net Tangible Assets, E = Equity Shareholders fund, CL = Current Liabilities, TL = Total Liabilities, CR. EXPOSU = Credit Exposure (0.25% of CA), CD = Current Debt, D = Depreciation, NP = Net Profit, NA = Net Assets, CE = Capital Employed.

For analysing the data statistical tools like arithmetic mean, standard deviation, coefficient of variation etc. and statistical techniques like Pearson's simple correlation analysis and multiple regression analysis and statistical test like 't' test have been applied at appropriate places.

FINDINGS OF THE STUDY

From Table 1 it has been depicted that in consumer durables sector, the CCC of Hawkins Cooker Ltd. (Hawkins) is highest in the year 2002 (134 days) and smallest in the year 2010 (47.71 days). On an average it is 72.8 days. The company followed a moderate liquidity position during the study period. There is a decreasing trend in CCC noticed throughout the study period except in the year 2011.

Table 1 shows that the CCC of Havells India Ltd. (Havells) is highest in the year 2003 (100.91 days) and lowest in the year 2010 (16.22 days). On an average it is 56.6 days. The company improved its liquidity position during the second half of the study period.

From Table1 it is observed that the CCC of Khaitan Electricals Ltd. (Khaitan) fluctuated during the study period. The highest CCC is noticed in the year 2008 (126.45 days) and on the contrary the lowest CCC is noticed in the year 2003 (67.01 days). On an average it is 93.4 days. During the first half of the study period the company maintained a moderate CCC as compared to the second half of the study period.

In case of Voltas Ltd. (Voltas) the situation is quite volatile. From Table 1 it is depicted that the CCC of the company is highest in the year 2009 (200.17 days) and smallest in the year 2002 (47.52 days). On an average it is 101.46 days. It registered an upward trend during the study period except in 2010 and 2011.

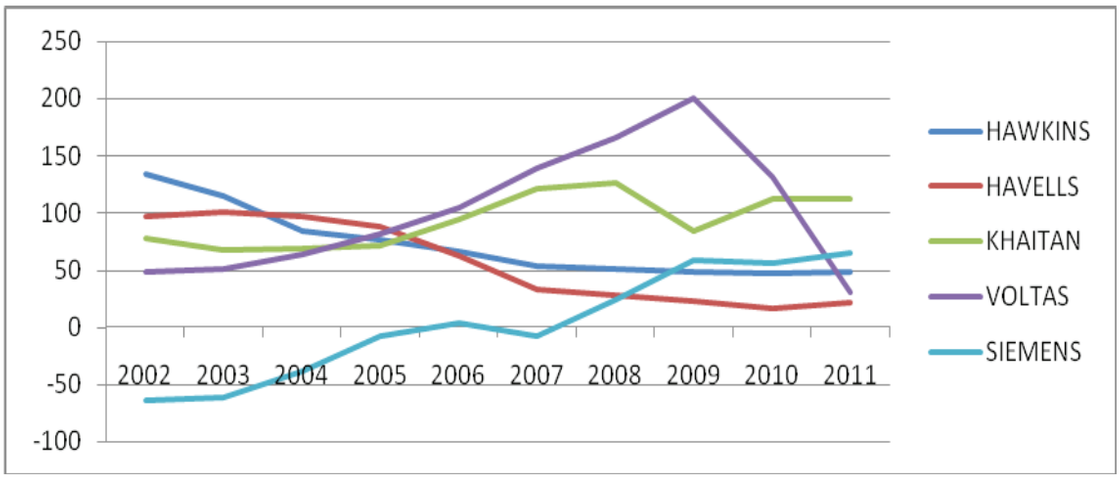
Table1 depicts that the CCC of Siemens Ltd. (Siemens) is highest in the year 2011 (64.66 days) and lowest in 2002(-63.95 days). On an average it is 2.7 days. In the beginning of the study period the CCC of the company is negative. It is due to high deferral period for payments. But at the end

Table 1: Calculation of Cash Conversion Cycle of Selected Companies (in Days)

YEAR		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	AVG
COMPANIES	HAWKINS	134.12	114.48	84.31	77.55	66.48	53.91	51.60	49.12	47.71	48.93	72.8
	HAVELLS	96.62	100.91	97.55	87.95	62.65	32.60	27.86	22.89	16.22	20.99	56.6
	KHAITAN	77.01	67.01	67.81	71.02	94.40	121.14	126.45	83.92	112.73	112.85	93.4
	VOLTAS	47.52	50.89	63.47	81.68	104.23	139.33	165.87	200.17	131.42	30.04	101.46
	SIEMENS	-63.95	-61.27	-38.99	-7.46	3.93	-7.47	23.45	58.09	56.01	64.66	2.7

Source: Compiled and computed from 'Capitaline Corporate Database' of Capital Market Publishers (I) Ltd., Mumbai.

Figure 1: Cash Conversion Cycle of Consumer Durable Sector



of the study period its liquidity position decreases as CCC increases.

Hence, the CCC of Siemens is good among other companies of consumer durable sector. The liquidity position of Siemens Ltd. is good as compared to other companies in that group. It emphasizes the efficient liquidity management system of Siemens. Figure1 states that Voltas maintained highest CCC whereas Siemens registered the lowest CCC.

In Table 2**,** the values of average cash conversion cycle (CCC) of the companies under study have been ascertained by applying arithmetic mean, and consistency of CCC have also been measured by using the coefficient of variation (CV) of their cash conversion cycle. In consumer durable sector, the average CCC of Siemens is the lowest, followed by Havells, Hawkins, Khaitan and Voltas respectively in that order. Table 2 also reveals that in respect of consistency of designing CCC Khaitan occupied the first position, followed by Hawkins, Voltas, Havells and Siemens respectively. From both average and consistency point of view Hawkins and Khaitan captured the top most position, Havells and Siemens are in second place followed by Voltas.

Coefficient of correlation is the measurement of degree of association between two variables. A positive value of 'r' indicated high values of one variable are generally associated with the high values of other variables and low values with low values. In Table 3 an effort has been made to measure the degree of relationship between cash conversion cycle (CCC) and each of the factors related with CCC such as inventory turnover ratio (ITR), current ratio (CR), debtors turnover ratio (DTR), debtors more than six months (Debt>6Months) and creditors turnover ratio(CTR). To test the significance of such coefficient, 't' test has been applied.

According to Richards-Laughlin, CCC is the sum of receivables conversion period (RCP) plus the inventory conversion period (ICP) minus the payment deferral period (PDP) i.e. CCC = RCP + ICP – PDP.

Table 3 depicts that the correlation coefficients between CCC and ITR in Hawkins, Khaitan, and Voltas are 0.993, 0.752, and 0.945 respectively which are statistically significant at 5% level. It shows that there is positive association between CCC and ITR in these three companies. Due to higher ITR, the CCC is the minimum in these three companies. On the other hand, the correlation coefficient between CCC and ITR in Havells and Siemens are negative and statistically insignificant both at 5% and 1% level of significance.

From Table 3 it is found that the correlation coefficient between CCC and CR in Hawkins, Voltas, and Siemens are 0.722, 0.608, and 0.017 respectively. Out of which only in

Table 2: Statement showing rank on the basis of Average and Consistency of Cash conversion Cycle of the Selected Companies

COMPANIES	AVG.	SD	RANK OF AVG.	COEFFICIENT OF VARIATION	RANK OF COEFFICIENT	TOTAL RANK	OVER ALL RANK
HAWKINS	72.8	30.2917	3	41.594	2	5	1
HAVELLS	56.6	36.0528	2	63.671	4	6	3
KHAITAN	93.4	23.155	4	24.782	1	5	1
VOLTAS	101	56.4052	5	55.592	3	8	5
SIEMENS	2.7	47.9163	1	1773.4	5	6	3

Source: Compiled and computed from 'Capitaline Corporate Database' of Capital Market Publishers (I) Ltd., Mumbai.

Table 3: Analysis of Karl Pearson's Simple Correlation between CCC and ITR, CR, DTR, Debt > 6 Months and CTR of the Selected Companies

COMPANIES	CCC & ITR		CCC & CR		CCC & DTR		CCC & DEBT > 6 MONTHS		CCC & CTR	
	(r)	't' Value	(r)	't' Value	(r)	't' Value	(r)	't' Value	(r)	't' Value
HAWKINS	0.993**	23.78	0.722*	2.952	0.933**	7.333	0.533	1.782	0.710*	2.8517
HAVELLS	-0.328	-0.98	-0.219	-0.63	0.846**	4.488	-0.858**	-4.72	-0.669*	-2.546
KHAITAN	0.752*	3.227	-0.416	-1.29	0.553	1.877	-0.386	-1.18	0.449	1.4213
VOLTAS	0.945**	8.172	0.608	2.166	-0.359	-1.09	0.087	0.247	0.670*	2.5527
SIEMENS	-0.179	-0.51	0.017	0.048	-0.050	-0.14	0.102	0.29	0.276	0.8122

Note: Figures in the parentheses indicate 't' values.

* Correlation is significant at the 5% level (2tailed).

**Correlation is significant at the 1% level (2tailed).

Source: Compiled and computed from 'Capitaline Corporate Database' of Capital Market Publishers (I) Ltd., Mumbai.

case of Hawkins, the correlation coefficient is significant at 5% level. It implies positive association between CCC and CR in these three companies. On the other hand, negative correlation between CCC and CR is noticed in case of Khaitan (-0.416) and Havells (-0.219).

Table 3 exhibits that the correlation coefficients between CCC and DTR in Hawkins, Havells, and Khaitan are 0.933, 0.846, and 0.533 respectively. Out of which the correlation coefficient between CCC and DTR of Hawkins and Havells are statistically significant both at 5% and 1% level of significance. On the other hand, Voltas and Siemens registered a negative correlation between CCC and DTR which are (-) 0.359 and (-) 0.050 respectively. It implies negative association between CCC and DTR.

Table 3 exhibits that the correlation coefficients between CCC and debtors more than six months in Havells and Khaitan are (-) 0.858 and (-) 0.386 respectively. Out of which the same in case of Havells is statistically significant at 5% level of significance. It implies negative association between CCC and debtors more than six months in case of Havells and Khaitan. On the other hand the correlation coefficient between CCC and debtors more than six months in Hawkins, Voltas, and Siemens are 0.533, 0.087, and 0.102 respectively.

It has been found from Table 3 that the correlation coefficient between CCC and CTR in Havells is (-) 0.669 which is statistically significant at 5% level. It indicates the negative association between CCC and CTR which help to reduce the CCC. The correlation coefficient between CCC and CTR in Hawkins, Khaitan, Voltas, and Siemens are 0.710, 0.449, 0.670, and 0.276 respectively. Out of which the same in case of Hawkins, Havells, and Voltas is statistically significant at 5% level. It implies positive association between CCC and CTR which is theoretically accepted.

From the correlation analysis between CCC and ITR, except Havells and Siemens, others fulfill the theoretical proposition. Regarding correlation between CCC and CR we can conclude that except Havells and Khaitan, other companies supported the theoretical proposition. On the other hand, regarding correlation between CCC and DTR, only Voltas and Siemens authenticated the theoretical proposition. Regarding correlation between debtors more than 6 months and CCC it is clear that only Havells and Khaitan supported the theoretical proposition. Lastly, regarding correlation

between CCC and CTR, it is observed that except Havells all other companies followed the theoretical proposition. So, out of five companies of consumer durable sector, only in case of Siemens all the theoretical proposition has been matched.

In Table 4 an attempt has been made to assess the influence on profitability, size of the organisation and cumulative profitability on cash conversion cycle. In this study, return on net-worth (RONW) has been taken as the measure of owners' profitability, log value of total assets has been taken as the measure of size of the organisation, and shareholder's fund has been taken as the measure of cumulative profitability. The linear regression equation fitted in this study is

$CCC = b_0 + b_1$ RONW + b_2Size of Org. + b_3 Shareholders' fund,

where b_0 is the value of intercept term (constant) and b_1, b_2 and b_3 are the slopes of the line i.e. the regression coefficient of CCC on RONW, size of org. and Shareholders' fund. This regression equation has been tested by't' test.

Table 4 shows that for once unit increase in RONW the CCC of Hawkins Ltd. stepped up by only 0.013 units which is also statistically insignificant at 5% level. Table4 also depicts that for one unit increase in size of the organisation the CCC of Hawkins Ltd. goes down by 8.399 units which is significant at 1% level. On the other hand, the table reveals that for one unit increase in cumulative profitability the CCC of goes up by 7.104 units which is statistically significant at 5% level of significance. It implies that the influence of RONW and cumulative profitability on CCC is positive and last one is statistically significant at 5% level while the influence of size of the organisation on CCC of the company is negative. The coefficient of determination (R^2) makes it clear that 95.7 % of the variation of the company's CCC is accounted for by the variation in RONW, size of organisation and shareholders' fund.

Table 4 depicts that for one unit increase in RONW the CCC of Havells is decreased by 0.133 units which is statistically insignificant at 5% level while for one unit increase in the size of the organisation the CCC of Havells stepped down by 4.993 units. Table 4 also depicts that for one unit increase in shareholders' fund the CCC of the organisation rapidly increase by 12.795 units which is also statistically insignificant. It indicates that the influence of cumulative profitability on CCC of the Havells is positive whereas RONW and size of the organization negatively influenced the CCC of the company. The coefficient of determination (R^2) makes it clear that 91.4 % of the variation of the company's CCC is accounted for by the variation in RONW, size of organisation and shareholders' fund.

It has been found from Table 4 that for one unit increase in profitability the CCC of the Khaitan is increased by only 0.143 units which is statistically significant at 5% level of significance. For one unit increase in size of the organisation the CCC of Khaitan goes up by 11.292 units which is statistically insignificant. From Table 4 it is found that for one unit increase in cumulative profitability the CCC of the company is highly decreased by 42.217 units which is statistically significant 10% level. It implies that the profitability and size of the organization positively influenced the CCC of the Khaitan while cumulative profitability negatively influenced the CCC of the company. The coefficient of determination (R^2) makes it clear that 72.0 % of the variation of the company's CCC is accounted for by the variation in RONW, size of organization and shareholders' fund.

Table 4 depicts that for one unit increase in RONW the CCC of Voltas Ltd decreased by only 0.216 units which is not statistically significant. Table 4 also depicts that for one unit increase in size of the organisation the CCC of Voltas Ltd. stepped up by 9.955 units which is statistically not significant. On the other hand, Table 4 shows that for one unit increase in cumulative profitability the CCC of Voltas Ltd. decreased by only 2.694 units which is statistically not significant. It indicates that size of the organization positively influenced the CCC of the Voltas whereas both profitability and cumulative profitability negatively influenced the CCC of Voltas. The coefficient of determination (R^2) makes it clear that 55.1 % of the variation of the company's CCC is accounted for by the variation in RONW, size of organisation and shareholders' fund.

Table 4 reveals that for one unit increase in RONW the CCC of Siemens stepped up by 2.457 units which is statistically insignificant. Table 4 also portrays that for one unit increase in size of the organisation the CCC of Siemens highly goes down by 76.328 units which is also statistically insignificant. From Table 4 it is found that for one unit increase in cumulative profitability the CCC of Siemens goes up by only 0.027 unit which is not significant at 5% level. It implies that the profitability and cumulative profitability positively influenced the CCC of Siemens while size of the organisation negatively influenced the CCC of Siemens. The coefficient of determination (R^2) makes it clear that only 8.1 % of the variation of the company's CCC is accounted for by the variation in RONW, size of organization and shareholders' fund.

Therefore, from Table-4 it is found that in case of Khaitan cumulative profitability negatively influenced the CCC which is very high. On the other hand, in case of Siemens, the size of the organization negatively influenced the CCC which is also very high.

From the regression analysis it is clear that only in Havells and Voltas, RONW negatively influenced the CCC. On the other hand, in Hawkins, Havells, and Siemens the effect

Table 4: Multiple Regression of CCC on RONW, Size of Org. and shareholders' Fund of the Selected Companies of Consumer Durable Sector Regression Equation is CCC = a_0+a_1RONW+a_2Size of Org.+a_3Shareholders' Fund

COMPANIES	PARTIAL REGRESSION COEFFICIENT			CONSTANT	R2ED
	RONW	SIZE OF THE ORGANISATION	SHAREHOLDERS' FUND		
HAWKINS	0.013 (1.551)	-8.399 (-3.434)***	7.104 (2.915)**	9.387 (4.779)	0.957
HAVELLS	-0.133 (-1.392)	-4.993 (-0.353)	12.795 (1.398)	-2.813 (-0.159)	0.914
KHAITAN	0.143 (2.579)**	11.292 (0.913)	-42.217 (-2.252)*	59.282 (2.035)	0.720
VOLTAS	-0.216 (-1.638)	9.955 (0.184)	-2.694 (-0.059)	-8.206 (-0.263)	0.551
SIEMENS	2.457 (0.615)	-76.328 (-0.328)	0.027 (0.368)	116.962 (0.230)	0.081

Source: Compiled and computed from 'Capitaline Corporate Database' of Capital Market Publishers (I) Ltd., Mumbai.

of size of the organisation on CCC is negative. The effect of cumulative profitability on CCC is negative in case of Khaitan and Voltas. So with this no such general conclusion can be drawn that this factor has positive or negative impact on CCC.

Creditworthiness

The main purpose of calculating ratios is to judge the firm's liquidity, profitability, and capital adequacy. From the 'risk description model', scores are calculated individually for each of the selected companies under study. Tables are prepared consisting of different ratios to calculate scores. The model clearly showed how the liquidity, profitability and capital adequacy factors influenced the scores of individual companies. In case of all the companies from five different sectors, where all the factors are good, they obtained high score. On the contrary, the companies where two factors are good, the impact of one or two bad factor / factors outweighed the influence of good factors. This model is self-explanatory in nature. In this case our objective is to gives an idea to the credit analyst, about extracting best result of using financial statement.

Table5 shows that the average scores of ratio x_1, x_2, x_3, x_4, x_5, x_6, x_7, and x_8 in Hawkins Cooker Ltd. (Hawkins) are 0.307, 0.6868, 0.3715, 71.228, 0.6831, 129.05, 2.1832, and 2.1614 respectively. The highest score is revealed by ratio x_6 (129.05) and lowest score is registered by ratio x_1 (0.307). The total average score is 206.67. The credit score of Hawkins Ltd is 25.833.

Table 5: Risk Description Model – Ratio Measurement (Hawkins)

RATIOS	DESCRIPTION	AVG. SCORES
X1	NP/CE	0.307
X2	NTA/TL	0.6868
X3	NP/CL	0.3715
X4	NWC/CR.EXPOSU	71.228
X5	E/CL+CR.EXPOSU	0.6831
X6	NA/CR.EXPOSU	129.05
X7	TA/TL+CR.EXPOSU	2.1832
X8	NP+D/CD	2.1614
TOTAL AVG SCORES		206.67
CREDIT SCORES(CS)		25.833

Table6 exhibits that the average score of ratio x_1, x_2, x_3, x_4, x_5, x_6, x_7, and x_8 in Havells India Ltd. (Havells) are 0.2145, 1.5491, 0.5221, 72.758, 1.5365, 360.79, 3.172, and 2.5341 respectively. The highest score is represented by ratio x_6 (360.79) and lowest score is registered by ratio x_1 (0.2145). The total average score of Havells is 443.08. The credit score of Havells is 55.385.

Table 6: Risk Description Model –Ratio Measurement (Havells)

RATIOS	DESCRIPTION	AVG SCORES
X1	NP/CE	0.2145
X2	NTA/TL	1.5491
X3	NP/CL	0.5221
X4	NWC/CR.EXPOSU	72.758
X5	E/CL+CR.EXPOSU	1.5365
X6	NA/CR.EXPOSU	360.79

X7	TA/TL+CR.EXPOSU	3.172
X8	NP+D/CD	2.5341
TOTAL AVG SCORES		443.08
CREDIT SCORES(CS)		55.385

Table 7 shows that the average score of ratio x_1, x_2, x_3, x_4, x_5, x_6, x_7, and x_8 in Khaitan Electricals Ltd. (Khaitan) are 0.0335, 3.1395, 0.1195, 86.385, 3.1699, 735.48, 5.0493, and 0.8221 respectively. The highest score is represented by ratio x_6 which is 735.48 and lowest score is portrayed by ratio x_1 which is 0.0335. The total average score of Khaitan is 834.2. The credit score of Khaitan is 104.28.

Table 7: Risk Description Model – Ratio Measurement (Khaitan)

RATIOS	DESCRIPTION	AVG SCORES
X1	NP/CE	0.0335
X2	NTA/TL	3.1395
X3	NP/CL	0.1195
X4	NWC/CR.EXPOSU	86.385
X5	E/CL+CR.EXPOSU	3.1699
X6	NA/CR.EXPOSU	735.48
X7	TA/TL+CR.EXPO-SU	5.0493
X8	NP+D/CD	0.8221
TOTAL AVG SCORES		834.2
CREDIT SCORES(CS)		104.28

Table 8 reveals that the average score of ratio x_1, x_2, x_3, x_4, x_5, x_6, x_7, and x_8 in Voltas Ltd. (Voltas) are 0.2678, 0.2606, 0.0838, (-) 52.46, 0.2889, 89.719, 1.2401, and 0.4798 respectively. Out of which ratio x_6 (89.719) represented the highest score and ratio x_4(-52.46) revealed the lowest score. The total average score of Voltas is only 39.883. The credit score of Voltas Ltd. is 4.9853. The negative score of ratio x_4 reduced the total score.

Table 8: Risk Description Model – Ratio Measurement(Voltas)

RATIOS	DESCRIPTION	AVG SCORES
X1	NP/CE	0.2678
X2	NTA/TL	0.2606
X3	NP/CL	0.0838
X4	NWC/CR.EXPOSU	-52.46
X5	E/CL+CR.EXPOSU	0.2889
X6	NA/CR.EXPOSU	89.719
X7	TA/TL+CR.EXPOSU	1.2401
X8	NP+D/CD	0.4798
TOTAL AVG SCORES		39.883
CREDIT SCORES(CS)		4.9853

It is found from Table 9 that the average scores of ratio x_1, x_2, x_3, x_4, x_5, x_6, x_7, and x_8 in Siemens Ltd. (Siemens) are 0.3041, 0.6304, 0.1843, 36.074, 0.6281, 175.92, 1.5298, and 1.0587 respectively. The ratio x_6 (175.92) represented the highest score whereas the ratio x_1 (0.3041) represented the lowest. The total average score of Siemens Ltd. is 216.33. The credit score of Siemens Ltd. is 27.042.

Table 9: Risk Description Model – Ratio Measurement(Siemens)

RATIOS	DESCRIPTION	AVG SCORES
X1	NP/CE	0.3041
X2	NTA/TL	0.6304
X3	NP/CL	0.1843
X4	NWC/CR.EXPOSU	36.074
X5	E/CL+CR.EXPOSU	0.6281
X6	NA/CR.EXPOSU	175.92
X7	TA/TL+CR.EXPOSU	1.5298
X8	NP+D/CD	1.0587
TOTAL AVG SCORES		216.33
CREDIT SCORES(CS)		27.042

Therefore, Tables 5, 6, 7, 8, and 9 reveal that from current profitability point of view Hawkins is the best whereas from cumulative profitability's view point Havells is the best. On the other hand, in respect to debt paying capacity, Khaitan is the best. The score shows that under consumer durables sector the highest credit scores are obtained by Khaitan followed by Havells, Siemens, Hawkins and Voltas in that order. The score plotted in Figure 2 shows that under consumer durables sector the highest credit scores are obtained by Khaitan followed by Havells, Siemens, Hawkins and Voltas in that order.

In Table10, sector-wise ranking and ranking on the basis of companies as a whole have been done regarding their credit score. In-depth analysis of credit score it is revealed that the credit score of selected companies is mainly influenced by two ratios, liquidity ratio (x_4) and comfort margin(x_6).

Table10 reveals that in consumer durables sector the ratio x_4 in Hawkins, Havells, Khaitan, Voltas, and Siemens are 71.23, 72.376, 86.38, (-)52.5, and 36.07 respectively. On the other hand, ratio x_6 in Hawkins, Havells, Khaitan, Voltas, and Siemens are 129.0, 360.8, 735.5, 89.372, and 175.9 respectively. In Khaitan ratio x_4 and ratio x_6 are the highest. Such ratio helped the Khaitan to occupy the first position in consumer durables sector.

Figure 2: Credit Scores of Companies of Consumer Durable Sector

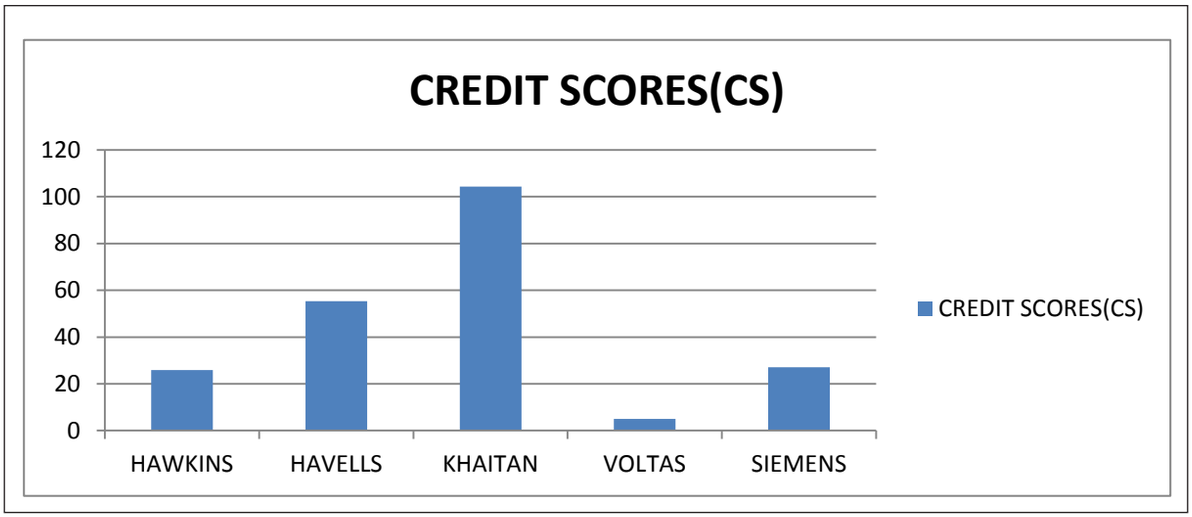


Table 10: Statement showing Ranking on the basis of Credit Scores of the Selected Companies

RATIOS	COMPANIES				
	HAWKINS	HAVELLS	KHAITAN	VOLTAS	SIEMENS
X1	0.307	0.215	0.034	0.268	0.304
X2	0.687	1.549	3.139	0.261	0.63
X3	0.371	0.522	0.12	0.084	0.184
X4	71.23	72.76	86.38	-52.5	36.07
X5	0.683	1.536	3.17	0.289	0.628
X6	129	360.8	735.5	89.72	175.9
X7	2.183	3.172	5.049	1.24	1.53
X8	2.161	2.534	0.822	0.48	1.059
TOTAL AVG SCORES	206.7	443.1	834.2	39.88	216.3
CREDIT SCORES(CS)	25.83	55.38	104.3	4.985	27.04
RANK	4	2	1	5	3

In-depth analysis of the individual company's credit performance on the basis of credit score table indicates that liquidity ratio (x_4) i.e. the ratio of Normalised Working Capital to Credit Exposure is highly affected by percentage of Current Liabilities to Current Assets and percentage of Cash to Current Assets. It is found from Table11 that the liquidity ratio (x_4) as per our model in Hawkins is 71.23 whereas its current liabilities consist of 47.86 % of current assets and at the same time cash occupied 10.56% of current assets. The liquidity ratio (x_4) as per our model in Havells is 72.75 whereas its current liabilities consist of 53.42 % of current assets and at the same time cash occupied 6% of current assets. Similarly, the liquidity ratio (x_4) as per our model in Khaitan is 86.38 whereas its current liabilities consist of 60.15 % of current assets and at the same time cash occupied 3.58% of current assets.

The liquidity ratio (x_4) as per our model in Voltas is (-) 52.45 whereas its current liabilities consist of 81.59 % of current assets and at the same time cash occupied 0.14% of current assets. Similarly, the liquidity ratio (x_4) as per our model in Siemens is 36.07 whereas its current liabilities consist of 71.27 % of current assets and at the same time cash occupied 21.20% of current assets.

Hence, Table 11 exhibits that the liquidity ratio of Voltas is (-) 52.45. It is because in Voltas current liabilities consist of higher portion of current assets and lower portion of cash. In other companies of consumer durables sector where liquidity ratio is sound, higher portion of current liabilities on current assets is compensated by moderate cash balance.

Coefficient of correlation is the measurement of degree of association between two variables. A positive value of 'r'

Table 11: Statement Showing Liquidity position of Selected Companies

CONSUMER DURABLES INDUSTRIES	CA	CL	AVG CASH as % OF CA	CL % OF CA	NWC/ CREDIT EXPOSURE
HAWKINS	64.397	29.828	0.105657	0.47867200	71.22778459
HAVELLS	394.295	248.49	0.060004	0.53424062	72.7575355
KHAITAN	40.147	24.419	0.035881	0.60151173	86.38482057
VOLTAS	2456.711	2055.7	0.001448	0.81593705	-52.45745207
SIEMENS	3299.805	2205.6	0.212013	0.71278214	36.07350993

Table12: Analysis Correlation of Selected Companies

		CASH OF CA	CL OF CA	NWC OF
CASH OF CA	Pearson Correlation	1	-.098	0261
	Sig. (2-tailed)		.875	.671
	N	5	5	5
CL OF CA	Pearson Correlation	-.098	1	-.868
	Sig. (2-tailed)	.875		-.057
	N	5	5	6
NWC OF CR EXP	Pearson Correlation	.261	-.868	5
	Sig. (2-tailed)	.671	.057	1
	N	5	5	5

indicated high values of one variable are generally associated with the high values of other variables and low values with low values. In this study multiple correlation technique among cash as a % of CA, CL as a % of CA and NWC/Credit Exposure has been applied. To test the significance of such coefficient, 't' test has been used.

It has been found from Table 12 that in consumer durables sector the correlation coefficient between cash as a percent of current assets and liquidity ratio (x_4) depicted a very low positive correlation, which is 0.261, statistically insignificant. On the other hand, the correlation coefficient between current liabilities as a percent of current assets and liquidity (x_4) revealed a high degree of negative correlation (-) 0.868 which is also statistically not significant.

It also supported the theoretical principle that higher the current liabilities as a percent of current assets lower the liquidity (x_4). The correlation analysis in Table12 exhibits that cash as a percent of current assets and current liabilities as percent of current assets has a low degree of negative correlation (-) 0.098 which is statistically insignificant.

CONCLUSION

Liquidity management deals with the management of current assets and current liabilities. Its main objective is to maintain current assets in such a way that it can meet the current liabilities timely. Many firms take the advantage of external financing due to the difficulty in paying its short-term debt. But the firm cannot collect such external financing easily, particularly in case of small firms. External financing is the costly. So, the efficient liquidity management of the company helps its long-term prosperity and healthy bottom lines and more specifically to make the company remain solvent.

Cash Conversion Cycle (CCC) is a useful technique by which we can easily and quickly assess the liquidity of the firm. It invariably measures the time lag between cash payments for purchase of inventories and collection of receivables from customers. CCC is a dynamic measure of continuous liquidity management, which comprises both balance sheet and income statement data with time dimension.

An individual firm's CCC is helpful but from industries stand point it is crucial for a company to evaluate its performance regarding CCC and assess opportunities for improvement because the length of CCC may differ from industry to industry. From the liquidity view point Khaitan is the best. But, only in case of Siemens the relationship between CCC and ITR, CCC and CR, CCC and DTR, CCC and Debtors more than six months and CCC and CTR is theoretically sound. Out of which some factors positively and some factors negatively influenced the CCC of all the companies selected in this study.

Credit score signifies the creditworthiness of the company. Higher CS signifies better credit worthiness and vice-

versa. Higher credit worthiness gives the opportunity to the company for late payment and late payment increases the deferral period. It again decreases the cash conversion cycle. Lower CCC represents less requirement of working capital. So liquid cash are not blocked in other types of current assets, it can invest in some profitable project to enhance profit. Hence good credit worthiness indirectly increases the profitability of the organisation. From another point of view credit worthiness helps the company for achieving higher debtors' turnover. As the credit manager takes the decision of granting credit before the commencement of sales then it helps the organisation to take decision regarding its future investment projects. It helps the management to know how and when money should be collected and such information protect the company to borrow funds for investing future profitable projects. It also minimizes the CCC of the organisation which indirectly increases the profit of the organisation.

In this study we observed that from the view point of average and consistency of CCC, Khaitan is the best whereas consistency as cash as a % of total assets Khaitan is also ranked first. And from the credit score point of view Khaitan is best. It signifies that due to higher credit score the said company managed to decrease its CCC.

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