



CHAPTER 4

**CONCEPTUAL FRAMEWORK OF PHYSICAL
AND FINANCIAL PERFORMANCE**



CHAPTER - IV

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The growth and survival of business enterprises are largely determined by evaluating its physical and finance performance. The analysis of the physical and financial performance assumes and added significance in dairy industry where efforts are being made to develop and organised dairy industry on co-operative lines by spending vast some of money for this purpose. The analyses of physical and financial performance of milk industry is essential from the point of view of member farmers for making proper decisions plans and policies for developments of dairy industry.

4.1 CONCEPT OF PHYSICAL PERFORMANCE:

Physical performance was developed with a passion for helping business organization how to exercise property and how their business function. Analysis of the physical performance well encourage the business organization to have best conditioning programme to fit into surrounding environment which help them to achieve their desired objectives.

Physical performance is the ability to perform a physical task or sport at desired level. It is also called motor fitness or physical fitness. Physical performance depends on power, ability, balance and co-ordination of all the activities of business organization and in time achievement of desired objectives.

The physical performance of the dairy industry is to be evaluated by analysis of the performance of physical activities takes place in the dairy such as procurement of milk from rural areas, manufacturing and selling of different varieties of milk and milk products, sale of cattle feed, mineral mixture, seeds, raising of fodder plot and providing route slips and functioning of artificial insemination etc. takes place in the different time period.

Procurement of Milk :

In almost developed dairying countries, production of milk is confined to rural areas, while demand is mostly urban in nature. Hence the milk has to be collected and transported from production point in the milk shed areas to processing and distributing point in cities.

The dairy industries follows the two types of milk procurement methods such as by co-operative societies to dairy and by co-operative societies to milk collection cum chilling centers/depots to dairy

1. Milk procurement from the co-operative societies :

The dairy industries directly received the raw milk collected by District Co-operative societies existed at near by villages. These societies are formed by group of member farmers.

2. Collection cum Chilling Centers/depots :

Some District Co-operative societies of milk industries are existed at distant place. The raw milk collected from such societies are to be supplied to the processing dairy. During this period, there may be a possibility of loss of quality of milk or it may destroy completely. This is due to containing of micro-organisms in milk when drawn from the udder. Their number will increase during subsequent handling. The common milk microorganisms grows best between 20 to 40 degree Celsius bacterial growth is invariably accompanied by deterioration in milk quality due to development of off flavours, acidity etc. Hence for this purpose, the chilling centers are established. In these chilling centers the milk is to be preserved by prompt cooling to a low temperature of 4 degree Celsius and also held in this temperature till dispatch to the processing dairy.

Dairy industries procures lakh liters of milk per/day. Hence procurement performance of milk industries are to be evaluated by comparative analysis milk procured in liters/Kgs in different time period.

A dairy is place for handling milk and milk products. Rural place where identified for milk production, the centers where selected for location of milk processing plants and product manufacturing factories. The plants and factories were rapidly modernized with improved machinery and equipment to secure the various advantages of large scale production.

The milk is the main product of dairy industry. In milk market some of the people prefer the milk of high fat content and high priced and some prefer less fat content milk and low priced. As we know that, milk is the essential nutritional food for our health. Hence to satisfy the needs of each and every one, the dairy industries adopted product mix technique. A product mix (also called product assortment) is the set of all products and items that a particular seller offer for sale. The dairy industries too, collects the raw milk in kgs from rural co-operatives which are owned and managed by farmers and processing and manufacturing different varieties of milk based on FAT and SNF like Toned milk, Homogenized milk, standardised milk and Full cream milk etc in tones/Kgs. The manufacturing performance is to be evaluated by comparative analysis of tones/kgs of milk produced in different time period. These milk are to be sold in Lakh Liters Per Day (LLPD). The sales performance of this milk is to be evaluated by comparing the sale of milk in liters during different time period.

Suitable to different seasons, we want to use different variety of new products along with milk. Like household, dairy industries too manufactures and sells different varieties of milk products like curd, ghee, butter, peda, kunda, butter milk, lassi, and kowa etc.,

Some of these milk products are manufacture and sell in tones/kgs and some are in liters. The manufacture and sales performance of such products are to be evaluated by comparative analysis of manufacture and sells of such products in kgs. and liters indifferent time period.

The performance of dairy industries is to be determined by satisfying their customers by supplying the quality milk. Hence, for this purpose they

encourage the farmers to supply quality milk. Now the dairy industries supplying cattle feed, mineral mixture, seeds, and route slips,

Cattle feed is the mixture of cereals like maze, jowar, bazra and cakes of cotton seeds, soya, seeds grownuts, rice brown, mineral mixture, kakambi and salt the dairy industry sell inputs in tones. The sales performance of such inputs is to be evaluated by comparative analysis of sale of such inputs in tones for different time period.

To enhance the quality and quantity of milk in less cost, the dairy industries were undertaking Fodder Development Programmers. Under such programme, the dairy industries grows and sells root slips for encouraging the farmers to grow green fodder which is essential input for enhancing the quality of milk to be produce. The sales performance of root slips is to be evaluated by comparative analysis of number of route slips supplied in different time period.

Artificial Insemination :

Artificial insemination is the technique in which semen with living sperms is collected from the male and introduced into female reproductive tract at proper time with the help of instruments. This has been found to result in a normal offspring. In this process, the semen is inseminated into the female by placing a portion of it either in a collected or diluted form into the cervix or uterus by mechanical methods at the proper time and under most hygienic conditions.

The first scientific research in artificial insemination of domestic animals was performed on dogs in 1780 by the Italian scientist, Lozano Spalbanzani. His experiments proved that the fertilizing power reside in the spermatozoa and not in the liquid portion of semen. Few further studies under research station conditions helped this technique to be used commercially allover the world including India.

Artificial insemination is not merely a novel method of bringing about impregnation in females. Instead, it is a powerful tool mostly employed for

livestock improvement. In artificial insemination the germplasms of the bulls of superior quality can be effectively utilized with the least regard for their location in far away places. By adoption of artificial insemination, there would be considerable reduction in both genital and non-genital diseases in the farm stock.

4.2 CONCEPT OF FINANCIAL PERFORMANCE:

Financial analysis is the process of identifying the financial strengths and weaknesses of the firm by properly establishing relationships between the items of the balance sheet and the profit and loss account. Financial analysis can be undertaken by management of the firm or by parties outside the firm, viz. owners, creditors, investors and others. The nature of analysis differs depending on the purpose of the analyst. For example, Trade creditors are interested in firm's ability to meet their claims over a very short period of time. Their analysis will confine to the evaluation of the firm's liquidity position. Suppliers of long term debts concerned with the firm's long-term solvency and survival. They analyse the firm's profitability over time, its ability to generate cash to be able to pay interest and repay principal and to know the relationship between the various sources of funds. Long term creditors do analyse the historical financial statements, but they place more emphasis on the firm's projected, or preformed, financial statements to make analysis about its future solvency and profitability. Investors who have invested their money in the firm's shares are most concerned about firms earnings. They restore more confidence in those firms that show steady growth in earnings. As such they concentrate on the analysis of the firm's present and future profitability and also interested in financial structure to the extent it influences the firms earning ability and risk. Management of the firm would be interested in every aspect of the financial analysis. In financial analysis, a ratio is used as a benchmark for evaluating the financial position and performance of a firm.

Ratio analysis is a powerful tool of financial analysis. A ratio is defined as "the indicated quotient of two mathematical expressions", and as

relationship between two or more things.” The absolute accounting figures reported in the financial statements do not provide a meaningful understanding of the performance and financial position of a firm. An accounting figure conveys meaning when it is related to some other relevant information. For example, Rs.5 crores net profit may look impressive, but the firm’s performance can be said to be good or bad only when the net profit figures expressed mathematically is known as ratio analysis (or simply a ratio).

Ratio helps to summarise the large quantities of financial data and to make qualitative judgment about the firm’s financial performance. For example, current ratio which is to be calculated by dividing current assets by current liabilities; the ratio indicates a relationship - a quantified relationship between current assets and current liabilities. This relationship is an index or yardstick which permits a qualitative judgment to be formed about the firm’s ability to meet its current obligations. It measures the firm’s liquidity. The greater the ratio, the greater the firm’s liquidity and vice versa. The point to note is that a ratio indicates a quantitative relationship, which can be, in turn used to make a qualitative judgment. Such is a nature of all financial ratios.

To study the financial performance of the organization, the following ratios are to be used:

Liquidity Ratios : 1. Current Ratio
 2. Quick Ratio

Leverage Ratios: 1. Debt –Equity Ratio
 2. Interest Coverage Ratio

Activity Ratios : 1. Inventory Turnover Ratio
 2. Debtors Turnover Ratio
 3. Net Asset Turnover Ratio

Profitability Ratios: 1. Gross Profit Ratio
 2. Net Profit Ratio
 3. Return on Equity

Liquidity Ratio:

It is extremely essential for a firm to be able to meet its obligations as they become due. Liquidity ratio measure the ability of the firm to meet its current obligations. In fact, analyses of liquidity needs the preparation of cash budgets and cash and fund flow statement; but liquidity ratios, by establishing a relationship between cash and other current assets to current obligations, provide a quick measure of liquidity. The firm should ensure that it does not suffer from lack of liquidity, and also it does not have excess liquidity. The failure of a company to meet its obligations due to lack of sufficient liquidity, will result in a poor creditworthiness, loss of creditors confidence, or even legal tangles resulting in the closer of the company. A very high degree of liquidity is also bad; idle assets earn nothing. The firm's funds will be unnecessarily tie-up in current assets. Therefore, it is necessary to strike a proper balance between high liquidity and lack of liquidity.

The common ratios which indicate the extent of liquidity and lack of it are: current asset ratio and liquid asset ratio.

1. Current Ratio:

The current ratio is calculated by dividing the current assets by current liabilities. Therefore,

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

Current assets include cash and bank balance, debtors, closing inventories, prepaid expenses and other current assets. Current liabilities include payable, short-term bank loan, income-tax liability outstanding arrears and expenses, other current liabilities.

As a conventional rule, a current ratio of 2 to 1 or more is considered satisfactory. The current ratio represents a margin of safety, for creditors. The higher the current ratio, the greater the margin of safety; the larger the amount of current assets in relation to current liabilities, the more the firm's ability to meet its current obligations.

2. Quick Ratio:

Quick Ratio establishes a relationship between quick or liquid assets and current liabilities. An asset is liquid if it can be converted in to cash immediately or reasonably soon without a loss of value. Cash is the most liquid asset. Other assets which are considered to be relatively liquid and included in quick assets are book debts (debtors and bills receivables) and marketable securities (temporary quoted investments). Investments are considered to be less liquid. Inventories normally require some time realizing in to cash; their value also has a tendency to fluctuate.

Quick ratio is founded by dividing the quick assets by current liabilities. Therefore,

$$\text{Quick ratio} = \frac{\text{Quick Assets} - \text{Inventories}}{\text{Current liabilities}}$$

Generally quick ratio of 1 to 1 is considered to represents a satisfactory current financial condition. Although quick ratio is a more penetrating test of liquidity that the current ratio yet it should be used cautiously. A quick ratio of 1 to 1 or more does not necessarily imply sound liquidity position. It should be remembered that all book debt may not be liquid, and cash may be immediately needed to pay operating expenses. It should also be noted that, inventories are not absolutely non-liquid. To a measurable extent, inventories are available to meet current obligations. Thus a company with a high value of quick ratio can suffer from shortage of funds if it has slow paying; doubtful and long duration outstanding book debts (receivables). On the other hand, a company with a low value of quick ratio may really be prospering and paying its current obligation in time if it has been turning over its inventories efficiently.

Leverage Ratios:

The short-term creditors, like bankers and suppliers of raw materials, are more concerned with the firm's current debt-paying ability. On the other hand, long term creditors, like debenture holders, financial institutions etc., are more concerned with the firm's long term financial strengths. In fact, a firm should

have a strong short as well as long-term financial position. To judge the long-term financial position of the firm, financial leverage, or capital structure, ratios are calculated. The ratios indicate mix of funds provided by owners and lenders. As a general rule, there should be an appropriate mix of debt and owners equity in financing the firm's assets.

The manner in which assets are financialised it has a number of implications:

1. Between debt equity, debt is more risky from the firm's point of view. The firm has a legal obligation to pay interest to debt holders, irrespective of the profits made or losses incurred by the firm. If the firm fails to pay to debt holders in time, they can take legal action against it to get payments and in extreme cases can force the firm into liquidation.
2. Employment of debt is advantageous for share holders in two ways:
 - They can retain control over the firm with a limited stake and
 - Their earning will be magnified, when the firm earns a rate of return on the capital employed higher than the interest rates on borrowed funds. The process of magnifying the share holders' return through the employment of debt is called financial leverage or trading on equity.
3. A highly debt-burdened firm will find difficulty in raising funds from creditors and owners in future. The owners' equity is treated as a margin of safety by creditors; if the equity base is thin, the creditors risk will be high.

To find out the proportion of the debt in total financing of the firm, the following two leverage ratios are to be used:

1. Debt - Equity Ratio
2. Interest Coverage Ratio

1. Debt - Equity Ratio:

Debt-Equity ratio is determined to ascertain the soundness of the long term financial policies of the company. It is to be calculated by dividing the long-term debt by shareholder's fund (i.e. Net worth) is as follows:

$$\text{Debt - Equity Ratio} = \frac{\text{Total Debt}}{\text{Net worth}}$$

The investors may take debt-equity ratio as quite satisfactory if shareholders funds (Net worth) are equal to borrowed funds. This ratio indicates that, the proportion of owner's stake in the business and the extent to which the firm depends upon outside liabilities for its existence. It provides margin of safety to the creditors. It tells the owners the extent to which they can gain the benefits or maintain control with a limited investment. The excessive liabilities tend to cause insolvency.

2. Interest Coverage Ratio:

It is a proportion of earning before depreciation interest and tax to interest payment. It is to be calculated as follows:

$$\text{Interest Coverage Ratio} = \frac{\text{Earning before depreciation, interest \& taxes}}{\text{Interest}}$$

This ratio indicates the extent to which the earnings may fall without causing any embarrassment to the firm regarding the payment of the interest charges.

Activity Ratio:

Funds of creditors and owners are invested in various assets to generate sales and profits. Better the management of assets, the larger the amount of sales. Activity ratios are employed to evaluate the efficiency with which the firm manages and utilises its assets. These ratios are also called turnover ratios because they indicate the speed with which assets are being converted or turned over into sales. Activity ratios, thus, involve a relationship between sales and assets. A proper balance between sales and assets generally reflects that assets are managed well.

To judge the effectiveness of assets utilization in firm, the following three activity ratios are being used:

1. Inventory Turnover Ratio
2. Debtors Turnover Ratio

3. Net asset Ratio.

1. Inventory Turnover Ratio:

This ratio indicates the efficiency of the firm in selling its product. It is calculated by dividing the cost of goods sold by average inventory:

$$\text{Inventory turnover} = \frac{\text{Cost of goods sold}}{\text{Average Inventory}}$$

The inventory turnover shows how rapidly the inventory is turning in to receivable through sales. Generally, a high inventory is indicative of good inventory management. A low inventory turnover implies excessive inventory levels than warranted by production and sales activities, or slow moving or obsolete inventory. A high level of sluggish inventory amounts to unnecessary tie-up of funds, reduced profit and increased costs. A high inventory turnover may be the result of a very low level of inventory which results in frequent stock outs; the firm may be living from hand to mouth. The turnover will also be high if the firm replenishes its inventory in too many small lot sizes. The situation of frequent stockouts and too many small inventory replacements are costly for the firm.

2. Debtors Turnover Ratio:

A firm sells goods on cash and credit. Credit is used as a marketing tool by a number of companies. When the firm extends credits to its customers, book debts (debtors or receivables) are created in the firm's accounts. Book debts are expected to be converted into cash over a short period and, therefore, are included in current assets. The liquidity position of the firm depends on the quality of debtors to a great extent.

Debtor's turnover is found out by dividing credit sales by average debtors is as follows:

$$\text{Debtors Turnover} = \frac{\text{Sales}}{\text{Debtors}}$$

Debtors turnover indicates the number of times debtors turnover each year. Generally, the high the value of debtors turnover, the more efficient is the management of credit.

3. Net Asset Turnover Ratio:

Net asset turnover is to be calculated simply by dividing sales by net assets (net worth).

$$\text{Net Asset Turnover} = \frac{\text{Sales}}{\text{Net worth}}$$

The firm's ability to produce a large volume of sales for a given amount of net assets is the most important aspect of its operating performance.

Profitability Ratios:

A company should earn profits to survive and grow over a long period of time. Profits are essential, but it would be wrong to assume that every action initiated by management of a company should be aimed at maximizing profits, irrespective of social consequences.

Profit is the difference between revenues and expenses over a period of time. Profit is the ultimate output of a company, and it will have no future if it fails to make sufficient profits. Therefore, the financial manager should continuously evaluate the efficiency of its company in term of profits. The profitably ratios are calculated to measure the operating efficiency of the company. Besides management of the company, creditors and owners are also interested in the profitability of the firm. Creditors want to get interest and repayment of principal regularly. Owners want to get a reasonable return on their investment. This is possible only when the company earns enough profits.

Generally, two major types of profitability ratios are calculated:

- Profitability in relation to sales
- Profitability in relation to investment

A. PROFITABILITY IN RELATION TO SALES:

1. Gross Profit Margin:

The first profitability ratio in relation to sales is the gross profit margin (or simply gross margin) ratio. It is calculated by dividing the gross profit by sales:

$$\text{Gross Profit Ratio} = \frac{\text{Gross profit}}{\text{Sales}}$$

The gross profit margin reflects the efficiency with which management produces each unit of product. The ratio shows profits relative to sales after the deduction of production costs, and indicates the relation between production costs and selling price. A high gross profit margin relative to the industry average implies that the firm is able to produce at relatively lower cost.

A high gross profit margin ratio is a sign of good management. A gross margin ratio may increase due to any of the following factors:

- a) Higher sales prices, cost of goods sold remaining constant,
- b) Lower cost of goods sold, sales prices remaining constant,
- c) A combination of variations in sales prices and costs, the margin widening, and
- d) An increase in the proportionate volume of higher margin items. The analysis of these factors will reveal to the management how a depressed gross profit margin can be improved.

A low gross profit margin may reflect higher cost of goods sold due to the firm's inability to purchase raw materials at favorable terms, inefficient utilization of plant and machinery, or over-investment in plant and machinery, resulting in higher cost of production. The ratio will also be low due to a fall in prices in the market, or marked reduction in selling price by the firm in an attempt to obtain large sales volume, the cost of goods remaining unchanged.

2. Net Profit Margin Ratio:

Net profit is obtained when operating expenses, interest and taxes are subtracted from the gross profit. The net profit margin ratio is measured by dividing profit after tax by sales:

$$\text{Net Profit Margin} = \frac{\text{Profit After Tax}}{\text{Sales}}$$

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 is the 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.

This ratio also indicates the firm's capacity to withstand adverse economic conditions. A firm with a high net margin ratio would be in an advantageous position to survive in the face of falling sales prices, rising costs of production or declining demand for the product. It would really be difficult for a low net margin firm to withstand these adversities. Similarly, a firm with high net profit margin can make better use of favorable conditions, such as rising sales prices, falling costs of production or increasing demand for the product. Such a firm will be able to accelerate its profits at a faster rate than a firm with a low net profit margin.

B. PROFITABILITY IN RELATION TO INVESTMENT:

3. Return on Equity (ROE)

Common shareholders are entitled to the residual profits. The rate of dividend is not fixed; the earning may be distributed to them or retained in the business. Nevertheless, the net profit after taxes represents their return. A return on shareholders' equity is calculated to see the profitability of the owners' investment. The shareholders' equity or net worth will include paid-up share capital, share premium, and reserves and surpluses less accumulated losses.

The return on shareholders' equity is net profit after taxes divided by shareholders' equity.

$$\text{ROE} = \frac{\text{Profit After Taxes}}{\text{Net worth}}$$