Analysis of Inventory Management of Selected Companies in India

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Abstract

The need of adequate amount of working capital is immensely felt in all business concerns. Adequate amount of working capital helps a concern to overcome odd financial situations and any sort of operating crisis. Conversely, excessive or too much working capital also acts adversely for a business. Therefore it requires to be controlled and manage efficiently. Inventory management consists of the functions of determining the size of inventory, establishing procedures of effective inventory handling, reducing cost of inventory. This paper analyses the inventory management of selected companies in India.

Keywords:

Inventory Management, Working Capital, Turnover, Profitability

Introduction

Inventory management consists of the function of determining the size of inventory establishing procedure of effective inventory handling, maintaining control on inventory making efforts to reduce costs related to inventory. Every organization needs inventory for smooth running of its activities. In a manufacturing concern, inventory includes stock of Raw material, Work-in-progress and Finished goods. In a trading concern only the stock of saleable goods is treated as inventory. Inventory in most cases considered as most important component of current assets and so its efficient management considered being a significant part of working capital management. Thus, it is very essential to have proper control and management of inventories. The management of inventory normally ensures availability of materials in sufficient quantity as and when required and also to minimize investment in inventories. The efficiency of a firm to earn profits depends on its ability to manage working capital.

Inventory is the firm's investment in Working Capital and the risk of holding inventory generally higher than that of other items of Current Assets. It involves many types of costs associated with it viz acquisition cost, carrying cost etc. It is the only item of Current Assets which has direct influence on the prices and income of a firm.[]

Literature Review

Tanvar & Shah (2012) concluded that profitability analysis today is of paramount significance in the context of overall performance of the business concern. Chellasamay and Sumathi (2009) observed that working capital management is the highly influencing factor to determine the profitability of

selected textile companies. Chandra and Selvaraj (2012) concluded that the selected companies could reframe their optimum capital structure, capacity utilization and liquidity position for enhancing the further profitability in future.

Objective

The objectives of the paper are-

- to examine the overall quantum of working capital maintenance by the companies under study

- to assess the amount of investment in the various components of working capital of the company

- to the liquidity position of the companies

- to examine the extent of relationship between working capital and profitability

Hypotheses

The hypotheses tested for the present study are as follows-

- There is no proper and efficient liquidity management in the companies

- There is no adequate proportion of the component of working capital in the companies

- There is no significant difference in the profitability of the companies under the study

- There is a positive correlation between working capital and profitability

Research Methodology

Secondary data relating to working capital management in the selected companies have been collected from the published annual reports and accounts of the companies and various other publications of the company. To analyze the problem of managing liquidity various techniques have also been used such as ratio analysis, common size analysis and trend analysis. Further several statistical tools have also been used for analysis such as average, standard deviation, coefficient of variation etc. The hypotheses have been tested by applying F test i.e. analysis of variance. To find the relationship between liquidity and profitability coefficient of correlation has also been computed.

Sample

The present study is mainly based on FMCG sector. The sample drawn is 3 FMCG companies operating in India. Those are Hindustan Unilever Ltd., Dabur and Colgate and Palmolive. The scope of the study kept limited to the period of 5 years commencing from 2006-07 to 2010-11.

Size of Inventory

The size of the inventory in HUL showed fluctuating trend during the study period. The size of inventory during 2006-07 was Rs. 2003.77 crores increased to 2580.53 crores in 2007-08 but decreased to Rs. 25.81 crores during 2008-09 and then to 22.26 crores in 2009-10. Further it decreased to Rs.28.74 crores in 2010-11. The average size of inventory in HUL was Rs 932.22 which is regarded as huge amount of inventory. The coefficient of variation was 134.96 percent denoting a highly fluctuating trend which should be controlled by the management.

In Dabur, the size of the inventory recorded as an increasing trend during the period of the study. Initially, in 2006-07 the inventory was Rs 227.11 crores which increased to Rs. 302.48 crores in 2007-08 and further to Rs. 375.47 crores in 2008-09. It goes on increasing which stands at Rs. 426.22 crores in 2009-10 and further to Rs. 708.53 crores. The average size of the inventory in Dabur was Rs. 407.96 crores denoting a satisfactory level of inventory. The coefficient of variation was 45.13 percent denoting a high fluctuating trend of the size of inventory.

Table 1: Size of the Inventory

(Rs in Crore)

Year	HUL	DABUR	COLGATE
2006-07	2003.77	227.11	80.03
2007-08	2580.53	302.48	80.25
2008-09	25.81	375.47	90.24
2009-10	22.26	426.22	110.55
2010-11	28.74	708.53	153.7
Average	932.22	407.96	104.21
S.D.	1258.07	184.09	29.90
C.V. (%)	134.95	45.13	28.70

Source: Annual Reports & Accounts of the Companies (2006 -07 to 2010-11)

In Colgate and Palmolive, the size of inventory shows an increasing trend during the study period. In 2006-07 the inventory was Rs. 80.03 crores, which was increased to Rs. 80.25 crores in 2007-08 and further it increased to Rs. 90.24 crores in 2008-09. The inventory goes increasing in 2009-10 to Rs. 110.55 crores and Rs. 153.7 crores in 2010-11. The average of the inventory was 104.21 crores which is not very high. The coefficient of variation was 28.70 percent which denotes a moderate fluctuating trend of the size of inventory.

Hypotheses to be tested are

Null Hypothesis (H_0): There is no significant difference in the size of the inventory of the companies.

Null Hypothesis (H_0): The company wise size of inventory does not differ significantly or the year wise difference in the size of inventory of the companies is insignificant.

Table 2: ANOVA

Source of Variation	Sum	Degree of Freedom (d.f.)	Variance (sum/d.f.)	F Ratio	5% F Limit (Table Value)
Between Column (i.e. between Companies)	1755489	(c-1)–3-1=2	877745	1.47	F(2,8)– 4.46
Between Rows (i.e. within years)	1691150	(r-1)=5-1=4	422788	1.41	F(8,4)= 6.04
Residual or Error	4781234	(c-1)(r-1) (3-1)(5-1)=8	597654		

F Test between the Companies

F = Higher Variance/Smaller Variance

   = 877745/597654= 1.47

Critical value of F at 5 percent level of significance (for V_1=2, V_2=8)=4.46

Since the calculated value of F is less than the table value, hence the null hypothesis is accepted and it can be concluded that the difference in the size of the inventory of the companies is insignificant.

F Test within the years

F = Higher Variance/Smaller Variance

  = 597654/422788= 1.41

Table value of F at 5 percent level of significance (V_1=8, V_2=4) = 6.04

The null hypothesis is accepted because the calculated value of F is less than the table value of F, therefore, it can be calculated that the company wise or year wise difference in the size of the inventory of the companies under study is not significant.

Inventory to Current Assets Ratio

Inventory to current assets ratio shows the relationship between inventory and current assets and indicates that what amount of current has been invested in proportion to the inventory. A higher inventory to current ratio shows that a maximum portion of current assets is representing inventory, this is not favorable for the company. On the other hand low ratio indicates a less stock and higher current asset which is better to some extent.

The inventory to current assets ratio of HUL showed a low fluctuating trend during the study period. It was 58.6 percent in 2006-07, which was decreased to 44.6 percent in 2007-08 and slight increased to 44.8 percent in 2008-09 and thereafter it decreased to 40 percent in 2009-10 and further increased to 46.03 in 2010-11. The inventory to current assets ratio was higher as the average of the ratio was 46.81percent. It was because of the reason that HUL is a fast moving consumer goods sector and much inventory is required. The standard deviation of the inventory to current assets ratio was 6.98 with Coefficient of variation 14.91 percent denoting a consistent trend and it can be concluded that company should maintain this position in future.

In Dabur India Ltd the inventory to current assets ratio showed a consistent trend during the study period. The inventory to current assets ratio was varied between 39.43 percent in 2008-09 to 35.47 percent in 2006-07. The inventory to current assets ratio continues increasing in 2007-08, 2008-09 to 39.01 and 39.43 percent respectively. After that there was a slight decrease in 2009-10 to 38.52 percent and finally in the year 2010-11 it was decreased to 38.26 percent. The average of the ratio was 38.14 percent indicates that there was a reasonable portion of inventory in the current assets and signifies that company has utilized the fund for inventory purpose. The coefficient of variation was 4.09 percent which shows a consistent trend during the period of the study and could be suggested to maintain this position.

In Colgate-Palmolive (India) Ltd inventory to current assets ratio also show a consistent trend throughout the study period. During 2006-07 the inventory to current assets ratio was 22.22 percent which decreased to 21.77 percent in 2007-08 and continues decreasing in 2008-09 to 18 percent but increased to 18.78 percent

in 2009-10. The ratio further increased to 21.88 percent in 2010-11. The average of the ratio was 20.53 percent, which is proportionately at better position and maintained a reasonable proportion of inventory in the total current assets of the company. The coefficient of variation was 9.64 which denotes a consistent trend and it could be suggested that the management of the company should try to maintain this position in future also.

Inventory to Working Capital Ratio

The inventory to working capital ratio shows the relationship between inventory and working capital and denotes the proportion of inventory in working capital. Higher ratio shows that management of inventory is not properly maintained. On the other hand a low ratio indicates less inventory and higher working capital indicates a favorable situation.

The inventory to working capital ratio of HUL showed a negative trend during the study period, as there was a negative working capital in the company. It means that HUL has consumed up whole of its current assets and it has not any working capital stock to finance its future operating activities.

In Dabur India Ltd, the inventory to working capital ratio shows a fluctuating trend throughout the study period. In 2006-07 this was

121 percent which increased to 719 percent, thereafter the record shows a decreasing trend, which stands at 179 percent in 2010-11. The average of the ratio was 302.11 percent which is very high and affects the liquidity position adversely. The coefficient of variation was 79.15 percent and it shows a fluctuating trend.

In Colgate- Palmolive, inventory to working capital ratio showed a fluctuating trend. In 2006-07 the ratio was 123 percent which goes to negative one in 2007-08 and also in 2008-09. In 2009-10 the ratio becomes positive and stood at 285 percent and a slight decrease in 2010-11 to 252 percent. The average of the ratio was 50.48 percent, which can be considered as reasonable as the Colgate-Palmolive is a production and distribution company. The coefficient of variation was 398.11which shows a highly fluctuating trend. The management of the company should try to control the fluctuations.

F Test for Inventory to Working Capital Ratio

Null Hypothesis (H_0): There is no significant difference in the inventory to working capital ratio of the companies under the study

Null Hypothesis (H_0): The year-wise difference in the inventory to working capital ratio of the companies under study is not significant.

Table 2: ANOVA

Source of Variation	Sum	Degree of Freedom (d.f.)	Variance (sum/d.f.)	F Ratio	5% F Limit (Table Value)
Between Column (i.e. between Companies)	5751806.67	(c-1)=3-1=2	2875903.3	4.05	F(2,8)= 4.46
Between Rows (i.e. within years)	2397625.66	(r-1)=5-1=4	599406.41	1.41	F(8,4)= 6.04
Residual or Error	5670514.4	(c-1)(r-1) (3-1)(5-1)=8	708814.3		

F Test between the companies

F = Higher variance/ Smaller variance

= 2875903.3/708814.3= 4.05

Table value of F at 5 percent level of significance for (V_1=2, V_2=8) = 4.46

As the calculated value of F is less than the table value, hence the null hypothesis is accepted and it is concluded that the difference in inventory to working capital ratio of the company under study is not significant.

F Test within years

F = Higher variance/ Smaller variance

= 708814.3/599406.41= 1.18

Critical value of F at 5 percent level of significance for (V_1=8, V_2=4) = 6.40

Since the computed value of F is less than the table value of F, hence the null hypothesis is accepted and it can be said that company wise or year wise difference in the inventory to working capital ratio of the companies under study is not significant.

Inventory Turnover Ratio

Inventory turnover affects the profitability of a firm. The higher the turnover, the larger is the profits of the firms. The ratio helps in determining the liquidity of a concern. The ratio also helps to know the efficiency of inventory management. Lower ratio shows that stock is blocked and blocked and not immediately sold. It shows the bad performance of the company. The inventory turnover ratio of the companies under study is as follows:-

Table 3 : Inventory turnover ratio of the companies (2006-07 to 2010-11)

(In times)

Year	HUL	DABUR	COLGATE
2006-07	3.86	5.08	8.31
2007-08	3.03	4.45	8.88
2008-09	0.08	4.13	9.63
2009-10	3.71	4.23	9.76
2010-11	3.86	3.59	8.83
Average	2.908	4.296	8.992
S.D.	1.62	0.54	0.68
C.V. (%)	55.63	12.58	7.56

Source: Annual Reports & Accounts of the Companies (2006 -07 to 2010-11)

The above table shows that the inventory turnover ratio of HUL is fluctuating during the period of the study. During 2006-07 the inventory turnover ratio was 3.86 times which decreased to 3.03 times in 2007-08. The inventory turnover ratio decreased to 0.08 times in 2008-09 but increased to 3.71 times in 2009-10 and again it increases to 3.86 times in 2010-11. The average of the inventory turnover ratio was 2.908 times which cannot be said satisfactory. The coefficient of variation was 55.63 percent which showed a fluctuating trend; hence the management of the company should control this fluctuation in future.

In Dabur India Ltd, the inventory turnover ratio shows a fluctuating trend during the period of study. The ratio was 5.08 times in 2006-07 which decreased to 4.45 in 2007-08 and again decreased to 4.13 times in 2008-09. The ratio was again increased to 4.23 times in 2009-10 and further decreased to 3.59 times. The average of the ratio was 4.296 which cannot be considered as satisfactory. It can be suggested that this ratio should improve in future. The coefficient of variation was 12.58 percent which shows a consistent trend.

For Colgate-Palmolive (India) Ltd, the inventory turnover ratio showed an increasing trend from 2006-07 to 2009-10 but decreased in 2010-11 which was 8.83 times. The inventory turnover ratio in 2006-07 was 8.31 times and increased to 8.88 times in 2007-08. The ratio was increased to 9.63 times in 2008-09 and 9.76 times in 2009-10. The average of the ratio was 8.992 times which cannot be regarded satisfactory and indicates blocking of inventory. The coefficient of variation was 7.56 percent showing consistency in the ratio. The management is advised to use the inventory efficiently.

F Test for Inventory Turnover Ratio

The following hypothesis has been tested by applying F Test

Null Hypothesis (H_0): There is no significant difference in the inventory turnover ratio of the companies under study

Null Hypothesis (H_0): The year-wise difference in the inventory turnover ratio of the companies under study is not significant.

Table 2: ANOVA

Source of Variation	Sum	Degree of Freedom (d.f.)	Variance (sum/d.f.)	F Ratio	5% F Lim it (Table Val ue)
Between Column (i.e. between Companies)	10556491730	(c-1)=3-1=2	5278245865	1.24	F(2,8)= 4.46
Between Rows (i.e. within years)	17093726997	(r-1)=5-1=4	4273431749	1.00	F(4,8)= 6.04
Residual or Error	34093271644	(c-1)(r-1) (3-1)(5-1)=8	4261658955		

F Test between the companies

F = Higher variance/ Smaller variance

= 5278245865/4261658955= 1.24

Table value of F at 5 percent level of significance for (V_1=2, V_2=8) = 4.46

As the calculated value of F is less than the table value, hence the null hypothesis is accepted and it is concluded that the difference in inventory to turnover ratio of the company under study is not significant.

F Test within years

F = Higher variance/ Smaller variance

=4273431749/4261658955= 1.00

Critical value of F at 5 percent level of significance for (V_1=8, V_2=4)= 3.84

Since the computed value of F is less than the table value of F, hence the null hypothesis is accepted and it can be said that year wise difference in the inventory turnover ratio of the companies under study is not significant.

Conclusion

On the basis of the study it can be concluded that the liquidity position of HUL during the study period is negative. It is being suggested that the management of the company should maintain proper working capital to meet the operating expenses. The high inventory to working capital ratio will affect liquidity position of Dabur India Ltd. The Inventory turnover ratio affects the profitability of the firm. During the study period Colgate-Palmolive (India) Ltd has a moderate ratio though not satisfactory. All the companies under study are being suggested to dispose of the stock immediately. Profitability analysis is of great significance in relation to the overall performance of the company.

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