



## Indian Capital Market – A Review Of Ambuja Cement And Birla Cement

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### ABSTRACT

*Inventories defined as the sum of value of raw material, work-in-progress and finished goods though it depends largely upon the type of business therefore it requires management. An efficient inventory management ensures continuous production by maintaining inventory at a satisfactory level. It also minimizes capital investment and cost of inventory by avoiding stock-pile of product.*

### Keywords : Inventory Management, Cement industries

Inventory plays very vital role as current assets. On an average, inventories are approximately 60% of current assets in public limited companies in India. Because of the large inventories maintained by a firm, naturally a considerable amount of funds are blocked in it. Therefore, to avoid such huge amount of investment in inventories, a management must be required. It is possible for a company to reduce its inventory up to a considerable degree, e.g. 10 to 20% without any adverse effect on production and sales by using simple management and control tool and techniques. A firm's inventory cost increases by two ways (1) carrying cost (2) ordering cost. So every firm try to reduce its ordering cost because holding cost are fixed and unavoidable cost and not easy to manage.

#### Review of literature:

Krishnamurty's (1964) study was aggregative and dealt with inventories in the private sector of the Indian Economy as a whole for the period 1948-61. This study used sale to represent demand for the product and suggested the importance of accelerator. Short-term rate of interest had also been found to be significant. Sastry's (1966) study was a cross section analysis of total inventories of companies across several heterogeneous industries for the period 1955-60 using balance sheet data of public limited companies in the private sector. The study brought out the importance of accelerator represented by changes in sales. Krishnamurty and Sastry's (1970) study 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 major component i.e. Raw material, good-in-process and finished goods for 21 industries over the period 1946-62. The study by Vinod Prakash (1970) was a time series analysis with mostly undeflated data taken from CMI and Annual survey of Industries (ASI) for the period 1946-63. 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. The study by George (1972) was cross section analysis of balance sheet data of 52 public limited companies for the period 1967-70. The study by R.N.Agrawal (1982) 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 for 1959-60 through 1978-79. Analysis of two sector revealed that sales and stock-sales ratio were important explanatory variables.

#### Methodology of the study:

#### Sources of the data:

"Comparative analysis of inventory management in Ambuja cement and Birla cement" has been made by using data from financial statements of cement industry. Period of the study was nine years from 2001-2002 to 2009-2010. The data was collected from money control database and from the annual reports of respective companies.

#### Techniques of Analysis:

For the purpose of analysis various ratios relating to inventory management is selected and calculated, the statistical tools and techniques such as mean and t- test were calculated manually to analyze the consistency, stability and overall trends in the different inventory management of the sample units.

#### Empirical Analysis:

Empirical analyses are based on three ratios and t test which are as follows.

Table -1

**Inventory Turnover Ratio, Inventory to Total Current Assets Ratio and Inventory Holding Ratio of Ambuja Cement and Birla Cement**

YEAR	AMBUJA CEMENT			BIRLA CEMENT		
	ITR (times)	ITCAR (%)	IHR (days)	ITR (times)	ITCAR (%)	IHR (days)
2001-02	6.64	69.96	54	8.44	69.47	43
2002-03	7.74	74.55	46	9.26	67.65	39
2003-04	7.71	69.57	47	10.05	67.83	36
2004-05	8.19	70.58	44	11.06	59.75	33
2005-06	15.22	60.91	24	11.52	69.00	31
2006-07	9.75	69.05	37	10.98	73.20	33
2007-08	6.57	72.95	55	8.60	76.77	42
2008-09	10.36	71.76	35	9.35	76.65	39
2009-10	8.17	73.41	44	7.62	86.77	47
AVERAGE	8.92	70.30	43	9.65	71.90	38

#### Inventory Turnover Ratio (ITR) :

Inventory turnover ratio shows liquidity of the firm. This ratio is test for the efficient management of inventory. The ratio has been calculated by dividing inventories by turnover of the unit. But the level of inventory should neither be too high nor too low. Means high ratio suggests better performance and efficiency of the company and less investment blocked in inventories where as low ratio suggests company's inefficiency to manage its inventories. Table-1 shows inventory turnover ra-

tion of both the selected cement industries amongst them Birla cement industries perform very well as the industries annual growth is very near to industries average that is 9.65. Where as in Ambuja in the beginning years the growth rate of the industry is below then their average that is 8.92. For further verification t-test has been applied for inventory turnover ratio of both the industries. And the calculated values by using data from Table-1 are as follows.

Ambuja cement	$\bar{X}_1 = 8.92$	$\sigma_{s_1}^2 = 6.9695$	n1 = 9
Birla cement	$\bar{X}_2 = 9.65$	$\sigma_{s_2}^2 = 1.79$	n2 = 9

H0:  $\bar{X}_1 = \bar{X}_2$

H1:  $\bar{X}_1 \neq \bar{X}_2$

**Table-2**  
Students' t test for inventory turnover ratio between selected group of cement industries

Degree of freedom	Level of significance	Calculated value of 't'	Critical value of 't'	Result
n <sub>1</sub> +n <sub>2</sub> -2=16	0.05	0.7399	2.120	Accepted

Degrees of freedom= (n<sub>1</sub> + n<sub>2</sub> - 2) = 9 + 9 - 2 = 16

Tcal < Ttab

(0.7399 2.120) Accepted

The observed value of t is 0.7399 (Table-2) which falls in the rejection region and thus, H0 accepted and conclude that there is no significant difference in average inventory turnover ratio of selected cement industries at 5 per cent level.

**Inventory to Total Current Assets Ratio (ITCAR):**

This ratio shows the amount invested in inventories from total current assets ratio. Because inventories compared to other current assets are less liquid therefore it is advisable to maintain and manage inventories efficiently. Ratio has been calculated by dividing inventories by total current assets of the unit. A high ratio suggests less liquidity position of the firm and low ratio suggest high and better liquidity position of the firm or industries. Looking to the Table-1 in Ambuja cement this ratio ranged between 69.96 in 2001-02 to 73.41 in 2009-10 and in Birla cement this ratio ranged between 69.47 in 2001-02 to 86.77 in 2009-10. The average inventories to total current assets in Birla cement (71.90%) was higher than that of Ambuja cement (70.30%) during the study of nine years. A t-test can be applied to prove the relationship of inventories to total current assets ratio between the sample units.

Ambuja cement	$\bar{X}_1 = 70.30$	$\sigma_{s_1}^2 = 15.9147$	n1 = 9
Birla cement	$\bar{X}_2 = 71.90$	$\sigma_{s_2}^2 = 58.20$	n2 = 9

H0:  $\bar{X}_1 = \bar{X}_2$

H1:  $\bar{X}_1 \neq \bar{X}_2$

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**Table-3**  
Students' t test for inventory to total current assets ratio between selected groups of cement industries

Degree of freedom	Level of significance	Calculated value of 't'	Critical value of 't'	Result
n <sub>1</sub> +n <sub>2</sub> -2=16	0.05	0.5575	2.120	Accepted

Degrees of freedom= (n<sub>1</sub> + n<sub>2</sub> - 2) = 9 + 9 - 2 = 16

Tcal < Ttab

(0.5575 2.120) Accepted

The observed value of t is 0.5575 (Table-3) which falls in the rejection region and thus, H0 accepted and conclude that there is no significant difference in average inventory to total current assets ratio of selected cement industries at 5 per cent level.

**Inventory Holding Ratio (IHR):**

This ratio represents length of the time required for the conversion of investments in inventories to cash of a unit. Lower the ratio suggests better and efficient inventory management and high ratio suggests the lack of efficiency in the management of inventories. The ratio has been calculated by dividing the number of days of a year (360) by inventory turnover ratio. Table-1 shows that in Ambuja this ratio varied from 54 days in 2001-02 to 44 days in 2009-10 and in Birla it fluctuated between 43 days in 2001-02 to 47 days in 2009-10. The average holding period of Ambuja was 43days while it was 38 days for Birla during the study period.

Ambuja cement	$\bar{X}_1 = 43$	$\sigma_{s_1}^2 = 94.11$	n1 = 9
Birla cement	$\bar{X}_2 = 38$	$\sigma_{s_2}^2 = 28.36$	n2 = 9

H0:  $\bar{X}_1 = \bar{X}_2$

H1:  $\bar{X}_1 \neq \bar{X}_2$

**Table-4**  
Students' t test for inventory holding ratio between selected groups of cement industries

Degree of freedom	Level of significance	Calculated value of 't'	Critical value of 't'	Result
n <sub>1</sub> +n <sub>2</sub> -2=16	0.05	0.6026	2.120	Accepted

Degrees of freedom= (n<sub>1</sub> + n<sub>2</sub> - 2) = 9 + 9 - 2 = 16

Tcal < Ttab

(0.6026 2.120) Accepted

The observed value of t is 0.6026 (Table-4) which falls in the rejection region and thus, H0 accepted and conclude that there is no significant difference in average inventory holding ratio of selected cement industries at 5 per cent level.