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ANALYSIS OF PROFITABILITY

5.1 INTRODUCTION

Profit is the main goal for establishing a business concern. Profit is the primary motivating force for economic activity. Profits have to be earned and they have got to be earned on a regular or continuous basis. Business concerns that is unable to generate sufficient profits from their operations cannot remunerate the providers of their capital and this makes it difficult for them to maintain the continuity of their existence. Profits are needed not only to remunerate capital but also to finance growth and expansion. The survival of a firm in growing economy cannot always be ensured simply by maintaining the status queue. If the firm is to survive in competitive and expanding environment, it has to go on expanding the scale of its operations on a regular and continuing basis. “Profits are the record card of the past, the inventive lord star for the future. If an enterprise fails to make Profit, capital invested is eroded and in this situation prolongs the enterprise ultimately ceases to exist.” Thus profit is the soul of the business concern without which it becomes weak and lifeless. In fact profits are useful intermediate beacon towards which a firm’s capital should be directed.\(^1\)

5.2 CONCEPT OF ‘PROFIT’ AND ‘PROFITABILITY’

\(^\text{\textbf{\textcircled{F}} \; PROFIT}\)

The word ‘Profit’ has had French / Latin origin in ‘Proficere’ (being useful or proficient), ‘Profectus’ and ‘Profectum’ (to make progress). Thus, profit is in index of proficiency or progress, as typified by ‘the gain resulting from the employment of capital’, the excess of returns over expenditure; pecuniary gain in any transaction / occupation.

Profit can arise when the price paid by the customers for the product of the business firm exceeds the cost that has been incurred for it. Profit has been defined in a number of ways, by accountants, economists and others as per its use and purpose. There have
been many theoretical discussion of the concept of profit, but there is no consensus on the precise definition of this theoretical construct. In short, Profit means excess of income over expenditure in given period of time. Hence, the excess of output over input factors expressed in monetary term represents profit.

**PROFITABILITY**

The word ‘profitability’ is composed of two words ‘profit’ and ‘ability’. Therefore, profitability means the profit making ability of the enterprise. According to Gibson and Boyer, “Profitability is the ability of the firm generates earnings.” In the words of Howard and Upton “The concept of profitability may be defined as the ability of a given investment to earn a return from its use.” Profitability is an indication of the efficiency with which the operations of the enterprise are carried on. Poor operational performance may indicate poor sales and hence poor profits. A lower profitability may arise due to the lack of control over expenses. In accountancy, profitability may be described as a yard-stick of the enterprise performance and indicate public acceptance of the products. It is a relative concept which regulates and controls management policy and decision. In the words of Weston and Brigham, “Profitability is the net result of a large number of policies and decisions.” The profitability ratios show the combined effects of liquidity, asset management and debt management on operating results.

**PROFIT AND PROFITABILITY**

Profit is essentially an internal measure of new wealth creation. It reflects the excess of earnings over expenses or costs. If the costs are more than earnings, it will mean a loss. Profit is the excess of net sale revenue over the cost of goods sold while profitability is the profit making ability of the business firm showing either steady or increased or decreased state of such ability during a specified time. Profit is an absolute connotation showing absolute figure which alone cannot give an exact idea of changes in efficiency of business firm whereas profitability is a relative concept which gives a clear idea of variation in efficiency. Thus, profit and profitability are two different concepts; however, they are closely related and mutually interdependent,
having distinct role in business. Hence, it can be said that profitability is broader concept comparing to the concept of profit. Profitability is the overall measure of efficiency. The income (output) as compared to the capital employed (input) indicates profitability of a firm.

5.3 FACTORS AFFECTING THE PROFITABILITY

The following are the two main factors which affects the profitability of a business firm.

(i) The Operational profit Margin.

(ii) The Rapidity of Turnover of capital employed.

Profitability is the product of these two factors and, therefore maximum or optimum profits can be earned only by maximizing them. In technical terms, the combination of these two factors is known as the “Triangular Relationship”. Its significance exits not only in its use as an analytical tool but also because the profitability ratio can be calculated directly from the specific earnings and investment data. It is also useful in explaining the two forces bearing upon ultimate results and therefore, establishes the area of business operations which must be properly controlled if expected results are to be achieved. It can be shown is an equation form as under:

\[
\text{Profitability} = \frac{\text{Sales}}{\text{Operating Assets}} \times \frac{\text{Operating Income}}{\text{sales}} = \frac{\text{Operating Income}}{\text{Operating Assets}}
\]

Where “Operating Assets” are used for capital employed and income from utilization of capital employed in the business firm, respectively. The inter-relationship between the above ratios has to be understood with a view to analyzing profitability. The rate of return on investment is the result of the profit margin and turnover of assets in sales. These two components are multiplied for arriving at the profit percentage on investment. Each of these two components is itself an end-product of a sequence of interrelated factors. These components are helpful in investigating the financial composition, analyzing current financial position and formulating the financial forecasting for future of a business firm.
5.4 SIGNIFICANCE OF PROFITABILITY

Profit is a very good indicator of business performance, but the real standard of performance of a business firm cannot be judged by the absolute size of its periodic profit. For that profitability is a good device, which represent the earning of a business firm. Modern management is engaged in the task of maximizing the profit and wealth. The efficiency of management is measured by the profitability of the business; the greater is the profitability of the business, the more will be efficiency. “An analysis of the profitability reveals as to how the position of profit stands as a result of total transactions made during the year. It need not be stressed that profitability is analyses through the computation of profit ratios. Profitability of a business firm is very much helpful to the management, creditors and share holders of business firm.

5.5 TECHNIQUES TO MEASURE PROFITABILITY

The measurement of profitability is an essential as the earning of profit itself for a business firm. The profitability of business firm can be evaluated or measured from a number of perspectives, and there are various quantitative as well as qualitative methods that can be employed for this purpose. In the research study Ratio analysis techniques used to measure profitability.

5.5.1 CONCEPT OF RATIO ANALYSIS

Ratio analysis is one of the techniques of financial analysis where ratios are used as a yardstick for evaluating the financial condition & performance of a firm. Analysis and interpretation of various accounting ratio gives a skilled and experienced analyst a better understanding of the financial condition and performance of the firm than what he could have obtained only through a perusal of financial statements.

Ratios are relationship expressed in mathematical terms between figures which are connected with each other in some manner. Obviously, no purpose will be served by comparing two sets of figures which are not at all connected with each other. Moreover, absolute figures are also unfit for comparison. Thus, a ratio is a simple arithmetical expression of the relationship of one number to another and is obtained
by dividing the former by the later. In other words, ratios are simply a means of highlighting, in arithmetical terms, the relationship between figures drawn from financial statements. In shortly, Ratio analysis is the process of determining and presenting the relationship of items or group of items in the financial statements.

Financial analysis of an enterprise by financial ratios helps the management as well as interested external parties to evaluate the firm’s financial performance and condition. Rapidly by making comparison of ratios obtained from the firm with ratio obtained from other comparable firm. In the word of Helfert, “Ratio analysis provide guides and clue especially in spotting trends towards better or poor performance, and in finding out significant deviation from any average or relatively applicable standard.”

“A ratio in known as a symptom like the blood pressure, the pulse rate or the temperature of an individual Ratio analysis is used as a device to diagnose the financial condition of an enterprise; it points out whether the financial conditions very strong, good, partly good, questionable or poor.”

In short, it would be remembered that “Ratios are only guides in analysis of financial statements and do not conclusive ends in themselves. Besides, if a ratio is to be important, “It must not only represent a true relationship but must also say the analyst in making his immediate decision. Thus it is necessary for a ratio to be meaningful and useful that;

1. It must produce significant relationship between related items or groups of items, selected for comparison purpose and
2. It is useful to the particular statement under observation.

5.5.2 CLASSIFICATION OF RATIOS
Ratio can be classified into two different categories depending upon the basis of classification.

1. The traditional classification.
2. Classification based on nature of ratios.
1. **THE TRADITIONAL CLASSIFICATION**

The traditional classification has been made on the basic of the financial statements to which determinates of a ratio belong. On this basis the ratio could be classified as:

(i) **Profit And Loss Account Ratio:**
Ratios are calculated on the basic of the items of profit and loss account only.

(ii) **Balance Sheet Ratio:**
Ratios are calculated on the basis of the figure of Balance Sheet only.

(iii) **Composite Ratio:**
Ratio is calculated on the basis of profit and loss account as well as the balance sheet.

2. **CLASSIFICATION BASED ON NATURE OF RATIO**

To get the correct view of the profitability and financial soundness of a firm and to make a systematic study, Ratios are classified as under:

**A. Profitability Ratio:**

Profitability ratio are calculated to measure the managements Overall efficiency. Several other parties like creditors, share holders, prospective investors, bankers, financial institutions and the government are also interested in analysis of the
profitability of a company. Profitability ratios are Net Profit, Return on Shareholders Fund, Earning Per Share Ratio etc.

**B. Liquidity Ratio:**

This ratio indicates liquidity position of a company. This ratio shows the ability of a company to meet its short term obligation. Current ratio, liquidity ratio and quick or acid-test ratio are included in liquidity ratio.

**C. Leverage Ratio:**

These ratios are used to guide the long term financial position of the firm. This ratio indicates the funds provided by the long term creditors and owners. Leverage ratio is calculated from balance sheet items. Leverage ratio are (1) Debt equity ratio (2) Gearing Ratio (3) Debt to total capital ratio.

**D. Activity Ratio:**

Activity ratio is concerned with how efficiency the assets of the firm are managed. These ratios express relationship between level of sales and the investment in various assets. Activity ratios include (1) Inventory turnover ratio (2) Debtor turnover ratio (3) Working Capital Turnover Ratio.

**5.5.3 ADVANTAGES OF RATIO ANALYSIS**

Following are some of the advantages of ratio analysis:

**1. Simplifies Financial Statements:**

Ratio analysis simplifies the comprehension of financial statements ratio tell the whole story of change in the financial condition of the business.

**2. Facilities Inter Firm Comparison:**

Ratio analysis provides data for inter firm comparison. Ratio highlights the factors associated with successful and unsuccessful firms. They also reveal strong firms and week firms, overvalued and undervalued firms.
3. Helps in Planning:
Ratio analysis helps in planning & forecasting over a period of time, a firm or industry develops certain norms that may indicate future. If relationship changes in firm’s data over different time periods, the ratio may provide clues on trends and future problems. Thus, “Ratio can assist management in its basic function of forecasting, planning, co-ordination, control and communication.”

5.5.4 LIMITATIONS OF RATIO ANALYSIS
Ratio analysis suffers from a number of drawbacks: Difficulty in comparison due to

A. Different procedures and practice followed by different firms.
B. Different accounting periods.
C. Every firm differs in age, size, etc,

- Price-level changes between two periods.
- Conceptual diversity.
- Different meaning of the terms.
- Accounting limitations.
- Several ratios to draw conclusions.
- Ratio analysis conveys observations.
- Ratio may be misleading.

5.6 ANALYSIS OF VARIANCE (F-TEST)
R. A. Fisher developed Analysis of Variance and a test so developed by him is known as Fisher’s test or more commonly ‘F’-test. It is also known as ANOVA. It is one of the most important tools of statistical analysis. It is used in various fields like economics, education, sociology, biology, psychology, business and industry. It has been developed specially to test the hypothesis whether the means of several samples have significant differences or not. The analysis of variance furnishes a technique for testing simultaneously the significance of differences among several means. From this technique one is able to determine whether the samples have the same mean as the
population from which they have been drawn. According to Levin, “Analysis of variance is the test for the significance of the difference between more than two sample means using analysis of variance. One will be able to make inferences about whether the samples are drawn from population having the same mean.” Levin describes the following three steps in analysis of variance:

1. Determine one estimate of the population variance from the variance among the sample means.
2. Determine a second estimate of the population variance from the variance within the samples.
3. Compare these two estimates. If they are approximately equal in value, accept the null hypothesis.

5.7 PROFITABILITY ANALYSIS OF THE CO-OPERATIVE DAIRY UNITS UNDER STUDY

Today co-operative dairies play a very important role in milk market. The main aim of co-operative milk dairies is to protect the milk producers from the exploitation by private dairies which were in the role of middlemen between producer & consumers of milk. Co-operative dairies cannot procure milk at lower price to increase profit margin. Milk producer had joined hands and formed co-operative societies which in turn had joined hands and formed co-operation milk dairies to protect themselves from exploitation by private dairies giving very less procurement price to the milk producers and charging higher price from the consumers of milk.

Co-operative dairies also safeguard the interests of milk consumers besides milk producers so they cannot increase selling price suddenly to increased profit margin. Today’s scenario of competition by private dairies will also not allow co-operative dairies to do so. Thus the scope for profitability for the co-operative milk dairies is limited.
**PROFITABILITY RATIO**

5.7.1 NET PROFIT RATIO

Net profit margin is a good indicator of the efficiency of a firm. It is obtained by deducting operating expenses, interest, and taxes from the gross profit. The net profit margin ratio is determined by relating net income after taxes to net sales. The formula can be narrated as under:

\[
\text{Net Profit Ratio} = \left( \frac{\text{Net Profit}}{\text{Net Sales}} \right) \times 100
\]

Net profit margin ratio establishes the relationship between net profit and sales. It also indicates management’s efficiency in manufacturing, administering, and selling the products. This ratio is an overall measure of the firm’s ability to turn each rupee sales into net profit. If the net margin is inadequate, the firm will fail to achieve satisfactory return on shareholders’ funds.

The ratio also indicates the firm’s ability to withstand adverse economic conditions. Where firms with higher net margin ratio will be in advantageous position to survive in the face of falling selling prices, rising costs of production, or declining demand for the product. Such conditions are very difficult for low profit margin firms.

The below table clears the position regarding the net profit ratio in the selected Dairy unit.
### Table No. 5.1.A
Net Profit Ratio of the Dairy Units under Study
(From 2003-04 to 2012-13)

<table>
<thead>
<tr>
<th>Year</th>
<th>Dudhsagar Dairy</th>
<th>Gopal Dairy</th>
<th>Amul Dairy</th>
<th>Sumul Dairy</th>
<th>Vasudhara Dairy</th>
<th>Sabar Dairy</th>
<th>Madhur Dairy</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003-04</td>
<td>0.35</td>
<td>0.47</td>
<td>0.46</td>
<td>0.088</td>
<td>-1.28</td>
<td>0.59</td>
<td>0.28</td>
<td>0.1368</td>
</tr>
<tr>
<td>2004-05</td>
<td>0.35</td>
<td>0.42</td>
<td>0.52</td>
<td>0.15</td>
<td>0.11</td>
<td>0.62</td>
<td>0.31</td>
<td>0.3542</td>
</tr>
<tr>
<td>2005-06</td>
<td>0.35</td>
<td>0.24</td>
<td>0.46</td>
<td>0.22</td>
<td>0.14</td>
<td>0.45</td>
<td>0.36</td>
<td>0.3171</td>
</tr>
<tr>
<td>2006-07</td>
<td>0.29</td>
<td>0.34</td>
<td>0.50</td>
<td>0.27</td>
<td>1.33</td>
<td>0.48</td>
<td>0.33</td>
<td>0.5057</td>
</tr>
<tr>
<td>2007-08</td>
<td>0.24</td>
<td>0.38</td>
<td>0.42</td>
<td>0.30</td>
<td>0.015</td>
<td>0.43</td>
<td>0.32</td>
<td>0.3007</td>
</tr>
<tr>
<td>2008-09</td>
<td>0.21</td>
<td>0.54</td>
<td>0.42</td>
<td>0.27</td>
<td>0.006</td>
<td>0.33</td>
<td>0.31</td>
<td>0.2980</td>
</tr>
<tr>
<td>2009-10</td>
<td>0.31</td>
<td>0.57</td>
<td>0.44</td>
<td>0.26</td>
<td>0.009</td>
<td>0.45</td>
<td>0.4</td>
<td>0.3484</td>
</tr>
<tr>
<td>2010-11</td>
<td>0.41</td>
<td>0.53</td>
<td>0.44</td>
<td>0.25</td>
<td>0.095</td>
<td>0.52</td>
<td>0.43</td>
<td>0.3821</td>
</tr>
<tr>
<td>2011-12</td>
<td>0.38</td>
<td>0.56</td>
<td>0.43</td>
<td>0.23</td>
<td>0.057</td>
<td>0.66</td>
<td>0.51</td>
<td>0.4038</td>
</tr>
<tr>
<td>2012-13</td>
<td>0.37</td>
<td>0.68</td>
<td>0.25</td>
<td>0.21</td>
<td>0.08</td>
<td>0.37</td>
<td>0.39</td>
<td>0.3357</td>
</tr>
<tr>
<td>Total</td>
<td>3.26</td>
<td>4.73</td>
<td>4.34</td>
<td>2.248</td>
<td>0.562</td>
<td>4.90</td>
<td>3.64</td>
<td>3.3820</td>
</tr>
<tr>
<td>Average</td>
<td>0.326</td>
<td>0.473</td>
<td>0.434</td>
<td>0.224</td>
<td>0.0562</td>
<td>0.49</td>
<td>0.364</td>
<td>0.3382</td>
</tr>
</tbody>
</table>

**Source:** Computed from Published Annual Reports of the respective Dairy Units.

### Chart No. 5.1
Net Profit Ratio of the Dairy Units under Study

![Net Profit Ratio Chart](chart.png)
**Dudhsagar Dairy**

The net profit ratio in Dudhsagar Dairy witnessed a fluctuating trend. In first three years of study period it was stable, which was 0.35 per cent and then after it decreased and reached at 0.21 per cent in 2008-09. At finally it stood at 0.37 per cent. The average ratio of this dairy was 0.326 per cent.

**Gopal Dairy**

The net profit ratio of Gopal Dairy registered a decreasing trend in first three years of the study period. It was 0.47 per cent in 2003-04 and reached 0.24 per cent in 2005-06. Then after it showed increasing till 2009-10 and reached 0.57 per cent and finally it stood with 0.68 per cent in 2012-13. The average ratio of Gopal Dairy was 0.473 per cent.

**Amul Dairy**

The net profit ratio in Amul Dairy witnessed a fluctuating trend. The ratio was 0.46 per cent in 2003-04 than after constantly ups and down and stopped with 0.44 per cent in 2009-10. It further declined in last three years and reached 0.25 times in 2012-13. The average Net Profit Ratio of Amul Dairy was 0.434 per cent.

**Sumul Dairy**

The net profit ratio of Sumul Dairy registered an increasing trend in first five years of the study period. It was 0.088 per cent in 2003-04 and reached 0.30 per cent in 2007-08. Then after continuously decreased and stopped with 0.21 per cent in 2012-13. The average ratio of Sumul Dairy was 0.2248 per cent.

**Vasudhara Dairy**

The net profit ratio in Vasudhara Dairy also witnessed a fluctuating trend. In first year of study period it was negative because of worst performance of Vasudhara Dairy in this year. Then after continuously increased and stopped with 1.33 per cent in 2006-07. Than after ups and downs trend in 2007-08 to 2012-13. The average ratio of
Vasudhara Dairy was 0.0562 per cent. The average ratio of Vasudhara Dairy was lowest among all the Dairy Units.

Sabar Dairy

In Sabar Dairy, the Net profit ratio registered a fluctuating trend through the period under the study. The ratio was 0.59 per cent in 2003-04 increasing in first two years and reached to 0.62 times in 2004-05. Than after constantly ups and down and stopped with 0.37 per cent in 2012-13. The average of Sabar Dairy was 0.49 per cent.

Madhur Dairy

In Madhur Dairy, the Net profit ratio registered a fluctuating trend through the period under the study. The ratio was 0.28 per cent in 2003-04 increasing in first three years and reached to 0.36 times in 2005-06. Than after constantly ups and down and stopped with 0.39 per cent in 2012-13. The average of Madhur Dairy was 0.49 per cent.

ANOVA TEST ON NET PROFIT

Null Hypothesis (Ho):
There is no any significant difference in net profit ratio of selected co-operative dairies.

Alternative Hypothesis (H1):
There is significant difference in net profit ratio of selected co-operative dairies.

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>SS</th>
<th>d.f.</th>
<th>MS</th>
<th>F Value</th>
<th>F crit (5%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>1.435899</td>
<td>6</td>
<td>0.23931</td>
<td>3.9218</td>
<td>2.2464</td>
</tr>
<tr>
<td>Within Groups</td>
<td>3.84435</td>
<td>63</td>
<td>0.06102</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>5.28025</td>
<td>69</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The analysis showed the significant result. It can be seen from the table, that the calculated value of ‘F’ was found as 3.9218 while the table value of ‘F’ was 2.2464 at 5% level of significance. The calculated value of ‘F’ being greater than the table value ‘F’, the null hypothesis stood rejected and the alternative hypothesis accepted at 5% level of significance.

5.7.2 RETURN ON EQUITY SHAREHOLDER’S FUNDS

The ratio of return on equity shareholder’s fund is a valuable measure for judging the profitability of the organization. This ratio helps the shareholders of company know the return on investment in term of profit. It has got the following uses:

(i) It determines the earning power of equity share capital.
(ii) It enables the earning capacity of the enterprise to be contrasted with the earning capacity of other investment.

This ratio is calculated by dividing the net profit by paid-up amount of equity share capital. The Return on Equity Shareholder’s Funds has been computed with help of the following formula:

\[
\text{Return on Equity Shareholder’s Funds} = \frac{\text{Net Profit}}{\text{Equity share capital} + \text{Reserves \\& other fund}} \times 100
\]

Here; net profit means after deducting income tax, interest and dividend on preference share capital. This ratio helpful to shareholders judges the effectiveness of the management and it also an indicator of the earning power of business. The dividend prospects are higher when this ratio is higher. It also helps the potential investor to take an investment decision. The following table shows the percentage of return on Equity Shareholder’s Funds:
### Table No. 5.2.A
**Return on Equity Shareholder’s Funds of the Dairy Units under Study**  
(From 2003-04 to 2012-13)  
(In Percentage)

<table>
<thead>
<tr>
<th>Year</th>
<th>Dudhsagar Dairy</th>
<th>Gopal Dairy</th>
<th>Amul Dairy</th>
<th>Sumul Dairy</th>
<th>Vasudhara Dairy</th>
<th>Sabar Dairy</th>
<th>Madhur Dairy</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003-04</td>
<td>7.56</td>
<td>10.3</td>
<td>2.99</td>
<td>2.46</td>
<td>-27.08</td>
<td>7.29</td>
<td>9.60</td>
<td>1.8742</td>
</tr>
<tr>
<td>2004-05</td>
<td>7.22</td>
<td>10.73</td>
<td>5.54</td>
<td>4.39</td>
<td>2.38</td>
<td>7.38</td>
<td>10.15</td>
<td>6.8271</td>
</tr>
<tr>
<td>2005-06</td>
<td>8.21</td>
<td>6.76</td>
<td>5.79</td>
<td>7.06</td>
<td>2.85</td>
<td>6.08</td>
<td>10.80</td>
<td>6.7928</td>
</tr>
<tr>
<td>2006-07</td>
<td>8.32</td>
<td>10.90</td>
<td>7.00</td>
<td>9.07</td>
<td>20.97</td>
<td>7.15</td>
<td>10.39</td>
<td>10.5428</td>
</tr>
<tr>
<td>2007-08</td>
<td>7.61</td>
<td>15.24</td>
<td>7.35</td>
<td>10.75</td>
<td>0.49</td>
<td>7.22</td>
<td>11.22</td>
<td>8.5542</td>
</tr>
<tr>
<td>2008-09</td>
<td>0.91</td>
<td>20.26</td>
<td>6.22</td>
<td>10.13</td>
<td>1.22</td>
<td>6.90</td>
<td>11.57</td>
<td>8.1728</td>
</tr>
<tr>
<td>2010-11</td>
<td>2.09</td>
<td>18.85</td>
<td>11.25</td>
<td>10.01</td>
<td>2.07</td>
<td>12.53</td>
<td>13.74</td>
<td>10.0771</td>
</tr>
<tr>
<td>2011-12</td>
<td>2.52</td>
<td>20.41</td>
<td>12.21</td>
<td>9.71</td>
<td>1.34</td>
<td>19.25</td>
<td>10.41</td>
<td>10.8357</td>
</tr>
<tr>
<td>2012-13</td>
<td>2.54</td>
<td>26.59</td>
<td>7.51</td>
<td>8.42</td>
<td>0.38</td>
<td>9.70</td>
<td>8.45</td>
<td>9.0842</td>
</tr>
<tr>
<td>Total</td>
<td>48.39</td>
<td>161.2</td>
<td>76.19</td>
<td>81.52</td>
<td>6.38</td>
<td>93.76</td>
<td>110.96</td>
<td>82.628</td>
</tr>
<tr>
<td>Average</td>
<td>4.839</td>
<td>16.12</td>
<td>7.619</td>
<td>8.152</td>
<td>0.638</td>
<td>9.376</td>
<td>11.096</td>
<td>8.2628</td>
</tr>
</tbody>
</table>

**Source:** Computed from Published Annual Reports of the respective Dairy Units.

### Chart No. 5.2
**Return on Equity Shareholder’s Funds of the Dairy Units under Study**
**Dudhsagar Dairy**

Table no.5.2.A indicated a progressive and fluctuating trend in the return on equity shareholder’s fund of Dudhsagar Dairy. The return on equity shareholder’s fund was 7.56 per cent in 2003-04 and then after ups and down and stopped with 1.41 per cent in 2009-10. Further, it was increasing in last three years and reached to 2.54 per cent in 2012-2013. The highest return on equity shareholder’s fund of Dudhsagar Dairy was 8.32 per cent in 2006-07 and the lowest ratio was 0.91 per cent in 2008-09. The average return on equity shareholder’s fund of Dudhsagar Dairy was 4.839 per cent.

**Gopal Dairy**

Return on equity shareholder’s fund registered a Progressive and fluctuating trend in Gopal Dairy during the study period. The return on equity shareholder’s fund was 10.3 per cent in 2003-04 and then after ups and down and stopped with 21.16 per cent in 2009-10. Further, it was increasing in last three years and reached to 26.59 per cent in 2012-2013. The highest return on equity shareholder’s fund of Gopal Dairy was 26.59 per cent in 2012-13 and the lowest ratio was 6.76 per cent in 2005-06. The average return on equity shareholder’s fund of Gopal Dairy was 16.12 per cent.

**Amul Dairy**

In Amul Dairy return on equity shareholder’s fund indicated an increasing trend in first five years of the study period. Then after in next five years it showed a fluctuating trend and finally it stood with 7.51 per cent in 2012-13. It ranged between 2.99 per cent in 2003-04 and 12.21 per cent in 2011-12. The average return on equity shareholder’s fund of Amul Dairy was 7.619 per cent.

**Sumul Dairy**

In Sumul Dairy return on equity shareholder’s fund indicated an increasing trend in first five years of the study period. Then after in next five years it showed a fluctuating trend and finally it stood with 8.42 per cent in 2012-13. It ranged between
2.46 per cent in 2003-04 and 10.75 per cent in 2007-08. The average return on equity shareholder’s fund of Sumul Dairy was 8.152 per cent.

**Vasudhara Dairy**

Return on equity shareholder’s fund registered a fluctuating trend in Vasudhara Dairy during the study period. The average return on equity shareholder’s fund of Vasudhara Dairy was 0.638 per cent, but in first year of study there were negative Return on equity shareholder’s fund. Then after it was increasing in next three years and reached to 20.97 per cent in 2006-07. It ranged between 20.97 per cent in 2006-07 and 0.38 per cent in 2012-13.

**Sabar Dairy**

Return on equity shareholder’s fund registered a fluctuating trend in Sabar Dairy during the study period. The highest return on equity shareholder’s fund of Sabar Dairy was 19.25 per cent in 2011-12 and the lowest ratio was 6.08 per cent in 2005-06. The average return on equity shareholder’s fund of Sabar Dairy was 9.376 per cent.

**Madhur Dairy**

Return on equity shareholder’s fund registered a fluctuating trend in Madhur Dairy during the study period. It was increased in first three years during the study period. Then after it showed a fluctuating trend and finally it stood with 8.45 per cent in 2012-13. The highest return on equity shareholder’s fund of Madhur Dairy was 14.63 per cent in 2009-10 and the lowest ratio was 8.45 per cent in 2012-13. The average return on equity shareholder’s fund of Madhur Dairy was 11.096 per cent.

**ANOVA TEST ON RETURN ON EQUITY SHAREHOLDER’S FUNDS**

**Null Hypothesis (Ho):**

There is no any significant difference in Return on equity shareholder’s fund ratio of selected co-operative dairies.
Alternative Hypothesis (H1):

There is significant difference in Return on equity shareholder’s fund ratio of selected co-operative dairies.

Table No. 5.2.B
Analysis of variance (ANOVA) Test of Return on Equity
Shareholder’s Funds

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>SS</th>
<th>d.f.</th>
<th>MS</th>
<th>F Value</th>
<th>F crit (5%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>1412.886</td>
<td>6</td>
<td>235.4809</td>
<td>7.5905</td>
<td>2.2464</td>
</tr>
<tr>
<td>Within Groups</td>
<td>1954.435</td>
<td>63</td>
<td>31.02277</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>3367.32</td>
<td>69</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The analysis showed the significant result. It can be seen from the table, that the calculated value of ‘F’ was found as 7.5905 while the table value of ‘F’ was 2.2464 at 5% level of significance. The calculated value of ‘F’ being greater than the table value ‘F’, the null hypothesis stood rejected and the alternative hypothesis accepted at 5% level of significance.

5.7. 3 EARNING PER SHARE RATIO

In the word of A. Tom Nelson, “Investment circles often quote earning per share as a measure of profitableness of the ordinary shareholders’ investment.” It has become one of the most important measure by which outsiders evaluate performance of management. Earnings per share is considered one of the most important indicators of profitability because it can easily be compared with previous EPS figures and with those of other companies and investors find it convenient to compare the amount earned for a single share of stock.8

The EPS is calculated by dividing the profit after taxes and preference dividends by total number of Equity share. The formulae to calculate EPS is as under:
Earnings Per Share = \frac{Net Profit after Taxes – Preference Dividends}{Number of Equity Shares}

The calculation of EPS over the years indicates whether the firm’s earnings power on per-share basis has changed over that period or not. The EPS of the Company should be compared with industry average and the EPS of the other firms. However, EPS does not indicate how much of EPS is distributed as a dividend and how much is retained earnings. Below table shows Earning Per Share Ratio of the Dairy Units under Study.

<table>
<thead>
<tr>
<th>Year</th>
<th>Dudhsagar Dairy</th>
<th>Gopal Dairy</th>
<th>Amul Dairy</th>
<th>Sumul Dairy</th>
<th>Vasudhara Dairy</th>
<th>Sabar Dairy</th>
<th>Madhur Dairy</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003-04</td>
<td>12.29</td>
<td>31.17</td>
<td>12.62</td>
<td>7.52</td>
<td>*</td>
<td>11.64</td>
<td>18.88</td>
<td>15.6866</td>
</tr>
<tr>
<td>2004-05</td>
<td>12.13</td>
<td>36.77</td>
<td>15.56</td>
<td>13.98</td>
<td>5.58</td>
<td>12.35</td>
<td>11.46</td>
<td>15.4042</td>
</tr>
<tr>
<td>2006-07</td>
<td>14.93</td>
<td>22.29</td>
<td>20.58</td>
<td>32.66</td>
<td>12.90</td>
<td>15.01</td>
<td>24.08</td>
<td></td>
</tr>
<tr>
<td>2007-08</td>
<td>14.20</td>
<td>32.44</td>
<td>11.29</td>
<td>41.52</td>
<td>13.49</td>
<td>18.00</td>
<td>18.89</td>
<td></td>
</tr>
<tr>
<td>2009-10</td>
<td>6.22</td>
<td>29.06</td>
<td>18.40</td>
<td>4.20</td>
<td>21.41</td>
<td>11.80</td>
<td>16.3042</td>
<td></td>
</tr>
<tr>
<td>2011-12</td>
<td>11.65</td>
<td>42.82</td>
<td>26.76</td>
<td>31.08</td>
<td>45.00</td>
<td>17.53</td>
<td>25.2714</td>
<td></td>
</tr>
<tr>
<td>2012-13</td>
<td>12.45</td>
<td>49.38</td>
<td>33.78</td>
<td>32.35</td>
<td>30.09</td>
<td>16.13</td>
<td>25.3371</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>122.45</td>
<td>321.02</td>
<td>192.74</td>
<td>252.95</td>
<td>199.57</td>
<td>143.75</td>
<td>189.922</td>
<td></td>
</tr>
</tbody>
</table>

Note: Asterisk indicates negative figure

Source: Computed from Published Annual Reports of the respective Dairy Units.
In Dudhsagar Dairy, the earning per share recorded a fluctuating trend period under the study. The Earning per share was Rs.12.29 in 2003-04 first four years excised 2005-06 and reached to Rs.14.93 in 2006-07 ups and down and stopped with Rs.14.88 in 2008-09. Further, it was increasing in last four years and reached to Rs.12.45 in 2012-13. The average Earning of Dudhsagar Dairy was Rs. 12.245.

In Gopal Dairy Earning per share indicated a decreasing trend in first five years (excised 2007-08) of the study period. Then after next five years increasing trend and finally it stood with Rs. 49.38 in 2012-13. The earning per share ranged between Rs.21.84 in 2007-08 and Rs. 49.38 in 2012-13. The average Earning per share of Gopal Dairy was Rs. 32.102.
Amul Dairy

Earning per share registered a Progressive and fluctuating trend in Amul Dairy during the study period. It showed an increasing trend in first four years and then after ups and down and stopped with Rs.11.29 in 2007-08. Further, it was increasing in last five years and reached to Rs. 33.78 in 2012-2013. The highest earning per share of Amul Dairy was Rs. 33.78 in 2012-13 and the lowest ratio was Rs.11.29 in 2007-08. The average Earning per share of Amul Dairy was Rs. 19.274.

Sumul Dairy

Earning per share registered a Progressive and fluctuating trend in Sumul Dairy during the study period. It showed an increasing trend in first five years and then after it was decreased in 2008-09 and further, it was increasing in last four years and reached to Rs.32.35 in 2012-2013. The highest earning per share of Sumul Dairy was Rs. 41.52 in 2007-08 and the lowest ratio was Rs.7.52 in 2003-04. The average Earning per share of Sumul Dairy was Rs. 25.29.

Vasudhara Dairy

Earning per share registered a fluctuating trend in Vasudhara Dairy during the study period. The highest earning per share of Vasudhara Dairy was Rs. 50.19 in 2006-07 and the lowest ratio was Rs.1.29 in 2007-08. The average earning per share of Vasudhara Dairy was Rs. 9.03.

Sabar Dairy

The earning per share of Sabar Dairy showed ups and down trend during the study period. It varied between Rs.10.7 in 2005-06 and Rs. 45 in 2011-12. The average earning per share of Sabar Dairy was Rs. 19.957.

Madhur Dairy

In Madhur Dairy Earning per share indicated an increasing trend in first five years (excised 2003-04) of the study period. Then after it decreased but in next four years it
also showed an increasing trend and finally it stood with Rs. 17.53 in 2011-12. The earning per share ranged between Rs.7.97 in 2008-09 and Rs.18.88 in 2004-05. The average earning per share of Madhur Dairy was Rs. 14.375.

**ANOVA TEST ON EARNING PER SHARE**

**Null Hypothesis (H0):**
there is no any significant difference in Earning per share ratios of selected co-operative dairies.

**Alternative Hypothesis (H1):**

there is significant difference in Earning per share ratios of selected co-operative dairies.

<p>| Table No. 5.3.B |
| Analysis Of Variance (ANOVA) Earing Per Share Ratio |</p>
<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>SS</th>
<th>d.f.</th>
<th>MS</th>
<th>F Value</th>
<th>F crit (5%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>3971.033</td>
<td>6</td>
<td>661.8389</td>
<td>7.7439</td>
<td>2.2464</td>
</tr>
<tr>
<td>Within Groups</td>
<td>5384.343</td>
<td>63</td>
<td>85.46577</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>9355.377</td>
<td>69</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The analysis showed the significant result. It can be seen from the table, that the calculated value of ‘F’ was found as 7.7439 while the table value of ‘F’ was 2.2464 at 5% level of significance. The calculated value of ‘F’ being greater than the table value ‘F’, the null hypothesis stood rejected and the alternative hypothesis accepted at 5% level of significance.
5.7.4 DEBT-EQUITY RATIO

This ratio is an indicator of the soundness of the configuration of debt-equity mix. A proper mix of debt and equity helps in improving the rate of capital formation in the long term. Analysis of this ratio is made to see the gearing of the capital as well as to find out permanent liability of the organization in comparison with owner’s funds. The formulae to calculate Debt-Equity Ratio is as under:

\[
\text{Debt-equity ratio} = \frac{\text{Long-Term Debts}}{\text{Owner's Funds (Net Worth)}}
\]

This ratio can be calculated by dividing the long term debt by shareholder’s equity. This ratio is generally represent in terms of times or percentage. Long term debt included a borrowing not repayable before the completion of five year period from the date of borrowing. For the purpose of calculation of this ratio, the term shareholder’s equity includes share capital, reserves and surplus minus miscellaneous expenses.

The purpose of this ratio is to find out the amount of capital supplied to a business enterprise by the owners and also assets ‘cushion’ available to creditors on liquidation. To repeat, the generally accepted norm of this ratio is 1:1. Theoretically, the higher are the interests of the proprietors as compared with that of creditor, the more solid would be the financial condition of business. Significantly, and this ratio holds the same importance as the current ratio in the analysis of short-term financial position.
## Table No. 5.4.A
Debt-Equity Ratio of the Dairy Units under Study
(From 2003-04 to 2012-13)

<table>
<thead>
<tr>
<th>Year</th>
<th>Dudhsagar Dairy</th>
<th>Gopal Dairy</th>
<th>Amul Dairy</th>
<th>Sumul Dairy</th>
<th>Vasudhara Dairy</th>
<th>Sabar Dairy</th>
<th>Madhur Dairy</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003-04</td>
<td>0.26</td>
<td>1.40</td>
<td>1.28</td>
<td>0.29</td>
<td>3.76</td>
<td>*</td>
<td>3.38</td>
<td>1.7283</td>
</tr>
<tr>
<td>2004-05</td>
<td>0.96</td>
<td>1.01</td>
<td>1.85</td>
<td>0.16</td>
<td>3.79</td>
<td>*</td>
<td>2.56</td>
<td>1.7216</td>
</tr>
<tr>
<td>2005-06</td>
<td>2.32</td>
<td>1.29</td>
<td>1.65</td>
<td>0.16</td>
<td>3.68</td>
<td>*</td>
<td>2.29</td>
<td>1.8983</td>
</tr>
<tr>
<td>2006-07</td>
<td>4.76</td>
<td>0.67</td>
<td>1.25</td>
<td>0.17</td>
<td>2.75</td>
<td>*</td>
<td>1.95</td>
<td>1.9250</td>
</tr>
<tr>
<td>2007-08</td>
<td>4.71</td>
<td>1.87</td>
<td>2.50</td>
<td>0.17</td>
<td>3.59</td>
<td>*</td>
<td>1.51</td>
<td>2.3916</td>
</tr>
<tr>
<td>2008-09</td>
<td>0.90</td>
<td>1.78</td>
<td>1.89</td>
<td>0.11</td>
<td>2.75</td>
<td>*</td>
<td>1.20</td>
<td>1.4383</td>
</tr>
<tr>
<td>2009-10</td>
<td>1.57</td>
<td>2.72</td>
<td>2.38</td>
<td>0.30</td>
<td>3.85</td>
<td>0.11</td>
<td>1.88</td>
<td>1.6871</td>
</tr>
<tr>
<td>2010-11</td>
<td>2.30</td>
<td>1.89</td>
<td>2.29</td>
<td>0.45</td>
<td>4.00</td>
<td>9.88</td>
<td>0.58</td>
<td>3.0557</td>
</tr>
<tr>
<td>2011-12</td>
<td>1.59</td>
<td>1.62</td>
<td>2.25</td>
<td>0.57</td>
<td>5.11</td>
<td>9.87</td>
<td>0.40</td>
<td>3.0585</td>
</tr>
<tr>
<td>2012-13</td>
<td>2.77</td>
<td>1.45</td>
<td>4.28</td>
<td>1.11</td>
<td>1.00</td>
<td>2.40</td>
<td>0.25</td>
<td>3.3150</td>
</tr>
<tr>
<td>Total</td>
<td>22.14</td>
<td>15.7</td>
<td>21.62</td>
<td>3.49</td>
<td>34.28</td>
<td>22.26</td>
<td>15.00</td>
<td>22.219</td>
</tr>
<tr>
<td>Average</td>
<td>2.214</td>
<td>1.57</td>
<td>2.162</td>
<td>0.349</td>
<td>3.428</td>
<td>5.565</td>
<td>1.50</td>
<td>2.2219</td>
</tr>
</tbody>
</table>

**Source:** Computed from Published Annual Reports of the respective Units. (Note: Asterisk indicates not available data)

## Chart No. 5.4
Debt-Equity Ratio of the Dairy Units under Study
Dudhsagar Dairy

In Dudhsagar Dairy, the Debt-Equity ratio registered a fluctuating trend during the period of the study. The ratio was 0.26 times in 2003-04 increasing in first four years and reached to 4.76 times in 2006-07. It further declined and reached 0.9 times in 2008-09. The highest ratio was 4.76 times in 2006-07 and the lowest ratio was 0.9 times in 2008-09. The average ratio of Dudhsagar Dairy was 2.214 times.

Gopal Dairy

In Gopal Dairy, the Debt-Equity ratio registered a fluctuating trend during the period of the study. The highest ratio was 2.72 times in 2009-10 and the lowest ratio was 0.67 times in 2006-07. The average ratio of Gopal Dairy was 1.57 times. The ratio was 2.72 times in 2009-10 decreasing in last four years and reached to 1.45 times in 2012-13.

Amul Dairy

In Amul Dairy, the Debt-Equity ratio registered a fluctuating trend during the period of the study. The ratio was 1.89 times in 2008-09 increasing in first five years and reached to 4.28 times in 2012-13. The highest ratio was 4.28 times in 2012-13 and the lowest ratio was 1.25 times in 2006-07. The average ratio of Amul Dairy was 2.162 times.

Sumul Dairy

In Sumul Dairy, the Debt-Equity ratio registered a fluctuating trend during the period of the study. The ratio was 0.11 times in 2008-09 increasing in first four years and reached to 1.11 times in 2012-13. The Debt-Equity ratio was always less than its standard norms during the period except first year 2012-13. The highest ratio was 1.11 times in 2012-13 and the lowest ratio was 0.11 times in 2008-09. The average ratio of Sumul Dairy was 0.349 times.
**Vasudhara Dairy**

In Vasudhara Dairy, the Debt-Equity ratio indicated a fluctuating trend in the Debt-Equity ratio of Vasudhara Dairy. The highest ratio was 3.85 times in 2009-10 and the lowest ratio was 1.0 times in 2012-13. The average ratio of Vasudhara Dairy was 3.428 times.

**Sabar Dairy**

In Sabar Dairy, the Debt-Equity ratio registered a fluctuating trend during the period of the last four years. The highest ratio was 9.88 times in 2010-11 and the lowest ratio was 0.11 times in 2009-10. The average ratio of Sabar Dairy was 5.565 times.

**Madhur Dairy**

In Madhur Dairy up to 2003-04 there was a decline trend in Debt-Equity ratio. It decreased due to an increase in equity. The ratio was 3.38 times in 2003-04 decreasing during the study period and reached to 0.25 times in 2012-13. The Debt-Equity ratio was always less than its standard norms. The highest ratio was 3.38 times in 2003-04 and the lowest ratio was 0.25 times in 2012-13. The average ratio of Madhur Dairy was 1.50 times.

**ANOVA TEST ON DEBT-EQUITY RATIO**

**Null Hypothesis (Ho):**

There is no any significant difference in Debt-Equity ratios of selected co-operative dairies.

**Alternative Hypothesis (H1):**

There is significant difference in Debt-Equity ratios of selected co-operative dairies.
Table No. 5.4.B
Analysis Of Variance (ANOVA) Test of Debt-Equity Ratio

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>SS</th>
<th>d.f.</th>
<th>MS</th>
<th>F Value</th>
<th>F crit (5%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>52.85809</td>
<td>6</td>
<td>8.809682</td>
<td>2.7449</td>
<td>2.2464</td>
</tr>
<tr>
<td>Within Groups</td>
<td>202.1941</td>
<td>63</td>
<td>3.20943</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>255.0522</td>
<td>69</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The analysis showed the significant result. It can be seen from the table, that the calculated value of ‘F’ was found as 2.7449 while the table value of ‘F’ was 2.2464 at 5% level of significance. The calculated value of ‘F’ being greater than the table value ‘F’, the null hypothesis stood rejected and the alternative hypothesis accepted at 5% level of significance.
REFERENCES

5. R.S. Kulshretha: Profitability in India’s steel industry during 1960- 70.