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Inventory turnover optimization criteria of efficiency (With special reference to FMCG sector in India)

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Abstract
Study of the Inventory management is very crucial for all the firms. Unless the working capital is planned, managed and monitored effectively, company cannot earn profits and increase its turnover, Also, it helps in removing bottlenecks. Although very studies have been conducted on analyzing the working capital management of Indian companies but very few studies have measured the inventory management of top FMCG companies of last decade. This study bridges the gap and highlights the current status of inventory turnover management of selected five FMCG companies in India.
More companies go under because of cash flow issues, rather than declining profitability. Hence traditional prudence always suggests that a firm should have sufficient cash to cover its immediate liabilities. However there is a growing breed of FMCG companies that claim otherwise. Unlike most other industries, the turnover of a FMCG company is not limited by its ability to produce, but its ability to sell. They can generate cash so quickly they actually have a negative working capital. This happens because customers pay upfront and so rapidly, the business has no problem raising cash (like Nestle, Britannia). In these companies products are delivered and sold to the customer before the company even pays for them. A negative working capital is a sign of managerial efficiency in a business with low inventory and accounts receivables (which means it operates on an almost strictly cash basis). In other situation, it is a sign a company may be facing bankruptcy or serious financial trouble.
The current study has tried to examine the sources used by the companies to finance their working capital requirements and to analyze and evaluate the Inventory management. The present work therefore is a modest attempt in this direction by undertaking a study of Inventory management.
With this end an efforts has been made in this article entitled as study of FMCG in respects of performance and its inventory management. The finding of the study not only throw light on technical weakness in the managerial activities of the companies, but it may also help scholars and researchers to develop new ideas, techniques and methods in respects of the management of inventory.

Keywords: inventory management, bottleneck, negative working capital, managerial efficiency

Introduction
Inventory management is concerned with the acquisition storage, handling and use of inventories, so as to ensure the availability of inventory whenever needed, providing sufficient protection for contingencies, maximizing economy at minimizing wastage and losses. The efficiency of inventory management affects the flexibility of the firm.
Inefficient procedures may result in an unbalanced inventory. These inefficiencies will have an adverse effect on profitability of the organization. The more efficient is the inventory management; the less is investment required. Excessive investment in inventories increases costs and curtails profits. In the way, the effect of inventory control on flexibility and on the level of investment required, inventories represents two sides of the same coin.

Review of Research
Inventory, in most industries, accounts for largest proportion of gross working capital. A number of studies, therefore, have been conducted to find the determinants of investment in inventories.
Econometric studies to analyze the factors that influence inventory accumulation in India, are based on time series and pooling of cross section of time series date pertaining to manufacturers' inventories.
Krishnamurty and Sastry's study in 2014 was perhaps the most comprehensive study on manufacturers' inventories. They used CMI data and the consolidated balance sheet data of public limited companies published by RBI, to analyze each of the major components *i.e.* raw material, goods-in-process and finished goods for 21 industries over the period 2001-2011. It was a time series study but some inter-industry cross section analysis had also been done. Accelerator represented by change in sales, bank finance and short-term interest rate were found to be important determinants. Utilization of productive capacity and price anticipations had been found to be of some relevance.
Vinod Prakash (2011) was a time series analysis with mostly undefeated data taken from CMI and Annual Survey of Industries (ASI) for the period1990-2010. It examined the influence of structural changes in manufacturing activity on the relative size and composition of inventory in the large scale-manufacturing sector in India. Three different models for industry groups and for six important individual industries

had been tried. Output/sales, capacity utilization, short-term rate of interest, money supply, foreign exchange availability, price index, size and time trend were taken as explanatory variable. The simple accelerator model with output gave better results for industrial groups, whereas the ratio model seemed to perform better in the analysis of individual industry. The flexible accelerator models were found to be inferior. The impact of price index was found to be generally insignificant, while the impact of foreign exchange and money supply was absent. The rate of interest showed a perverse impact. Time trend appeared to be important than the size of establishment. The role of availability of funds was completely ignored in this study.

George (2008) was cross section analysis of balance sheet data of 52 public limited companies for the period 2001-05. Accelerator, internal and external finance variables were considered in the equations for raw materials including goods-in-process and total inventories. However, equations for finished goods inventories considered only output variable. Accelerator and external finance variables were found to be important.

Seamy and Rao (2006) [16] of the flow of funds of public limited companies had an equation for aggregate inventory investment. RBI data for the period 1990-2005 had been used. The explanatory variables considered were accelerator, flow of bank borrowings, an index of man-days lost, capacity by the call rate. Accelerator, bank finance and fixed investment were found to be significant.

R.N. Agarwal (2005) estimated total inventory investment equation for individual firms in automobile manufacturing industry, which was divided into two sectors─ car-sector and non car-sector. His study was based on the data for1995-2004. Official Directory of Mumbai Stock Exchange had been the basic source of data. Analysis of two sector revealed that sales and stock-sales ratio were important explanatory variables. Cost of capital and trend were important in only car sector while fixed investment and flows of external funds were significant in non-car sector. Existing stock of inventories was statistically significant in both the sector but contrary to expectations, it possessed negative coefficient. Several other variables as dividends, capacity utilization and liquidity ratio were found to be of no importance in explaining inventory investment behavior.

N.C. Gupta (2003) [6] examined the determinants of total inventory investment in aluminum and non-ferrous semi firms in private sector. The data had been taken from Stock Exchange, Official Directory, Mumbai for 9 years1990-93 to 1996-2002. variables considered were current sales change, one-lagged sales change, inventory stock at the beginning, gross fixed investment during the year, flow of net debt (external finance) and profits net of dividends and taxes but gross of depreciation provision (retained earnings or internal finance). The equation also provided for firm dummies and year dummies. Analysis was based on pooling of time series of cross section data. Demand factor and external finance turned out to be significant determinants in aluminum. Both retained earnings and external finance were important determinants in case of non-ferrous semis. Competition for investment funds between fixed and inventory investment was suggested both in aluminum and non-ferrous semis.

Adesh Sharma (2002) applied accelerator model with financial variables to determine the factors influencing investment in inventories in pesticides industry in India. Data had been taken form the Stock Exchange Official Directory, Mumbai for the period 1990-2001 in respect of 18 firms in this industry. The coefficients of the accelerator and financial variables were found to be significant and positive. The coefficient of inventory of inventory stock was significant and negative.

Objectives of the Study

- To study the inventory position of the FMCG companies by taking various measurements.
- To compare and analyze various components of working capital management such as Accounts receivables, accounts payables, inventory position, credit management, etc
- To study the impact of inventory on working capital management of various companies.

Limitations of the Study

1. The study duration is limited to 10 years.
2. The findings of the study are based on the information retrieved by the annual reports of the companies and there reliability depends upon audit.
3. The study is limited to the analysis of inventory turnover ratio of the companies.
4. The study has picked up only five companies in the FMCG sector.

Scope of the Study

The scope of the study is identified after and during the study is conducted. The main scope of the study is to check the effective utilization of working Capital in FMCG sector. The study analyzed the liquidity position and working capital management threw inventory turnover ratio of a limited sample consisting of only five companies i.e. Nestle, HUL, Britannia, ITC and Dabur. The study of working capital is based on only one tool i.e. Ratio Analysis. Further the study is based on last 10 years Annual Reports of the five companies taken into consideration. As only FMCG sector was studied so the findings could only be generalized to this sector's firms.

Sampling Element

Five individual FMCG companies have been analyzed. The five companies are:-

- Hindustan Unilever Ltd.
- ITC (Indian Tobacco Company)
- Nestlé India
- Britannia
- Dabur India

Analysis and Discussion

Inventory Turnover Ratio

Inventory turnover ratio or Stock turnover ratio indicates the velocity with which stock of finished goods is sold i.e. replaced. Generally it is expressed as number of times the average stocks has been "turned over" or rotate of during the year. High turnover suggests efficient inventory control, sound sales policies, trading in quality goods, reputation in the

market, better competitive capacity and so on. Low turnover suggests the possibility of stock comprising of obsolete items, slow moving products, poor selling policy, over investment in stock etc.

Inventory Turnover Ratio=Cost of goods sold / Average inventory at cost Inventory turnover ratio of individual companies

Table 1: Inventory Turnover Ratio of ITC (Rs in Crores)

Year	Cost Of Goods Sold	Inventory	Ratio
2014-15	15060.00	5638.00	2.67
2013-14	12906.00	5269.00	2.45
2012-13	12133.00	4549.00	2.67
2011-12	10772.00	4600.00	2.34
2010-11	9548.00	4051.00	2.36
2009-10	8211.00	3354.00	2.45
2008-09	6475.00	2636.00	2.46
2007-08	4889.00	2003.00	2.44
2006-07	4135.00	1534.00	2.70
2005-06	3742.00	1252.00	2.99
Grand Average			2.55

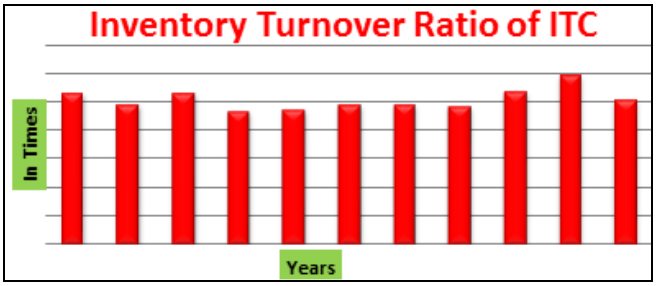

Fig 1

Table 1 shows the value of inventory turnover ratio. On seeing the values of the 10 years, it can be said that the company has been very consistent in keeping the level of the ratio. The value varies between 2.36 and 2.99. It also indicates that the company is efficiently converting its inventory into sales and doesn't believe in huge over stocking.

Table 2: Inventory Turnover Ratio of HUL (Rs in Crores)

Year	Cost Of Goods Sold	Inventory	Ratio
2014-15	17718.00	2517.00	7.04
2013-14	16096.00	2811.00	5.73
2012-13	14975.00	2180.00	6.87
2011-12	17583.00	2529.00	6.95
2010-11	11832.00	1954.00	6.06
2009-10	10455.00	1548.00	6.75
2008-09	9617.00	1322.00	7.27
2007-08	8490.00	1470.00	5.78
2006-07	8162.00	1393.00	5.86
2005-06	7999.00	1279.00	6.25
Grand Average			6.46

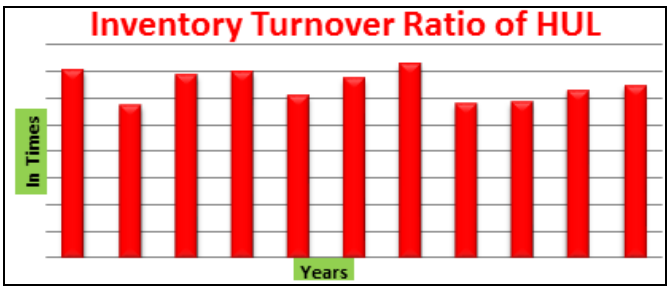

Fig 2

Inventory turnover ratio of HUL has higher values than that of ITC. In Table 2, the value of this ratio starts from 6.25 in the year 2005-2006 and then decreases in the next two years. In year 2008-2009, the ratio again shows an increase to 7.27. In the next four years, the ratio was more or less the same and then it declines in year 2013-2014. In the year 2014-2015, the ratio again increased to 7.04 which indicates that the company is maintaining high Inventory ratio which is the symbol of inventory control efficiency of management.

Table 3: Inventory Turnover Ratio of Nestle (Rs in Crores)

Year	Cost Of Goods Sold	Inventory	Ratio
2014-15	5939.00	734.00	8.09
2013-14	5006.00	576.00	8.69
2012-13	4095.00	499.00	8.21
2011-12	3460.00	435.00	7.95
2010-11	2808.00	401.00	7.00
2009-10	2274.00	276.00	8.24
2008-09	1955.00	253.00	7.73
2007-08	1777.00	217.00	8.19
2006-07	1710.00	219.00	7.81
2005-06	1538.00	219.00	7.02
Grand Average			7.89

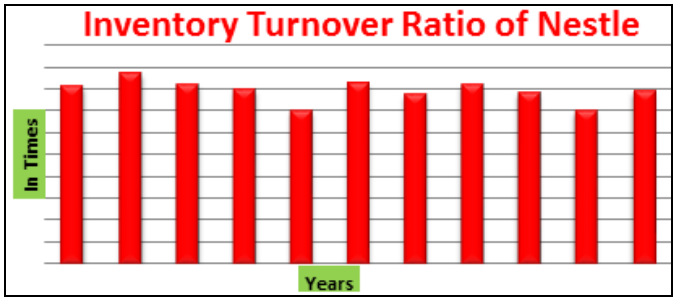

Fig 3

Table: 3 throws light on the inventory turnover ratio of Nestle. It can be seen that the ratio is quite high as compared to the ratio of other companies taken in the study. It starts with the value of 7.02 in the year 2005-2006 and then keeps on increasing in the next two years till 2007-2008. In declines in the year 2008-2009 and then kept on increasing and then decreasing in the next three years. In years 2013-2014 and 2014-2015, the ratio increased to 8.69 and 8.09 respectively. The higher values of inventory turnover ratio indicate that the company is having efficient inventory control and better competitive capacity.

Table 4: Inventory Turnover Ratio of Dabur (Rs in Crores)

Year	Cost Of Goods Sold	Inventory	Ratio
2014-15	2857.00	529.00	5.40
2013-14	2413.00	461.00	5.23
2012-13	1450.00	298.00	4.87
2011-12	1293.00	262.00	4.94
2010-11	1084.00	201.00	5.39
2009-10	822.00	157.00	5.24
2008-09	639.00	116.00	5.51
2007-08	616.00	128.00	4.81
2006-07	593.00	111.00	5.34
2005-06	624.00	179.00	3.49
Grand Average			5.02

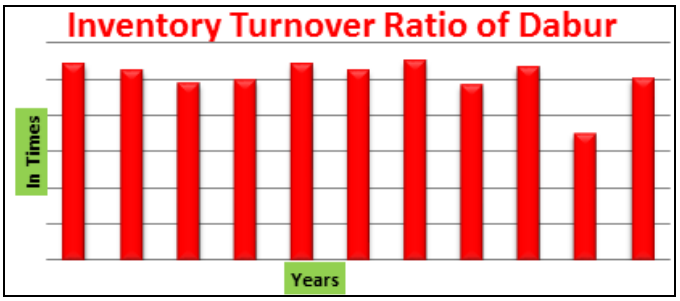

Fig 4

Inventory turnover ratio of Dabur for 10 years has been more or less consistent except for the year 2005-2006 in which the value is the least at 3.49. Table 4 shows that the value of the ratio lays between 4.81 and 5.51. The value of the ratio indicates that the company is not piling up too much stock in hand and also has a good selling policy.

Table 5: Inventory Turnover Ratio of Britannia (Rs in Crores)

Year	Cost Of Goods Sold	Inventory	Ratio
2014-15	4548.00	382.00	11.91
2013-14	3872.00	311.00	12.45
2012-13	3239.00	268.00	12.09
2011-12	2849.00	254.00	11.22
2010-11	2353.00	302.00	7.79
2009-10	2070.00	215.00	9.63
2008-09	1512.00	185.00	8.17
2007-08	1323.00	134.00	9.87
2006-07	1276.00	122.00	10.46
2005-06	1159.00	82.00	14.13
Grand Average			10.77

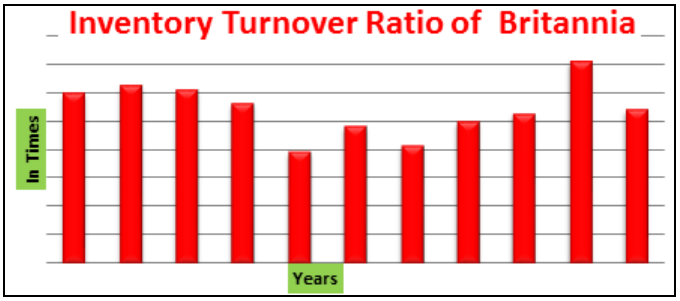

Fig 5

Britannia shows the highest value of inventory turnover ratio among all the companies taken in the study. Table 5 shows that the company has touched the highest value of 14.13 in the first year of 2005-2006 and the lowest value of 7.79 in the year 2010-2011. But still the company has maintained very efficient values which show proficient inventory control, sound sales policies, trading in quality goods, reputation in the market and better competitive capacity.

Comparison of Inventory Turnover Ratio among the Companies and with the Industry's Average

Table 6: Inventory Turnover Ratio of 5 companies and the industry Average

Year	ITC	HUL	Nestle	Dabur	Britannia	Industry Average
2014-15	2.67	7.04	8.09	5.40	11.91	7.02
2013-14	2.45	5.73	8.69	5.23	12.45	6.91
2012-13	2.67	6.87	8.21	4.87	12.09	6.94
2011-12	2.34	6.95	7.95	4.94	11.22	6.68
2010-11	2.36	6.06	7.00	5.39	7.79	5.72
2009-10	2.45	6.75	8.24	5.24	9.63	6.46
2008-09	2.46	7.27	7.73	5.51	8.17	6.23
2007-08	2.44	5.78	8.19	4.81	9.87	6.22
2006-07	2.70	5.86	7.81	5.34	10.46	6.43
2005-06	2.99	6.25	7.02	3.49	14.13	6.78
Grand Average	2.55	6.46	7.89	5.02	10.77	6.54

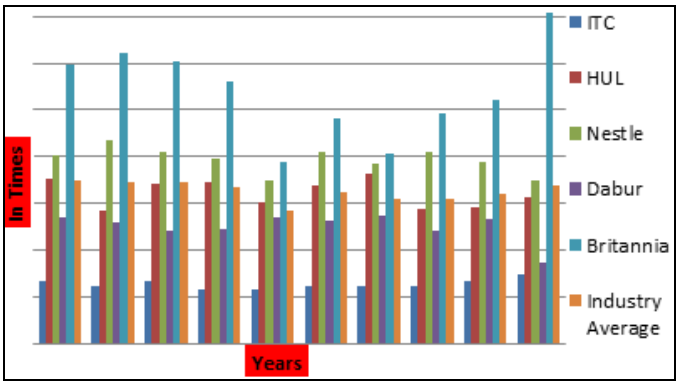

Fig 6

Year 2014-15

Year 2014-15, saw the highest average inventory turnover ratio in last 10 years in the FMCG sector. It was 11.91 with Britannia having the highest value followed by Nestle at 8.09 and HUL at 7.04. Higher the inventory turnover ratio, better it is considered for FMCG companies because the goods are cheap and are consumed very fast and on the top they are perishable also. The company having the least inventory turnover ratio is ITC with the value of 2.67 which is less than half of the average ratio of the industry in that year. It shows that the company is converting its inventory into sales at a very low pace. Refer table 6.

2013-14

In year 2013-14, the average inventory turnover ratio in the FMCG sectors comes out to be 6.91 which is lesser than the ratio in year 2014-2015. In this year also, the company having the highest inventory turnover ratio is Britannia with the value

of 12.45 which is even more than the average ratio of the industry. It is followed by Nestle with the value of 8.69 which is again not very bad. Rest of the three companies ITC, Dabur and HUL have values which are less than the industry's average in this year which indicates that the company are keeping surplus of inventory turnover in hand to meet the day to day requirement and smooth functioning of work. Refer Table 6.

2012-13

In year 2012-13, the average inventory turnover ratio in the FMCG sector comes out to be 6.94 which is reasonably good for FMCG companies. In the same year, the company having the highest inventory turnover ratio is Britannia. The ratio is 12.09. And that shows that the company is converting its goods produced into sales many a times during one year. Nestle is the company with the second highest ratio of 8.21, followed by HUL with the value of the ratio as 6.87. Dabur was able to maintain the ratio at a value of 4.87 and the company with a very low ratio in the year 2009-2010 is ITC. It can be said that ITC was least effective and efficient in converting its inventory into sales. Refer Table 6.

2005-06 to 2011-12

If we analyze these seven years, we see that the value of industry average of inventory turnover ratio has been revolving around 6 with the only exception in year 2010-11. In all these seven years, Britannia has maintained itself to be a company with the most effective and efficient ways of converting its inventory into sales by maintain the highest average inventory turnover ratio among all the companies. Nestle took the second place in keeping the maximum inventory turnover ratio. The companies that have maintained reasonably low and below average inventory turnover ratio are Dabur, HUL and ITC. Throughout the 10 years of time period, ITC always has a inventory turnover ratio which is least compared to all the companies. So, it can be said that among all the FMCG companies, ITC has the most poor inventory turnover ratio. Refer Table 6.

Conclusion and Suggestion

The company maintained the highest inventory turnover ratio in Nestle, Britannia & HUL and the lowest in ITC and Dabur., it means investment in working capital in Nestle, Britannia and HUL is lesser than other company. In this way their working capital requirement regarding inventory is less than other companies. So this is good symptoms for companies.

The inventory turnover ratio of the ITC and Dabur is less than Nestle, Britannia and HUL so it can be said that investment in working capital regarding inventory in these companies is greater than other companies therefore companies should try to increase their ratio.

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