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Introduction

Financial Performance Analysis is defined as being the process of identifying financial strength and weakness of a business by establishing relationship between the elements of balance sheet and income statement. “The analysis of financial statements is a process of evaluating the relationship between component parts of financial statements to obtain a better understanding of the firm’s position and performance.”[1] The information pertaining to the financial statements is of great importance through which interpretation and analysis is made. It is through the process of financial analysis that the key performance indicators, such as, liquidity solvency, profitability as well as the efficiency of operations of a business entity may be ascertained, while short term and long term prospects of a business may be evaluated. Thus, identifying the weakness, the intent is to arrive at recommendations as well as forecasts for the future of a business entity.

Financial analysis focuses on the financial statements, as they are a disclosure of a financial performance of a business entity. “A Financial Statement is an organized collection of data according to logical and consistent accounting procedures. Its purpose is to convey an understanding of some financial aspects of a business firm. It may show assets position at a moment of time as in the case of balance sheet, or may reveal a series of activities over a given period of times, as in the case of an income statement.”

The financial statements are: income statement, balance sheet, statement of earnings, statement of changes in financial position and the cash flow statement. The income statement, having been termed as profit and loss account is the most useful financial statement to enlighten what has happened to the business between the specified time intervals while showing, revenues, expenses gains and losses. Balance sheet is a statement which shows the financial position of a business at certain point of time. The distinction between income statement and the balance sheet is that the former is for a period and the latter indicates the financial position on a particular date. “Financial statements are prepared for the achievement of specific objectives as like acquiring the knowledge about financial position of business, results of business operations, liquidity position, earning capacity of business, soundness of dividend policy, interest paying capacity on long-term debt, future plan for increase in income,

etc are included in these objectives.”

According to Myers, “financial statement analysis is largely a study of the relationship among the various financial factors in a business as disclosed by a single set of statements and a study of the trend of these factors as shown in a series of statements.”

In short, “financial performance analysis is the process of selection, relation, and evaluation.”

**Significance of Financial Performance Analysis**

Analysis of financial performance is linked with the objective and interest of the individual agency involved. Some of the agencies interested include management, investors, creditors, bankers, workers, government and public at large.

**Management**

Management is interested in the financial performance and financial condition of the enterprise. It would like to know about its viability as an ongoing concern, management of cash, debtors, inventory and fixed asset and adequacy of capital structure. Management would also be interested in the overall financial position and profitability of the enterprise as a whole and its various departments and divisions.

**Investors**

An investor is interested in the profitability and safety of his investment and would like to know whether the business is profitable, has growth potential and is progressing on sound lines. The present investors want to decide whether they should hold the securities of the company or sell them. Potential investors, on the other hand, want to know whether they should invest in the shares of the company or not. Investors (Shareholders or owners) and potential investors, thus, make use of the financial statements to judge the present and future earning capacity of the business, to judge the operational efficiency of the business and to know the safety of investment and growth prospects.

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Bankers and Lenders

Bankers and lenders are interested in serving of their loans by the enterprise, i.e. regular payment of interest and repayment of principal amount on schedule dates. They also like to know the safety of their investment and reliability of returns.

Suppliers / Creditors

Creditors dealing with the enterprise are interested in receiving their payments as and when fall due and would like to know its ability to honor its short-term commitments.

Employees

Employees interested in better emoluments, bonus and continuance of the business, would like to know its financial performance and profitability.

Government

Government and regulatory authorities would like to ensure that the financial statements prepared areas per the specified laws and rules and are to safeguard the interest of various concerned agencies. e.g.: Taxation authorities would be interested in ensuring proper assessment of tax liability of the enterprise as per the laws.

Stock Exchange

Stock exchange uses the financial statements to analyze and thereafter, inform its members about the performance, financial health etc, of the company, to see whether financial statements prepared are in conformity with the specified laws and rules and to see whether they safeguard the interest of various concerned agencies. Other regulatory authorities (such as, company law board, SEBI, stock exchanges, tax authorities etc) would like that the financial statements prepared are in conformity with the specified laws and rules and are to safeguard the interest of various concerned agencies, For example, taxation authorities would be interested in ensuring proper assessment of tax liability of the enterprise as per the laws in force from time to time.
Customer

Customers are interested to ascertain continuance of an enterprise. For example, an enterprise may be supplier of a particular type of consumer goods and in case it appears that the enterprise may not continue for a long time, the customer has to find an alternate source.

Public

Enterprises affect members of the public in a variety of ways. For example, enterprises may make a substantial contribution to the local economy in many ways including the number of people, they employ and their patronage of local suppliers, financial performance analysis may assist the public by providing information about trends and recent developments in the prosperity of the enterprises and the range of its activities.

Different agencies thus look at the enterprise form their respective viewpoint and are interested in knowing about its profitability and financial condition. In short a detailed cause and effect study of profitability and financial condition is the overall objective of financial performance analysis.

Types of Financial Performance Analysis:

Financial performance analysis can be classified into different categories on the basis of material used, according to objectives of analysis and modus operandi of analysis as under:

A. On the basis of Material used.

1. External Analysis

“External analysis is done by the interested parties of the business who have no direct connection or dealing with the accounting records and other records of the business.”5 Analysis of financial statements may be carried out on the basis of published information. i.e., information made available in the annual report of the enterprise. Such analysis are usually carried out by those who do not have access to the detailed accounting records of the Co. i.e., Banks, Creditors etc.

2. Internal Analysis

“As the management of an enterprise has the right to access its books and accounts (i.e., Internal Sources), such an analysis is done by the management of the enterprise.” Analysis may also be based on detailed information available within the Co. which is not available to the outsiders. Such analysis is called internal analysis. This type of analysis is of a detailed one and is carried out on behalf of the management for the purpose of providing necessary information for decision making, such analysis emphasizes on the performance appraisal and assessing the profitability of different activities.

B. According to objectives of analysis

1. Short Term Analysis

Short term analysis is mainly concerned with the working capital analysis. In the short run; a Co. must have ample funds readily available to meet its current needs and sufficient borrowing capacity to meet the contingencies. In short term analysis the current assets and current liabilities are analyzed and liquidity is determined.

2. Long Term Analysis

In the long term a Co. must earn a minimum amount sufficient to maintain a reasonable rate of return on the investment to provide for the necessary growth and development of the Co., and to meet the cost of capital. Financial planning is also desirable for the continued success of a Co. Thus in the long term analysis the stability and the earning potentiality of the Co. is analyzed i.e., fixed assets, long term debt structure and the ownership interest is analyzed.

C. according to the Modus Operandi of analysis

1. Horizontal Analysis

“This analysis is used when the financial statements of a number of years are to be analyzed such analysis indicates the trends and the increase or decrease in various items not only in absolute figures but also in percentage form.”

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financial statements involves making comparisons and establishing relationship among related items. such comparison or establishing of relationship may be based on financial statements of a Co. for a number of years and the financial statements of different Co's for the same year. Such analysis is called horizontal analysis. It may take the following two forms.

a. Comparative financial statement analysis
b. Trend analysis

2. Vertical Analysis

“Such an analysis is done to examine Financial Statements of only one particular year of an enterprise therefore, this analysis is based on financial data of only one accounting year and it is for this reason that it is also called Static Analysis.”

Analysis of financial data based on relationship among items in a single period of financial statement is called vertical analysis. From a single balance sheet or P&L A/C relationships of various items may be established. E.g. various assets can be expressed as percentage of total assets. Statements containing such analysis are also called as common size statements. The common size P&L A/C is more useful in analyzing the operating results and costs during the year. It shows each element of cost as a percentage of sales. Similarly common size balance sheet show fixed assets as a percentage to total assets.

Techniques/Tolls of Financial Performance Analysis:

Accounting Techniques

Ratio Analysis

“Accounting ratios are relationship expressed in arithmetical terms between figures that are connected with each other in some manner; no meaningful purpose will be served if the ratios are calculated by comparing two sets of figures, which are not at all connected with each other.” Ratio analysis is used to evaluate relationships among financial statement items. The ratios are used to identify trends over time for

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one company or to compare two or more companies at one point in time. Ratio Analysis as a tool possesses several important features. The data, which are provided by financial statements, are readily available. The computation of ratios facilitates the comparison of firms which differ in size. Ratios can be used to compare a firm's financial performance with industry averages. In addition, ratios can be used in a form of trend analysis to identify areas where performance has improved or deteriorated over time.

Ratio Analysis is a form of Financial Statement Analysis that is used to obtain a quick indication of a firm's financial performance in several key areas.

A. Liquidity Ratio

B. Turnover Ratio

C. Solvency or Leverage ratios

D. Profitability ratios

A. Liquidity Ratio

It measures the ability of the firm to meet its short-term obligations that is capacity of the firm to pay its current liabilities as and when they fall due. Thus these ratios reflect the short-term financial solvency of a firm. A firm should ensure that it does not suffer from lack of liquidity. The failure to meet obligations on due time may result in bad credit image, loss of creditors confidence, and even in legal proceedings against the firm on the other hand very high degree of liquidity is also not desirable since it would imply that funds are idle and earn nothing. So therefore it is necessary to strike a proper balance between liquidity and lack of liquidity.

The various ratios that explains about the liquidity of the firm are

1. Current Ratio
2. Acid Test Ratio / quick ratio
3. Absolute liquid ration / cash ratio

B. Turnover Ratio

Turnover ratios are also known as activity ratios or efficiency ratios with which a firm manages its current assets. The following turnover ratios can be calculated to judge the effectiveness of asset use.

1. Inventory Turnover Ratio
2. Debtor Turnover Ratio
3. Creditor Turnover Ratio
4. Assets Turnover Ratio

C. Solvency or Leverage ratios

The solvency or leverage ratios throw light on the long term solvency of a firm reflecting its ability to assure the long term creditors with regard to periodic payment of interest during the period and loan repayment of principal on maturity or in predetermined installments at due dates. There are thus two aspects of the long-term solvency of a firm.

a. Ability to repay the principal amount when due
b. Regular payment of the interest.

The ratio is based on the relationship between borrowed funds and owner’s capital. It is computed from the balance sheet, the second types are calculated from the profit and loss a/c. The various solvency ratios are

1. Debt equity ratio
2. Debt to total capital ratio
3. Proprietary (Equity) ratio
4. Fixed assets to net worth ratio
5. Fixed assets to long term funds ratio
6. Debt service (Interest coverage) ratio

D. Profitability ratios

Profitability ratios are of two types-those showing profitability in relation to sales, and those showing profitability in relation to investment. Together, these ratios give us indication of the firm's efficiency in operation.

a. Profitability in relation to sales.
   b. Profitability in relation to investments.

Profitability in relation to sales

1. Gross profit margin or ratio
2. Net profit margin or ratio
3. Operating profit margin or ratio
4. Operating Ratio
5. Expenses Ratio
Profitability in relation to investments

1. Return on gross investment or gross capital employed
2. Return on net investment or net capital employed
3. Return on shareholder’s investment or shareholder’s capital employed.
4. Return on equity shareholder investment or equity shareholder capital employed.

Common-Size Analysis

Common-size analysis (also called vertical analysis) expresses each line item on a single year’s financial statement as a percent of one line item, which is referred to as a base amount. The base amount for the balance sheet is usually total assets (which is the same number as total liabilities plus stockholders' equity), and for the income statement it is usually net sales or revenues. “Thus expressing each monetary item of the financial statement as a percentage of same totals of which that item is a part, transforms a financial statement into what is referred as common – size statement.”

By comparing two or more years of common-size statements, changes in the mixture of assets, liabilities, and equity become evident. On the income statement, changes in the mix of revenues and in the spending for different types of expenses can be identified.

Trend Analysis

“Trend analysis is an important tool of horizontal financial analysis which is popularly helpful in making a comparative study of financial statements of several years or periods and trend percentage are computed for each component of the financial statements taking the figure of base years as 100 and generally the starting year or period is taken as the base.” Under this analysis, ratios of different items of the financial statements for various periods are calculated and the comparison is made accordingly. The analysis over the prior years indicates the trend or direction. Trend

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analysis is a useful tool to know whether the financial health of a business entity is improving in the course of time or it is deteriorating.

**Comparative Financial Statements Analysis**

“Comparative Statements are financial statements that cover a different time frame, but are formatted in a manner that makes comparing line items from one period to other.”

It is an important method of analysis which is used to make comparison between two financial statements. Being a technique of horizontal analysis and applicable to both financial statements, income statement and balance sheet, it provides meaningful information when compared to the similar data of prior periods. The comparative statement of income statements enables to review the operational performance and to draw conclusions, whereas the balance sheets, presenting a change in the financial position during the period, show the effects of operations on the assets and liabilities. Thus, the absolute change from one period to another may be determined.

**Fund Flow Analysis**

“Fund flow statement is prepared with the basic objective of getting an idea about the fund generating capacity of an enterprise.”

Funds Flow Statement is useful for Long Term Analysis. Funds Flow Statement is a statement prepared to analyze the reasons for changes in the Financial Position of a Company between 2 Balance Sheets. It is a very useful tool in the hands of the management for judging the financial and operating performance of the Company. The Balance Sheet and the Profit and Loss A/c (Income Statement) fail to provide the information which is provided by the Funds Flow Statement i.e. Changes in Financial Position of an enterprise. Such an analysis is of great help to the management, shareholders, creditors etc.

1. The Funds Flow Statement helps in answering the following questions:-
   - Where have the profits gone?
   - Why is there an imbalance existing between liquidity position and profitability position of an enterprise?

Why is the concern financially solid in spite of losses?

2. The Funds Flow Statement analysis helps the management to test whether the working capital has been effectively used or not and the working capital level is adequate or inadequate for the requirements of the business. The Working Capital Position helps the management in taking policy decisions regarding payment of dividend etc.

3. The Funds Flow Statement Analysis helps the investors to decide whether the company has managed the funds properly. It also indicates the Credit Worthiness of a company which helps the lenders to decide whether to lend money to the company or not. It helps the management to take policy decisions and to decide about the financing policies and Capital Expenditure for the future.

Cash Flow Analysis

"Cash flow statement can be prepared daily, weekly, monthly, quarterly, annually or for any fixed time gap and in other words, cash flow statement is a summary of sources and application of case over a fixed period of time."

Cash Flow Statement also known as Statement of Cash Flows is a statement which shows the Changes in the Cash Position of an organization between 2 periods. Along with showing the changes in the Cash Position of an organization, it also depicts the reasons for such change during the period.

The main reason for the preparation of the Cash Flow Statement is that the Income Statement of an enterprise is always prepared on an Accrual Basis and it may show profits in the Income Statement but the Cash received out of these profits may be low to run the business or vice-versa.

While preparing the Cash Flow Statement, the cash flows during the period are classified into 3 major categories:-
I. Cash Flow from Operating Activities (Direct Method/ Indirect Method)
II. Cash Flow from Investing Activities
III. Cash Flow from Financing Activities

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Classification by activities provides information that allows users to assess the impact of those activities on the financial position of the enterprise. This information also helps in evaluating the inter-relationships between these activities.

Cost –Volume – Profit Analysis

Cost – Volume – Profit analysis is one of the most important tools of decision making for a manager. “Cost volume profit analysis is a systematic method of examining the relationship between selling price, sales revenue, volume of production and profits, such an analysis provide management with data regarding sales, price, and product mix, so as to enable the management to select products for better profitability of business.”\(^\text{15}\)

It deals with how operating profit is affected by changes in variable costs, fixed costs, selling price per unit and the sales mix of two or more different products.

CVP analysis has following assumptions:
1. All cost can be categorized as variable or fixed.
2. Sales price per unit, variable cost per unit and total fixed cost are constant.
3. All units produced are sold.

Statistical Techniques

Measures of Central Tendency

A measure of central tendency is a single value that attempts to describe a set of data by identifying the central position within that set of data. As such, measures of central tendency are sometimes called measures of central location. They are also classed as summary statistics. The mean (often called the average) is most likely the measure of central tendency that you are most familiar with, but there are others, such as the median and the mode.

The mean, median and mode are all valid measures of central tendency, but under different conditions, some measures of central tendency become more appropriate to use than others.

Measures of Dispersion

It is possible to have two very different datasets with the same means and medians. For that reason, measures of the middle are useful but limited. Another important attribute of a dataset is its dispersion or variability about its middle. The most useful measures of dispersion are the range, percentiles, and the standard deviation. The range is the difference between the largest and the smallest data values. Therefore, the more spread out the data values are, the larger the range will be. However, if a few observations are relatively far from the middle but the rest are relatively close to the middle, the range can give a distorted measure of dispersion.

1. Correlation and Regression Analysis

“The degree of relationship between the variables under consideration is measured through the correlation analysis and the measure of correlation called the correlation coefficient or correlation index summarizes is one figure the direction and degree of correlation.”\(^{16}\) Values of the correlation coefficient are always between -1 and +1. A correlation coefficient of +1 indicates that two variables are perfectly related in a positive linear sense; a correlation coefficient of -1 indicates that two variables are perfectly related in a negative linear sense, and a correlation coefficient of 0 indicates that there is no linear relationship between the two variables. For simple linear regression, the sample correlation coefficient is the square root of the coefficient of determination, with the sign of the correlation coefficient being the same as the sign of \(b_1\), the coefficient of \(x_1\) in the estimated regression equation.

Neither regression nor correlation analyses can be interpreted as establishing cause-and-effect relationships. They can indicate only how or to what extent variables are associated with each other. The correlation coefficient measures only the degree of linear association between two variables. Any conclusions about a cause-and-effect relationship must be based on the judgment of the analyst.

Regression analysis is one of the most powerful and popular statistical tools for examining linear relationship involving two or more variables. “Regression and correlation have common roots, but the basic premise and strategic approach of the

Regression analysis involves identifying the relationship between a dependent variable and one or more independent variables. A model of the relationship is hypothesized, and estimates of the parameter values are used to develop an estimated regression equation. Various tests are then employed to determine if the model is satisfactory. If the model is deemed satisfactory, the estimated regression equation can be used to predict the value of the dependent variable given values for the independent variables.

In simple linear regression, the model used to describe the relationship between a single dependent variable $y$ and a single independent variable $x$ is $y = a_0 + a_1x + k$. $a_0$ and $a_1$ are referred to as the model parameters, and $k$ is a probabilistic error term that accounts for the variability in $y$ that cannot be explained by the linear relationship with $x$. If the error term were not present, the model would be deterministic; in that case, knowledge of the value of $x$ would be sufficient to determine the value of $y$.

### 2. Analysis of Time Series

A time series is a chronological sequence of observations on a particular variable. Usually the observations are taken at regular intervals (days, months, years), but the sampling could be irregular. Time series analysis is generally used when there are 50 or more data points in a series. If the time series exhibits seasonality, there should be 4 to 5 cycles of observations in order to fit a seasonal model to the data.

Goals of time series analysis:
1. Descriptive: Identify patterns in correlated data—trends and seasonal variation
2. Explanation: understanding and modeling the data
3. Forecasting: prediction of short-term trends from previous patterns
4. Intervention analysis: how does a single event change the time series?
5. Quality control: deviations of a specified size indicate a problem

It is assumed that a time series data set has at least one systematic pattern. The most common patterns are trends and seasonality. Trends are generally linear or quadratic. To find trends, moving averages or regression analysis is often used. Seasonality is a trend that repeats itself systematically over time. A second assumption is that the data exhibits enough of a random process so that it is hard to

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identify the systematic patterns within the data. Time series analysis techniques often employ some type of filter to the data in order to dampen the error. Other potential patterns have to do with lingering effects of earlier observations or earlier random errors. Time Series Analysis is used for many applications such as: Economic Forecasting, Sales Forecasting, Budgetary Analysis, Stock Market Analysis, Yield Projections, Process and Quality Control, Inventory Studies, Workload Projections, Utility Studies, Census Analysis and etc.

3. Index Number

Index numbers are meant to study the change in the effects of such factors which cannot be measured directly. According to Bowley, “Index numbers are used to measure the changes in some quantity which we cannot observe directly”. For example, changes in business activity in a country are not capable of direct measurement but it is possible to study relative changes in business activity by studying the variations in the values of some such factors which affect business activity, and which are capable of direct measurement.

Index numbers may be classified in terms of the variables that they are intended to measure. In business, different groups of variables in the measurement of which index number techniques are commonly used are (i) price, (ii) quantity, (iii) value. Thus, we have index of wholesale prices, index of consumer prices, index of industrial output, index of value of exports and index of business activity, etc. Here we shall be mainly interested in index numbers of prices showing changes with respect to time, although methods described can be applied to other cases. In general, the present level of prices is compared with the level of prices in the past. The present period is called the current period and some period in the past is called the base period.

4. t-test

A t-test is any statistical hypothesis test in which the test statistic follows a Student's t distribution if the null hypothesis is supported. It can be used to determine if two sets of data are significantly different from each other, and is most commonly applied when the test statistic would follow a normal distribution if the value of a scaling in the test statistic were known. When the scaling term is unknown
and is replaced by an estimate based on the data, the test statistic (under certain conditions) follows a Student's t distribution.

To compare three or more variables, statisticians use an analysis of variance (ANOVA). If the sample size is large, they use a z-test. Other hypothesis tests include the chi-square test and f-test.

5. Chi – Square test

“The chi – square (also spelled as $\chi^2$) test is an inferential statistical test that is used to examine relationships between two variables with nominal or ordinal data.”

The chi-square test is used to determine whether there is a significant difference between the expected frequencies and the observed frequencies in one or more categories. Chi-square is a statistical test commonly used to compare observed data with data we would expect to obtain according to a specific hypothesis. For example, if, according to Mendel's laws, you expected 10 of 20 offspring from a cross to be male and the actual observed number was 8 males, then you might want to know about the "goodness to fit" between the observed and expected. Were the deviations (differences between observed and expected) the result of chance, or were they due to other factors. How much deviation can occur before you, the investigator, must conclude that something other than chance is at work, causing the observed to differ from the expected. The chi-square test is always testing what scientists call the null hypothesis, which states that there is no significant difference between the expected and observed result.

The formula for calculating chi-square ($\chi^2$) is:

$$\chi^2 = \frac{(o-e)^2}{e}$$

That is, chi-square is the sum of the squared difference between observed ($o$) and the expected ($e$) data (or the deviation, $d$), divided by the expected data in all possible categories.

Chi-Square Test Requirements

1. Quantitative data.
2. One or more categories.
3. Independent observations.

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4. Adequate sample size (at least 10).
5. Simple random sample.
6. Data in frequency form.
7. All observations must be used.

It is a statistical measure used in the context of sampling analysis to (i) test the goodness of fit; (ii) test the significance of association between two attributes; and (iii) test the homogeneity or the significance of population variance.

6. **Diagrams & Graphs**

One of the most effective and interesting alternative way in which a statistical data may be presented is through diagrams and graphs. There are several ways in which statistical data may be displayed pictorially such as different types of graphs and diagrams. The commonly used diagrams and graphs to be discussed in subsequent paragraphs are given as under:

**Types of Diagrams/Charts:**

1. Simple Bar Chart
2. Multiple Bar Chart or Cluster Chart
3. Staked Bar Chart or Sub-Divided Bar Chart or Component Bar Chart
   - Simple Component Bar Chart
   - Percentage Component Bar Chart
   - Sub-Divided Rectangular Bar Chart
   - Pie Chart

**Types of Diagrams/Charts:**

1. Histogram
2. Frequency Curve and Polygon
3. Lorenz Curve
4. Historigram

**Mathematical Techniques**

Financial analysis also involves the use of certain mathematical tools such as Programme Evaluation and Review Techniques (PERT), Critical Path Method (CPM), and Linear Programming etc. However, they are not useful for the present study.
It must be noted that Financial performance analysis is a continuous process being applicable to every business to evaluate its past performance and current financial position. It is useful in various situations to provide managers the information that is needed for critical decisions. The process of financial performance analysis provides the information about the ability of a business entity to earn income while sustaining both short term and long term growth.
REFERENCES