Impact of Management of Inventory on Profitability and Liquidity: An Empirical Evidence from Some Selected Pharmaceutical Company in India

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Abstract: This Research Segment has been undertaken to investigate the Impact of Inventory on Liquidity and Profitability of Some Selected Pharmaceutical Company in India. This Research Segment is mainly based on secondary data like website, Various blogs, Annual reports of the company, Financial statements of the company i.e. profit and loss Account and Balance sheet etc. To measures the profitability and liquidity of some selected Pharmaceutical Company of India is the main purpose of this research Study. For Assessing the profitability and liquidity, Various Descriptive Statistical Tools and Accounting Tools has been used in this Research Segments:

Index Terms - Inventory, Working Capital, Profitability, Liquidity, Descriptive tools, Standard Deviation etc.

I. INTRODUCTION

Management of Inventory has been one of the peak Analytical phases of the Management. The elementary persistence of Inventory Management is to retain an optimal size of Inventory and optimization of various Cost related with inventories. Minimum investment in Inventory assistances to preserve high level of profitability. In the framework of Inventory Management, the company should place the order of numerous Inventory or goods at right time, right quantity, right quality and at right price. The main persistence of Inventory Management is as follows.

➢ The key persistence of Inventory Management in the framework of business activities is to optimize following three point.

        Inventory Expenses
        Operating Expenses
        Customer Service

➢ To deliver right quantity of materials at right time and place.

➢ To preserve optimal level of Inventory and determination of ordering level, Re-ordering level, etc.

➢ To Confirm continues supply of materials, and provide right type of materials to production department or manufacturing department at right time.

➢ The chief objective of Inventory Management is to reduce the unnecessary investment in Inventory.

II. LITERATURE REVIEW

Sahari, Tinggi and Kadri (2012) Empirically analyzed the relationship between Inventory Management and firm performance along with capital intensity. For the purpose they took a sample of 82 construction firms in Malaysia for the period 2006–2010. Using the regression and correlation analysis methods, they deduced that Inventory Management is positively correlated with firm performance. In addition, the results indicate that there is a positive link between Inventory Management and capital intensity.

Soni (2012) Made an in depth study of practices followed in regard to Inventory Management in the engineering goods industry in Punjab. The analysis used a sample of 11 companies for a period five years, that

is, 2004–2009 and was done using panel data set. The adequate and timely flow of Inventory determines the success of an industry. She concluded that size of Inventory enhanced marginally over the period as compared to a hike in current assets and net working capital. Inventories constituted half of the working capital which was due to overstocking of Inventory as a result of low Inventory turnover especially for finished goods and raw materials. Rise in sales and favourable market conditions lead to a rise in Inventory levels. It was also inferred that sales increased more as compared to Inventory.

III. TESTING OF HYPOTHESIS

Ho: There is No Significant Relationship between Inventory and Working Capital of Some Selected Pharmaceutical Company in India.

H1: There is Significant Relationship between Inventory and working Capital of Some Selected Pharmaceutical Company in India.

IV. RESEARCH METHODOLOGY

Being the explanatory research, the Analysis is based on secondary source of data. For Analysis data had been collected from official website of the company, Financial Statements of the company, Accounting reports, various reports, Various blogs, article, website Various reference books, and newspaper. The accessible secondary data is intensively used for research study.

Sample Size:

The following listed Industry has been selected for the purpose of analysis.

1. Alembic Pharma **(AP)**
2. Torrent Pharmaceutical Ltd. **(TP)**
3. JB Chemicals and Pharmaceuticals Ltd. **(JCP)**
4. Biofil Chemicals and Pharmaceuticals Ltd. **(BCP)**
5. BAL Pharma Ltd. **(BP)**

V. DATA COLLECTION

For the Purpose of analysis, Data is Collected from the Official Website of the Company, Financial Statements of the Various Company i.e. Profit and loss Account, Balance sheet, Cash flow statement, etc. Last 10 years' Data Started from the year 2011-12 to 2020-21 are to be taken:

Accounting Tools & Techniques:

1. Ratio Analysis: Inventory to Working Capital Ratio
2. Comparative Statement Analysis

Statistical Tools & Techniques:

1. Descriptive Statistical Tools
2. Confidence Level
3. Correlation
4. Regression
5. ANOVA Technique

VI. DATA ANALYSIS

Inventory to Working Capital Ratio: Inventory to working capital is a Liquidity Ratio that measures the amount of Working capital that is Locked up in inventory. The difference of current assets and current liabilities is known as Working capital. The Inventory to Working Capital Ratio calculate the particular portion of the business's working capital that is tied up in its inventories. This Ratio measures how well a company can produce additional cash using its working capital at its current inventory level. This Ratio measures the percentage of the company's working capital that is financed by its inventory.

$$\text{Inventory to Working Capital ratio} = \frac{Inventory}{Working\ Capital}$$

1. A High ratio indicate that the firm has an Operational Problem in liquidating its inventories.

2. A Low ratio indicate the Company's operation is efficient in terms of converting its inventories into cash hence can generate extra revenue with the available working capital.

Inventory to working capital Ratio of Some Selected Pharmaceuticals Companies from the year 2011-12 to 2020-21 are as under:

Inventory to Working Capital Ratio:

Company	AP	TP	JCP	BCP	BP
Year:	Inventory to Working Capital Ratio (IWCR)				
2011-12	2.18	0.66	0.14	-0.10	-18.50
2012-13	1.81	0.73	0.13	-0.18	102.09
2013-14	1.34	0.46	0.15	-0.20	3.80
2014-15	1.62	0.56	0.20	-0.27	2.88
2015-16	0.72	0.59	0.35	0.05	3.01
2016-17	0.83	0.43	0.33	0.05	1.94
2017-18	0.84	1.99	0.24	0.26	1.37
2018-19	1.50	2.05	0.27	0.35	1.57
2019-20	1.54	3.49	0.33	0.35	2.08
2020-21	1.05	1.23	0.24	0.65	1.30
Correlation	0.87	-0.03	0.63	0.74	0.94
t-statistics	0.11	0.33	1.85	0.13	5.02

Table No: 1

Descriptive Statistical Tools:

Tools	AP	TP	JCP	BCP	BP
Mean	1.34	1.22	0.24	0.10	10.15
Standard Error	0.15	0.32	0.03	0.09	10.42
Median	1.42	0.70	0.24	0.05	2.00
Standard Deviation	0.48	1.00	0.08	0.30	32.96
Sample Variance	0.23	1.00	0.006	0.10	1086.60
Kurtosis	-0.80	1.87	-1.44	-0.65	9.00
Skewness	0.24	1.52	-0.02	0.52	2.91
Range	1.47	3.06	0.22	0.91	120.59
Minimum	0.72	0.43	0.13	-0.27	-18.49
Maximum	2.18	3.49	0.35	0.65	102.09
Sum	13.43	12.20	2.39	0.97	101.55
Count	10	10	10	10	10
Largest (1)	2.18	3.49	0.35	0.65	102.09
Smallest (1)	0.72	0.43	0.13	-0.27	-18.494
Confidence Level	0.34	0.72	0.06	0.21	23.58

Confidence Level @ 95% **Table No: 2**

Data Interpretation:

As We Seen in Table No:1, Total 10 years' data i.e. Inventory to Working Capital Ratios is mentioned. Here, Correlation between two Variables say Inventory and Working Capital is also calculated for defining the Relationship between two Components. Generally, Correlation Indicate the linearity between two Variable. Positive Correlation indicate the Positive or Significant relationship between two Variable i.e. Inventory and Net Working Capital.

As Per Table No: 1, there is linear relationship between Inventory and Net Working Capital in case of Alembic Pharma Company (PC), JB Chemicals and Pharmaceuticals Ltd. (JCP), Biofil Chemicals and Pharmaceuticals Ltd (BCP) and BAL Pharma Ltd (BPL); and there is no Linear relationship between Inventory and Net Working Capital in case of Torrent Pharmaceutical Ltd. (TP)

In Table No: 2 Various Descriptive Statistical tools were used for this Research Segment. The Average or Arithmetic Mean in this table is lies between 0.10 to 10.15. The Highest IWCR is found in the year 2012-13 in BAL Pharma Ltd (BPL) and its' indicate that the BAL Pharma Ltd (BPL) Liquidity Position is not sound in comparison of rest of the year and company in the year 2012-13. It also indicates that the High Amount of Working capital is invested in Raw Materials (Inventory) and it reduces the financial liquidity in Business enterprise. So, the company try to reduce the investment in inventory by using various Methods of holding inventory.

Variance, Standard Deviations, and Sample Variance Indicate the variations between sample selected for Analysis. It indicates that how mean value is deviated from average or mean of such distribution. If the variance and standard deviation is less compare to its mean, then results by using such data is more authentic and reliable. Standard deviation is lies between 0.08 to 32.96. If the variations between sample is large then it's standard deviation is also high while co efficient of Variations is shows in percentage and it's indicates the variations between sample in percentage. In BAL Pharma Ltd (BPL) Company, Standard deviation is highest, indicates that there are more variations in sample. Less variations in sample gives the perfect Result regarding its relationship between the two Variable. In JB Chemicals and Pharmaceuticals Ltd.(JCP), Standard deviation is minimum compare to rest of the Pharmaceutical companies, shows that, there is a very less variations between sample. Low Variation indicate that the data is more reliable and conclusion is also more reliable and accurate. More variations between two Variable indicates less authenticity of the data and result of by using such data is also not more reliable and authentic.

ANOVA Test (Single Factor): IWCR

H0: There is No Significant Difference in IWCR of Some Selected Pharmaceutical Companies' in India.

H1: There is Significant Difference un IWCR of Some Selected Pharmaceutical Companies' in India.

ANOVA: Single Factor:

Summary:

Groups	Count	Sum	Average	Variance
AP	10	13.43	1.34	0.23
TPL	10	12.20	1.22	1.00
JCPL	10	2.39	0.24	0..01
BCPL	10	0.97	0.10	0.09
BPL	10	101.55	10.15	1086.60

ANOVA:

Sources of Variation	SS	D.F	MS	F	P-Value	F-Crit
Between Groups	723.94	4	180.98	0.83	0.51	2.58
Within Groups	9791.34	45	217.59			
Total	10,515.28	49				

Degree of Freedom: D.F = 50 – 1 = 49

F-Tab (0.05) = 2.58

F-Cal = 0.83

F-Cal	<	F-Tab (0.05)
0.83	<	2.58

The Calculate Value of **F (F-cal),** is Less than Compare to Tabulated Value at 5% Level of Significance, Thus We Accepted the Null Hypothesis at 5% Level of Significance and Reject the Alternative Hypothesis. So, We Can say that, there is insignificant relationship between Inventory and Net Working Capital.

IV. CONCLUSION

The IWCR: Inventory to working capital ratio of some selected Pharmaceutical Companies in India shown an average 2.61. The Average Ratio of inventory to working capital management is not adequate in case of Biofil Chemicals and Pharmaceuticals Ltd **(BCP)** and BAL Pharma Ltd **(BPL);** and there is no Linear relationship between Inventory and Net Working Capital in case of Torrent Pharmaceutical Ltd. **(TP)**. Negative IWCR Ratio shows excess of current liabilities compare to Current Assets. Thus, it is suggested that, the listed Pharmaceutical Companies should try to rise the investment in Current Assets, decrease the amount of Current liabilities and also try to reduce the Volume of Inventory (Raw materials, WIP, Finished Goods) by using Various Inventory Control Model like EOQ, ROP, Fixing Stock levels, ABC, FSN, SDE etc. and also try to increase investment in current assets.

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