# A STUDY ON LIQUIDITY, PROFITABILITY AND WORKING CAPITAL MANAGEMENT OF BHARUCH DISTRICT CO-OPERATIVE MILK PRODUCERS' UNION LIMITED (DUDH DHARA DAIRY)

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**ABSTRACT**

*Working capital is an integral part of overall business finance for the smooth operations of a business. An optimal management of working capital is one of the pre-conditions for the success of a business. Efficient management of working capital ensures that the business operating cycle keeps moving without any hurdles in terms of payment of liabilities and procurement of raw materials. Efficient management of working capital means management of various components of working capital in such a way that adequate amount of working capital and liquidity is maintained for smooth running of an enterprise. The flow of money gets choked, the supplies are interrupted and payments are delayed in the event of inefficient management of working capital. While inadequate working capital has the potential to disrupt production or sales operation and is a unfavorable, excessive working capital has an adverse impact on profitability and is a criminal waste. Management of working capital is regarded as an essential tool of business finance focusing on maintaining optimum levels of both the components viz. current assets and current liabilities. Thus there is an essential need to manage working capital effectively.*

*In this study, we have selected Bharuch District Co-Operative Milk Producers' Union Limited (Dudh Dhara Dairy) as a sample and taken the financial data for the period of Seven years from 2003-04 to 2009-10 and studied the effect of different components of working capital.*

**Key Words:** *Management of Working capital, Ratio analysis, Financial Performance.*

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## Introduction

Financial management is that managerial activity which is concerned with the planning and controlling of the firm's financial resources. The funds raised from the capital market needs to be procured at minimum cost and effectively utilized to maximize returns on investments. The efficiency of an organization is measured in terms of certain parameters such as profit/ earnings, management of working capital and payments made to investors in the form of dividend etc., the giant structure of dairy industry can only be built on a sound financial base, which ultimately depends upon the availability of adequate finance in the form of working capital.

Management of working capital means management of various components of working capital in such a way that an adequate amount of working capital is maintained for smooth running of a business and for fulfillment of objectives of liquidity and profitability. But, it is very difficult for the finance manager to estimate working capital properly because the amount of working capital varies across business enterprises over the periods depending upon the nature of business, raw-materials used, technology, finished products, degree of competition in the market, credit policy, etc. Therefore, effective provision of working capital in the form of different current assets and its proper management has become an essential part of business finance.

## Meaning

The management of current assets, current liabilities and inter-relationship between them is termed as working capital management. "Working capital management is concerned with problems that arise in attempting to manage the current assets, the current liabilities and the inter-relationship that exist between them." In practice, "There is usually a distinction made between the investment decisions concerning current assets and the financing of working capital."

## About The Indian Dairy Industry

The Indian dairy industry is one of the leading sectors of Indian economy as it accounts for a significant fraction of total output of India. The dairy sector in India has shown significant development in the past decade. Now, India has become one of the largest producers of milk and value-added milk products in the world. India has largest market for dairy products with a great potential with more than a billion people, vast territory and abundant resources. The Indian dairy industry achieved a healthy growth in its operations. To face the hard competition radical steps are to be taken to reduce cost of production in dairy industry in India. The application of financial management techniques would help the dairy companies in increasing their productivity and profitability. An attempt has been made in the present study to have an insight into the examination of Working capital management of the dairy industry in Dudh dhara dairy.

## Profile of The Bharuch District Co-operative Milk Producers' Union Limited (Dudh Dhara Dairy)

The Bharuch District Co-operative Milk Producers' Union Limited has been registered in 1959 and initiated Dairy Development Activities on Anand pattern.

The milk producers of Baroda district particularly the women of small and marginal farmers and landless laborers have strengthened the movement called “Dudhdhara”. The Bharuch District is one of the potential districts in Narmada. The milk shed area of the Bharuch Districts is from Baroda to Surat. In the past, the Dairy Plant was installed in 1959 with the capacity of 65,000 LPD. At Present this organization is collecting milk from 654 Dairy Co-operative Society located at different villages. Various Dairy Co-operative Societies are equipped with Milk o-Tester. The dairy operations are being run in accordance with Good Manufacturing Practices (GMP). The products of the Organization are Liquid Milk, Ghee & White butter.

The Organization is well equipped with the state-of-the-art-technology for quick and efficient milk reception, processing, quality control, manufacturing and storage. Developmental efforts enables the Dairy to upgrade its products constantly and stringent Quality Control ensures that only products meeting the most exacting standards to reach our discerning customers. The production facilities are backed up by Quality Assurance, Training, Financial Management and System Management. To further improve the efficiency and effectiveness of the organization’s performance, it was decided to go in for implementation of ISO 9001:2000 Quality Management Systems and ISO 22000:2005 Food safety systems to eventually get certification and international recognition.

## Objective of Study

The specific objective of this article is to have a comprehensive analysis of working capital decisions and practices followed by The Bharuch District Co-operative Milk Producers’ Union Limited (Dudh Dhara Dairy) over the past seven years through a study of working capital trend, liquidity ratios and efficiency ratios related to utilization of current assets. The study will help to highlight the relative importance of working capital management as an essential tool of business finance.

## Review of Literature

A study conducted by Vijayasaradhi and Rao ( 1978) on the " problem of working capital management in public enterprises" revealed that the management of working capital played a key role in the success of the business. The study indicated that increasing trends in the investment of current assets resulted in higher carrying cost which, in turn; negative affected the profitability position of the company.

Ashutosh Verma**,** (2009) “Working Capital Management in Gujarat Cooperative Milk Marketing Federation”. To identify whether the liquidity management and the financing of working capital of GCMMF have undergone change or not in of liberalization.

Vijaykumar and Venkatachalam (1995) studied “The Impact of Working Capital on Profitability in Sugar Industry in Tamil Nadu” by selecting a sample of 13 companies; 6 companies in co-operative sector and 7 companies in private sector over the period 1982-83 to 1991-92. They applied simple correlation and multiple regression analysis on working capital and profitability ratios.

## Research Methodology

For this study, one of the leading Dairy industries in India namely The Bharuch District Co-operative Milk Producers' Union Limited (Dudh Dhara Dairy), Bharuch has been purposively selected. The period of study covers Seven years, from 2003-04 to 2009-2010. The study covers mainly the Working capital trend and analysis, Efficiency of working capital and test of liquidity and profitability.

The data for the study was collected from the annual reports of the Dudh Dhara Dairy. Various techniques of ratio analysis namely Current Ratio, Quick Ratio, Working Capital Turnover Ratio, Return On Capital Employed (ROCE), Current Assets to Total Assets Ratio etc. are used for analyzing the data. Analysis is based on secondary data. Secondary data sources are Balance Sheets and Profit and Loss Accounts for the past seven years which are extracted from the annual reports of the Dairy. The key financial ratios have been computed for all working capital decisions.

## Analysis and Interpretation

**Working Capital Ratios**

Working capital ratios indicate the ability of the business concern in meeting its current obligations as well as its efficiency in managing the current assets for generation of the sales. These ratios are applied as well as its efficiency with which the firm manages and utilizes its current assets. The following three categories of ratios are used for the efficient management of the working capital:

**1) Liquidity ratios:-**

i) Current Ratio

ii) Quick Ratio

Liquidity ratios measure the extent to which the firm can meet its immediate obligations. They also reflect the firm's ability to meet financial contingencies that might arise.

**i) Current Ratio:**

The current ratio is very poplar liquidity ratio; it is used to determine the short term liquidity of the company. It means that enough current assets (Cash, prepaid Insurance, Cash equivalents, Account receivables and Inventory etc) are available with company to meet it short term liabilities obligations.

In other words, current ratio determines the company's ability to pay off its short term liabilities via available current assets. In theory, higher the current of the company better will be the liquidity position.

**Current Ratio** = $\frac{current\ Assets}{Current\ Liabilities}$

As the ratio is concerned with the working capital, it is also called working capital ratio. The Composition of current ratio is very important at the time of interpretation. The Current ratio indicates the sound short term finance from the creditor's point of view. But on the other hand the higher ratio indicates blocking of funds in the current assets. As a conventional rule, current ratio of 2:1 or more is considered satisfactory. To throw more light on the quality of the current assets the percentage of the current assets is to be calculated.

| Years | 2003-04 | 2004-05 | 2005-06 | 2006-07 | 2007-08 | 2008-09 | 2009-10 |
|---|---|---|---|---|---|---|---|
| Ratio | 0.51 | 0.46 | 0.31 | 0.34 | 0.33 | 0.23 | 0.36 |

**Table 1. 1 Current Ratio of The Bharuch Dis.Co-Op. Milk Pro.Un.Ltd. (In Proportion to 1)**

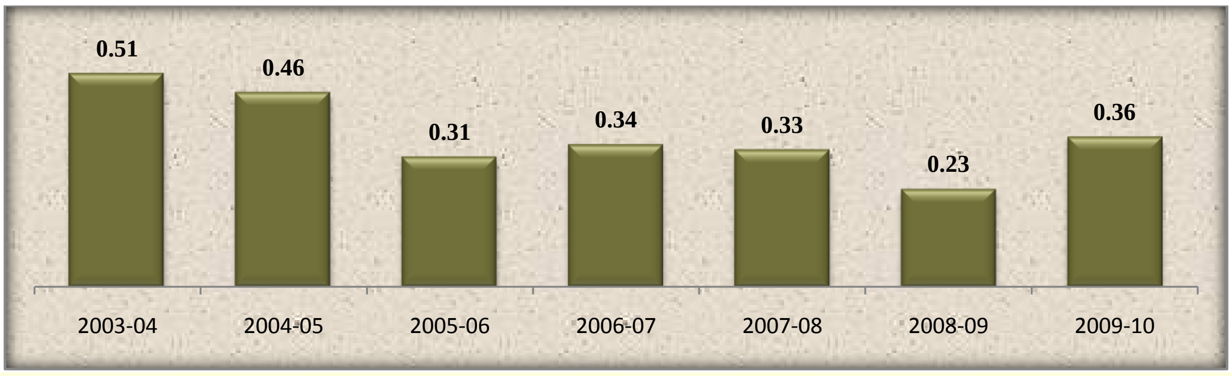


**Figure 1. 1 Current Ratio of The Bharuch Dis.Co-Op. Milk Pro.Un.Ltd.**

In none of the years during our analysis, The Bharuch Dis.Co-Op. Milk Pro.Un.Ltd Liquidity position was at the intolerable level. In the year of 2003-04, the current ratio was 0.51:1 against average of 0.68:1. It further decreased to 0.36:1 in 2009-10 due to higher increase in current liabilities than in current assets against average current ratio of Dairy under study 0.36 times. In the year 2005-06 to 2009-10 we saw in The Bharuch Dis.Co-Op. Milk Pro.Un.Ltd current assets are increasingly more number. On the contrary current liability is on decreasing mode so the current ratio is not good for these years. The Current ratio of The Bharuch Dis.Co-Op. Milk Pro.Un.Ltd is not very good financial health.

**ii) Quick Ratio:**

Liquid ratio is also termed as "Liquidity Ratio", "Acid Test Ratio" or "Quick Ratio". It is the ratio of liquid assets to liquid liabilities. The true liquidity refers to the ability of a firm to pay its short term obligations as and when they become due.

**Liquid Ratio =** $\frac{\textit{Liquid Assets}}{\textit{Liquid Liabilities}}$

Liquid Assets = Current Assets-Stocks

Liquid Liabilities = Current Liabilities-Bank Over Draft

The ideal liquid ratio is 1:1. The firm has more liquid position and it is good for the dairy because the firm should have some cash on hand to meet daily expense.

| Years | 2003-04 | 2004-05 | 2005-06 | 2006-07 | 2007-08 | 2008-09 | 2009-10 |
|---|---|---|---|---|---|---|---|
| Ratio | 1.44 | 1.80 | 2.75 | 2.14 | 2.25 | 3.64 | 2.54 |

**Table 1. 2 Liquid Ratio of The Bharuch Dis.Co-Op. Milk Pro.Un.Ltd. (In Proportion to 1)**

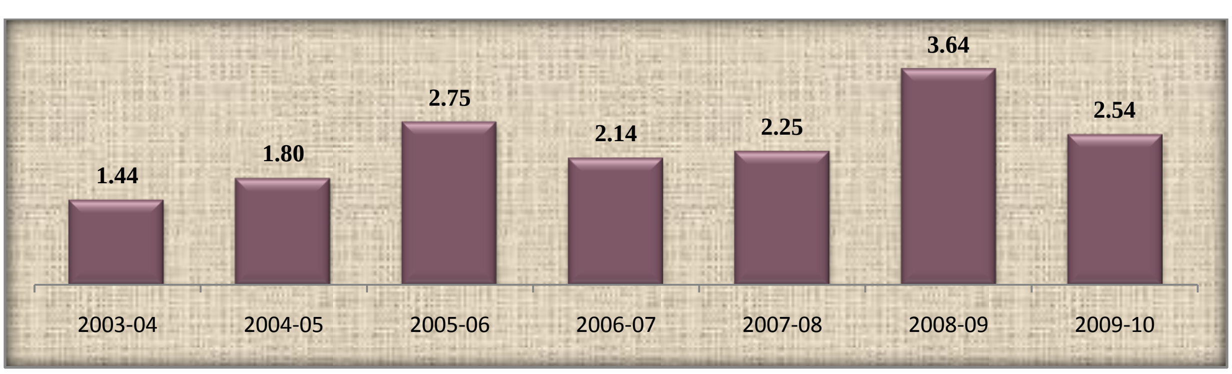


**Figure 1. 2 Liquid Ratio of The Bharuch Dis.Co-Op. Milk Pro.Un.Ltd.**

In The Bharuch Dis.Co-Op. Milk Pro.Un.Ltd, the liquid ratio was constantly high compared to the initial two years. The firm has no more liquid position and it was poor for the dairy because the firm should have some cash on hand to meet the daily expense. But the dairy increased its liquid assets and this was not good for the dairy because the firm should have some cash on hand to meet the daily expense. This was an underprivileged sign for the firm.

**2) Profitability Ratios:**

i) Gross Profit ratio

ii) Net Profit Ratio

**i) Gross Profit Ratio**

Gross profit ratio (GP ratio) is the ratio of gross profit to net sales expressed as a percentage. It expresses the relationship between gross profit and sales.

**Gross Profit Ratio** = $\frac{Gross\ Profit}{Sales} \times 100$

The ideal Ratio is 25 % for the trading concern while 15 % for the manufacturing concern. This ratio shows the margin left after meeting manufacturing costs. It measures the efficiency of production as well as pricing.

| Years | 2003-04 | 2004-05 | 2005-06 | 2006-07 | 2007-08 | 2008-09 | 2009-10 |
|---|---|---|---|---|---|---|---|
| Ratio (%) | 15.62 | 14.50 | 16.72 | 20.27 | 17.11 | 11.72 | 10.14 |

**Table 1. 3 Gross Profit Ratio of The Bharuch Dis.Co-Op. Milk Pro.Un.Ltd.**

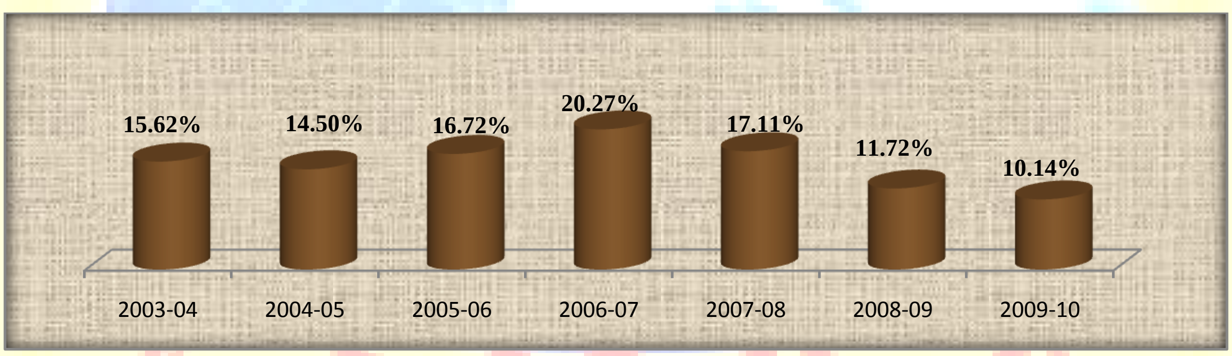


**Figure 1. 3 Gross Profit Ratio of The Bharuch Dis.Co-Op. Milk Pro.Un.Ltd.**

The Bharuch Dis.Co-Op. Milk Pro.Un.Ltd, gross profit ratio was 15.67% in the first year, which was the best. But, then it fluctuated in the study period. It was at the top level, the gross profit ratio was 20.27 % in the year 2006-07and then after three years it decreased. This was not a good sign for the Dairy. The ratio goes down because of the vast increases in the cost of the purchase.

**ii) Net Profit Ratio**

Net profit ratio is the ratio of net profit (after taxes) to net sales. Net profit Margin ratio establishes a relationship between net profit and sales and indicates management's efficiency in manufacturing, administering and selling the products. This ratio also indicates the firm's capacity to withstand adverse economic conditions.

**Net Profit Ratio** = $\frac{Net\ Profit\ (After\ Tax)}{Sales} \times 100$

Net Profit ratio is used to measure the overall profitability and hence it is very useful to proprietors. The ratio is very useful as, if the net profit is not sufficient, the firm shall not be able to achieve a satisfactory return on its investment.

This ratio also indicates the firm's capacity to face adverse economic conditions such as price competition, low demand, etc. Obviously, higher the ratio the better is the profitability. But while interpreting the ratio, it should be kept in minds that the performance of profits also found be seen in relation to investments or capital of the firm and not only in relation to sales.

The Ratio is an effective measure to check the profitability of business. However, constant increase in the net profit ratio year after year is a definite indication of improving condition of the business. If the net margin is inadequate, the firm will fail to achieve satisfactory return on owner’s equity.

| **Years** | 2003-04 | 2004-05 | 2005-06 | 2006-07 | 2007-08 | 2008-09 | 2009-10 |
|---|---|---|---|---|---|---|---|
| **Ratio (%)** | 1.45 | 0.56 | 0.84 | 0.67 | 0.74 | 0.24 | 0.19 |

**Table 1. 4 Net Profit Ratio of The Bharuch Dis.Co-Op. Milk Pro.Un.Ltd.**

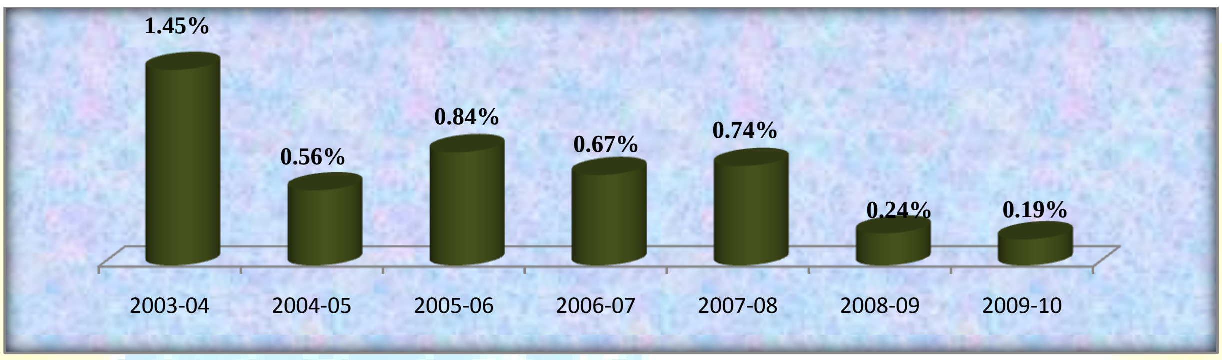


**Figure 1. 4 Net Profit Ratio of The Bharuch Dis.Co-Op. Milk Pro.Un.Ltd.**

The Bharuch Dis.Co-Op. Milk Pro.Un.Ltd gets Maximum profit in the first years. But, then it fluctuates in the study period. The Bharuch Dis.Co-Op. Milk Pro.Un.Ltd, net profit margin showed a downgrade in 2009-10 over 2003-04. The ratio was 1.45 % which went downward to 0.56 % in 2004-05. The ratio was 0.84 % in 2005-06 and 0.67 % in 2006-07. The ratio was 0.74 % in 2007-08 and then it went down to 0.19 % in 2009-10. The ratio was 1.45 % in 2003-04 which was the ever highest ratio of the all dairies. The net profit ratio was satisfactory in the company due to minimum administrative expenses.

**3) Performance Ratio:-**

i) Working capital turnover ratio

ii) Inventory Turnover Ratio

**i) Working Capital Turnover Ratio**

A close relationship exists between sales and net working capital. With any increase in sales volume, there is corresponding increase in a working capital. The overall efficiency with which working capital funds are used can be measured by working capital turnover ratio. In other words, the ratio helps to assess the degree of efficiency in the use of short term funds for generating sales. The working capital is considered to be efficiently circulated when it is turned over quickly, since the greater the circulation, the lower the investments in working capital. Working capital turnover ratio is computed as follows:

**Working Capital Turnover Ratio** = $\frac{\textit{Net Sales}}{\textit{Net Working Capital}}$

| **Years** | 2003-04 | 2004-05 | 2005-06 | 2006-07 | 2007-08 | 2008-09 | 2009-10 |
|---|---|---|---|---|---|---|---|
| Ratio(Times) | 28.25 | 18.78 | 12.08 | 11.29 | 10.74 | 8.25 | 9.26 |

**Table 1. 5 Working Capital Turnover Ratio of The Bharuch Dis.Co-Op. Milk Pro.Un.Ltd.**

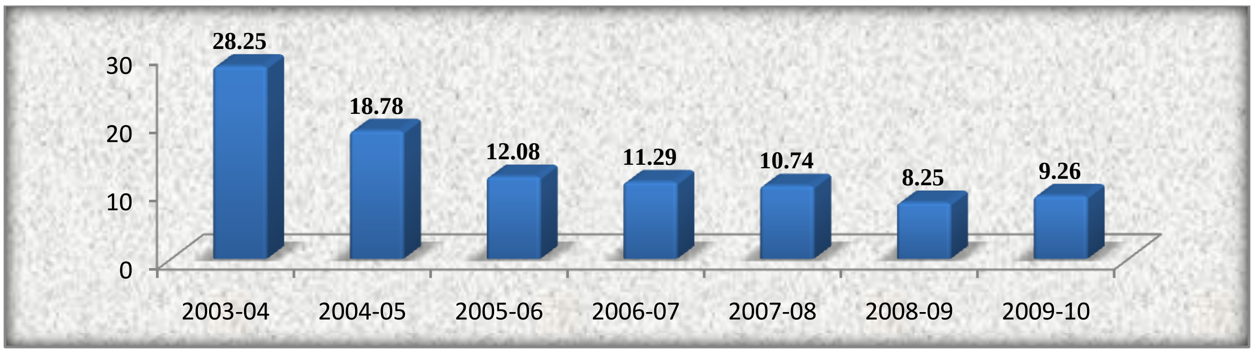


**Figure 1. 5 Working Capital Turnover Ratio of The Bharuch Dis.Co-Op. Milk Pro.Un.Ltd.**

It is seen from the table that the working capital turnover ratio decreased gradually from the beginning year of study to the year 2003-04. But an increasing trend is observed in the last year and trying to cope up with 9.26 times in 2009-10. The reason was that the relative speed of increase in working capital was higher than the speed of increase in sales.

**ii) Inventory Turnover Ratio**

The days in the period can then be divided by the inventory turnover formula, to calculate the days it takes to sell the inventory on hand or "inventory turnover days". Before you invest, you are going to have to make an informed decision about how much you think the inventory on the balance sheet is really worth. A major part of this decision should be based on how fast the inventory is "turned" (or sold).

**Inventory Turnover Ratio =** $\frac{\textit{Cost Of Good Sold}}{\textit{Average Inventory}}$

Inventory turnover ratio indicates the relationship between the cost of goods sold and the inventory level. Higher the inventory ratio, larger the amount of sales, the smaller the amount of the capital tied up in inventory and the more current the merchandise stock.

| **Years** | 2003-04 | 2004-05 | 2005-06 | 2006-07 | 2007-08 | 2008-09 | 2009-10 |
|---|---|---|---|---|---|---|---|
| **Ratio(Times)** | 52.59 | 79.53 | 72.03 | 40.00 | 29.44 | 42.36 | 73.54 |

**Table 1. 6 Inventory Turnover Ratio of The Bharuch Dis.Co-Op. Milk Pro.Un.Ltd.**

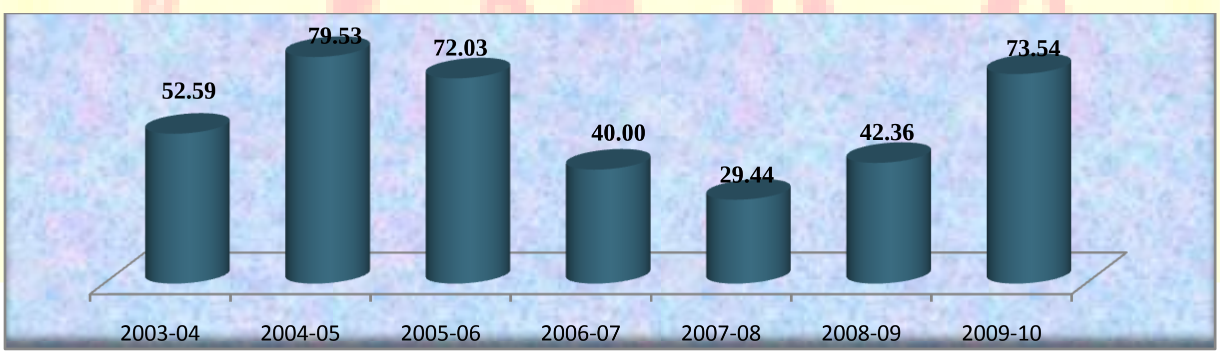


**Figure 1. 6 Inventory Turnover Ratio of The Bharuch Dis.Co-Op. Milk Pro.Un.Ltd.**

The inventory ratio of this dairy in the year 2003-04 was 52.59 times it increase in the year 2004-05 and it was 79.53 times. The increased in the first three the years in this study. Then the next two years it decreased. Later on it increased in the year 2008-09 and 2009-10 it was 42.36 times and 73.54 times respectively, which was a good sign for the dairy.

## Conclusion and Suggestions

From the entire above analysis of working capital management of The Bharuch Dis.Co-Op. Milk Pro.Un.Ltd. (Dudh Dhara Dairy), the following observations are made in brief as conclusions:

1. The overall size of net working capital of sample unit had maintained a raising trend throughout the period under study. The amount of net working capital was Rs. 83,39,462 in 2003-04 and gradually increased to Rs. 7,09,05,228 in 2009-10. The increase in net working capital is attributed to the faster rise in the size of current assets.
2. Inventories and Sundry debtors were the major and key components of current assets in the sample unit.
3. The lower working capital turnover ratio means, the poorer utilization of the working capital and year 2008-09 compare to other year it's very low.
4. Current ratio is fluctuating all the times. As ideal current ratio is 2:1 but at time of actual analysis shows that ratio is always less than the ideal one. This ratio moving around 0.23 to 0.51. Which indicate bad liquidity position.
5. In case of quick or acid test ratio the ideal ratio is 1:1 .As per actual analysis ratio was constantly high compare to first two years. This was an underprivileged sign for the dairy.
6. The gross profit and net profit ratio gets maximum profit in first five years but than after it is very low.

From the above conclusions, the following suggestions can be made for improving the management of working capital in the dairy sector. It can prosper the industries not only to their own expectations but also to that of Government, Consumers, Investors and Employees.

**1.** The dairy industry should try to control the growth rate of current assets as compared to current liabilities to some extent as per the industry needs and situations to maintain proper level of net working capital.

**2.** The industry should try to maintain a balance between liquidity and profitability position by improving current ratio and quick ratio. For this purpose the dairy industry should develop some ideal standard of these ratios and try to maintain this standard ratio. The management must follow the ideal norm of 2:1 and try to maintain its ratio around it.

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