

An Overview of Inventory Management of Public Enterprises in Haryana

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ABSTRACT

The theme of this paper focuses on inventory management of public enterprises in Haryana. This paper is sighting the inventory management of selected enterprises from the year 2008 to 2017. Inventory is the most important component of working capital in business enterprises. It constitutes the largest component of current asset in most business enterprises. In the sphere of working capital, the efficient control of inventory has passed the most serious problem to the sugar mills because about two-third of the current assets of mills are blocked in inventories. The working capital turnover is largely governed by the inventory management. Therefore, inventory which helps in maximizing profit occupies the most significant place among current assets. The data were collected from the annual reports of selected enterprises. The researcher had selected 6 public enterprises (5 Sugar mills & 1 Agro corporation) for this study. Ratio analysis, mean and C.V. were used to analyze the data. The findings of the study revealed that lot of fluctuation in all selected sugar mills except Shahabad sugar mill. That shows improper management of inventory. The value of C.V. ranges between 6 (Shahabad) to 37 (Rohtak) shows faster changes regarding the ratio.

1. Introduction of Inventory

Inventory is a "detailed list of goods, furniture etc." Many understand the word inventory, as a stock of goods, but the generally accepted meaning of the word 'goods' in the accounting language, is the stock of finished goods only. In a manufacturing organization, however, in addition to the stock of finished goods, there will be stock of partly finished goods, raw material and stores. Inventory is the collective name of these entire items.

'Inventory' is the stockpile of production of a firm which is offering for sale and the components that make up the production. The inventory means aggregate of those items of tangible personal property which

- i) are held for sale business.
- ii) are in process of production.
- iii) they are to be currently consumed in the production of goods or services to be available for sale.

Inventories are expandable physical articles held for resale for use in manufacturing a production or for consumption in carrying on business activity such as merchandise, goods purchased by the business which are ready for sale.

It is the inventory of the trader who does not manufacture it.

• Finished Goods:

Goods being manufactured for sale by the business which are ready for sale.

• Material:

Inventory includes raw material, semi-finished goods or finished parts, which the business plans to convert the raw material into finished goods.

• Supplies:

"Article, which will be consumed by the business in its operation but will not physically as they are a part of the production.

The short inventory may be defined as the material, which are either saleable in the market or usable directly or indirectly in the manufacturing process. It also includes the items which are ready for making finished goods in some other process or by comparing them either by the concern itself and/or by outside parties. The term inventory means which have at least one of the following characteristics. It may be

- which are saleable in the market,
- which are directly saleable in the manufacturing process of the business,
- which are usable directly in the manufacturing business, and
- which are ready to send to the outside parties for making usable and saleable productions out of it.

In the present study inventory includes raw materials, stores and spare parts, finished goods and work-in-process. Firm also manufactures inventory to supplies. Supplies included office and plant cleaning materials (soap, brooms etc. oil, fuel, light bulbs and the likes). These materials do not directly enter into the production process, but are necessary for production process. Inventory occupies the most significant part of current assets of a large majority of companies in India. For example, on an average inventory are more than 57 per cent of current assets in public limited companies and about 60.5 per cent in government companies in India. Therefore it is important to manage the inventories efficiently and effectively in order to avoid unnecessary investment in them. An undertaking which neglect the management of inventory will be harmful. It is possible for a company to reduce its level of inventories to a considerable degree e.g. 10 to 20 per cent without any adverse effect on production and sales.

Management of Inventories

Inventory constitutes raw material, store, spares, packing material, coal, works-in-progress and finished products in stock. Inventory is most important component of current assets in the manufacturing industry.

Inventory means blocking of funds so it should be managed as it involves the interest and opportunity cost to the firm. In many countries specially in Japan great emphasis is placed on inventory management. Efforts are made to minimize the stock of inputs and outputs by proper planning and forecasting of demand of various inputs and producing only that much quantity which can be sold in the market.

In India the inventory of coal, raw materials and packing materials is very high and many items become junk or obsolete causing heavy loss to the enterprise. In India lack of inventory planning has been pointed out by various committees but due to lack of planning, problem of timely receipt of railway wagons, uncertainties in supplies and unreliable suppliers the investment in inventories is quit high. The fluctuation in demand affects inventory of finished product of which cement industry has been a victim many times.

Objectives of Inventory Management

The primary objectives of inventory management are:

- (i) To minimize the possibility of disruption in the production schedule of a firm for want of raw material, stock and spares.
- (ii) To keep down capital investment in inventories.

So it is essential to have necessary inventories. If there is an excessive inventory then it is an idle resource of a concern. The concern should always avoid this situation. The investment in inventories should be just sufficient in the optimum level. Disadvantages of excessive inventories are:

- i) the unnecessary tie up of the firm's funds and loss of profit.
- ii) it increases the chances of misuse, waste, and theft etc.
- iii) excessive carrying cost, and
- iv) the risk of liquidity.

The excessive level of inventories involves an opportunity cost as it consumes the funds of business, which cannot be used for any other purpose. It also involves the carrying cost, such as the cost of shortage, recording and inspection, handling insurance, are also increased in proportion to the volume of inventories. This cost will impair the concern profitability further. On the other hand, inadequacy of inventory may result in frequent interruptions in the production schedule under-utilization of resources and lower sales. The main objective of inventory management is to avoid excessive inventory and inadequate inventory and to maintain adequate inventory for smooth running of the business operations. Efforts should be made to place orders at the right time with the right source to purchase the right quantity at the right price and quality. The aims of effective inventory management are:

- Maintain sufficient stock of raw material in the period of short supply and anticipate price changes
- For uninterrupted production, ensure a continuous supply of material to production department facilitating.
- The carrying cost and time should minimize.

- Maintain sufficient stock of finished goods for smooth sales operations.
- Ensure that materials are available for use in production and production services as and when required.
- Ensure that finished goods are available for delivery to customers to fulfill orders, smooth sales operation and efficient customer service.
- Minimize the carrying cost and time and minimize investment in inventories.
- Protect the inventory against obsolescence, deterioration, and unauthorized use.
- Maintain supply of stock of raw material sufficient in short period and anticipate price changes.
- Control on investment in inventories and keep it at an optimum level.

2. Research Methodology

Introduction

Research is work that involves studying something and trying to discover about it. According to Webster's Collegiate Dictionary, "Research means studious inquiry or examination or investigation or experimentation aimed at the discovery and interpretation of facts, revision of accepted theories or laws in the light of new facts, or practical application of such new or revised theories or laws." Research is a systematic investigative process employed to increase or revise current knowledge by discovering new facts. It is divided into two general categories: 1) Basic research is inquiry aimed at increasing scientific knowledge, 2) Applied research is effort aimed at using basic research for solving problems or developing new processes, products or techniques.

Objectives of the Study

The present study will be undertaken with a view to examine the practices and evaluate the performance of inventory management of public enterprises in Haryana, the study specially attends to pursue the objective to evaluate the performance of inventory management in public enterprises.

Collection of data

Secondary data are those, which have been collected and compiled by someone else. In this study, data were collected through Published annual reports of units for the relevant period. The annual reports contain the results of past performances and considered the most important and most reliable source of financial data of business enterprises. The data from these reports were analyzed by using various accounting ratio with a view to evaluating the performances of public enterprises in Haryana regarding working capital management. In this research paper, secondary data were used which were collected by annual reports of enterprises from the year 2008 to 2017.

3. Data Analysis

The statistical analysis of data gathered to compare the various public enterprises of Haryana. The data collected quantitative in nature. The data were analyzed and interpreted by using ratio analysis.

Year	CORP.		SUGAR MILLS										INDUSTRY			
	Agro		Kaithal		Rohtak		Jind		Palwal		Shahabad		Amount	Ratio		
	Amount	Ratio	Amount	Ratio	Amount	Ratio	Amount	Ratio	Amount	Ratio	Amount	Ratio				
2008	INV.	CA.	33.13 229.51	14.4 3	51.43 54.71	94.0 0	45.12 111.74	40.3 7	40.63 45.75	88.8 0	40.76 42.95	94.9 0	114.67 131.77	87.0 2	325.74 616.44	52.8 4
2009	INV.	CA.	295.28 431.8	68.3 8	30.16 36.8	81.9 5	31.01 191.86	16.1 6	18.64 23.91	77.9 5	27.06 28.71	94.2 5	95.35 130.66	72.9 7	497.5 843.74	58.9 6
2010	INV.	CA.	611.35 908.12	67.3 2	12.03 16.52	72.8 2	9.7 29.62	32.7 4	4.52 12.59	35.9 0	12.26 15.36	79.8 1	74.62 98.36	75.8 6	724.48 1080.58	67.0 4
2011	INV.	CA.	425.25 670.06	63.4 6	39.93 44.01	90.7 2	39.45 65.36	60.3 5	35.42 45.33	78.1 3	19.24 21.2	90.7 5	105.78 138.55	76.3 4	665.07 984.51	67.5 5
2012	INV.	CA.	954.03 1385.77	68.8 4	62.67 67.13	93.3 5	67.39 94.87	71.0 3	46.78 53.33	87.7 1	41.70 44.25	94.2 3	120.03 154.4	77.7 3	1292.6 1799.75	71.8 2
2013	INV.	CA.	1411.92 2000.7	70.5 7	69.8 74.29	93.9 5	77.65 98.74	78.6 4	45.51 51.72	87.9 9	47.75 49.84	95.7 6	131.11 164.04	79.9 2	1783.72 2439.33	73.1 2
2014	INV.	CA.	720.4 1118.15	64.4 2	77.38 84	92.1 1	106.94 132.21	80.8 8	50.29 56.34	89.2 6	43.56 44.6	97.6 6	150.08 181.97	82.4 7	1148.65 1617.27	71.0 2
2015	INV.	CA.	318.75 540.2	59.0 1	81.63 87.12	93.6 9	96.07 124.54	77.1 3	55.8 62.53	89.2 3	40.1 41.08	97.6 1	137.32 167.75	81.8 5	729.67 1023.22	71.3 1
2016	INV.	CA.	101.19 140.17	72.1 9	81.12 109.17	74.3 0	98.6 149.28	66.0 5	59.11 86.11	68.1 4	54.10 76.18	71.0 1	174.43 204.57	85.2 6	568.55 765.48	74.2 7
2017	INV.	CA.	115.06 140.36	81.9 7	110.25 139.68	78.9 3	106.72 153.05	69.7 2	77.11 102.56	75.1 8	61.37 91.67	66.9 4	210.46 243.42	86.4 5	680.97 870.74	78.2 0
Mean				63.0 5		86.5 9		59.3 0		77.8 3		88.3 0		80.5 8		68.6 1
S.D.				18.1 4		8.65		22.0 5		16.4 7		11.4 4		4.83		7.55
C.V.				29		10		37		21		13		6		11

Table 1: Ratio of Inventory to Total Current Assets of Public Enterprises in Haryana (Figures in percentage)

(Source: Annual reports of respective units from 1st April 2007 to 31st March 2017)

(Abbreviations: INV. – Inventory, C.A. – Current Assets).

4. Ratio Of Inventory To Total Current Assets

Ratio of inventory to total current assets indicates the percentage of inventory to current assets. Thus,

$$\text{Ratio of Inventory to Total Current Assets} = \frac{\text{Inventory at the end of the year}}{\text{Current Assets at the end of the year}} \times 100$$

Inventory is basically that portion of current assets which is not yet sold in the current year. Therefore inventory should be maintained upto a certain level.

Here, **Current Assets** include cash or other assets or resources commonly identified as those which are reasonably expected to be realized in cash or sold or consumed during the normal operating cycle of the business.

Analytical Table 1 states that the ratio of inventory to total current assets of Agro and sugar mills of Haryana for ten years period i.e. 1st April 2008 to 31st March 2017. In Agro corporation, initial inventory part was only 33.13 out of total current assets 229.52 but increased to inventory 295.28 out of total current assets 431.80. This is a huge change as part of inventory increase. In year 2017, inventory is the largest part with 81.97 ratio. In Kaithal sugar mill maximum and minimum

ratio is 94 and 72.82 in the year 2008 and 2010 respectively which indicate inventory is a major part of Current asset (Inventory 51.43 and Current Asset 54.71) in 2008.

In Rohtak sugar mill maximum ratio during the study period is 80.88 in the year 2014 and minimum ratio is 16.16 in the year 2009 that is differ from maximum is 64.72. In Jind sugar mill, maximum inventory was in 2014 i.e., 89.26. In Palwal, inventory chart from 2008 to 2017 has declined tremendously from 94.9 to 66.94. Shahabad sugar mill has no much fluctuation in trend during the study period. Maximum ratio is 87.02 in 2008 and minimum ratio is 72.97 in 2009 of Shahabad sugar mill.

- There are so many fluctuations in all selected sugar mills except Shahabad sugar mill.
- Analytical Table shows a large amount of inventory is kept by the sugar mills for the whole year but production for a limited time period. Palwal sugar mill has maximum mean ratio 88.30 and is higher than industry (68.61).

The value of C.V. ranges between 6 (Shahabad) to 37(Rohtak) shows faster changes regarding the ratio.

**Figure 1 :
Ratio of Inventory to Total Current Assets of Public Enterprises in Haryana**

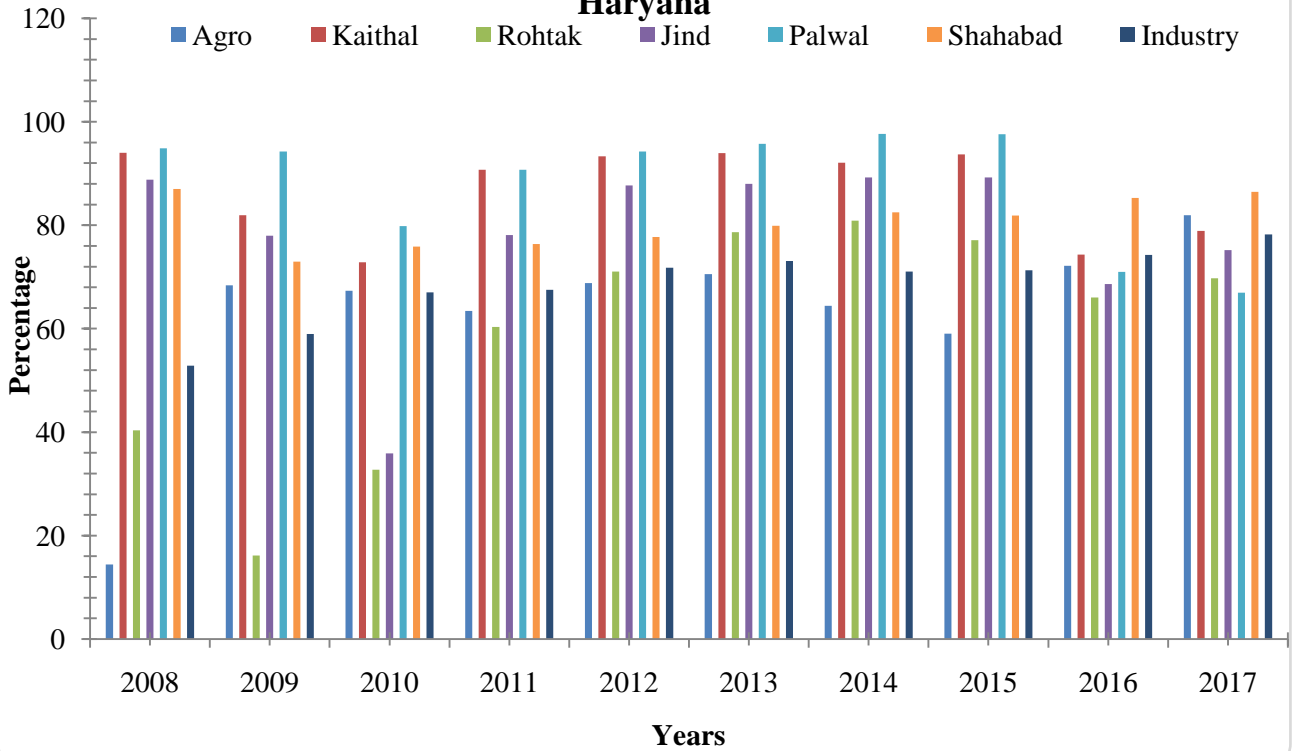


Table 2: Holding Period of Total/Aggregate Inventory of Public Enterprises in Haryana (Figures in Days)

Year	SUGAR MILLS						INDUSTRY
	Agro	Kaithal	Rohtak	Jind	Palwal	Shahabad	
2008	20	731	624	622	553	584	152
2009	168	186	222	154	203	241	183
2010	224	105	105	77	124	225	211
2011	109	816	772	1410	366	360	152
2012	292	436	409	359	497	288	307
2013	260	303	222	229	280	272	260
2014	93	304	454	312	269	265	126
2015	50	382	272	413	282	239	94
2016	116	286	257	373	462	281	234
2017	124	357	221	327	303	332	244
Mean	146	390	356	428	334	308	196
C.V.	61	57	59	88	40	34	34

(Source: Annual reports from 1st April, 2008 to 31st March, 2017.)

5. Holding Period Of Total/Aggregate Inventory

This ratio reflects the holding period of total inventory. Holding period of aggregate inventory has computed by using the formula,

$$\text{Holding period of Total Aggregate Inventory} = \frac{\text{No. of days in a year}}{\text{Total Inventory at the end of the year}} \times \text{Total Sales during the year}$$

Holding period: A holding period is the amount of time the investment is held by an investor or the period between purchase and sale of a security.

It is an efficiency ratio that measure the average number of days the enterprises hold its inventory before selling it. The

ratio measures the number of days funds are tied up in inventory. The faster a company can sell inventory for a profit, the more profitable it is. However, a company could employ a strategy of maintaining higher level of inventory for discounts or long term planning efforts.

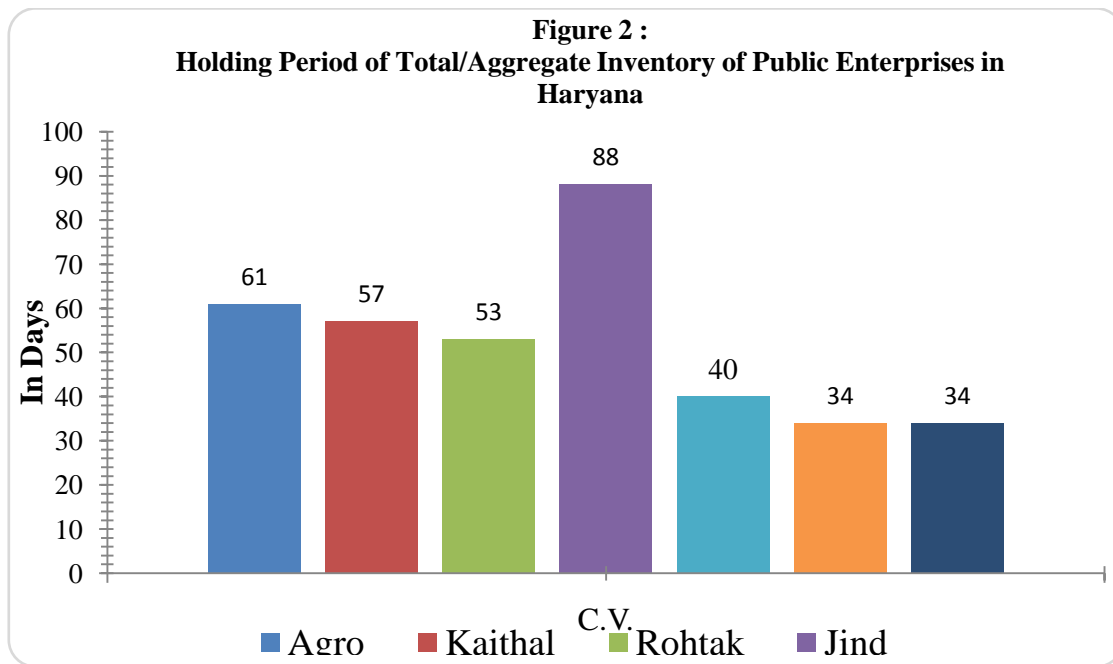
Analytical Table 2 clarifies holding period of total inventory of Agro Corporation in the year 2008 is 20 Days which is lowest period which indicates that the firm takes 20 days to sell its inventory that shows Agro is most efficient than all selected enterprises. In the year 2009 it has increased from 20 days to 168 days. After year 2009 it has fluctuating trend during 2010 to 2017. The holding period of Kaithal sugar mill is fluctuating

from 2008 to 2017 ranged between 186 to 816. In Jind sugar mill holding period in the year 2008 is 622 days. In the year 2009 it has decreased and data is 155 days. But in the year 2011 it reached at 1410 days which is highest holding period of all selected industries during the study period which indicate the critical year means a firm is not properly managing its inventory. In year 2012 it again decreased and reached at 360 days due to increment in the large amount of inventory (35.42) but less amount of sale (9.17).

- Shahabad sugar mill has least C.V. i.e. 34 which is equal to industry's C.V.
- Jind sugar mill has maximum C.V. i.e. 88.

- Highest mean of all selected enterprises is 428 of Jind sugar mill.
- Jind sugar mill also represent maximum holding period (1410) in the year 2011 from all selected enterprises which is ten times of industry. The reason behind it large amount of inventory and less amount of sales or that it has inventory that is difficult to sell.
- High period means that the inventory turnover ratio is very small.

In sugar mills production cycle is November to April but sale is throughout the year. So large amount of inventory is kept for the whole year.



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