T.Y.B.Com.

BUSINESS MANAGEMENT

PAPER - II

FINANCIAL MANAGEMENT

Revised Syllabis w.e.f. academic year 2007 - 2008
For IDE Students applicable from 2008- 2009

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Objectives :

1. To enable the students to understand basic concepts, functions and objectives of Financial Management

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3. To bring to their attention the various instruments of finance.

4. To acquaint the students with the recent changes in the field of financial management.

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PAPER PATTERN :

There must be 8 questions out of which Five questions must be practical orientation. Total questions to be attempted Five out of which one question will be compulsory. Practical question be asked on Chapter Nos.3,4,5,7,10 & 11. Case Study question should be asked on 8 & 9.

Books Suggested :

1) Financial Management – James C. Van Horne.
2) Financial Management – by I.M. Pandey
3) Financial Management – By Prasanna Chandra
4) Financial Management – By S.C. Kucchal
5) Principles of Management Finance – By Lawrence J. Gitman, Harper
6) Financial Management – By Ravi Kishore
7) Techniques of Financial Analysis – Ekrich A. Helfert, Donjone's

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Module-1

MEANING AND DEFINITIONS SCOPE OF FINANCIAL MANAGEMENT

MEANING

Financial management involves obtaining funds required by an organization in the most economic and prudent manner and employment of these funds in the most optimum manner to maximize the returns to the owners. Since success of the organisation depends on raising of funds and their best utilization, financial management as a functional area has occupied a place of price relevance. All business decisions have financial implications and hence financial management is related to each and every aspect of business operation.

In simple words, financial management includes any decision made by a business that affects its finances.

DEFINITIONS

It can be defined as “the management of flow of funds in a firm and it deals with the financial decision making of firm”.

According to Joshep and Massie. “Financial management is the operational activity of a business that is responsible for obtaining and effectively utilizing the funds necessary for efficient operations”.

According to Dr. S.N. Maheshwari, “Financial Management is concerned with raising financial resources and their effective utilization towards achieving the organisational goals”.

EVOLUTION OF FINANCIAL MANAGEMENT

Financial management emerged as a distinct filed of study during the second half of the twentieth century. The evolution of financial management and the changes in its scope appeared mainly due to two factors i.e. the continuous growth and diversity in business and the gradual appearance of new financial analytical tools.

The evolution of financial management can be divided into three broad phases – the traditional phase, the transitional phase and the modern phase.

These are explained as under :

1. The traditional phase (upto 1940)

Initially finance was considered a part of economics and no separate attention was paid to fiancé. More importance was given to operational activities. In the traditional phase, the finance manager's functions included record keeping, preparing different reports and managing cash. The traditional phase can be summarized as under :

- Financial management was not a part of overall management of the organization.
- Organization were more concerned with procurement of funds rather than application of funds.
- The focus of financial management was primarily on activities such as formation, mergers, expansions, reorganisations and so on.
- More emphasis was on institutional financing and banking.
- Finance function was viewed from the point of view of supplier of funds i.e. lenders. Therefore, the outsider's point of view was dominant.
- Long term financial planning was emphasized on. The concept of working capital and its management was virtually non-existent.
- The treatment of different aspects of finance was descriptive rather than analytic, In fact, there were no analytical financial analysis as such.

2. The transitional phase (1940 – 1950)

The transitional phase began around the early 1940s and continued through the early 1950s. this phase was an extension of the traditional phase. In this phase, greater emphasis was placed on day to day finance problems faced by an organization. However, these problems were discussed within limited analytical framework. Funds analysis and control on a regular basis started.

3. Modern phase (After 1950)

The modern phase began in mid 1950s and is still ongoing. The finance function widened further. Now it is concerned with not only procurement of funds, but also with its effective application. The features of the modern phase include :

- Financial panning focuses on the shareholders. Efforts are made to maximize their wealth.
- Funds required for business are tapped not only from local or national markets but also from global markets.
- Financial planning involves not only acquiring funds from the most economical sources but also deploying them in order to make best possible use of funds.
- New ways of acquiring funds are evolving day by day such as securitization global depository receipts and so on which has made financial planning complex.
- New bodies like SEBI have come into existence to monitor the financial performance of the organization and various legislations are being enacted to make the oranisations more accountable to the shareholders in particular and the society in general. Organisation, therefore have to be very discreet in their acquiring and utilizing of funds.
- Various developments in the fields of capital budgeting, valuation models, working capital management etc. have made the approach of financial management more analytical and quantitative.

OBJECTIVES OF FINANCIAL MANAGEMENT

The objectives of financial management include :

1. Identifying total funds required

Funds are required by an organization for various purposes. These are required for promoting the organization, acquiring fixed assets for day-to-day business operations, growth oriented activities and so on. Identify in the total funds requi4edis one of the most important objectives of financial management. However, identifying the total funds required is very difficult as it would depend upon various factors like the level of technology to be adopted, number5 of employees to be recruited, area of operations legal requirements etc.

2. Effective utilization of funds

Funds collected from various sources should be put to productive use. It is an important objective of financial management to make optimum utilization of the funds available. Funds could be utilized properly by :

- Minimising wastages
- Avoiding unviable projects
- Having shorter credit period

- Avoiding unnecessary blockage of funds in inventory and so on.

3. Reducing cost of capital

Cost of capital is the cost incurred for procurement of funds. Each fund involves different costs. It is the responsibility of the finance manager to plan the capital structure in such a manner that the cost of capital is minimised.

4. Planning capital structure

Capital structure refers to the composition of capital. Funds can be collected from various sources such as by issue of shares, debentures, fixed deposits, obtaining loans from banks and financial institutions and so on. It is necessary to have a right blend of various funds, which will ensure liquidity. Flexibility, economy and stability. Financial management aims at bringing about a proper balance between the various sources of funds.

5. Reducing operating risks

For smooth functioning of business operations, it is necessary to reduce operating risks. This can be done by selecting a right blend of various risk management tools like futures and forward contracts, insurance avoiding high risks projects and so on. Thus selecting the combination of right tolls and thereby reducing operating risks is one of the objectives of financial management.

7. Maximising shareholders wealth.

The ultimate objective of any organization is to maximise the w3ealth of the shareholders value of shares is generally, directly correlated to the performance of the company. Better the performance higher is the market value of shares and vice versa. So the financial manager should strive to maximize shareholders value.

8. Creating reserves

The entire profit earned by an organization is not distributed to the shareholders in the form of dividends. A part of it has to be retained for various purposes such as for growth oriented activities, facing contingencies in future and so on. Hence, an important objective of financial management is build unnecessary reserves for facing unforeseen contingencies.

Concept of Cost of Capital

The cost of capital is an important concept in financial management. It is used for evaluating investment projects, for determining the capital structure, for assessing leasing proposals etc. In particular, the concept of cost of capital has two applications, i.e.

i) In capital budgeting, it is used to discount the future cash flows to obtain their present values.

ii) It is used in optimization of the capital structure of the company.

The concept of cost of capital is a widely used in capital budgeting. Here,. It means "the discount rate or minimum required rate of return a project must earn in order to cover, the cost of raising funds being used by the firm in financing the proposals.

Every organization needs funds for financing various proposals. These funds can be collected from different sources like shares, debentures, bonds, loans etc. All finance providers have to be compensated for th3 funds provided by them. For example dividend to shareholders, interest to debenture holders, bankers etc. these investors while providing finance to the organization, have an expectation of receiving a minimum return from the organization. The minimum return expected depend son the risk element. It is generally directly proportionate to the risk involved i.e. higher the risk greater would be the return and vice versa. This minimum return which an organisation has to pay to its investors is called the cost of capital. It can be defined as "the rate at which an organization must pay to the suppliers of capital for the use of their funds". The finance executive must devise the capital structure of an organization is such a manner that the cost of capital is minimum.

Importance and Significance

The cost of capital serves the following purposes :

1. It enables an organization to achieve its most important objective of maximization of the wealth of the shareholders. The wealth maximization goal is said to be achieved when the organisation's actual rate of return exceeds its cost of capital. This excess return can be put to several uses such as :

   i) For distribution of higher dividends to shareholders;

ii) Reinvesting the funds of expansion and diversification programs.

2. It enables an organization to decide its capital structure i.e. to have a balanced capital structure where the resources would be utilized in an optimum manner.

3. It is widely used in capital budgeting. It enables the organization to estimate the future discounted cash flows arising due to operation of the project. The project is feasible only if the discounted cash inflow exceed the discounted cash outflows.

Factors affecting the cost of capital of an organization :

1. Risk in business operations

There is a direct correlation between the risks involved in business and the cost of capital. Higher the risk, higher would be the cost of capital and vice versa. The lender of funds demands higher returns if the proposal is risky.

2. Risk free securities

The securities issued by the government of India are relatively risk free in respect of payment of periodic interest as well as the repayment of principal amount on maturity. Hence, people invest in such securities even if they get a low rate of return. Thus the cost of raising funds for the government securities is usually low.

3. Liquidity or marketability of securities

There is an inverse correlation between the liquidity of securities and the cost of capital i.e. more is the liquidity, lesser is the cost of capital and vice versa e.g. short term loans are more liquid than long term loans. So the cost of acquiring short tem loans is comparatively less.

4. Inflation

Inflation is the general rise in the price level in the economy. The lender of funds estimates the price level that would prevail at the time of redemption of the principal amount by the borrower. If the price level is rising, he would expect a higher interest rate. In such a case, the cost of capital would be high.

5. New Business

In case of a new business organization, promoters have to pay higher returns in order to attract the investors. Hence the cost of capital is high. On the other hand, well established business organizations are in a position to raise capital at lower rates.

6. Hypothecation

If the borrowings are secured, the interest rates are lower as compared to unsecured borrowings. This would automatically reduce the cost of capital.

Concept of Risk and Return

Financial decisions cover two aspects i.e. the risk and the return. Every financial decision involves risk. However, the degree of risk differs from one decision to another. Every financial decision fetches return too. Higher the risk involved, higher would be the return expected.

In financial management, the risk is defined as "the variability of expected returns from an investment". For example, when an investor invests in a fixed deposit carrying 8% interest with a schedule bank, there is virtually no risk attached with this investment since the returns are fixed. On the other hand, if the same amount is invested in equity shares of a company, then the return in the form of dividends may vary from one year to another. In other words, the returns are variable this makes investment in equity shares more risky.

Return associated with a decision means the total gain or loss expected over a given period of time by the decision maker.

While making financial decisions, both the aspects of risk and return have to be taken into account. Usually, when the return from an investment increases, so also its risk. Therefore, the finance executive must bring out a balance between the risk and the return so as to maximize the wealth of the shareholders.

Types of Risks

The different types of risk involved in **financial decisions are :**

1. Capital risk

Capital risk is the risk of incurring a capital loss due to fall in the market price of a security. For example, investment in most of the equity shares carry this type of risk.

2. Income risk

This arises due to variations in return available from the security. For example, dividend paid on equity shares by a company may vary from one year to another. On the other hand, since fixed interest is paid on debentures and bonds, income risk does not arise in such securities.

3. Default risk

It refers to chances of default in payment of interest or repayment of principal amount by the Company. It also includes the risk of losing the principal amount of shares and debentures in case the company is wound up.

4. **Other business risks**
Faced by an organization are depicted in the following chart :

Types of Risk

Business Portfolio Risks	Financial rates risks	Legal and statutory risks	Internal process risks	Social, political and economic risks

1. Business portfolio risks

This risk arises on account of the different products of the organization in the market. If the organization is a diversified one then the risk is less as compared to single product company, whereon performance of that product may lead to closure of the company. The organization an reduce this risk by restricting the revenue from a particular product to around 25% of total revenue, not depending on a particular client for morethan10% to 15% of revenue for a particular product, identifying new areas for selling existing or new products and so on.

2. Financial risks

Financial risk can arise due to defective capital structure borrowing debts at high rate of interest and so on. Even though it is difficult to predict future cash flows, efforts should be made to ensure that cash inflows are always more than ash outflows. This will prevent the firm from facing any payment crisis.

Financial risk can be minimized by organizing stock – debtors – cash circle properly i.e. the time required to collect amount from debtors so that adequate liquid balance is maintained

It is advisable for accompany to have around 25% revenues in liquid assets.

3. Legal and statutory risks

These risks arise due to different legislations in different countries. Most of the economies have started reducing trade barriers and the companies throughout the world are now contemplating of going global. While this has widened the scope of business. It has also increased the risk arising due to different legislations existing in different countries. For example liquor cannot be advertised on doordarshan in India, In short the organization should be aware of the various laws prevailing in different countries to reduce the risks arising due to legal violations.

In order to overcome these risks, the organization can have a legal department to oversee and review various contract agreements If necessary insurance can be undertaken to cover all possible liabilities arising out of non performance of contractual obligations. Avoiding contracts having open ended legal obligations can also reduce these risks.

4. Internal process risks

These risks arise in the production process. For example, if the quality of the product is unsatisfactory it would increase the risk as product may not survive in the market or if the work environments unfavourable and the workers compensation plan is not adequate talented people may leave the organization. This jay adversely affect the productivity.

The organization can overcome this risk by undertaking various measure like ISO Certification for their products or providing adequate compensation plan for employees, by allocating sufficient amount for research and development and so on.

5. Social political and economic risks

Social environment includes various groups like the shareholders, creditors etc. their expectations are different sometimes they may even be contradictory. Moreover the lifestyles culture, preferences etc. of people keep on changing.

The policies programs products etc. of the organisation have to modified accordingly. For example since most Indians don't eat beef, McDonalds the food chain restaurant has Indianised around 85% of its products to be sold in India. Its advertising campaign in

India in fact emphasized around that its products do not contain beef.

Political risk arises when the continuance of government is uncertain Proper policy decisions may not betaken and if taken may be reverted by the new government. This leads to uncertainty on the political front. Thus long term organization planning becomes difficult.

What is more, uncertain political environment leads to unwise economic decisions. For example there is always a school of thought that agriculture income should be taxed in India but it may not happen, as it is politically unwise.

Corporate Risk Management

Corporate Risk Management involves identifying the various risks and taking necessary steps to reduce the impact of these risks.

With the growth of equity culture since 70's amongst the masses in India, the financial prices have become very volatile. Financial prices includes prices of equity shares, exchange rates especially vis-à-vis dollar, interest rates of banks and so on. It is very difficult to exactly foretell as to the direction in which these share prices would change.

The financial market responded by developing a range of risk management tools like forwards, options and so on.

It is observed that organizations with high fluctuations in the prices of shares re likely to face more financial difficulties. For example IT Companies whose share prices fluctuated tremendously within last few months were always at risk Investors were hesitant to subscribe to their new issue making their expansion plans difficult.

An organization should effectively manage its risk, or else it may lead to distressed financial condition. The following may be the outcome :

1. The organization may select highly risky investment to over come the financial difficulties faced by it. However, if this initiative is infective then it may have to close its operations.

2. The organization would reduce the amount spent on research and development which may lead to a loss of finding promising business opportunities.

3. In order to become profitable again in the short run, the organization may take certain imprudent decisions like reducing the quality of the product delaying mandatory payments reducing the payment to workers etc. this may adversely affect its image.

4. Creditors, distributors etc. may start disassociating themselves from such loss making units.

5. If then loss making trend continues for a longer period the organization may go into liquidation.

6. Future borrowing would become more costly. Lenders may be ready to lend but on their terms and conditions which may further affect the organisation's liquidity.

7. Talented skilled workers may hesitates to join the organization making its retrieval difficult.

Module-2 :

FUNCTIONS OF FINANCE

As long as finance function is confined to the process of raising funds, it cannot and does not provide answers to question like : Should a business commit capital funds to a certain purpose ? Are the expected returns adequate to compensate the cost and risk attached to additional capital ? How does the cost of capital vary with the mixture of financing methods used ? These questions lie at the very heart of sound financial management. Hence there is need to define the scope of finance function which covers decisions not only for the acquisition of funds but also for their effective use.

In the light of this broader scope, the finance function includes Judgments about whether a company should hold, reduce or increase investment in various assets. These, in turn, require defensible basis to answer three questions :

1. What specific assets should a company acquire ?
2. What total volume of funds should a company commit ?
3. How should the funds required be raised ?

It may be noted that these questions are closely inter related. Another way of stating the content of these three related questions is as under :

1. How large and how fast a company should grow ?
2. In what specific forms should it have its assets ?
3. What should be the compositions of its liabilities?

One is likely to get the impression from the preceding survey of the scope of finance function that it is concerned with almost all aspects of business operations. But that is not so. Although it is difficult to set limits to the finance function, a fairly large group of business decisions do not involve changes in the volume of funds to be used. These lie outside the orbit of finance function though they may affect the profitability of the business. These decisions may bethought of as “technical” or non financial decisions. Some examples of such decisions are :

1. Decision about labour’s participation in management
2. Decision about changes in employment practices.
3. Decision on administrative practices.
4. Change in marketing and advertising technique that do not involve a change in the annual advertising budget.

Many of these decisions affect the size and timing of future flow of funds, but they do not involve a current change in the volume o0f funds committed.

Classification and description of Finance Function

Finance function may be classified into two groups : executive finance function and incidental finance function. The executive finance function is so termed because it requires administrative skill in planning and execution, and the incidental function is so called because, for the most part, it covers routine work, chiefly clerical that is necessary to carry into effect financial decisions at the executive level. Some of the basic executive finance functions are given below.

1. *Establishing asset-management policies.* All finance functions are concerned with the control of the cash flows. In order to estimate and arrange for cash requirements of an enterprise, the financial managers must know, among other things, how much cash will be “tied up” in the various kinds of non-cash assets. The determination of asset-management policies includes decisions regarding kinds and coverage of insurance that a company will carry. The formation of sound and consistent asset-management policies is an indispensable pre-requisite to successful financial management. However, the role of Financial Managers in formulating asset management policies is not an exclusive one. Marketing Executive participate in making decisions involving the carrying of inventors of finished goods, customer credit policy, etc. Production managers, likewise, participation making decisions concerned with the carrying of inventories of raw materials and factory supplies, the purchase or renting of building, machinery and equipment.

2. *Determining the allocation of net profits.* The typical corporation may be said to have three choices regarding the allocation of et profits after payment of taxes : (a) Pay dividends to the shareholders as a return upon their investments; (b) Make distributions to people other than the shareholders as to employees in profit sharing plans and(c) Retain earnings for the expansion of business. As the second alternative is ordinarily made on a large contractual basis or as a mater of fixed policy, the company’s continuing free choices in the matter of the use of net profits involve only the other two alternatives i.e. payment of dividends and the retention of earnings to acquire additional assets.

3. *Estimating and controlling cash flows and requirements.* A prime responsibility of financial management is to see that an adequate supply of cash is on hand at the proper time for smooth flow of operations of the company. Since flow of cash originates in sales and cash requirements are closely related to the volume of sales, the fulfillment of the responsibility of providing cash in the proper amount at the proper time requires forecasting.

The function creates an increasing dilemma. Ideally the financial manager would like to match the inflow of cash to the outflow of cash so that after providing enough cash to meet current obligations, there would be no idle cash balance earning nothing for the company. But the trouble is that cash inflows are not precisely predictable and seldom offset one another. So the financial Manager must keep a cash balance on hand to pay his bills on time. At this point the dilemma sets in. the more he protects his company against risks associated with inability to pay bills on time, the more he loses returns that might have been gained from investment of the idle cash. It is, in essence, the dilemma of liquidity Vs Profitability.

4. *Deciding upon needs and sources of new outside financing.* The Financial Managers, on the basis of their forecasts of the volume of operations, may have to plan upon borrowing to supplement cash flowing from these 0operations. All kinds of borrowing, including borrowing from commercial banks and other financial institutions, and the floatation of debentures is one of the two principal means of outside financing. Another principal method of outside financing is the sale of additional shares. On the basis of the forecasts of the inflow and outflow of cash in the ordinary course of operations, the financial manager should be able to judge rather closely the time when additional funds from outside sources will be needed, how long they will be needed, how best they can be raised, and from what sources they will be repaid.

5. *Carrying on negotiations for new outside financing.* Finance function does not stop with the decisions to undertake outside financing, it extends towards carrying on the negotiations to arrange for it. Short-term financing requirements are often arranged for on a continuing basis, may be through an establishment of credit with commercial banks. Even a continuing arrangements of this kind, however involves negotiations. Normally lines of credit are “held-open” for not more than a year; hence it is necessary to reopen negotiations annually to continue this arrangement. The factor of advance planning assumes greater importance in the matter of long term financing because negotiations and the completion of arrangements for long term financing always require much more time than does the working out of arrangements for short terms financing.

6. *Checking upon financial performance.* The checking of financial performance in a business deserves much attention in carrying out finance function. It requires retrospective analysis of operating period for the purpose of evaluating the wisdom and efficiency of financial planning. Analysis of what has happened should be of great value in improving the standards techniques and

procedures of financial control involved in carrying out finance function.

The executive finance functions are interrelated. Therefore, a change in decision with respect to one of the functions is likely to require a change in decision concerning some or al others.

The incidental finance functions are : (a) Supervision of cash receipts and disbursements and the safeguarding of cash balances (b) Custody and safeguarding of securities, insurance policies and other valuable papers (c) Taking care of the mechanical details of financing (d) Record keeping and reporting. The incidental finance functions are self-explanatory.

Orientation of the finance subject matter

In many writings on the finance subject, the stand point of the owners of a finance firm has been given an exclusive position. It has been considered that the large corporate enterprise is operated on behalf of the share holders, even though ownership is diffused. Recently, there have been more cases of separation of ownership and control. There have also been trends requiring a broader point of view. The business firm represents an institution in the sociological sense. It has a role to lay, involving a balancing of the various groups of interests. The rising in strength of the interest of the consumers workers and government represent forces against which share holder interests must be balance. There is another view which holds that relationships with consumers employees suppliers and general public have long been recognized by business managers. Only recently the corporate management has considered the need for communicating with shareholders.

In business schools, the professional view point trends to be the demanding one in the study of business finance. On the other hand, courses in business finance presented in an economics department may have a general economic or social point of view. The behaviour and performances of business firms are the keys to understanding the modern e4conomic society. Hence the subject of business finance is to be studied from the standpoint of its impact on the operation of the economy. The problems of corporate concentration, the separation of ownership and control, the role of government regulations and the emergence of national and international fiscal and financial policies are of crucial importance requiring the major attention from the corporate financial executives. The national fiscal and monetary policies have a great impact on financial decisions. It is, therefore, essential that financial mangers get themselves concerned with national fiscal and monetary policies. In addition, international

trading and financial policies increasingly have an impact on domestic policies. The scope of the finance function and the finance subject matter is thus broadened to incorporate the entire fid of economics and management.

In the traditional course on corporation finance, undue emphasis was laid on matters like promotion, merger, consolidation, recapitalization and reorganization which were infrequent influences during the life cycle of a company. It resulted in leaving a limited room for the problems of a normal going company and the treatment of subject was too closely around certain specific happenings. This dissatisfaction with emphasis on the episodic outsider point of view gave rise to a news stream of thinking in business finance. Prof Hunt (Harvard Business school) coined the phrase on the outside looking in" and contrasted it to the point of view of the financial manager concerned with the internal operation of the business firm i.e. the insider looking out. A survey was conducted by Prof. Weston (University of California) on the activities of financial managers and he found that most of the time of financial executives was spent on various aspects of working capital management, reflecting their day to day responsibilities However the financial executives assigned greatest importance to the episodic decisions such as long term contracts for financing mergers and capital budgets. In recent years anew approach has emerged which combines both views. In long range panning control functions and financial analysis of alternative product market decisions, the finance function covered both the indiv9dual episodes and provides a framework for the day-to-day decisions involved in w0rking capital management. Thus, working capital management vs individual financial episodes are two sides of the same coin,.

The insider versus the outsider view:. Should the study of finance take the insider's or the outsider's point of view? Phrased in another way, should a finance book emphasis the managerial point of view, or should it be aimed at the person who is interested in business finance as a customer,lender, a stockholder, or a voter ?

These two points of view are not incompatible. The financial manager, whose preoccupation is with the internal administration of the firm, must still take into account the reaction of outsiders to his operations.

Small firm versus large firm financing. Similarly, the issue of the large firm versus the small firm as the appropriate focus of att3ention in finance courses is a false one. Principles of business finance are just as applicable to the small firm as to the large.

Module - 3

OBJECTIVES OF FINANCIAL MANAGEMENT

The objective of a company is to maximize its value to its shareholders. Value is represented by market price of the ordinary share of the company over the long run, which is a reflection of the company's investment and financing decisions. The long run means a period long enough so that a normalized market price can be worked out Management can make decisions on the basis of day to day fluctuations in the market price in order to make decisions that will raise the market price of the shares over the short run at the expense of the long run. For instance, a company may cut its research and development expense significantly in order to increase current earnings. This action may result in an increase in market price per share temporarily but future profits of the company are likely to suffer without sufficient research and develo0ment and the result will be a drop in market price in the long run.

Often maximization of profits is regarded as the objective of a business enterprise. But it does not specify the timing of expected returns. Few shareholders may think favorably of a project that promises its first return after 30 years, no mater how large this return. In other words, we have to take into account the time pattern of returns secondly, the objective of maximizing profits does not consider the risk or uncertainty of prospective earnings stream. Some investment projects are far more risky than others. As a result, the prospective steam of earnings would be more uncertain if these projects were undertaken. Further, this objective of profit maximization does not allow for the effect of dividend policy on the market price of the share. If the objective wr4 only to maximize earnings per share the firm would never pay a dividend. To the extent that the payment of dividends can affect the value of the share, the maximization of earnings per share will not be a satisfactory objective by itself. For these reasons an objective of maximizing earnings per share may not be the same as maximizing market price per share.

The market price of the corporate share represents the maintenance centre. It takes into account present and prospective earnings per share, the timing and risk of these earnings, the dividend policy of the company and any other factor that may be having a bearing upon the market price of the share. Thus the market price serves as a performance index of the company's progress. It indicates how well management is doing. Management is under a continuous appraisal.

Profit maximization vs wealth maximization. There is an interesting controversy regarding the goals of financial decision makingi.;e; should the goal of financial decision making be profit maximization or wealth maximization ? Certain objections have been raised against profit maximisation as the goal of the business enterprise. First, it relates to the problem of uncertainty as future cannot be known well enough to express the probability of possible return. (It is not possible to maximize what cannot be known. Secondly, most decisions involve a balancing between expected return and risk. Opportunities promising the possibility of higher expected yields are associated with greater risk to recognize such a balancing nd wealth maximisation is brought into the analysis. If greater expected returns are associated with highest risks, a higher capitalisation rate should be applied to opporttnities that involve greater risk. The combination of expected returns with risk variations and related capitalization rate cannot be considered in the concept of profit maximisation. Thirdly, the decision maker may not have enough confidence in estimates of future returns so that he does not attempt further to maximize. It is argued that the firm's goals cannot be to maximize profits but to attain a certain level or rate of profit holding a certain share of the market or a certain level of sales. Firms try to satisfice rather than to maximize. The satisficing goal is appropriate for behavioural theory of the firm and is perfectly manageable. Satisficing is primarily a sort rum search strategy and relates to the cost of search If information and search costs are low, additional efforts will be made to maximize. Where information and search costs are high additional effort to seek to maximize promises little additional net gains. So the decisions maker may be said to satisfice. Thus, when information and search costs are taken into account, the differences between satisficing and maximising may be insignificant or non existent. Lastly, the objective to profit maximization indicat4s that it is too narrowly centred. Such maximisation criteria fail to take into consideration the interests of government workers and other persons in the enterprise.

Prof. Solomon (Stanford University) has handled this issue logically. He argues that its is useful to distinguish between profits and profitability. Maximisation of profit in the sense of maxmising the wealth accruing to shareholders is clearly an unreal motive. On the other hand, profitability maximisation in the sense of using resources o yield economic values higher than the joint values of inputs required is a useful goal. The goal of the profitability achieved in terms of greater outputs than input values involves a different set of considerations. 'thus the proper goal of financial management is wealth maximisation. Even if management has other motives such as maximizing sales or size, growth or market share, or their own survival or peace of mind, these operating goals do not necessarily conflict with operating goal of wealth

maximization. Prof. Solomon has made a good case for the thesis that wealth maximisation also maximizes the achievement of these other objectives. He concludes that maximization of wealth provides a useful and meaningful objective as basic guideline by which financial decisions should be evaluated.

Recent developments in economics and finance have placed the financial manager in a central position in the business firm. The developments of financial management over the past two decades have prepared the financial executive better than any other officer to provide the chief corporate executive with the planning and control tools he needs. Since most business activities involve the use of funds, financial management must have recognized involvement in all the other activities which take place. Prof. Solomon elaborate on the nature of the business function as follows. "Financial management is properly viewed as an integral part of over all management rather than as a staff speciality concerned with fund raising operations. "In this broader view, the central issue of financial policy is the wise use of funds and the central process involved is a rational matching of the advantage of potential uses against the cost of alternative potential sources so as to achieve the broad financial goals which an enterprise sets for itself In addition to raising funds financial management is directly concerned with production, marketing and other functions within an enterprise whenever decisions are made about the acquisition or distribution of assets.

Finance must consider a broad range of business decisions for their cash flow implications. In addition, financial managers are involved in evaluation of resource allocation choice. Finance is, therefore, concerned with the following wide range of areas; size of the firm, rate of growth, asset mix, product mix, project evaluation, financial analysis, financing mix, fixed versus variable costs, make or buy decisions and the like.

We feel that the field of finance is a subset of behavioural sciences and derives its analytical foundations from the economic theory of the firm. The field of finance is enriched by the behavioural characteristics of all market participants – management, shareholders, lenders and consumers. Similarly, it is constrained by the institutional and legal environmental factors of government market and so on. We are interested in the efforts of all participants to optimize their own welfare through the pursuance of specific goals, within the accepted modes of behaviour.

Decision Making

Figure 1.1 depicts the analytical and conceptual framework developed I this book for financial management decision making. It sho0ws the components of the finance function and the

interrelationship among them. The financial management decisions an be classified into three basic kinds : investment decisions, financing decisions and dividend decisions. These three components of the finance interact among themselves through the medium of the cost of capital in order to attain the objective of financial management, namely, wealth maximization.

Investment Decisions

Risk versus Return 1. Establishing asset. Risk versus return

External financing 3. Estimating and contro- Internal Financing
Debtor/ Equity ratios lling cash flows and Payout Ratios
Requirements etc.

Financing Decisions

4. Deciding upon needs and sources of new outside financing.

5. Carrying on negotiations for new 0utside financing etc.

Debt/Equity/Ratios

Diviend Decisions

2. Determination of the allocation of net profits

6. Checking upon financial performance etc.

Payout Ratios

Cost of Capital

(a) Financing Decisions
(b) Investment Decisions
(c) Dividend Decisions

Fig.1.1 Componen5s of finance function and their interrelation

The investment decisions allocate and ration the resources among the competing investment alternatives. The effort is to find out the projects which are acceptable through the discounted cash flow (DSF) technique using the cost of capital as the cut off criterion and also to choose the projects with higher Net Present Values (NPV) or Internal Rates of Return (IRR) if the resources are limited, and, therefore, have to be rationed. These analytical techniques are required because of the facts that the timings of the cash flows are different and that cash has a time value. Further, future cash flows are subject to uncertainty. Therefore, the investment decisions have also to be subjected to risk versus return analysis.

The financing decisions are helpful in planning for a balanced capital structure. Risk, return and control are the crucial factors relevant in formulating the financing decisions. The debt/equity and the pay-out ratios act as constraints on the quantum and timing of external and internal financing. Analytical tools such as EPS/EBIT computations, leverage calculations and interest and dividend coverage estimates are used in the process of making the financing decisions. The dividend decisions are concerned with the determination of the quantum and the timing of dividend payment, the payout ratio being the controlling factor. The internal profitability versus the external profitability (Walter's Approach) analysis helps in developing the payout ratio, that part of the profits not paid out as dividends constitutes the source for internal financing.

The cost of capital acts as the nucleus in the frame work for financial management decision making. It has a two-way effect on the investment, financing and dividend decisions. It influences and is in turn influenced by them. The cost of capital leads to the acceptance or rejection of projects as it is the cut off criterion in investment decisions. In turn, the profitability of the projects raises or lowers the cost of capital. The financing decisions affect the cost of capital as it is the weighted average of the cost of different sources of capital. The need to raiser or lower the cost of capital, in turn influences the financing decisions. The dividend decisions try to meet the expectations of the investors reflected through the cost of capital In turn, the expectations of the investors raise or lower the cost of capital.

2

STUDY OF FINANCIAL STATEMENTS

Module-1:

OBJECTIVES OF FINANCIAL STATEMENTS

The objective of financial statements is to provide information about the financial position, performance and changes and financial position of an enterprise that is useful to wide range of users in making economic decisions. Financial statements are prepared for this purpose to meet the common needs of most users. However, financial statements do not provide all the information that users may need to make economic decisions since they largely portray the financial effects of past events and do not necessarily provide non financial information. Financial statements also show the results of the stewardship of management or the accountability of management for the resources entrusted to it. Those users who wish to assess the stewardship or accountability of management do so in order that they may make economic decision, these decisions may include, for example, whether to hold or sell their investment in the enterprise or whether to reappoint or replace the management.

Financial reporting includes not only financial statements like balance sheet, profit and loss account etc. but also other means of communicating information that relates, directly or indirectly to the information provided by the accounting system. Management may also provide information to those outside an enterprise by means of financial reporting which may not necessarily be in the form of formal financial statements. Such financial information may be required to be provide under various corporate legislations. Information communicated by means of financial reporting other than financial statements may take various forms and relate to various mattes. Annual reports, quarterly and half yearly reports as per the requirements of stock exchange listing agreements to be given as per the requirements of SEBI etc. The financial statements also contain notes and supplementary schedules and other information. It may contain additional information that is relevant to the needs of users about the items in the balance sheet and income statement,. They may include disclosure about the risks and uncertainties affecting the enterprise and any resources and obligations not recognized in the balance sheet. Information about geographical and industry segments and the effect on the enterprise of changing prides also be provided in the form of

supplementary information. The impor5tanty objectives of financial statements are given below :

Providing information for Economic decisions making - The economic decisions that are taken by users of financial statements require an evaluation of the ability of an enterprise to generate cash and cash equivalents and of the timing and certainty of their generation. This ability ultimately determines the capacity of an enterprise to pay its employees and suppliers meet interest payments, repay loans and make distributions to its owners.

Providing information about financial position – The financial position of an enterprise is effected by the economic resources it controls, its financial structures its liquidity and solvency and its capacity to adapt to changes in the environment in which it operates.

- Information about the economic resources controlled by the enterprise and its capacity in the past to modify these resources is useful in predicting the ability of the enterprise to generate cash and cash equivalents in the future.

- Information about financial structure is useful in predicting future borrowing needs and how future profits and cash flows will be distributed among those with an interest in the enterprise.

- Information is useful in predicting how successful the enterprise is likely to be in raising further finance.

- Information about liquidity and solvency is useful to predicting the ability of the enterprise to met the financial commitments as fall due. Liquidity refers to the availability of cash in the near future after taking account of financial commitments over this period. Solvency refers to the availability of cash over the longer term to meet financial commitments as they fall due.

Providing information about performance(working results) of an enterprise – Another important objective of the financial statements is that it provides information about the performance and in particular its profitability, which is require in order to assess potential changes in the economic resources that are likely to control in future. Information about variability of performance is important in this respect. Information about performance is useful in predicting the capacity of the enterprise to generate cash flows from its existing resource base. It is also useful in forming judgment about the effectiveness with which the enterprises might employ additional resources.

Providing Information about changes in financial position – The financial statements provide information concerning changes in the financial position of an enterprise, which is useful in order to assess its investing financing and operating activities during the reporting periods. This information is useful in providing the user with a basis to assess the ability of the enterprise to generate cash and cash equipments and the needs of the enterprise to utilize those cash flows.

UNDERLYING ASSUMPTIONS OF FINANCIAL STATEMENTS

It is fundamental to the understanding and interpretation of financial accounts that, those who use them should be aware of the main assumptions on which they are based. The users of financial statements need to be familiar with these fundamental assumptions in order to understand both how to prepare accounts and how to interpret them. The users of the financial information may assume that the assumptions have been applied in the preparation of a set of financial statements unless warning is given to the contrary.

Going concern It is assumed that accounts are drawn up on the basis that enterprise will continue in operational existence for the foreseeable future. The values of assets are, therefore, generally taken to be based on what they cost with adjustment in the form of depreciation for fixed assets which have been declining in value over a period of time. This is an important assumption as fart as the valuation of assets is concerned. Since the value to a firm of very specific assets such as plant and equipment will be much higher on the going concern basis than it would be if the organizations were to go in to liquidation.

Accrual Basis Profit has been defined as a change in value, expressed in the profit and loss account as revenue less expenses. Profit is usually measured and profit and loss accounts prepared at regular interval. The process of matching is an attempt to ensure that revenues recorded in a period are matched with the expenses incurred in earning them. Revenues and costs are not calculated on the basis of cash received or paid. Revenues are recognized when they are earned usually at the date of a transaction with a third party. Against such revenues are charged, not the

expenditures of a particular period, but the costs of earning the revenue which has been recognized. The matching principle leads to the association of an expense with the revenue that it generated, irrespective of the timing of the cash payment connected with that expenses. Thus costs of running the business should not be treated as a flow of cash.

QUALITATIVE CHARACTERISTICS OF FINANCIAL STATEMENTS

Qualitative characteristics are the attributes that make the information provided in the financial statements useful to users. The important qualitative characteristics are given below:

Understanda-ability — An essential quality of information provided in financial statements is that it is readily understandable by users. For this purpose, users are assumed to have a reasonable knowledge of business and economic activities and accounting and a willingness to study the information with reasonable diligence.

Relevance — To be useful information must be relevant to the decision making needs of users. Information has the quality of relevance when it influences the ec0omic decisions of users by helping them to evaluate past, present or future events or confirming or correcting their past evaluations.

Materiality — The relevance of information is affected by its nature and materiality. In some cases, the nature of information alone is sufficient to determine its relevance. Information is material if its omission or misstatement could influence the economic decisions of users taken on the basis of the financial statements. Materiality depends on the size of the item or error judged in the particular circumstances of its omission or mis-statement.

Reliability — To be useful information must also be reliable. Information has the quality of reliability when it is free from material error and bias and the users can be depend upon it for reliable

information. To be reliable, information must represent faithfully the transactions and other events it either purports to represent or could reasonable be expected to represent. Thus, for example, a balance sheet should represent faithfully the transactions and other events that result in assets liabilities and equity of the enterprise at the reporting date which meet the recognition criteria.

Substance If information is to represent faithfully the transactions and other events that it purports to represent, it is necessary that they are accounted for and presented in accordance with their substance and economic reality and not merely their legal form.

Neutrality To be reliable, the information contained in financial statements must be neutral that is, free from bias. Financial statements are not neutral, if, by the selection or presentation of information, they influence the making of a decision or judgment in order to achieve a predetermined result or outcome.

Prudence Where an accountant could deal with an item in more than one way, his choice between the alternatives should give precedence to that which provides the most conservative result. For example, in the valuation of stock, if the current price is lower than the cost of acquisition, the stock should be recorded as its current price. However, if the stock has gained in value this gain should not be recorded until the assert is sold. In general, in order not to overstate profit, any possible gain or extra profits should be excluded from accounting calculations but any possible losses should be allowed for.

Completeness To be reliable the information in financial statements must be complete within the bounds of materiality and cost. An omission can cause information to be false or misleading and thus unreliable and deficient in terms of its relevance.

Comparability Users must be able to compare the financial statements of an enterprise through time in

order to identify trends in its financial position and performance. Users must also be able to compare the financial statements of different enterprises in order to evaluate their relative financial position, performance and changes in financial position. Hence, the measurement and display of the financial effect of like transactions and other events must be carried out in a consistent way throughout an enterprise and in a consistent way for different enterprises.

CONSTRAINTS ON RELEVANT AND RELIABLE INFORMATION

Timeliness – If there is undue delay in the reporting of information it may lose its relevance. Management may need to balance the relative merits of timely reporting and the provision of reliable information. To provide information on a timely basis it may often be necessary to report before all aspects of a transaction or other event are known, thus impairing reliability. Conversely, if reporting is delayed until all aspects are known, the information may be highly reliable but of little use to users who have had to make decisions in the interim. In achieving a balance between relevance and reliability, the overriding consideration is how best to satisfy the economic decision making needs of users.

Balance Between Benefit and Cost – The balance between benefit and cost is a pervasive constraint rather than a qualitative characteristic. The benefits derived from information should exceed the cost of providing it. The evaluation of benefits and costs is, howsoever substantially a judgmental process.

Balance Between Qualitative Characteristics – In practice balancing or trade off between qualitative characteristics is often necessary. Generally the aim is to achieve an appropriate balance among the characteristics in order to meet the objective of financial statements. The relative importance of the characteristics in different cases is a matter of professional judgment.

True and Fair View/Fair Presentation – Financial statements are fre3quently described as showing a true and fair view of the financial position, performance and changes in financial position of an enterprise. Although this framework does not deal directly with such concepts, the applications of the principal qualitative characteristics and of appropriate accounting standards, normally results in financial statements that convey what is generally understood as a true and fair view of such information.

Forms of Consistency

While preparation of financial statements the following forms of consistency are taken into consideration :

Vertical Consistency	It is achieved when the same accounting policies, methods and practices are adopted while preparing interrelated financial statements of the same date.
Horizontal consistency	It is achieved when the same entity adopts the same accounting policies methods and practices from year to year.
Third dimensional Consistency	It is the consistency in accounting policies, methods and practices followed by different units in the same industry.

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Module-2 :

DIFFERENT TYPES OF FINANCIAL STATEMENTS

Income Statement : The income statement or profit and loss account is considered as a very useful statement of all financial statements, It depicts the expenses incurred on production sales and distribution and sales revenue and the net profit or loss for a particular period. It shows whether the operations of the firm resulted in profit or loss at the end of a particular period.

Balance Sheet Balance sheet is a statement which shows the financial position of a business as on a particular date. It represents the asserts owned by the business and the claims of the owners and creditors against the assets in the form of liabilities as on the date of the statement.

Statement of retained earnings – The statement of retained earnings is also called the profit and loss appropriation account. It is a link between the income statement and the balance sheet. Retained earnings are the accumulated excess of earnings over losses and dividends. The balance shown by the income statement is transferred to the balance sheet through this statement after making the necessary appropriations.

Funds Flow Statement - According to Anthony, *"The funds flow statement described the sources from which additional funds were derived and the use to which these funds were put"* . Funds flow statement helps the financial analyst in having a more detailed analysis and understanding the changes in the distribution of resources between two balance sheet periods. The statement reveals the sources of funds and their application for different purposes.

Cashflow Statement – A cash flow statement depicts the changes in cash position from one period to another. It shows the inflow and outflow of cash and helps the management in making plans for immediate future. An estimated cash flow statement enables the management to ascertain the availability of cash to meet business obligations. This statement is useful for short term planning by the management.

Schedules - These are the statements which explain the items given in income statement and balance sheet. Schedules are a part of financial statements which give detailed information about the financial position of a business organization.

FORMATS OF FINANCIAL STATEMENTS

The two maintenance financial statements, viz. the income statement and the balance sheet, fan either be presented in the horizontal form or the vertical form. Where statutory provisions are applicable the statement has to be prepared in accordance with such provisions.

Income Statement

There is no legal format for the profit and loss account. Therefore, it can be presented in the traditional T Form or vertically in statement form. An example of the two formats is given as under :

(i) **Horizonatal Form**

Manufacturing Trading and Profit and Loss Account
of…….for the year ending …….

Dr.
Cr.

Particulars	(Rs)	Particulars	(Rs)
To Opening stock		By cost of finished goods c/d	xxx
Raw materials	xxx	By Closing stock	
Work in progress xxx	xxx	Raw materials xxx	
To purchase of raw		Work in progress xxx	xxx
Materials	xxx		
To manufacturing wages	xxx		
To Carriages inwards	xxx		
To other factory expenses	xxx		
	xxx		
To opening stock of finished			
Goods	xxx	By Sales	xxx
To Cost of finished		By Closing stock of	
Goods b/d	xxx	finished goods	xxx
To Gross profit c/d	xxx	By Gross loss c/d	xxx
	xxx		xxx
To Gross loss b/d	xxx	By Gross profit b/d	xxx
To Office and adm.			
Expenses	xxx	By Net Loss c/d	xxx
To Interest and financial			
Expenses	xxx		
To Provision for Income tax	xxx		
To Net profit c/d	xxx		

	-----		
	xxx		

To Net loss b/d	xxx	By Balance b/d (from Previous year)	xxx
To General reserve	xxx	By Net Profit b/d	xxx
To Dividend	xxx		
To Balance c/f	xxx		
	----------		----------
	xxx		xxx

(ii) Vertical Form

Income Statement of …….. for the year ending …….

Particulars		(Rs.)	(Rs)
Sales		xxx	
Less : Sales returns		xxx	
Sales tax/Excise duty		xxx	
		-----	xxx
Net Sales	(1)	xxx	----
Cost of goods sold			
Materials consumed			xxx
Direct labour			xxx
Manufacturing expenses			xxx
Add/Less: Adjustment for change in stock			xxx
			----
	(2)	xxx	----
Gross profit (1) - (2)		xxx	
Less: Operating expenses		xxx	
Office and administration expenses		xxx	
Selling and distribution expenses		xxx	xxx

Operating profit			xxx
Add : Non operating income		xxx	----
		xxx	
Less: Non operating expenses (including interest)			xxx

Profit before interest and tax		xxx	
Less Interest		xxx	----
Profit before tax		xxx	
Less Tax		xxx	----
Profit after tax		xxx	----
Appropriations :			
Transfer to reserves		xxx	
Dividends declared/paid		xxx	
Surplus carried to Balance sheet		xxx	
			----
		xx	

Balance Sheet

The companies Act, 1956 stipulates that the balance sheet of a joint stock company should be prepared as per Part I of Schedule VI of the Act. However, the statement form has been emphasised upon by accountants for the purpose of analysis and interpretation.

(i) Horizontal Form

Balance Sheet of ……as on ……..

Liabilities	(Rs)	Assets	(Rs)
Share Capital		**Fixed Assets**	
(with all particulars of		1. Goodwill	xxx
authorized issued		2. Land & buildings	xxx
subscribed capital)		3. Leasehold property	xxx
Called-up capital	xxx	4. Plant and machinery	xxx
Less: Calls in arrears	xxx	5. Furniture & fittings	xxx
Add: For4feited shares	xxx	6. Patents and trade marks	xxx
		7. Vehicles	xxx
Reserves and Surplus		**Investments**	
1. Capital reserve	xxx	Current Assets,Loans and	
2. Capital redemption		advances	
reserve	xxx	**(a) Current Assets**	
3. Share premium	xxx		
4. Other reserves	xxx	1. Interest accrued on	
Less:		investments	xxx
Debit balance of profit &		2. Loose tools	xxx
Loss A/c. (if any)	xxx	3. Stock in trade	xxx
5. Profit & Loss		4. Sundry debtors	xxx
appropriation A/c	xxx	Less: Provisions for	
6. Sinking fund	xxx	doubtful debts	xxx
		5. Cash in hand	xxx
Secured Loans		6. Cash at bank	xxx
Debentures	xxx	**(b) Loans and Advances**	

Add: Outstanding int.	xxx	7. Advances to subsidiaries	xxx
Loans from Bank	xxx	8. Bills receivable	xxx
		9. Prepaid expenses	xxx
Unsecured Loans		Miscellaneous expenditure	
Fixed deposits	xxx	1. Preliminary expenses	xxx
Short term loans and		2. Discount on issue of	
Advances	xxx	shares and debentures	xxx
Current Liabilities		**3.** Unmderwriting	
And Provisions		Commission	xxx
(a) Current Liabilities		Profit and loss account	
		(loss) if any	xxx
1. Bills payable	xxx		
2. Sundry creditors	xxx		
3. Income received in			
advance	xxx		
4. Unclaimed dividends	xxx		
5. Other liabilities	xxx		
(b) Provisions			
6. Provisions for taxation	xxx		
7. Proposed dividends	xxx		
8. Provident fund &			
pension fund			
contingent liabilities			
not provided for	xxx		
	----		
	xxx		

(ii) Vertical Form

Balance Sheet of ……..As on ……..

Particulars	Schedule No	Current year	Previous year
I. Source of funds			
1. Shareholders' Funds			
(a) Capital	xxx	xxx	
(b) Reserves and surplus	xxx	xxx	
2. Loan funds			
(a) Secured loans	xxx	xxx	
(b) Unsecured loans	xxx	xxx	
	-----	----	
Total	xxx	xxx	
	----	----	
II. Application of Funds			
1. Fixed assets			
(a) Gross block	xxx	xxx	
(b) Less Depre3ciation	xxx	xxx	
	----	----	
© Net block	xxx	xxx	
(d) Capital work in progress	xxx	xxx	
2. Investments	xxx	xxx	
3. current assts loans and Advances			
(a) Inventories	xxx	xxx	
(b) Sundry debtors	xxx	xxx	
© Cash and bank balances	xxx	xxx	
(d) Other current assets	xxx	xxx	
(e) Loans and advances	xxx	xxx	
	----	----	
	xxx	xxx	
Less : Current Liabilities and Provisions			
(a) current liabilities	xxx	xxx	
(b) Provisions	xxx	xxx	
	----	----	
Net Current Assets	**xxx**	xxx	
4.(a) Misccellaneous expenditure to the extent not written off or adjusted	xxx	xxx	

(b) Profit and loss account (debit)	xxx	xxx
	----	----
Total	xxx	xxx

(iii) Vertical Form for Analysis

Balance Sheet of……..as on …….

Particulars			Rs.
Assets			
(1)	Current Assets		
	Cash and bank balances		xxx
	Debtors		xxx
	Stock		xxx
	Other current assets		xxx
			----
			xxx
(2)	Fixed Assets		xxx
	less : Depreciation		xxx
			-----
			xxx
(3)	Investments		xxx

	Total assets	(1))+ (2) + (3)	xxx

Liabilities			
(a)	Current Liabilities		
	Bills payable		xxx
	Creditors		xxx
	Other current liabilities		xxx
			----
			xxx

(b)	Long term Debt		
	Debentures		xxx
	Other long term debts		xxx
			----
			xxx

(c)	Capital and Reserves		
	Share capital		xxx
	Reserves and surplus		xxx
			xxx
			xxx
Total liabilities		(a) +(b) + (c)	xxx

Statement of Retained Earnings

The preparation of Statement of retained Earnings is a common feature in corporate accounting practice, to show how the balance in Profit and Loss accounts is appropriated for various purposes like provision for dividend, transfer to reserves etc.

Profit and Loss Appropriation Account

Particulars	(Rs)	Particulars	(Rs)
To Transfers to reserves	xxx	By Last year's balance	xxx
To Dividends paid (interim or final)	xxx	By current year's net profit (Transferred from Profit and loss A/c)	
xxx			
To Dividends proposed	xxx	By Excess provisions (which are no longer required)	xxx
To Surplus carried to Balance sheet	xxx	By Reserves withdraws (if any)	xxx
	xxx		xxx

Limitations of Financial Statements

The financial statements are subject to the following limitations :

- In Profit and Loss accounts are subject to the following limitations :

- Profit arrived at by the profit and loss account is of interim nature. Actual profit can be ascertained only after the firm achieves its maximum capacity

- The net income disclosed by the profit and loss account is not absolute but only relative.

- The profit and loss account does not disclose factors like quality of product, efficiency of the management etc.

- The net income is the result of personal judgment and bias of accountants cannot be removed in the matters of depreciation, stock valuation, etc.

- There are certain assets and liabilities which are not disclosed by the balance sheet. For example, the most tangible asset of a company is its management force and a dissatisfied labour force is its liability which re not disclosed by the balance sheet.

- The book value of assets is shown as original cost less depreciation. But in practice, the value of the assets may d8fferdepending upon the technological and economic changes.

- The assets are valued in a balance sheet on a going concern basis. Some of the assets may not realize their value on winding up.

- The accounting year may be fixed to show a favourable picture of the business. In case of sugar industry the balance sheet prepared in off season depicts a better liquidity position than in the crushing season.

- An investor likes to analyse the present and future prospects of the business while the balance sheets shows past position. V as such the use of balance sheet is only limited.

- Due to flexibility of accounting principles, certain liabilities like provision for gratuity etc. are not shown in the balance sheet giving the outsiders a misleading picture.

- The financial statements are generally prepared from the point of view of shareholders and their use is limited to decision making by the management, investors and creditors.

- Even the audited financial statements does not provide complete accuracy.

- Financial statements do not disclose the changes in management loss of markets, etc. which have a vital impact on the profitability of the concern.

- The financial statements are based on accounting policies which may vary from company to company and as such cannot be formed as a reliable basis of Judgment.

Other Limitations of Financial Statements

Financial statements are the result of the accounting process which begins with recording of transactions. Accounting process involves recording, classifying and summarizing business transactions. Financial statements are the result of the third process viz. summarizing. But the profit or loss figures and financial position as disclosed should not be taken to be an exact representation of the position. The financial statements are based on certain accounting concepts and conventions which cannot be said to be foolproof. The following are the important limitations of financial statements :

1. The information is historical in nature. It does not reflect the future.

2. It is the outcome of accounting concepts and conventions combined with personal judgment.

3. The statements portray the position in monetary terms. The profit or loss position and the financial position exclude from their purview things which cannot be expressed or recorded in monetary terms.

4. While studying financial statements of different units, the size of the units and the difference in the accounting procedures adopted by them have to be kept in mind. They may be reflected in the financial statements by one has to enquire into them before analysing the statements.

Parties Interested in Financial Statements

In recent years, the ownership of capital of many public companies has become truly broad based due to dispersal of shareholding. Therefore, one may say that the public in general has become interested in financial statements. However, in addition to the share holders, there are other persons and bodies who are also interested in the financial results disclosed by the annual reports of companies. Such persons and bodies include :

1. Creditors, potential suppliers or others doing business with the company;
2. Debenture-holders;
3. Credit institutions like banks;'
4. Potential Investors;
5. Employees and trade unions;
6. Important customers who wish to make a long standing contract with the company;
7. Economists and investment analysis;
8. Members of Parliament, the Public Accounts Committee and the Estimates Committee in respect of Government Companies;
9. Taxation authorities;
10. Other departments dealing with the industry in which the company is engaged; and
11. The Company Law Board

Financial Statement analysis, therefore, has become of general interest; it should be obviously intelligible even to laymen. Though this will be kept in mind in the discussion that follows, the treatment has been from the view point of management.

3

STUDY OF FINANCIAL STATEMENTS

(Comparative Statements, Common size statements, Trend analysis)

Module – 1 Meaning of Analysis

Financial statements viz. the income statement or the profit or loss account and the position statement or the balance sheet, are indicators of two significant factors : (i) profitability and (ii) financial soundness. Analysis of statements means such a treatment of the information contained in the two statements as to afford a full diagnosis of the profitability and financial position of the firm concerned.

To have a clear understanding of the profitability and financial position, the data provided in the financial statements should be methodically classified and compared with figures of previous periods or other similar firms. Thereafter, the significance of the figures is established. Such a comparative study would lead us to further questioning, the answers for which have to be brought out by further and deeper analysis. We may work out the figure of income of two firms A and B for a period but to analyze systematically one should (i) arrange the cost and revenue, (ii) relate the income to the capital employed and (iii) compare the result. On this basis we may come to know that A is more profitable than B (vice versa). The next question is why is A more profitable than B ? This question will require further analysis and study of the underlying situation.

We may define financial statement analysis as the process of methodical classification, comparison and raising pertinent questions and then seeking answers for them.

Objects of Analysis

Analysis of financial statements should always be tuned to the objective. People use financial statements for satisfying their particular curiosity. A prospective shareholder would like to know whether the business is profitable and is progressing on sound lines. A financier would like to be satisfied with the safety and reliability of return on his investment. The suppliers and others who would like to transact business with the concern may be interested in the company's ability to hour is short term commitments. Over and above all these, the management is interested in knowing the operational efficiency and financial position of the concern as a

whole and of its various parts or department. The different parties look at the company from their respective points of vi3ew, but the objects generally looked for are : (i) profitability and (ii) financial condition. It can be said that the objective of financial statement analysis is a detailed cause and effect study of the profitability and financial position.

The objectives of financial statement analysis may also be broadly classified on the basis of the persons interested in the analysis as (i) external and (ii) internal. An external analyst usually has to rely 0onlyon the published information. But an internal analyst would really know the full story behind each and every figure of the financial statement, he would also get further supplementary information to properly assess the significance of the figures. Such analysis would be more reliable than that done by an outsider. However, internal analysis may be biased; external analysis would be unbiased and impartial.

Arrangement of Figures for Analysis

Before meaningful analysis can be made, the figure have to be arranged properly. This will also facilitate the work a great deal. The objective is always relevant and should be kept in view all the time. Usually instead of the two column (T Form) statements as ordinarily prepared, the statements are prepared in single (vertical) column form which should throw up significant figures by a process of addition or subtraction. The chief advantage of such presentation is that figures for a number of firms or number of years can be set aside by side for comparison purposes.

A useful form of financial statement was suggested as early as 1917 by the federal reserve Board of the U.S.A. This suggestion was made by the Board to its member banks so that the latte may insist on that presentation while getting the financial statements of their clients for granting of loans etc. This form, it was thought would facilitate the member banks in analyzing the statement. Later this form was also approved by the American Institute of Accountants as suitable for annual reports to the shareholders. The following form (based on the form recommended by the federal reserve Board) is considered suitable for presentation of financial information to shareholders mainly for two reasons :

(1) It provides the information in an easily understandable manner; and
(2) I provides the appropriate figures facilitating further analysis

XYZ LIMITED

POSITION STATEMENT or Balance Sheet) AS ON……

Previous Year Rs.			This Year Rs.
…..	Cash in hand		……
…..	Cash in bank		……
…..	Bills receivable		……
……	Book debts (less provision)		……...
……	Marketable trade investment (at….)		……
_____			_____
….	Liquid assets (1)		…..
=====			=======
….	Inventories (valuation) (2)		…..
=====			=======
…..	Current assets (1) + (2) = (3)		…..
======			=======
…..	Bills payable		…..
…..	Creditors for supply of goods		…..
…..	Creditorsfor expense		…..
…..	Bankoverdraft		…..
…..	Other unsecured creditors (short term)		…..
……	Other liabilities payable in a year's time (including debentures redeemable in a year)		…..
_____			_____
…..	Current liabilities (4)	…….	======
			=======
….	Provision for taxation	…	
….	Dividend payable/proposed	…	
….	Other provisions	…	
		___	
….	Provisions (5)		….
_____			_____
….	Current liabilities and provisions (4) + (5)=(6)		….
=======			=======
….	Net current assets (net working capital) (3) – (6) = (7)		….
….	Land and buildings (at …)	…	
….	Plant and machinery (at ,,,,)	…	
….	Loose tools (at,,,,)	…	
….	Furniture and fixtures (at….)	….	
_____		____	
….	Fixed assets (8)		….
----------			----------
….	Capital employed) (7) + (8) = (9)		….
======			======
….	Investment in government securities (at…)		…
….	Investment in subsidiaries (at,,,)		…

….	Other investments (at ,,,)	…	
….	Other assets (non-trading)	…	
_____		_____	
….	Non business assets (10)	….	
=======		======	
….	Company's Net Assets (9) + (10) = (11)	….	
….	…% Debentures(Security…)	…	
….	…% Secured loan(Security)	…	
		___	
….	Secured loan	…	
….	…% Loans (unsecured)	…	
		____	
….	Long term loans (12)		….
_____		_____	
….	Shareholder's net worth (11)-(12)=(13)		….
-======		=======	
….	---% Preference share Capital (14)		….
======		=======	
….	Equity shareholders net worth (13)-(14)=(15)		….
======		=======	
	Represented by		
....	Equity share capital	….	
….	Forfeited shares	….	
…	Reserves	…	
….	Surplus	…	
_____		____	
….	Equity shareholders' claims		…
….	Less : Accumulated losses	…	
….	Miscellaneous expenditure not written off (Preliminary expenses, discount on issue of shares and debenture, etc.)	…	….
_____		_____	
….			….
======		=======	

It may be noted that the Sachar Committee on Simplifications of company Law, which submitted its report in August, 1978 has given recognition to the presentation of vertical Balance sheet. The format recommended is as follows :

BALANCE SHEET AS AT…….

		This Year Rs.	Rs	Previous year Rs.	Rs.
I.	Fixed Assets (Schedule 1)		…		…
II.	Investments (schedule 2)			…	
	…				

III	Net Current Assets	…	
	…		
	Current Assets, Loans and Advances		
	Stocks (Schedule 3)	…	…
	Sundry Debtors etc. (Schedule 4)	…	…
	Loans and advances (Schedule 5)	…	…
	Cash and Bank Balances (Schedule 6)	…	…
		=========	=======
	Less : Current Liabilities and Provisions :	…	…
	Sundry Creditors etc (Schedule 7)	…	…
	Sundry Deposits	…	…
	Taxation (Net of Advance Payments)	…	…
	Proposed Dividend	…	…
	Provision for Leaving/Retiring Benefits/Gratuities	…	…
		_____	_____
	Total Assets/Fund Employed	…	
…			
	Financed by		
IV	Share capital (Schedule 8)	…	
	…		
	Reserve and Surplus (Schedule 9)	…	
	…		
		=========	=======
V.	Loan Capital and Bank Overdrafts	…	
	…		
	Secured Loan (Schedule 10)	…	…
	Unsecured Loan (Schedule 11)	…	…
	Deferred Payment Liability (Schedule 12)	…	…
		=========	=======
	Capital Expenditure Commitment	…	
	…		
VI	Contingent Liabilities	…	
	…		

An attempt could be made to present the income statement too in a similar manner. The following form of presentation is recommended :

XYZ LIMITED
INCOME STATEMENT FOR THE YEAR ENDED…….

Previous Year		This Year Rs.	
		Rs.	Rs.
…	Gross Sale proceeds		…
	Less : Returns	…	
	Sales tax	…	
…	Net sales for the year (1)		…
…	Cost of goods sold (2) (as per cost statement)		…
…	Gross margin (1-2)=(3)		…
	Operating expenses :		
…	Administration expenses	,,,	
…	Distribution expenses	…	
…	Selling expenses	…	
…	Selling expenses		…
…	Net margin or operating profit (3)-(4)=(5)		…
…	Non trading income (net) except interest (6)		…
	Income before interest and Taxation(IBIT) (5)+(6)=(7)		…
…	Interest (8)		…
	Net Income before taxation (7)-(8)=(9) (IBT)		…
…	Taxation (10)		…
…	Net income after taxation (IAT) (9)-(10)=(11)		…
	Amounts written off/appropriated, Provisions for dividends, etc. (12)		…

…	Income carried forward (11)-(12)=(13)	…

XYZ LIMITED
COST STATEMENT FOR THE PERIOD ….

Previous Year Rs.		This Year Rs.
	Rs.	
…	Opening stock of materials	…
…	Purchases of materials	…
…	Expenses on purchases	…
…	Materials available	…
…	Less : Closing stock of materials	…
…	Materials consumed (A)	
	…	
…	Direct labour cost (B)	
	…	
…	Add : Opening stock of work-in-progress)	…
	Less " Closing stock of work-in-progress))C)	…
…	Prime cost A +B + C=(D)	
	…	
…	Manufacturing expense (E)	
	…	
…	Factory depreciation (F)	
	…	
…	Cost of production (D)+(E)+(F)=(G)	
	…	
…	Opening stock of finished goods (H)	
	…	
…	Cost of goods available for sale (G)+(H)=(I)	
	…	
…	Less: Closing stock of finished goods (J)	
	…	
…	Cost of goods sold (I)-(J)=(K)	
	…	

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==

As in balance sheet, so in the revenue statement, as shown above, ready figures can be obtained for the purpose of further analysis. For instance, gross profit, net profit, materials consumed, prime cost, works cost, cost of goods sold, etc. are readily available. This would facilitate the calculation of ratios.

❖❖❖

Module – 2 : Common sized Statements

A comparison of two years' figures of a concern can be easily made. Under the Companies Act companies must show in their profit and loss account and balance sheet, the corresponding figures for the previous year. Sometimes, however, the figures do not signify anything as the heads of items are regrouped and are incomparable. For a valid comparison, the various heads should be strictly comparable; they should precisely have the same meaning from one year to another.

It is better to work out the ratio of various items to sales (in terms of per centage) and enter these also in the statement. This is shown below with imaginary figures

PROFIT AND LOSS ACCOUNT OF PEE LTD.

		1977		1978	
		Amount Rs.	%to Sales	Amount Rs.	%to Sales
Sales	10,00,000	100.00		12,00,000	100.00
Miscellaneous Income	10,000	1.00		8,000	0,67
	10,10,000	101.00		12,08,000	100.67
Materials consumed	5,50,000	55.00		6,48,000	54.00
Wages	1,50,000	15.00		2,04,000	17.00
Factory expenses	1,00,000	10.00		1,08,000	9.00
Office expenses	45,000	4.50		50,000	4.17
Interest	50,000	5.00		60,000	5.00
Depreciation	70,000	7.00		75,000	6.25
Profit	45,000	4.50		63,000	5.25
	10,10,000	101.00		12,08,000	100.67

Comparative Financial Statements

Two comparable units can be compared regarding profitability and financial position. This will be facilitated if the relevant data are laid side by side in a single statement in single column form. The two organization, say companies, may not have the identical heads of account. Moreover, one company may have certain heads which the other company may not have. Therefore, in order to get over this difficulty, the data must first be properly set

before comparison. In the preparation of comparative financial statements, uniformity is essential. Care must be taken to see that all account heads or groups of these like “administrative expenses”, “fixed assets”, “current assets”, “long term funds”, “short term funds” etc. have the same connotation. Otherwise comparison will be vitiated.

Another difficulty which may crop up is the difference in the accounting methods followed. Uniformity among various companies in this respect is not found anywhere, But if one has knowledge of the differing accounting practices of the organizations, whose figures are being compared, one may rework the figures in such a way that they fall into a uniform pattern. For instance, if a Ltd. has the practice of charg in depreciation by fixed instalment method whereas B Ltd. Adopts the diminishing balance method, it is better to adjust the figures of the two firms to make them in line with one another before comparison is made.

A third major difficulty is the size. Comparison of absolute figures has no significance if the scale of operations of one company is much different from that of the other. In such cases, however, comparison of the ratios would have better meaning. Suppose the sale of a Ltd. is Rs.10,00,000 and of B.Ltd. Rs.4,00,000 and the selling expenses of A Ltd. Are Rs.2,00,000 and of B Ltd. Rs.1,00,000. These figures by themselves do not convey any specially significant point. However, if we state that the percentage of selling expenses to sales in a Ltd. Is 20, whereas in B.Ltd. it is 25, it has some significance. Thus the whole income statement and the balance sheet can be rearranged and ratios worked out which will facilitate better comparison.

The following manufacturing trading and profit and loss accounts of A Ltd. And B Ltd. Presented in the traditional forms as well as in statement form together with ratios is provided to illustrate how by laying the statements side by side with ratios, a comparative study could be made.

Illustration

MANUFACTURING TRADING & PROFIT & LOSS ACCOUNT

OF A LTD. & B LTD.

FOR THE YEAR ENDING ……

A Ltd.	B Ltd.		A Ltd.	B td.	
	Rs.	Rs.		Rs.	Rs.
Opening stock of materials	80,000	1,20,000	Closing stock Materials	60,000	80,000
Purchases of materials	4,00,000	6,00,000	Cost of production		7.70.000 13,20,000
Freight& clearing charges	40,000	60,000			
Carriage on materials	10,000	20,000			
Wages	2,00,000	4,00,000			
Factory expenses	1,00,000	2,00,000			
	8,30,000	14,00,000			8,30,000 14,00,000
Stock of finished goods	30,000	80,000	Sales		8,00,000 14,00,000
Cost of production	7,70,000	13,20,000	Closing Stock of Finished goods		1,00,000 2,00,000
Gross profit c/d	1,00,000	2,00,000			
	9,00,000	16,00,000			9,00,000 16,00,000
Salaries	20,000	30,000	Gross Profit b/d		1,00,000 2,00,000
Rent and rates	5,000	8,000			
Carriage outwards	3,000	4,000			
Delivery expenses	1,000	1,000			
Interest on loan	2,000	2,000			
Depreciation	9,000	15,000			
Net profit c/d	60,000	1,40,000			
	1,00,000	2,00,000			1,00,000 2,00,000

Compare the two companies' performance effectively by vertical presentation "

Solution "

COMPARATIVE INCOME STATEMENT FOR THE YEAR ENDING …

		A Ltd.		B Ltd.	
		Rs.	% to Sales	Rs.	% to Sales
1.	Sales	8,00,000	100	14,00,000	100
2.	(a) Materials cost	4,70,000	60.33	7,20,000	53.93
	(b) Labour cost	2,00,000	25.67	4,00,000	29.96
	(c) Factory over-heads (including depreciation)	1,09,000	14.00	2,14,000	16.11
3.	Cost of production (a + b + c)	7,79,000		13,35,000	
	Opening stock of Finished goods	30,000		80,000	
		8,09,000		14,15,000	
	Less : Closing stock of Finished goods	1,09,000		2,00,000	
4.	Production cost of good sold	7,09,000	88.63	12,15,000	86.79
5.	Gross Margin (1 – 4)	91,000	11.37	1,85,000	13.21
6.	(a) Administrative expenses : Salaries, rent and rates	25,000	3.12	38,000	2.71
	(b) Distribution expenses	4,000	0.50	5,000	0.36
	(c) Financial charges (interest on loan)	2,000	0.25	2,000	0.14
7.	Net profit (5-6)(a+b+c)	60,000	7.50	1,40,000	10.00

The ratios given inside the two boxes represent the ratios of each tem of cost to the total cost of production.

The scheme of presentation shown above can be adopted for balance sheet.

Illustration : Given below are the Balance sheets of two Al LTD and B. LTD. Transport companies as on 31st December, ……. You are required to rearrange the balance sheets suitably to reflect the financial position of the companies clearly :

BALANCE SHEET AS ON …..

	A Ltd.	B Ltd.		A Ltd.	B Ltd.
	Rs.	Rs.		Rs.	Rs.
Equity Share Capital	1,3 0,000	80,400	Land Building	26,070	74,700
Preference share capital	1,19,175	69,700	Vehicles equipments etc. (WDV)	7,10,482	3,21,540
Reserves and surplus	14,033	70,324	Investments temporary	650	8,516
Loans	4,79,600	1,37,951	Materials and supplies	16,137	8,338
Bills payable	2,500	-	Book debts	8,230	4,098
Sundry creditors	11,632	3,241	Prepaid expenses	2,605	822
Outstanding expenses	12,774	542	Cash and bank	7,850	6,704
Dividends declared	2,310	92,560			
	7,72,024	4,54,718		7,72,024	4,54,718

COMPARATIVE FINANCIAL STATEMENT AS ON …

	A Ltd.		B Ltd.	
	Amount Rs.	Percentage	Amount Rs.	Percentage
Cash and bank	7,850	1.01	6,704	1.50
Book debts	8,230	1,10	4,098	0,90
Investments	650	0.11	38,516	0,85
Liquid assets (1)	16,730	2.22	49,318	10.90
Materials and supplies	16,137	2.13	8,338	1.80
Prepaid expenses	2605	0.34	822	0.20
Non liquid current Assets (2)	18,742	2.47	9,160	2.00
Current assets (1)+(2)=(3)	35,472	4.69	58,478	12.90

Bills payable	2,500	0.30	-	-
Sundry creditors	11,632	1.50	3,241	0.70
Outstanding expenses	12,774	1.70	542	0.10
Dividends declared	2,310	0.30	92,560	20.40
Current liabilities (4)	19,216	3.80	96,343	21.20
Net current assets (3)-(4)=(5)	16,256	(-)	37,865	
Land and buildings	26,070	3.30	74,700	16,40
Vehicles, Equipments etc.	7,10,482	92.01	3,21,540	70.70
Fixed assets=(6)	7,36,552	95.31	3,96,240	87.10
Capital employed (5)+(6)=(7)	7,52,808		3,58,375	
Loan)s)	4,79,600	62.20	1,37,951	30.30
Shareholders net worth (7)-(8)=(9)	2,73,208	34.00	2,20,424	48.50
Represented by				
Equity share capital	1,30,000	16.80	80,400	17.70
Preference share capital	1,19,175	15.40	69,700	15.30
Reserves and surplus	14,033	1.80	70,324	15.50

Note – Percentage against each item show the percentage of such item to the total assts or liabilities as the case may be.

Vertical and Horizontal Analysis :

In a statement the presentation of data may be done by arranging the items one below the other, which will constitute the total. At the same time columnar presentation by using the facility of columns for each item could also be done. For instance, in the income statement the sales can be split up into different components like material cost, Labour cost, overhead, etc. And

profits. At the same time columns may be used to present different companies figures, so that one can have a comparative view of number of companies' figures. This means if one takes the figures in one column vertically he can compete composition of the total. If one wants to compare the trend of one item alone over number of companies, he can go horizontally over number of columns against one item. Both the analyses, vertical and horizontal can be done simultaneously.

Trend Percentages :

A horizontal comparison of various items one by one along with their percentage to the total can be done to know the trend of that particular item over a period of years. The study of a trend will really indicate the direction of movement over a long time. One can get a better view of things unaffected by short term influences by study of long term trend percentages. For example, if the total assets of a company are growing steadily at a certain percentage over along period it is definitely a good indicator of the growth of the company. Similarly, if a company is suffering losses uniformly over a period of years it is a good indicator of the operational position of the company. An illustration of a statement showing rend percentages is available on page 122:

In the statement the percentage column are more relevant than the figures. A horizontal comparison over the years reveals the following significant points :

1. Sale volume has been steadily rising over the 10 year period except a small setback in 1973.

2. The percentage of goods consumed has risen over the 10 year period from 34.93 of sales to 42.43. a rise of nearly 25%.

The rise in staff cost over the 10 year period is nearly 40% from 17.66% of sales to 24.28%. similarly, there has been a substantial rise in other expenses from 13.60% to 18.93% of sales. All costs have been rising excepting a small decline in depreciation content.

3. The consequence of the rise in all cost components is the decline in the profit margin. The operating income has declined from 27.35% in 1965 gradually to 7.33% in 1974.

In absolute figures though the sale have increased to 2.73 times over a 20 years period, the operating income has declined from rs.364 lakhs to Rs.259 lakhs. However, the after tax profit has

increased from Rs.144 lakhs to Rs.174 lakhs mainly as a consequence of other sources of income and taxation burden.

The analysis shows the profitability performance of a sound ad well managed drug company.

Financial Statement Analysis – Meaning :

Financial statement analysis means study of relationship among various factors in a business as disclosed by financial statements of a firm. The analysis show the trend of the factor and will help in evaluation of component parts. The analysis of financial statements is done to obtain a better insight into a firm's position and performance. The basic objectives of financial statements are as follows :-

To judge the financial health of the firm
To evaluate the profitability of the enterprise
To gauge the debt servicing capacity of the firm
To understand the long and short term solvency of the firm

To know the return on capital employed or invested.

Types of Financial Statement Analysis

The different types of financial statement analysis are summarized below :

External analysis The external analysis of financial statements done by the outside agencies like investors financial analysts, lenders, government agencies research scholars etc. The detailed records and accounting information is not available to the outside agencies and they rely mostly on published financial statements and information for analysis.

Internal analysis The internal analysis done by those who have access to detailed financial records of the firm. Generally, management is interested in the analysis of financial statements for measuring the effectiveness of its own policies and decisions. Sometimes

	officers appointed by court or government under statute will conduct internal analysis.
Horizontal Analysis	When evaluation is done for several years simultaneously at a time for making conclusions, it is called "*horizontal analysis".* This based on the data from year to year, rather than one time available information. Horizontal analysis is done for finding the4 trend ratios and in comparative financial statements.
Vertical Analysis	It is the study of quantitative relationship of one financial item to another based on financial statement on a particular date. Common size statements and ratio analysis are the examples for vertical analysis.
Long term analysis	The long term analysis of financial statements is done with a view to evaluate the long term solvency profitability liquidity financial health, earning capacity of the firm, debt servicing capacity etc. of a business ent3rprise. The objective of long term analysis is to determine whether the earning capacity of the firm is sufficient to meet the targeted rate of return on investment and is adequate for future growth and expansion of business.
Short term analysis	The short term analysis of financial statements is undertaken mainly to determine the liquidity position of the firm and short term solvency of the firm. The analysis is oriented on efficiency of working capital management and profitability of current operations.

Methods of analysing Financial Statements –

For analysis of financial statements, they should be re-arranged to reveal the relative significance and effect of various items of data in relation to time period and for making inter firm comparisons. While re-arranging the data logical relationship and sequence

should be given consideration. The analysis of financial statements will help; in interpretation and logical conclusions. The important methods used in analysis of financial statements are as follows :

- Comparative financial statements
- Common size statements
- Trend ratios
- Ratio analysis
- Funds flow analysis
- Cashflow analysis
- Break even and cost-volume profit analysis
- Value added analysis

The firstly three methods are discussed in this chapter and the rest of the methods are elaborately explained in the subsequent chapters.

Comparative Financial Statements

Comparative financial statements are statements of financial position of a business designed to provide time perspective to the consideration of various elements of financial position embodies to such statements. Comparative financial statements reveal the following :

- Absolute data (money values or rupee amounts)
- Increase or reduction in absolute data in terms of money values
- Increase or reduction in absolute data in terms of percentages
- Comparison in terms of ratios
- Percentage of totals

Financial statements of two or mor3e firms can also be compared for drawing inferences. This is called “inter firm comparison”

Comparative Income Statement A comparative income statement show the absolute figures for two or more periods and the absolute change from one period to another. Since the figures are shows side by side, the user can quickly understand the operational performance of the firm in different periods and draw conclusions.

Comparative Balance sheet – Balance sheets as on two or more different dates are used for comparing the assets, liabilities and the net worth of the company. Comparative balance sheet is useful for studying the trends of an undertaking.

Advantages – The comparative financial statements are useful for analysis of the following :

- Comparative statements indicate trends in sales, cost of production, profits etc. and help the analyst to evaluate the performance of the company.

- Comparative statements can also be used to compare the performance of the firm with the average performance of the3 industry or inter firm comparison. This helps in identification of the weaknesses of the firm and remedial measures can be taken accordingly.

Weaknesses – The comparative financial statements suffers from the following weaknesses:

- Inter firm comparison can be misleading if the firms are not identical in size and age and when they follow different accounting procedures with regard to depreciation inventory valuation etc.

- Inter period comparison may also be misleading, if the period has witnessed changes in accounting policies inflation, recession etc.

Illustration

The following is the Profit and Loss Account of TATA MOTORS Ltd. for the years 2004 and 2005. Prepare comparative Income statement and comment on the profitability of the undertaking.

Particulars	2004	2005	Particulars	2004	2005
To Cost of goods sold	2,31,625	2,41,950	By Sales	3,60,728	4,17,125
To Office expenses	23,266	27,068	Less Returns	5,794	6,952
				---	---
To Selling expenses	45,912	57,816		3,54,934	4,10,173
To Interest paid	2,137	1,750	By other incomes		
			Interest and		
To Loss on sale of fixed			dividends	1,898	1,310
Assets	627	175			
			By discount on		

To Income tax	21,519	40,195	purchase	2,125	1,896
To Net Profit	35,371	44,425	By Profit on sale Of land	1,500	
	3,60,457	4,13,379		3,60,457	4,13,379

**

Comparative Income Statement of TATA MOTORS Ltd. for the years ending 2004 & 2005

Particulars	2004 (Rs)	2005 (Rs)	Increase Decrease (Rs.	(+) Increase (-) Decrease %
Sales	3,60,728	4,12,125	+ 56,397	+ 15.63
Less : Sales returns	5,794	6,952	+ 1,158	+ 19.98
	3,54,934	4,10,173	+ 55,239	+ 15.56
Less : Cost of goods Sold	2,31,625	2,41,950	+ 10,325	+ 4.46
Gross Profit (i)	1,23,309	1,68,223	+ 44,914	+ 36.42
Operating expenses Office expenses	23,266	27,068	+ 3,802	+ 16.34
Selling expenses	45,912	57,816	+ 11,094	+ 25.93
(ii)	69,178	84,884	+ 15,706	+ 22.70
Operating Profit (i) - (ii)	54.131	83,339	+ 29,208	+ 53.96
Add: Other incomes	5,523	3,206	- 2,317	- 41,95
	59,654	86,545	+ 26,891	+ 45.08
Less : Other expenses	2,764	1,925	- 839	- 30.35
Profit before tax	56,890	84,620	+ 27,730	+ 48.74
Less : Income tax	21,519	40,195	+ 18,676	+ 86.79
Net Profit after tax	35,371	44,425	+ 9.054	+ 25.60

The comparative income statement reveals that while the net sales has been increased by 15.5% the cost of goods sold increased by 4.46% Gross profit is increased by 36.4%. The total operating expenses has been increased by 22.7% and the gross profits is suffice to compensate increase in operating expends. Net profit after tax is Rs.9.054 (i.e. 25.6%) increased. The overall profitability of the undertaking is satisfactory.

Illustration

The following are the Balance Sheets of GODWINS Ltd. for the years ending 31st March, 2004, 2005 .

Particulars	2004	2005
Liabilities		
Equity share capital	2,00,000	3,30,000
Preference share capital	1,00,000	1,50,000
Reserves	20,000	30,000
Profit and loss account	15,000	20,000
Bank overdraft	50,000	50,000
Creditors	40,000	50,000
Provision for taxation	20,000	25,000
Proposed dividend	15,000	25,000
	4,60,000	6,80,000
Fixed Assets (Less : Depreciation)	2,40,000	3,50,000
Stock	40,000	50,000
Debtors	1,00,000	1,25,000
Bills receivable	20,000	60,000
Prepaid expenses	10,000	12,000
Cash in hand	40,000	53,000
Cash at bank	10,000	30,000
	4,60,000	6,80,000

Comparative Balance Sheet

Particulars	31st March 2004 (Rs)	31st March 2005 (Rs)	Increase(+) Decrease (-) (Rs)	Increase (+) Decrease (-) (Rs.)
Assets				
Current Assets				
Cash at bank and in Hand	50,000	83,000	+ 33,000	+66
Bills receivable	20,000	60,000	+ 40,000	+ 200
Debtors	1,00,000	1,25,000	+ 25,000	+25
Stock	40,000	50,000	+ 10,000	+25
Prepaid expenses	10,000	12,000	+ 2,000	+20
(1)	2,20,000	3,30,000	+1,10,000	+50
Fixed Assets (2)	2,40,000	3,50,000	+1,10,000	+ 45.83
(1) + (2)	4,60,000	6,80,000	+2,20,000	47.83
Liabilities				
Current liabilities				
Bank overdraft	50,000	50,000	---	---
Creditors	40,000	50,000	+ 10,000	+ 25
Proposed dividend	15,000	25,000	+ 10,000	+ 66.67
Provision for taxation	20,000	25,000	+ 5,000	+ 25
(a)	1,25,000	1,50,000	+ 25,000	+ 20
Capital and Reserves				
Equity Share capital	2,00,000	3,30,000	+1,30,000	+ 65
Preference share Capital	1,00,000	1,50,000	+ 50,000	+ 50
Reserves	20,000	30,000	+ 10,000	+ 50

Profit and loss account	15,000	20,000 + 5,000	+ 33.33	
(b)	3,35,000	5,30,000 + 1,95,000	+ 58.21	
(a) + (b)	4,60,000	6,80,000 + 2,20,000	+ 47.83	

Interpretation –

- The above comparative balance sheet reveals the current assets has been increased by 50% while current liabilities increased by 20% only. Cash is increased by Rs.33,000 (i.e.66%). There is an improvement in liquidity position.

- The fixed assets purchased was for Rs.1,10,000. as there are no long term funds, it should have been purchased partly from share capital.

- Reserves and profit and loss account increased by 50% and 33.33% respectively. The company may issue bonus shares in near future.

- Current financial position of the company is satisfactory. It can raise more long term funds.

Module – 3 : Common Size Statements

The figures shown in financial statements viz. profit and loss account and balance sheet are converted to per centages so as to establish each element to the total figure of the statement and these statements are called *common size statements"* These statements are useful in analysis of the performance of the company by analyzing each individual element to the total figure of the statement. These statements will also assisting analysing the performance over years and also with the figures of the competitive firm in the industry for making analysis of relative efficiency. The following statements show the method of presentation of the data.

Common Size Income Statement

In common size income statement the sales figures is taken as 100 and all other figures of costs and expenses are expressed as per centage to sales. When other costs and expenses are reduced from sales figure of 100, the balance figure is taken as net profit. This reveals the efficiency of the firm in generating revenue which leads to profitability and we can make analysis of different components of costs proportion to sales. Inter firm comparison of common size income statements reveal the relative efficiency of costs incurred.

Common Size Balance Sheet

In common size balance sheet, the total of assets side or liabilities side is taken as 100 and all figures of assets and liabilities capital and reserves are expressed as a proportion to the total i.e. 100. The common size balance sheet reveals the proportion of fixed assets to current asserts composition of fixed assets and current assets proportion of long term funds to current liabilities and provisions composition of current liabilities etc. It also helps in making inter firm comparison and highlights the financial health and long term solvency ability to meet short term obligations and liquidity position of the enterprise.

Illustration

Common Size Income Statement of ADAG LTD for the year ended

31st March, 2005

Particulars		Amount (Rs.	% to sales
Sales	(a)	14,00,000	100
Raw materials		5,40,000	38.6
Direct wages		2,30,000	16.4
Factory expenses		1,60,000	11.4
Cost of goods sold	(b)	9,30,000	66.4
Gross profit	(a) – (b)	4,70,000	33.6
Less : Administrative expenses		1,10,000	7.9
Selling and distribution expenses		80,000	5.7
Operating profit		2,80,000	20.0
Add : Non-operating income		40,000	2.9
		3,20,000	22.9
Less : Non-operating expenses		60,000	4.3
Profit before tax		2.60,000	18.6
Less :Income tax		80,000	5.7
Profit after tax		1,80,000	12.9

Common Size Balance Sheet of ADAG Ltd. as at 31st March, 2005

Particulars	Amount (Rs.	% to total
Fixed Assets		
Land	50,000	5.3
Buildings	1,10,000	11.7
Plant and machinery	2,50,000	26.6
Current Assets		
Inventory		
Raw materials	80,000	8.5
Work in process	50,000	5.3
Finished goods	1,60,000	17.0
Sundry debtors	2,10,000	22.4
Cash and Bank	30,000	3.2
	9,40,000	100.0
Capital and Liabilities		
Equity share capital	2,50,000	26.6
Preference share capital	1,00,000	10.6
General reserve	1,60,000	17.0
Debentures	80,000	8.5
Current Liabilities		
Sundry creditors	2,20,000	23.4
Creditors for expenses	40,000	4.3
Bills payable	90,000	9.6
	9,40,000	100.0

Now analysis of performance and financial position can be made from the above common size statements.

Illustration

From the following Profit and Loss account prepare a Common Size Income Statement

Particulars	2004	2005	Particulars	2004	2005
To Cost of goods sold	12,000	15,000	By Net Sales	16,000	20,000
To Administrative Expenses	400	400			
To Selling expenses	600	800			
To Net Profit	3,000	3,,800			
	16,000	20,000		16,000	20,000

Common Size Income Statement

Particulars	2004 (Rs)	2004 (%)	12005 (Rs.)	12005 (%)
Net Sales	16,000	100.00	20,000	100.00
Less : Cost of goods sold	12,000	75.00	15,000	75.00
Gross profit	4,000	25.00	5,000	25.00
Less Operating expenses				
Administration expenses	400	2.50	400	2.00
Selling expenses	600	3.75	800	4..00
Total operating expenses	1,000	6.25	1,200	6.00
Net Profit	3,000	18.75	3,800	19.00

Illustration

Following are Balance Sheets of NELCO Ltd. for the year ended

31st March, 2004 and 2005

Liabilities	2004	2005	Assets	2004	2005
Equity share capital	1,00,000	1,65,000	Fixed assets (net)	1,20,000	1,75,000
Preference share Capital	50,000	75,000	Stock	20,000	25,000
Reserves	10,000	15,000	Debtors	50,000	62,500
Profit and loss account	7,500	10,000	Bills receivable	10,000	30,000
Bank overdraft	25,000	25,000	Prepaid expenses	5,000	6,000
Creditors	20,000	25,000	Cash in bank	20,000	26,500
Provision for taxation	10,000	12.500	Cash in hand	5,000	15,000
Proposed dividends	7,500	12,500			
	2,30,000	3,40,000		2,30,000	3,40,000

Common Size Balance sheet of NELCO Ltd. for the year ended 31sat March, 2004 and 2005

Particulars		2004		2005	
		(Rs.)	(%)	(Rs)	(%)
Capital and Reserves					
Equity share capital		1,00,000	43.48	1,65,.000	48.53
Preference share capital		50,000	21.74	75,000	22.05
Reserves		10,000	4.34	15,000	4,41
Profit and loss account		7,500	3.26	10,000	2.95
	(i)	1,67,500	72.82	2,65,000	77.94
Current Liabilities					
Bank overdraft		25,000	10.87	25,000	7.35

Creditors		20,000	8.70	25,000	7.35
Provisions for taxation		10,000	4.35	12,500	3.68
Proposed dividends		7,5000	3.26	12,500	3.68
	(ii)	62,500	27.18	75,000	22.06
	(i) + (ii)	2,30,000	100.00	3,40,000	100.00
Fixed Assets (net)	(a)	1,20,000	52.17	1,75,000	51.47
Current Assets					
Stock		20,000	8.70	25,000	7.35
Debtors		50,000	21.74	62,500	18.38
Bills receivable		10,000	4.34	30,000	8.82
Prepaid expenses		5,000	2.17	6,000	1.78
Cash in Bank		20,000	8,70	26,500	7.79
Cash in hand		5,000	2.18	15,000	4.41
	(b)	1,10,000	47.83	1,65,000	48.53
Total Assets (a) + (b)		2,30,000	100.00	3,40,000	100.00

Interpretation -

- In 2005,current assets were increased from 47,83% to 28.53%. Cash balance is increased by Rs.16,500
- Current liabilities were decreased from 27.18% to 22.06%. the Company can pay off the current liabilities from current assets. The liquidity position is reasonably good.
- Fixed assets were increased from Rs.1,20,000 in 2004 to Rs.1,75,000 in 2005. These were purchased from the additional share capital issued.
- The overall financial position is satisfactory.

Trend Analysis

The trend ratios of different items are calculated for various periods for comparison purpose. The trend ratios are the index numbers of the movements of reported financial items in the financial

statements which are calculated for more than one financial year. The calculation of trend ratios are based on statistical t3echnique called *"Index numbers"* . The trend ratios help in making horizontal analysis of comparative statements. It reflects the behaviour of items over a period of time. The methodology used in computation of trend ratios is as follows :

(1) The accounting principles and policies should be consistently followed through out the period for which the trend ratios ate calculated.

(2) The trend ratios should be calculated only for the items which have logical relationship with one another.

(3) The trend analysis should be made atleast for four consecutive years.

(4) The financial statements one financial year should be selected as base statement and financial items of it should be assigned with value as 100

(5) Then trend ratios of subsequent years' financial statements should be calculated by applying the following formula :

$$= \frac{\text{Absolute figure of financial statement under study}}{\text{Absolute figure of same item in baser financial statement.}} \times 100$$

(6) Tabulate the trend ratios for analysis of trend over a period

The trend percentages are calculated for select major financial items in the financial statements to arrive at the conclusions for important changes. The trend may some times be affected by external factors like government policies economic conditions changes in income distribution, technology development population growth, changes in tastes and habits etc. the trend analysis is a simple technique and does not involve tedious calculations.

Limitations The analysis through trend ratios is subject to the following limitations :

- The trend ratios are uncomparable, if there is inconsistency in accounting policies and practices.

- The price level changes are represented in trend ratios

- The trend ratios musty be studied along with absolute data for correct analysis.

- While analyzing the trend ratios, non-financial data should also be considered otherwise conclusions would be misleading.

Illustration

Even the following data, calculate trend a percentage taking 2003 As base:

(Rs)

Particulars	2003	2004	2005
Sales		50,000	75,000	1,00,000
Purchasers		40,000	60,000	2,000
Expenses		5,000	8,000	15,000
Profit		5,000	7,000	13,000

Particulars	2003	2004	2005	Trend percentage Base 2003		
	(Rs)	(Rs)	(Rs)	2003	2004	2005
Purchases	40,000	60,000	72,000	100	150	180
Expenses	5,000	8,000	15,000	100	160	300
Profit	5,000	7,000	13,000	100	140	260
Sales	50,000	75,000	1,00,000	100	150	200

Illustration

From the following data, calculate trend percentages (2003 as the base)

(Rs.)

Particulars	2003	2004	2005
Cash	200	240	160
Debtors	400	500	650
Stock	600	800	700
Other current assets	450	600	750

Land	800	1,000	1,000
Buildings	1,600	2,000	2,400
Plaint	2,000	2,000	2,400

Trend percentages (Base year 2003)

Assets	2003 (Rs.)	2004 (Rs)	2005 (Rs)	2003	2004	2005
Cash	200	240	160	100	120	80
Debtors	400	500	650	100	125	163
Stock	600	800	700	100	133	117
Other current assets	450	600	750	100	133	167
	1,650	2,140	2,260	100	130	137
Fixed assets						
Land	800	1,000	1,000	100	125	125
Buildings	1,600	2,000	2,400	100	125	150
Plant	2,000	2,000	2,400	100	100	120
	4,400	5,000	5,800	100	114	13

Module – 4 : Limitations of Historical Accounting

The following are the limitations of conventional historical accounting :

Historical accounts do not recognize the unrealized bolding gains. Assets are shown in the account at cost less depreciation and as such the unrealized holding gains arising from the increase in monetary value of asserts due to inflation are not shown. Assets acquired on different dates are added up at acquisition cost without any regard to change in the purchasing power of rupee. For example one machine might have been acquired in 1995 for Rs.10 lakh, showing the same acquisition in current year accounts makes no sense inspite of further drop in the purchasing poser of rupee and this is highly misleading. Therefore financial statements prepared under historical accounting are mainly statements of historical facts and do not reflect the current worth of the business. This deprives the users of accounts viz. Shareholders, employees creditors management etc. from getting useful information on a type of gain which is increasingly important during a time of inflation. To remedy this situation the assets must be shown either at their replacement cost or the historical cost must be converted to an equivalent number of rupees reflecting the current purchasing power by using as an appropriate multiplier. Some companies have already started showing assets (particularly property assets) at a *"valuation* on major accounts but unfortunately there has been no useful and meaningful comparison of the accounts of these companies is difficult.

The aim of calculating and charging depreciation under historical accounting is to spread the cost of an asset over its useful life. It does not take into account the changes in the replacement value of the fixed assets under inflationary conditions resulting in inadequate charge of depreciation. Depreciation provided for at a reduced rate may totally be inadequate to purchaser a new machine. The cost of which would have appreciably gone up. It follows that the profit shown by the company during this period were overstated and that they did jot truly reflect the surpluses from the business activities after maintaining the capital assets intact. Under historical accounting inventories acquire a told prices are matched against revenue expressed at current prices. As a result, during periods of inflation, profits are overstated due to mixing up of holding gains and operating gains. Exaggerated profits being shown by historic accounting methods due to the valuation of the same quantities of closing stocks at a higher level ion successive years of inflation. This progressive valuation of closing stocks at higher amounts will result in acute shortages of funds and profit shown will not be there in real terms.

Inflation Accounting

Financial accounts are the basis on which the success of the business is measured and on which investors can find out whether or not their investment is safe and will produce a reasonable return for them. Financial accounts, therefore, have a significant effect on the business and shareholders are particularly interested in them from the point of view of not only obtaining a good return on their investment but also of maintaining the value of that investment. But if this value is expressed in terms of historical costs without allowing for the inspect of inflation, it could be illusory. Hence, the need for inflation accounting. The purpose of inflation adjusted accounting is to restore the principle of matching current revenues with current costs or current purchasing poser to the Profit and Loss Account, thus removing the inflationary element from historic cost profit and/or allowing the concept of physical capital maintenance to be adopted. The techniques used to take the inflationary effect into account are (a) Current Purchasing Power Method and (b) Current Cost Accounting Method.

Current Purchasing Power (CPP) Method

Under this method of adjusting accounts to price changes, all items in the financial statements ate restated 9n terms of a constant unit of money i. e ion terms of general purchasing power by using an appropriate multiplier. A general price index is used for this purpose since it is the best indicator of the changes in the purchasing power of money as a whole. This method takers into account the changes in the general purchasing power of money and ignores the actual rise or fall in the price of the given item. The values of historical costs are to be converted into value of purchasing power as at the end of the period. Two index numbers are required one showing the general price level at the end of the period and the other reflecting the same at the date of the transaction. Profit under this method, is increase in the value of the jet assets over a period. All valuations being made in terms of current purchasing power. For the purpose of CPP method of accounting it is necessary to distinguish between two classes of items monetary and non monetary items.

Monetary Items

Monetary items may be defined as those fixed by contract or by their nature and are expressed in rupees regardless of changes in the price level. They include monetary assets such as cash, debtors and loans and exist as money or as claims to specified sums of money. Holders of monetary assets suffer a loss in the general purchasing power of their assets during periods of inflation. Thus, if one holds money in the form of a bank deposit and the

yearly rate of inflation is 25% the loss in the purchasing power of that money by the end of the period will be 25%. Monetary items include monetary liabilities such as creditors bank overdrafts and long term loans. As the value of money falls during a period of inflation, it follows that the value of such liabilities in current rupees will fall similarly and this fall represents a purchasing poser gain to the debtor consequently those who incur monetary liabilities gain at the expense of creditors during period of inflation, since they will settle these liabilities with rupees possessing less purchasing poser than those they have previously received directly or indirectly at the time the liabilities were incurred.

Non monetary Items

Non monetary items are assets and liabilities such as fixed assets, Shareholders, equity, which are assumed neither to lose nor to gain in value by reason of inflation or deflation. This is because price changes for these items will tend to compensate for changes in the value of money. For example, if stock on hand at the beginning of the year remain unsold at the end of the year, then will be no purchasing power loss since one assumes the sale price when they are sold would be adjusted upwards to take account of the fall in the value of money.

Limitations – Financial statements prepared under CPP Method are criticized for the following reasons :

- In the long term, CPP Method does not remedy the deficiencies of Historic cost accounting and so it does not provide the best long term solution to the problems of accounting for inflation;

- The Retail Price Index is an Index of prices of wide range goods and services purchased by domestic consumers. In many cases, such an index will give a misleading indication of effects of inflation on individual companies.

- The method leads to a new set of problems by expressing company accounts in a new writ of measurement viz. quantity of current purchasing power instead of monetary units. The unit of current purchasing power is likely to be conceptually difficult for most users of accounts to understand..

- The recommendation that CPP statements should be supplementary to the basic accounts weakens their impact.

Current Cost Accounting (CCA) Method

In order to rectify the defects and meet the problems of Historic cost accounting and the Current purchasing power method, an accounting system to be known as *Current Cost Accounting* is devised. The CCA method matches current revenues with the current cost of the resources which arte consumed in earning them. Historic cost figures are adjusted individually for the changes n prices which are specific to the physical resources.

Features – The maintenance features of the CCA method are given below :

- Accounts will continue to be drawn up[in terms of monetary units.

- Accounts should show the value to the business of the company assets at the balance sheet date.

- Profit for the year should consist of the company's operating gains. Extraordinary gains may be shown as Profit but should be distinguished from operating gains.

- Accounts drawn up in this way should become the basic published accounts of companies. In addition the net book value of assts and depreciation for the year on historic cost basis should be shown in notes to the accounts.

- Companies should include in their accounts summary statement orf total gains for the year, showing separately their Operating gains, Extraordinary gains and Holding gains.

- Current cost information should be published in addition to historical cost information as part of the annual financial reports.

- The current cost accounts should consist of a Profit and Loss Account and a Balance Sheet with explanatory notes.

- The Current Cost Profit and Loss Account should show the current cost operating profit ort loss. This is derived by making, three adjustments to historical cost, profit before interest and taxation in respect of depreciation, cost of sales and monetary working capital. The nature of the sale adjustments are discussed later in this chapter.

- The Current Cost Profit and Loss Account should also include a figure attributable to shareholders. This is derived by making a gearing adjustment to the current cost operating profit.

- Current cost earnings per share based on the current cost profit attributable to shareholders should be disclosed.

- The current cost Balance Sheet should include fixed assets and stocks at their value to the business. The Balance Sheet may be shown in summary form and should include a separate current Cost Reserve showing the effects of the following three elements (a) Revaluation surpluses or deficits arising from price changes in respect of fixed assets and stocks (b) The monetary working capital adjustment and (c) The gearing adjustment.

Advantages – The important advantages of CCA method of inflation accounting are as follows :

- Assets and liabilities showing at their *value to the business* will enable comparative returns on capital employed of different companies to be assessed in a more useful way during a time of inflation.

- Clear separation in the accounts of holding, operating and extraordinary gains will lead to clear distinction being made between gains which due to a company's productive efforts and gains due to luck or skill in the timing of purchases of asserts during a period of inflation.

- The principles of CCA are developments of accounting techniques already in use by number of companies, e.g. the revaluation of property assets in company accounts is already widespread and the principle underlying the Cost of Sales Adjustment forms the basis of the base stock method of accounting for stock CCA is an evolutionary rather than a revolutionary system accounting..

- As depreciation is provided on current cost, the method prevents over statement of profits and keeps the capital intact. This method provides better information to investors than is possible under historical accounts.

4

RATIO ANALYSIS

Module – 1 : Meaning and Definitions

The term Ratio refers to the numerical or quantitative relationship between two items/variables, expressed in a simple mathematical form. In other words, a ratio is simply one number expressed in terms of another number to show the relationship between the two numbers (or variables).

(i) Different Modes of expressing an Accounting Ratio :

The relationship between the numbers/variables (ratio) can be expressed as :

(i) percentages such as net profits are 25 per cent of sales (assuming net profits of rs.25,000 and sales of Rs.1,00,000)

(ii) fractions like net profit is one fourth of sales, and

(iii) proportion or times such as the relationship between net profits and sales is 1 : 4. An alternative way of expressing this relationship would be to omit the base of 1 and merely give the ratio as 4

These alternative methods of expressing relationship between items, which should be related to each other, are, for the purpose of financial analysis referred to as Ratio Analysis. Thus, to sum up, any attempt to find out the relationship between two relative items or groups of items of the financial statement establishes a ratio. Ratio analysis, therefore, means the process of computing, determining and presenting the relationship of inter connected accounting figures or groups of accounting figures of the financial statements. The art of ratio analysis is, firstly, in the selection of those ratios which are most appropriate for the purpose under consideration and, thereafter, in the interpretation of the position they reveal “Ratio Analysis of financial statements must be preceded by careful thought as to the kinds of insights the analyst wishes to obtain. Ratios are not ends in themselves rather, on a selective basis, they may help answer significant questions :

(ii) Comparison of Ratios

Ratios by themselves like absolute figures, fail to reveal the true position and therefore, computation of ratios, which is relatively an easy exercise, does not add any information which is not inherent

in the accounting figures. What the ratios do is that they reveal the relationship in a more meaningful way which enables an analyst to interpret them judiciously and intelligently and draw inferences or conclusions from them. Such inference scan be drawn by comparisons :

The analysis of financial ratios involves the following types of comparisons

(i) Present ratios with the pest or future ratios of the same enterprise. This infra-firm comparison shows a trend over the years or the direction of changes over the years. These ratios are called Trend Ratios.

(ii) Ratios of the enterprise with those of others in the same line of business or activities. This inter-firm comparison reflects the performance of the enterprise vis-à-vis others, i.e. its competitors.

(iii) Ratios of the enterprise with the average or standard ratios of the industry.

To illustrate, if we say that the return on capital employed for an enterprise is 15 per cent in a particular year, does it indicate anything ? Only if the figure is related to the fact that in the preceding year, the relevant return was 12 per cent or 18 per cent, then it can be inferred whether the profitability of the enterprise has declined or improved. Again, if w43 know that the return for other enterprises in the same line of business or activities (i.e. its competitors) and for the industry as a whole is 10 peer cent and 20 per cent respectively, the profitability of th4 enterprise in question can be evaluated. It would, thus, be seen that comparison with related facts is the basis of ratio analysis.

INFORMATION REQUIRED FOR RATIO ANALYSIS

Before undertaking Ratio Analysis, it is important to collect the financial statements in complete form. Complete financial statements would normally comprise :

- Balance Sheet
- Trading/Manufacturing and Profit and Loss Account
- Various Schedules relating to assets and liabilities, particularly the debtors, creditors, loans and advances stocks, provisions, term loans and deposits including unsecured or subordinated loans;
- Report of the Auditors in the prescribed Form;

- Report of the Directors, if it is a Company
- Details of Contingent Liabilities
- Details of Interest on Term Liabilities payable within 12 months from the date of Balance sheet;
- Details of old or slow moving or obsolete stocks, unrecoverable debts and advances given on a long term basis;

OBJECTIVES OF RATIO ANALYSIS

ACCOUNTING RATIOS :

What are Ratios ?

An absolute figure often does not convey much meaning. Generally, it is only in the light of other information that the significance of a figure is realized. A weighs 70 kgs. Is he fat ? One cannot answer that question unless one knows A's age and height. Similarly a company's profitability cannot be known unless together with the amount of profit, the amount of capital employed is also seen. The relationship between the two figures expressed mathematically is called a ratio. The ratio between 4 and 10 is 0'4 or 40%. 0'4 and 40% are ratios. Accounting ratios are relationships, expressed in mathematical terms, between figures which have a cause and effect relationship or which are connected with each other in some manner or the other. Obviously no purpose will be served by working out ratios between two entirely unrelated figures such as discount on debentures and sales. Ratios may be worked out on the basis of figures obtained in the financial statements ad, therefore, may be classified as follows :

1. Income statement ratios;
2. Position statement (balance sheet) ratio; and
3. Inter-statement ratios.

The first set of ratios is calculated on the basis of figures in the income statement; for instance, ratio of gross profit or net profit to sales. The second type is based on figures in the balance sheet, for instance, the ratio of loans to total equity or of current assets to current liabilities. The third type of ratios shows the relation of figures in the income statement and in the balance sheet, e.g. the ratio of net profit to capital employed or sales to fixed assets.

The above classification, however is rather crude, since it leads one to think that analysis of the income statement or the

balance sheet ca be attempted in isolation. Financial statements are indicators of the profitability and the financial position of a company. Any one, including the management, who is interested in acquiring knowledge about a company its concerned with these two aspects. A good company is that which has good profitability as sell as a sound financial position; either one or the other being aloe good des not make accompany sound. Ratios, as tools for establishing true profitability and financial position of a company, may be classified as :

1.` Profitability ratios

2. Turnover ratios

3. Financial ratios.

To say the same thing in different words, some ratios will portray the financial position while others will portray the causes that lead to a change in it.

CLASSIFICATION/TYPES OF RATIOS –

For the purpose of analysis and interpretation of financial statements, ratios can be classified into different categories.

The traditional classification has been on the basis of the financial statements from which the ratios are calculated, i.e. the financial statements to which the determinants of a ratio belong. Thus, there are :

(i) Balance Sheet Ratios, i.e. ratios calculated on the basis of the items/figures of Balance sheet only. For example, Current ratio, Debt-Equity Ratio etc. these ratios are also referred to as Financial Ratios.

(ii) Profit and Loss Account ratios or Income Statement Ratios or Revenue Statement ratios, i.e. ratios calculated on the basis of the items/figures of Profit and Loss Account only. For example, Gross Profit Ratio, Stock Turn over ratio etc. These ratios are also called Operating Ratios.

(iii) Balance sheet and Profit and Loss Account ratios, i.e. ratios calculated on the basis of the items/figures of both the Balance sheet and the Profit and Loss account. For example, Fixed Assets Turnover ratio, Debtors' Turnover ratio etc. these ratios are also referred to as Inter-Statement Ratios or Composite Ratios.

The Above classification of ratios can be depicted by means of the following chart :

Balance Sheet Ratios	Profit and Loss Account Ratios	Balance Sheet and Profit and Loss Account Ratios
i) Current Ratio or Working Capital Ratio	(i) Gross profit ratio	(i) Return on Total resources Ratio
ii) Liquid Ratio or Quick	(ii) Operating Ratio	(ii) Return on Own Funds
iii) Proprietary Ratio	(iii) Expense Ratio	(iii) Fixed Assets Turnover Ratio
iv) Assets-Proprietorship	(iv) Net Profit Ratio	(iv) Debtors" Turnover Ratio
	(v) Stock Turnover or Turnover of Inventory Ratio	(v) Earnings Per Share Ratio

Briefly, it can be seen from the chart that -

(i) Ratios indicating financial position are calculated on the basis of the Balance sheet

(ii) Ratios indicating profitability ad efficiency of control over expenses are calculated on the basis of the Profit and Loss account, and

(iii) Those which throw light on the operating efficiency or effective use of the facilities and resources are calculated on the basis of figures in both the statements.

However, the above basis of classification has not been found to be suitable, because the Balance sheet and the Income Statement have to be studied together, and not in isolation, in order to determine the profitability and the solvency of an enterprise.

Ratios are broadly classified to four groups, on the basis of their functions as under :

(i) *Liquidity Ratios* - *m*easure the short term stability of an enterprise

(ii) *Leverage/Capital Structure ratios* – indicate the relationship between Debt and Equity.

(iii) *Profitability Ratios* measure earning success.

(iv) *Activity Ratios* measure the efficiency of asset management

LIQUITY RATIOS

Liquidity ratios reflect the ability of an enterprise to meet its current/short term obligations or in other words, measure the short term solvency or liquidity of the enterprise. These ratios give an insight into the ability of the enterprise to remain solvent in the event of advertise. An enterprise must have therefore, adequate working capital to run its day-to-day operations, Inadequacy of working capital may bring the entire business of the enterprise to a grinding halt, because of its inability to meet its short term obligations like payment for wages , raw materials and other regular expenses. Liquidity is, therefore, a prerequisite for the very survival of an enterprise. For these reasons, Liquidity ratios are termed as short term Solvency Ratios.

As stated above, for efficient financial management, an enterprise should no doubt, have adequate liquidity to meet its current or short term obligations but at the same time, it has also to strike a proper balance so that funds do not remain idle and are used efficiently to maintain its profitability.

The ratios which indicate the liquidity of an enterprise are

(i) Current Ratio

(ii) Net Working Capital

(iii) Acid Test/Quick Ratio

(iv) Turnover Ratios

(i) Current Ratio

Current ratio is the ratio of current assets to current liabilities. This comparison indicates how far the current assets cover the current liabilities and establishes the ability of a enterprise to meet its short term or current obligations.

The ratio is worked out by dividing the current Assets by the current liabilities and is calculated as under :

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

Current assets represent those assets which can be, in the ordinary course of business, used up or converted into cash within a short period of time, normally not exceeding one year, and include.

(i) cash and bank balances.

(ii) investments (other than long-term investments) in government and trustee securities and term deposits with banks.

(iii) receivables (other than deferred receivables) both domestic and export including bills purchased and discounted by Banks.

(iv) instalments of deferred receivables due within one year

(v) short term loans and advances.

(vi) inventory of raw materials, stock in process, finished goods, consumable stores and spares.

(vii) advances to suppliers or raw materials consumable stores and spares

(viii) advance payment of taxes (net of provisions), and

(ix) other current assets (i.e. those not falling under any of the above categories)

However, while classifying current assets, as above, the following points have to be borne in mind :

(i) Investments in shares and advances to other firms/companies, not connected with the business of the borrowing enterprise, are to be excluded from Current Assets.

(ii) Unquoted investments and those in subsidiaries/associates are not to be included in Current Assets.

(iii) Receivables and/or sundry debtors for goods and services rendered are taken on net basis i.e; net of

those outstanding for more than six months and after deduction on non-moving/slow moving book debts and provision for bad and doubtful debts.

(iv) Deferred receivables due within one year alone should be treated as Current assets and the rest should be classified as "Other Current Assets.:

(v) Loans and advances to group companies on a long term basis, if any, cannot be considered as current assets and are to be ignored.

(vi) "Dead Inventory" i.e. slow moving or absolute items of inventory are not to be classified as current Assets.

(vii) Prepaid expenses are to be treated as Current assets, on the same basis as advance payment of taxes.

(viii) Advance tax paid and provision therefore should be netted

(ix) In certain business where the operating cycle is beyond 12 months inventories held for over 12 months will be treated as Current Assets.

(x) Where the provision made for disputed excise duty is invested separately say in term deposits with banks such provision may be set off against the relative investment.

(xi) Spares to the extent of say 5 per cent of the total inventory or those expected to be consumed within the next 12 months on the basis of pas erxperiu34nce, whichever is less, should be treated as current Assets and the balance as Non-current Assets.

(xii) Amounts representing interconnected company transactions should be treated as current only after examining the nature of transactions and merits of the case. For example, advances paid for suppliers for a period more than the normal trade practices, in spite of any other considerations such as regular and assured supply, should not be treated as current.

It may be worthwhile to note that security deposits/tender deposits, irrespective of whether these deposits mature within the normal operating cycle of one year or not, are to be classified as Non-current Assets and not as Current Assets.

Current liabilities are short term maturing obligations to be meet within a period of 12 months from the date of Balance sheet or during the operating cycle, whichever is longer, and include;

(i) short terms borrowings from banks (including bills purchased and discounted and excess borrowings, if any, placed on repayment basis;

(ii) short term borrowings from others,

(iii) deposits (maturing within one year),

(iv) sundry creditors (for raw materials, stores and consumable spares);

(v) advance payments from customers/deposits from dealers, selling agents, etc.

(vi) unsecured loans/deposits (to the extent not treated as debt or equity)

(vii) interest accrued but not due for payment

(viii) accrued expenses

(ix) provision for taxation

(x) statutory liabilities (due within one year),

(xi) dividend payable

(xii) instalments of term loans, deferred payment guarantees, debentures redeemable preference shares, deposits etc. (due within one year) and

(xiii) other current liabilities and provisions due within one year (i.e. those not falling under any of the above categories)

However, while classifying current Liabilities as above, the following points have to be noted :

(i) Bills discounted with banks, if shown as contingent liabillity in the footnote of the Balance sheet, this amount should be added back to “short term borrowings from banks” under current Liabilities and ”receivables” under current assets.

(ii) In case specific provisions have not been made for known liabilities like dividend payable, tax payable etc. estimates thereof should be made for eventual payment during the year and the amounts, though not provided, should be shown as Current Liabilities.

(iii) In case the borrowers have introduced changes in their accounting practices by capitalizing the whole amount of interest due on term borrowings till the stipulated date of repayment and treating such amount as term liability along with the principal, the Instalments(s) due along with the interest payable within the next 12 months is/are to be classified under Current Liabilities.

(iv) Term deposits, instalment of term liabilities, deferred payments etc. payable within 12 months from the date of the Balance Sheet are to be classified under Current Liabilities.

(v) In case of construction companies/turnkey pro0jects, the advance payments/progress payments received against work-in-progress may be set off and only the net position shown either as Current Liabilities or current Assets, as the case may be.

(vi) Unsecured loans taken from the directors of the company where no period is mentioned, such amounts are to be treated as current Liabilities.

(vii) Where provision is made for excise duty, it should be classified as a current Liability.

(viii) The disputed excise liability shown as a contingent liability or by way of notes to the Balance sheet, will not be treated as a Current Liability, unless it has been collected or provided for in the accounts of the borrowing enterprise.

(ix) Provision for disputed excise duty should be classified as a Current Liability, unless the amount is payable in instalments, spread over a period exceeding 1 years, as per the orders of a competent authority like the excise Department or in terms of the directions of competent court, in which case the instalments payable after 1 years are to be classified as long term liability.

(x) Deposits from dealers, selling gents etc. may be treated as term liabilities, irrespective of their tenure, if such deposits are repayable only when the dealership/agency is terminated.

(xi) Manufacturers of automobiles, two-wheelers etc. who accept deposits while booking orders for new vehicles, are required under government rules to earmark a part of such deposits for investment in certain approved securities. In such cases, the benefit of netting may be allowed to the extent of such investments and only the balance amount needs to be classified as a current Liability.

(xii) Preference shares redeemable within a period of one year are treated as Current Liabilities. Those redeemable between 1 and 12 years are treated as term liabilities. If the redeemable period is beyond 12 years, such shares will form a part of the Net Worth.

Computation of current ratio is shown in the following table.:

		Company A	Company B
Current Assets		Rs.1,80,000	Rs.30,000
----------	=	----------	----------
Currewnt Liabilities		Rs.1,20,000	Rs.10,000
Current Ratio	=	1.5 : 1	3 : 1

(ii) Rationale of Current Ratio

As mentioned earlier, the current ratio of an enterprise measures its short term solvency, is current financial health and ability to meet its short term obligations. It indicates the units of rupees of current assets available for each rupee of current liability/obligation. The higher the current ratio, the larger would be the amount of rupees available per rupee of current liability. In other words, the ability of the enterprise to meet its current obligations is more, which indicates that the safety of funds of short term creditors is greater. Thus, current ratio, in a way, is a measure of margin of safety to the creditors.

The need for safety of margin arises from the inevitable unevenness in the flow of funds in respect of the current assets and the current liabilities. If the flows are absolutely smooth and uniform each day and thereby the inflows exactly match the maturing obligations, the requirement of a safety margin may be small. The hard, fact, however, is that such a situation hardly arises and no enterprise could ever count on such an even flow of funds both ways, whereby it would be assured of being able to p[ay its current maturing obligations as and when due. Moreover, the current liabilities are settled by making payment of the amounts due, whereas the current assets available to liquidate them are subject to shrinkage in value for reasons like bad debts, inventories becoming obsolete or unsaleable and occurrence of unexpected losses in marketable securities and so on. There should, therefore be a reasonably satisfactory margin of current assets over current liabilities so that the current Ratio could act as a short terms liquidity "*buffer".* A satisfactory |current ratio should enable an

enterprise to meet its short term obligations even when the value of the current assets declines.

It is important to note that a very high Current ratio may be the result of slack management practices, leaving to accumulation of idle cash or building –up of inventories much in excess of normal requirements, holding of obsolete stocks or book debts remaining outstanding for a long time – all these together reflecting on the poor management of cash and lack or absence of control over inventories and receivables. A too high current ratio may also be the result of excessive current assets being financed by the owners funds or by long term borrowed funds. If there is too much dependence on long term borrowings for working capital, it will affect the profitability adversely. The current ratio should therefore be seen in relation to the components of the current assets and their liquidity.

(iii) Interpretation of Current Ratios

Although there is no hard and fast rule, conventionally, as a rule of thumb, a Current Ratio of 2:1 (current assets twice current liabilities) is considered to be a sale margin of solvency and, therefore, satisfactory. The logic underlying the conventional rule is that even if the value of current assets is reduced to hall (50 per cent) i.e. the current ratio is 1 instead of 2, the creditors would be able to get their payments in full and the enterprise can retain some amount as working capital in the business./ there could also be cases where the current ratio arrived at is 1 : 1 meaning thereby that the current assets are equal to current liabilities. This one to one ratio would man that the current creditors are entirely financing the day to day operations and that even a slight fall in the value of current assets would cause loss to current creditors..

In the case of Company A in the above table, the current ratio is 1.5 : 1. this implies that for every one rupees of current liabilities, current assets of one and a half rupees are available to met them. In other words, the current assets are one and a half times the current liabilities, which would indicate that a slight decline in the value of current assets would adversely affect the ability of the company to meet its current obligations and, therefore, from the view point of creditors/lenders, the liquidity of the company could be considered to be inadequate to satisfy their claims.

On the other hand, for Company B, the current assets are three-fold its short term obligations (current liabilities) and, therefore, measured by the current ratio, the position of Company B is better than that of Company A. This is because the safety margin in Company B (200 per cent) is sufficiently higher as compared to Company. A. There is sufficient cushion available with Company B and even with two-thirds shrinkage in the value of

its current assets, it will be able to meet its current obligations in full.

It would, thus, be seen from the foregoing that the current ratio needs to be interpreted in the context of the quality and reliability of the relative assets. Current ratio varies from industry to industry, from company to comply within the same industry and from season to season. Bankers should be careful, to determine the acceptable standards within the industry in which the Company operates. Although the current Ratio of 2:1 is considered to be ideal, bankers accept the Current Ratio of 1.33:1 as satisfactory.

(iv) Window Dressing of current Ratio

The Current ratio is susceptible to window dressing and can be manipulated to conceal vital facts and present the financial statements to show a better position than what it actually is.

An equal increase in both current assets and current liabilities would decrease Current ratio. Similarly, an equal decrease in current assets and current liabilities would increase current ratio. This would be clear from the following examples.

Example 1

Original Current Ratio is

$$\frac{\text{Current Assets}}{\text{Current Liabilities}} = \frac{\text{Rs.4,00,000}}{\text{Rs.2,00,000}} = 2:1$$

Example 2

In case the Company purchase goods worth Rs.2,00,000 on credit basis on say, 25th December, both the current assets (stocks) and current liabilities (creditors) would increase and the Current Ratio would be :

$$\frac{\text{Current Assets Rs.4,00,000} + \text{Rs.2,00,000}}{\text{Current Liabilities Rs.2,00,000} + \text{Rs.2,00,000}} = \frac{\text{Rs.6,00,000}}{\text{Rs.4,00,000}} = 1.5 : 1$$

However in order not to show deterioration in current ratio, the company may postpone the purchase for the next year.

Example 3

In order to show improvement in current ratio, the company may also pay off a part of its current liabilities before the year end to show an improvement in its Current ratio, Suppose, the company decides to pay off, say : Rs.1,00,000.00 to its pressing creditors, the |current ratio would then be :

Current Assets Rs.4,00,000 +Rs.1,00,000

Current Liabilities Rs.2,00,000 + Rs.1,00,000

= Rs.3,00,000

---------- = 3 : 1

Rs.1,00,000

While computing current ratio, an analyst should be on his guard against such manipulations.

Module – 2 : Net Working Capital (NWC)

Net Working capital (NWC) is really not a ratio. It is however frequently employed as a measure of the liquidity position of an enterprise. On the assumption that an enterprise having sufficient NWC would be in a position to meet the claims of the creditors and also its day to day needs of business.

NWC represents the excess of current assets over current liabilities and is calculated by deducting current liabilities from current assets. The greater the amount of NMC the more would be the liquidity of the enterprise. Although NWC is calculated as a measure to determine liquidity It not a very satisfactory indicator of the current financial health of an employee. A better indicator is the current ratio. However, inadequate NWC position or decline in NWC compared to earlier years or other enterprises engaged in similar liners of activities is the first sign of financial problems being faced by the enterprise and serves as a warning signal for the analysis.

There is no predetermined criterion as to what constitutes an adequate NWC. The adequacy or otherwise of NWC as a measure of liquidity has to be ascertained from the levels of current assts and current liabilities of an enterprise, as shown in the table below :

	Company (Rs.)	Company B (Rs)
Total current assets	1,80,000	30,000
Total current liabilities	1.20.000	10,000
NWC	60,000	20,000

From a prima facie look at the NWC of b0th the companies, it would appear that the liquidity position of company A is better than that of company B. However, a deeper analysis of the current liabilities and the current assets of the companies would show that while company B has Rs.3.00 of current assets for every rupee of current liabilities. Company A has only Rs.1.50 of current assets for every rupee of current liabilities. From the angle, Company BH is in better position than company a to meet its own current. obligations.

Let us examine a different scenario. From the table given below, it would appear that although the NWC of company at the end of a financial year is higher than that of the previous financial year end in reality there has been deterioration in the liquidity of the company..

Company A

	Financial Year end 1	Financial Year end 2
Total Current assets	1,00,000	2,00,000
Total current liabilities	25,000	1,00,000
NWC	75,000	1,00,000

Despite having a higher NWC (Rs.1,00,000) at the end of the second financial year, company A is having only Rs.2.00 of current assets for every rupee of current liabiloit9ies, whereas at the end of the previous financial year, the Company with a lower NWC (Rs.75,000) was having R,4.00 of current assets for every rupee of current liabilities

NWC as a measure of liquidity is useful for purposes of internal control and working capital management of an enterprises and may not be very useful for inter firm comparisons..

(iv) Acid Test or Quick Ratio

Also referred to as Liquid ratio, Acid Test or Quick rati0o is a refinement of the current ratio, Although Current ratio measures the adequacy or otherwise of the working capital of an enterprise to meet its current obligations, the ratio fails to distinguish between the different components of current assets. Cash in hand is readily available whereas it is not so in case of inventories conversion of which takes time. Stock of raw materials will have to be maintained for some period before being processed and converted into finished goods and sold. Again, stock-in-process has normally no 9instant sales value. Similarly, prepaid expanses, which form a part of current assets. Are also not available to pay off current debts since cash outgo has already taken place on such advance payments. The Acid Test ratio is, therefore, designed to overcome, this drawback of the current ratio and takes into account the quick (or more liquid) current assets and current liabilities to determine the quick or instant liquidity position of a n enterprise. In other words, it

is the relation between quick current assets or liquid resources and current liabilities.

Quick current assets are those which can be converted into cash immediately or at a short notice without diminution of value and include (i) cash and bank balances, (ii) short term marketable securities and (iii) debtors and receivables (after providing for bad and doubtful debts) and exclude inventories and prepaid expenses. Normally, bank overdraft and cash credit facilities, if they become permanent mode of financing, are to be excluded from current liabilities. If bank overdraft is payable on demand, it is to be included in current liabilities.

Quick current assets are those which can be converted into cash immediately or at a short notice without diminution of value and include (i) cash and bank balances, (ii) short term marketable securities and (iii) debtors and receivables (after providing for bad and doubtful debts) and exclude inventories and prepaid expenses. Normally, bank overdraft and cash credit facilities, if they become permanent mode of financing, are to be excluded from current liabilities, If bank overdraft is payable on demand, it is to be included in current liabilities.

As this ratio concentrates on cash, marketable securities and receivables (net of bad and doubtful debts) in relation to current obligations, it is a more rigorous and –penetrating measure of the liquidity position of an enterprise than the Current Ratio.

The ratio is arrived at by dividing quick current assets by current liabilities as under :

$$\text{Acid Test Ratio} = \frac{\text{Quick Current Assets}}{\text{Current Liabilities}}$$

Calculation of the ratio is shown below by way of an example :

	Amount (Rs.)
Cash	50,000
Debtors	1,00,000
Inventories	1,50,000
Total current Assets	3,00,000

Total current Liabilities	1,00,000
Current ratio	3 : 1
Acid Test Ratio	1.5 : 1

(v) Interpretation of Acid Test Ratio

Life the current ratio, a reasonable standard for the Acid Test Ratio also varies from season to season in an enterprise and from enterprise to enterprise in an industry. The ratio has, therefore, to be interpreted in the light of the nature of business of the enterprise, the quality of its debtors and receivables etc. and in conjunction with the current ratio, to infer whether the enterprise has the ability to meet its immediate (current) obligations. Although the ratio is not a conclusive test of the liquidity position of an enterprise, a banker can always take the view that the highest the ratio, the more sound is the short term financial position of the enterprise. A high Acid test ratio is better than a low one, but, generally, a Ratio of 1:1 is considered to be satisfactory. Such ratios of less than 1 are also not uncommon and should not, by themselves, be a cause for alarm. However, a good Current ratio accompanied by a low acid test ratio will indicate a disproportionately high investment in stocks.

(vi) Super Acid Test or Super Quick Ratio

This Ratio is a variation of acid Test or Quick ratio and is calculated by dividing the super quick current assets by the current liabilities. Current assets like cash and marketable securities are considered as super qui ck current assets for the purpose. This is the most conservative test of the liquidity position of an enterprise. However, this ratio is not widely used in practice.

Module – 3 : TURNOVER RATIOS

We have, so far, discussed, in brief detail, about current ratio, Net working Capital and Acid Test or Quick Ratio which are normally employed to examine the ability of an enterprise to meet its current or short term obligations. Another way of examining the liquidity of an enterprise is to determine how quickly certain current assets are converted into cash. The ratios that are used for the purpose, as supplement to the liquidity ratios discussed earlier, are referred to as Turnover ratios. These ratios also form a part of the Activity ratios which re being discussed later.

The three Turnover Ratios that are relevant are :

(i) Inventory Turnover ratio

(ii) Debtors \turnover ratio and

(iii) Creditors Turnover ratio

(i) Inventory Turnover Ratio (ITR)

The Ratio is calculated by dividing the cost of goods sold by the average inventory and indicates the number of times the inventory is turned over or rotated during the year :

Thus :

$$\text{Inventory turnover Ratio (ITR)} = \frac{\text{Cost of Goods Sold}}{\text{Average Inventory.}}$$

If the ITR is 6, it will indicate that the entire stock of finished goods has been sold 6 times a year, or in other words, the enterprise carries or holds, on an average, two months stock of finished goods at any given point of time. An ITR of less than I will indicate that the finished stocks could not be sold even once during the year. In such cases, the reasons for the low ITR are to be analysed Lower ITR indicates higher build up of inventory of raw materials or finished goods and implies that the inventories “sitting” or stuck on the shelves. Accumulation of excessive inventories, which is the cause for low inventory turnover, may be due to stocks becoming obsolete/slow moving or change in style or fashion, in the meantime, or adverse fluctuation in prices. For comparison, ITR of

the previous year(s) could also be seen. For correct analysis, the average of two ITRs can be taken and this will also remove the seasonality of operations of the enterprise.

The cost of goods sold means sales minus gross profit. The average inventory is arrived at by taking the simple average of the opening and the closing inventories. The ratio indicates how fast the inventory is sold. The calculation of the inventory turnover ratio and the Inventory Holding Period is shown in the following example.

Example

An enterprise has sold goods worth Rs.4,00,000 with a gross profit margin of 25 per cent. The stocks at the beginning and at the end of the year were Rs.75,000 and rs.25,000 respectively. What would be the inventory turnover ratio and the I*nventory Holding Period* in this case ?

Inventory Turnover Ratio (ITR) = Rs.4,00,000 – Rs.1,00,000

(Rs.75,000 + Rs.25,000) + 2

Rs.3,00,000 -6 (times a year)

Rs.50,000

Inventory Holding Period = 12 months

6 - 2 months

The team “inventory” includes raw materials, stock-in-process and finished goods. Since by “sales”, we normally mean sale of finished goods, the ratio is calculated on the basis of finished goods stock only.

As stated earlier, the cost of goods sold means sales minus gross profit. However, cost of goods sold can also be arrived at in the following manner :

Cost of goods Sold =Opening Stock - + Manufacturing Cost (Including

Purchases) – Closing Stock (Inventory)

Average inventory can be calculated by taking the opening inventory of each month, adding them up and dividing the resultant total by 13. For the purpose, the levels of invento0ry for 13 months

at the beginning of each month from April through April (for a financial year – April to March_ are to be taken. Taking average of the monthly figures evens up the fluctuation in inventory levels at different months,

(ii) Interpretation of Inventory turnover Ratio (ITR)

ITR measures the performance of an enterprise in so far as its inventory management is concerned. A high ITR implies good inventory management. The higher the inventory turnover the larger will be the profitability and the smaller will be the amount of capital tied up in inventory. This will also mean that the stocks of the enterprise turn over fast with no accumulation of stocks and are not obsolete. A decreasing trend in the ratio may indicate poor planning and co-ordination of procurement, manufacturing and marketing activities of the enterprise, leading to accumulation of obsolete, slow moving and disproportionately excessive stocks. This will result in heavy carrying cost of inventory in terms of interest on funds locked up rental for the storage deterioration in quality of finished goods et. Blocking of funds will also limit the liquidity of the enterprise. Although buying in small lots will keep funds quite free, this might result in the danger of going out of stock at any time, thereby reducing the bargaining power of the enterprise. While a high inventory ratio is generally considered to be better than a low ratio a very low ratio could have serious implications. This might adversely affect the ability of the enterprise to meet the demands of its customer. Thus an enterprise should have neither too high nor to low inventory turnover. It should maintain a reasonable level of both finished goods and inventory and simultaneously keep a close watch on the trend of the ratio. Any significant deviation on either side should be thoroughly investigated to identify the factors responsible for it.

The computation of the turn over for the individual components of the inventory may also be useful. Such ratios can be computed in respect of a materials and stock in process also. Thus,

$$\text{Raw Material Turnover} = \frac{\text{Cost of Raw Materials Used}}{\text{Average Raw Material Inventory}}$$

$$\text{Stock-in-Process Turnover} = \frac{\text{Cost of Goods Manufactured}}{\text{Average Stock-in-Process inventory}}$$

(iii) Debtors' Turnover Ratio

Debtors are an important constituent of current assets. Quality of debtors determines to a great extent the liquidity of an enterprise. For determining the quality of debtors, two ratios are used.

(a) Debtors turnover Ratio and

(b) Debt Collection Period Ratio

(a) Debtors" Turnover ratio

Debtors' or Receivables Turnover Ratio shows the relationship between credit sales and debtors of an enterprise. It indicates the turnover of debtors. i.e. the speed with which they are realized. It can be calculated in the following ways :

(i) By dividing the Net Credit Sales by average Debtors outstanding during the year.

$$\text{Debtors Turnover ratio} = \frac{\text{Net Credit Sales}}{\text{Average Debtors.}}$$

Net credit sales consist of gross credit sales minus returns. If any, from customers,. The term *"Average Debtors"* is the simple average of debtors at the beginning and at the end of the year i.e. the total of debtors at the beginning and at the end of the year divided by 2. The term "Debtors" includes "Trade Debtors" and "Bills Receivables".

Separate figures of cash sales and credit sales are usually not available in the published Income Statement. The figures of sales, as given in this Statement, is, therefore, taken as the basis for calculation of the ratio. However, since the figure of sales, a taken from the Income Statement, might include cash sales as well, there remains a possibility of the Debtors Turnover ratio being inflated to that extent.

Debtors as used in this context, include bills receivables, but exclude debts which are not on account of goods sold, e.g. debtors arising out of sale of furniture will not be included in debtors.

While calculating the ratio, it is important to note that bad and doubtful debts are not to be deducted from total debtors, since deduction of such debtors will result in a higher turnover of debtors.

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since deduction of such debtors will result in a higher turnover of debtors.

Calculation of Debtors "Turnover Ratio is shown by way of an example below :

	Amount (Rs)
Total Sales for the year 2003-04	1,00,000
Cash Sales for the year 2003-04	20,000
Debtors as on 01,04,2003	10,000
Debtors as on 31.03.2004	15,000
Bills Receivables as on 01,.04.2003	7,500
Bills Receivables as on 31.03.2004	12,500

Debtors Turnover Ratio = Credit Sales / Average Debtors.

= Rs.80,000 / Rs.22,500 = 3.56 times

Average of Opening Balance + Closing Balance

(Rs.17,500.00 + Rs.27,500.00)

(a) Interpretation of Debtors Turnover Ratio

The Ratio indicates the number of times the debtors have been turned over during the period. A high ratio is indicative of the efficiency with which book debts, as a component of working capital are realized. A low ratio will mean that there is a delay in collection of book debts, which may lead to book debts becoming sticky and, finally, turning into bad debts. A low ratio indicating a longer collection period will also indicate an unhealthy position of debtors portfolio, In general, therefore, a short collection period is preferable. To have a better control over debt collection, there should be a system of review of book debts position on a regular basis, and the enterprise should also take steps to ensue that an effective mechanism is in place to monitor collection of book debts promptly.

It is not however, prudent for an enterprise to have either a very long or a very short collection period. A very long collection period indicates that the enterprise is either not selective in identifying its customers or not effective in administering and monitoring its debt collection mechanism. Apart from the interest cost involved in maintaining a high level of book debts, the delay in collection of receivables adversely affects the liquidity of the enterprise as well. There is also a possibility of the receivables turning into bad and doubtful debts in such a situation, adopting a restrictive sales policy might also prove counter productive and result in the volume of sales and in turn the profitability of the enterprise coming down. Thus, an enterprise should have neither a very low nor a very high Debtors turnover ratio ad should maintain it at a reasonable level. The enterprise can also compare its level of Debtors Turnover with that of the industry.

(b) Debt Collection Period Ratio

Allied and closely related to Debtors' Turnover Ratio, the Debt collection Period Ratio shows the time lag between credit sales and realization of book debts or the average period (in months or weeks or days_ for which debtors remain outstanding. It also gives an indication of the average period for which funds have remained blocked with the debtors.

The Ratio is calculated by dividing the Number of days (365) or the Number of Months (12) or the Number of Weeks (52) in a year by the Debtors' Turnover, as shown below :

$$\text{Debt Collection Period Ratio} = \frac{\text{Months (or weeks or days) in a year}}{\text{Debtors' \Turnover}}$$

Some financial analysis prefer to take 300 days for a year after excluding Sundays and holidays. As the period for which the book debts remain outstanding also includes Sundays as well as holidays it is preferable to take 365 days for a year for calculation of this ratio.

From the example given above, the Debts collection Period ratio can be calculated, as under :

$$\text{Debt Collection Period Ratio} = \frac{\text{Months (or weeks or days) in a year}}{\text{Debtors' \Turnover}}$$

$$= \frac{12}{3.56} = 3.37 \text{ months}$$

(iv) Creditors' Turnover Ratio and Average Payment Period Ratio

Creditors: \Turnover Ratio

The Ratio indicates the number of times the \Creditors are paid vis-à-vis credit purchases or the speed with which payments are made to creditors for purchases made on credit basis.

The Ratio is calculated by dividing net credit purchases by the average of outstanding creditors, as under :

$$\text{Creditors Turn Ratio} = \frac{\text{Net Credit Purchases}}{\text{Average Creditors}}$$

Net Ratio Purchases are 3qual to Gross Credit Purchases less Returns to Suppliers.

"Creditors" include bills payable and the figure of "Average Creditors" is arrived at by adding the figures of Creditors and Bills Payable outstanding at the beginning and at the end of the year and dividing the resultant total by 2.

Calculation of the |Creditors Turn over Ratio is shown by way of an example below :

	Amount (Rs.)
Credit purchase during 2003-2004	1,00,000
Creditors as on 01,04,2003	20,000
Creditors as on 31.03.2004	10,000
Bills Payable as on 01.04.2003	4,000
Bills Payable as on 31.03.2004	6,000

$$\text{Creditors' Turnover Ratio} = \frac{\text{Credit Purchases}}{\text{Average Creditors}}$$

$$= \frac{\text{Rs.1,00,000}}{\text{Rs.20,000}} = 5 \text{ times}$$

A high Creditors \Turnover Ratio implies that the creditors are being paid promptly, thus enhancing the credit worthiness of the enterprise. However a very high ratio might also indicate that the enterprise is not taking advantage of the credit facilities being allowed by the suppliers. The ratio is an important too of analysis as an enterprise can meet its requirements of current assets by relying on suppliers' credit. A low ratio reflects that liberal credit terms are being granted by the suppliers.

Average Payment Period Ratio

The ratio shows the average credit period enjoyed by an enterprise from its suppliers and is calculated as under :

$$\text{Average Payment Period Ration} = \frac{\text{Months (or Weeks or days) in a Year}}{\text{Creditors' Turnover}}$$

From the example given above, calculation of the ratio is shown below.

$$\text{Average Payment Period Ratio} = \frac{12}{5} = 2.4 \text{ months}$$

(v) Defensive Interval Ratio

We have earlier discussed about the Liquidity ratios, which throw light on the ability of an enterprise to pay its current liabilities. Apart from paying current liabilities, the liquidity position of an enterprise should also be examined in terms of its ability to meet projected daily expenditure from its operations. The Defensive interval ratio provides for such a measure of liquidity It is Ratio between the Liquid Quick Assets and the Projected Daily cash requirements and is calculated, as under :

$$\text{Defensive Interval Ratio} = \frac{\text{Liquid Assets}}{\text{Projected Daily cash Requirements}}$$

Projected Daily cash Requirements are computed as follows :

$$\text{Projected Daily ash requirement} = \frac{\text{Projected cash Operating Expenses}}{\text{Number of days in a Year (365)}}$$

Projected cash operating expenses are computed on the basis of past experience and future plans. They comprise cost of goods sold (excluding depreciation)and selling, administrative and other ordinary expenses payable in cash.

The Defensive Interval Ratio measures the time period for which an enterprise can operate on the basis of present Liquid Assets without resorting to the next year's revenue. Liquid assets comprise cash and marketable securities and cash collected from debtors.

The higher the ratio, the better it is, since it reflects the ability of an enterprise to meet cash requirements for a loner period of time.

Let us arrive at the defensive Interval ratio by way of an example.

The projected cash operating expenses of an enterprise for the next year is estimated at Rs.1,82,500. The enterprise has Quick Assets amounting to Rs.40,000 what will be the defensive Interval Ratio ?

$$\text{Projected Daily Cash Requirements} = \frac{\text{Rs.1,82,500}}{365} = \text{Rs.500}$$

$$\text{Defensive Interval Ratio} = \frac{\text{Rs.40,000}}{\text{Rs.500}} = \text{80 days.}$$

The figure of 80 days means that the enterprise has liquid assets which can meet the operating cash requirements for 80 days without resorting to next year's income.

Module - 4 : LEVERAGE/CAPITAL STRUCTURE RATIOS

The short term creditors are interested in the current financial position of an enterprise and analyze its Liquidity ratios to ascertain the short term solvency or liquidity of the enterprise. The long-term creditors, however, judge the soundness of an enterprise on the basis of its long term financial strength reflecting the ability or otherwise of the enterprise to pay the periodical interest and instalments due on long term loans, on a regular basis as peer the stipulated schedule of payments or in one lump sum on maturity as agreed upon. The long term solvency of an enterprise can be examined by using the Leverage or Capital Structure w Ratios.

There are, thus, two aspects of the long term solvency of an enterprise.

(i) Regular payment of interest or the loan as and when due during the period of the loan and

(ii) Repayment of principal amount of the loan in predetermined instalments on the due dates or in one lump sum on maturity

To test the long term solvency and ability of an enterprise to meet the above two long term commitments, these are two different but mutually dependent and inter related types of Leverage Ratios..

Ratios of the first type are based on the relationship between borrowed funds and owner's capital and are computed from the Balance Sheet.

The other types of ratios, also referred to as the Coverage Ratios are calculated from the Profit and Loss account.

The different Leverage Ratios and the inferences drawn from them on the long term financial soundness of an enterprise are discussed in the following paragraphs.

(i) Debt-Equity Ratio

Debt-Equity Ratio (D/E Ratio) is the relationship between borrowed funds (Debts) and owner's capital (Equity).

One approach is to calculate the ratio by dividing Long term debts by Equity, to compare the owner's sake in the business with the outside term liabilities, and the ratio is depicted, as under :

$$\text{D/E Ratio} = \frac{\text{Long Term Debts}}{\text{Equity}}$$

According to this approach, only Long-term debts, and not current liabilities are to be considered for the purpose of this ratio.

Equity comprises equity share capital, equity share capital on account of conversion of warrants, preference share Capital, general reserve debenture redemption reserve, capital reserve other reserves (excluding provisions) and surplus (+) or deficit(-) in profit and loss account, but excludes intangible assets like patents, goodwill preliminary and formation expenses bad and doubtful debts not provided for past accumulated losses, discount on issue of shares etc. The Equity thus arrived at is called Shareholders equity or tangible Net Worth – The D/E Ratio is also called Debt-to Net Worth ratio.

Another approach to the calculation of the D/E Ratio is to relate Total Debts or total Outside Liabilities (i.e. both long term and short term debts (i.e. current liabilities) to the Shareholder Equity or tangible Net Worth. It is calculated, as shown below :

$$\text{D/E Ratio} = \frac{\text{Total Outside Liabilities}}{\text{Tangible Net Worth}}$$

The logic behind inclusion of current liabilities, like working capital loans from banks, in total Outside Liabilities is that although such loans are granted for short term and the ability of an enterprises to meet its obligations under the loans is reflected in the liquidity ratios, the fact remains that barring exceptional circumstances these short term loans are renewed from year to year and are enjoyed by the enterprise, more or less, permanently. Moreover, despite the amounts drawn against such loans fluctuating widely, a fixed amount of loan by and large is always in use and available with the enterprise on a long-term basis. The apart such short-term loans are also not cost free. Having considered all these aspects including of short-term loans in total Outside Liabilities would appeal to be justified.

(ii) Interpretation of Debt Equity ratio

The Ratio indicates the financial structure of an enterprise i.e. the manner in which an enterprise has raised its finances. In other words, it denotes the proportion of capital of an enterprise to its total debts, thereby indicating the relationship between the owned funds and the borrowed funds of the enterprise.

A high D/E Ratio will mean that the creditors' contributions are more than those of the owner' in the over all financial structure of the enterprise or in other words, that the stake of the creditors in the enterprise is higher than that of the owners. The implications of

a high D/E Ratio could be serious for both the creditors and the owners such as :

(i) likelihood of pressure on earnings of the enterprise, leading to default on meeting debt obligations;

(ii) possibility of the creditors losing heavily in case the enterprise fails to perform on sound lines and achieve the desired level of profitability;

(iii) interference from creditors in management of the enterprise including close monitoring of the day-to-day operations of the enterprise;

(iv) the enterprise might find it difficult to borrow additional funds and even if it succeeds to do so, it would be possible only on restrictive terms and conditions and at relatively higher costs.

In brief, the higher the D/E Ratio, the greater is the risk for the creditors as well as the owners.

A low D/E Ratio indicating a higher stake of the owners implies a sufficient safety margin for the creditors. In such a case, the servicing of debt does not cause any strain on the enterprise ad thus becomes less burdensome and consequently its credit standing remains unaffected, which enables the enterprise to raise additional funds. If necessary, at competitive rates.

No ideal D/E Ratio can be prescribed. Each case is to be examined on its merits. However, a ratio of 2:1 is considered good implying that the contribution of the creditors is twice that of the owners. Enterprises having a stable income, such as a electric company, can afford to have a higher D/E ratio. A higher D/E ratio is also allowed in case of capital intensive industries, e.g. cement and fertilizer industries.

(iii) Debt to Capital Ratio

Debit to Capital Ratio is a variant of the d/E Ratio and expresses the relationship between the creditors' funds and the Owners' capital with regard to capitalization of an enterprise. In this ratio, the outside liabilities are related to the total capitalization of the enterprise and not merely to the shareholder equity. The ratio can be expressed in different ways as under :

(i) Under the first approach, the Long-term, Debts are related to the Permanent capital of the enterprise. Permanent capital comprises Shareholders' equity as sell as Long term Debts.

Thus,

$$\text{Debt to Total Capital Ratio} = \frac{\text{Long – term Debts}}{\text{Permanent Capital}}$$

The Ratio indicates what proportion of the Permanent Capital of an enterprise consists of Long Term Debts. If the ratio is 1:2, it implies a that one-third of the Permanent Capital of the enterprise is in the form of Long-term Debts. Although there is no hand and fast rule, conventionally a ratio of 1: 2 is considered to be satisfactory.

(ii) The second approach is to relate the Total Debts to the total assets of the enterprise. Total Debts include Long-term Debts and Current Liabilities, whereas total assets consist of Permanent Capital and Current Liabilities. Thus

$$\text{Debt to Total Assets/Capital Ratio} = \frac{\text{Total Debts}}{\text{Total Assets}}$$

$$= \frac{\text{Total Debts}}{\text{Permanent Capital + Current Liabilities}}$$

The ratio measures the share of the total assets financed by outside funds.

(iii) The third approach shows what portion of the total tangible Assets is financed by the Owners' or the Proprietor funds. The ratio is called the Proprietary ratio Owners or Proprietors' \fund comprise equity share capital preference share capital and reserves and surplus and the term "Total Assets" means "Total tangible Assets". The Ratio is expressed, as under :

$$\text{Proprietary Ratio} = \frac{\text{Proprietors' Funds}}{\text{Total Tangible Assets}}$$

A high ratio reflects a strong financial position of the enterprise and is therefore a relatively little danger for the bankers and the creditors. A low ratio on the other hand, means that the bankers and creditors have contributed to the fixed assets of the enterprise and as such, in the event of any loss being incurred by the enterprise, there will be less protection fort them. While a ratio of 100 per cent indicates that the

enterprise has not obtained any loan from outside sources, a ratio below 50 per cent may be alarming for the bankers and creditors, since they may have to lose heavily if the enterprise goes into liquidation on account of heavy losses.

COVERAGE RATIOS:

As mentioned earlier, Coverage Ratios are computed from the details available in the Profit and Loss account. In the normal course, claims of creditors are met by an enterprise out of the earnings or operating profits and not out of sale proceeds of its permanent assets :

Claims of creditors arise on account :

(i) interest on loans

(ii) payment of dividend on preference shares, and

(iii) amortization of principal or repayment of instalments of term loans or redemptiopn of preference share capital on maturity.

From the view point of long term creditors, the soundness of an enterprise lies in its ability to service their claims. This ability is indicated by the Coverage Ratios.

Coverage Ratios measure the relationship between what is normally available from the operations of an enterprise and the claims of its creditors. The higher the coverage, the better it is.

(i) Interest Coverage Ratio

The Ratio is important from the lenders particularly the long term lenders' point of view, it indicates whether the enterprise would earn sufficient profits to pay the interest charges periodically. The higher the ratio the more secure the lender is in respect of his periodical interest income. It is calculated as under, by dividing the operating profits or earnings before interest and taxes (EBIT) by the fixed interest charges on loans asunder :

$$\text{Interest Coverage} = \frac{\text{EBIT}}{\text{Interest}}$$

The ratio uses the concept of nett profits before taxes because interest is tax-deductible and tax is calculated after payment of interest on loans. The ratio, as the name suggests

shows how many times the interest charges are covered by the EBIT, out of which those will be paid, In other words, it indicates the extent to which a fall in EBIT is tolerable in the sense that the ability of the enterprise to service its long term debts would not be adversely affected. For example interest coverage of say, 10 times would amply that even if the EBIT if the enterprise declines to one tenth of the current level, the net profits available for servicing the interest on long term loans would still be equivalent to the claims of the lend. On the other hand a coverage of say 5 times would indicate that a fall in operating earnings to only up to one-fifth level can be tolerated. From the point of view of the lenders, the larger the coverage the greater is the ability of th4e enterprise to handle fixed charge liabilities and the more assured is the payment of interest to the lenders. However too high a ratio may imply unused debt capacity. In contract, a low ratio is a danger signal in the sense that the enterprise is using excessive long term debts and does not have the ability o service the interest due to the lenders on log term loans.

(ii) Dividend Coverage Ratio

The ratio is important for preference shareholders, who are entitled to get dividend at a fixed ate in priority to other shareholders. It, therefore, measures the ability of an enterprise to pay dividend on preference shares which carry a fixed rate of return i.e. dividend.

The ratio is expressed in number of times and for the purpose of arriving at the ratio net profit after interest and tax is compared with the amount of preference dividend. It is calculated as under :

$$\text{Dividend Coverage} = \frac{\text{Net Profit after interest and Tax}}{\text{Preference Dividend}}$$

It can be seen that alth0ugh Preference dividend is fixed obligation, the earnings taken into account are after tax, for the reason that unlike debts on which interest is a charge on the profits of the enterprise, the Preference Dividend is treated as an appropriation of profit.

The Ratio, like the interest coverage Ratio, reveals the safety margin available to the preference shareholders. As a rule, the higher the coverage the better it is from the point of view of the preference shareholders.

PROFITABILITY RATIOS

Apart from the short loan and the long term creditors the management of an enterprise is also interested in its financial soundness, particularly the operating efficiency which can be judged only by the profitability of the enterprise. The importance of profit for an enterprise cannot be over emphasized since profit is the ultimate test of management effectiveness. The profitability of an enterprise can be measured by its Profitability Ratios which provide a sound diagnosis of the financial health of the enterprises in terms of its profitably

Profitability Rtios can be determined on the basis of either sales or investments...

(i) Profitability Ratios Related to Sales

Profitability Ratios that relate to sales are ;

(i) Profit Margin (Gross and Net) and

(ii) Expenses ratio or Operating Ratio

These ratios are based on the premises that an enterprise should earn sufficient profit on each rupee of sales, If adequate profits are not earned on sales, there would not be generation of any surplus after meeting the operating expenses and no returns would be available to the organization. As stated earlier these ratios consist of (i) Profit Margin and (ii) Expenses Ratio.

Profit Margin

The Profit Margin measures the relationship between profit and sales. As profit may be gross Profit and Net Profit the profit margin is also 9f two types, namely gross Profit Margin and Net Profit Margin respectively.

(ii) Gross Profit Margin

The Ratio shows the gross Margin of Profit on the net sales and is calculated by dividing Gross Profit by Net Sales., Thus

$$\text{Gross Profit Margin} = \frac{\text{Gross Profit}}{\text{Net Sales}} \times 100$$

Since Gross Profit is equal to sales minus cost of goods sold, the Gross Profit Margin can also be calculated as under :

$$\text{GrossProfit Margin} = \frac{\text{Sales – cost of goods sold}}{\text{Net Sales}} \times 100$$

The former ratio measures Gross Profit in relation to net sales, while the letter ratio reveals the relationship between the cost of production and the selling price.

The ratio indicates the efficiency in the matter of production as well as pricing A high ratio is a sign of good management implying that their cost of production is relatively low. It may also be indicative of ah higher sales price without a corresponding increase in the cost of goods sold. It is also likely that the cost of sales has declined without a corresponding decline in sales price. Nevertheless, a very high and rising gross margin may also be the result of unsatisfactory basis of valuation of stocks resulting in over valuation of closing tock and/or under valuati0on of opening tock. Stocks may be over valued to give the impression of additional profits or improve the Balance Sheet position. On the other hand, they may be under valued to avoid taxation.

A relatively low gross profit margin needs a thorough investigation of the possible contributory factors which may be (i) a high cost of production indicating acquisition of raw materials and other inputs on unfavorable terms inefficient utilization of current as well as fixed assets etc. and (ii) a low selling price due to severe competition or inferior quality of the products or lack of demand for the products etc.

An enterprise should have a reasonable gross profit margin which will cover the operating expenses of an enterprise adequately and also ensue sufficient return to the organization.

(iii) Net Profit Margin

The Ratio measure the relationship between Net Profit and Net Sales of an enterprise. Depending on the concept of Net Profit earned, the ratio can be computed in two ways, as under :

(i) $\text{Operating Profit Ratio} = \frac{\text{Earnings before interest and Taxes}}{\text{Net Sales}}$

(ii) $\text{Net Profit Ratio} = \frac{\text{Earnings after interest and taxes}}{\text{Net Sales}}$

The ratio measures the overall efficiency of production, administration selling financing pricing and tax management of an enterprise. The ratio is therefore indicative of the management's ability to operate the business with success by way of recovery

from revenues not only of (i) the cost of raw materials (ii) the expenses towards operating the business including depreciation and (iii) the cost of borrowed funds but also leaving a reasonable margin of profit for the organization.

A high Net Profit Margin ensures adequate return to the organisati09n and also enables it to withstand adverse economic conditions arising out of declining selling price, rise in cost of production and fall in demand for its products. A low ratio means that a slight unfavorable change in future selling prices, without a proportionate change in costs, probably would result in a loss instead of profit. A low ratio may also be the result of excessive costs being incurred due to lower/slow inventory turnover.

There is no ideal standard for the ratio and the best course would be to compare the ratio with that of the other enterprises engaged in similar type of business.

(iv) Expenses Ratio

This ratio also is related to sales and is computed by dividing expenses by sales. The term “Expenses” includes (i) cost of goods sold, (ii) administrative expenses (iii) selling and distribution expenses and excludes financial expenses like interest taxes, dividends and extra ordinary and unforeseen losses due to theft of goods, goods destroyed by fire etc.

There are different variants of the ratio such as :

(i) Cost of Goods Sold Ratio = $\frac{\text{Cost of Goods Sold}}{\text{Net sales}} \times 100$

(ii) Operating Expensaesa ratio

$= \frac{\text{Administrative Expenses+ Selling Expenses}}{\text{Net Sales}} \times 100$

(iii) Administrative Expenses Ratio = $\frac{\text{Administrative Expenses}}{\text{NetSales}} \times 100$

(iv) Selling Expenses Ratio = $\frac{\text{Selling Expenses}}{\text{Net Sales}} \times 100$

(v) Operating Ratio = $\frac{\text{Cost of Goods Sold + Operating Expenses}}{\text{Net Sales}} \times 100$

(vi) Financial Expenses Ratio = $\frac{\text{Financial Expenses}}{\text{Net Sales}} \times 100$

All the above ratios show the proportion of "expenses" in relation to "net sales". Since the constituents of each component are different from those of the other components the ratios also vary depending on the composition of the components.

A low ratio is always desirable and favourable too. It signifies operational efficiency and effectiveness. A high ratio should put the management on the alert and be diagnosed to analyze the causes therefore. Needless to add, appropriate steps should immediately be imitated to arrest the trend.

(v) Profitability Ratios Related to Investments

Banks, financial institutions and other creditors look at the profitability of an enterprise to ascertain whether based on the trend of existing profitability, ity would be worthwhile to extend any long term loans to it. Similarly owners are also interested to know how effectively their money is being used for operational purposes. The concept of Return on Investments (ROI) therefore, assumes significance from the points of view of the lenders and owners.

ROI refers to the return, i.e. the profit that is generated out of

(i) Return on Assets

(ii) Return on Capital Employed, and

(iii) Return on Shareholders' Equity.

(vi) Return on Assets (ROA)

This profitability Ratio is measured in terms of the relationship between net profits and assts.

Net profits may be (i) net profits after taxes and(ii) net profits after taxes plus interest.

Assets mean Total Assets comprising net fixed assets (i.e. fixed assets less accumulated depreciation) and net working capital (i.e. current assets minus current liabilities) but excluding intangible assets, fictitious assets idle/unused assets, obsolete stocks doubtful debts. Etc.

The variants of ROA are as under :

(i) Return on Assets (ROA) = $\frac{\text{Net Profit after Taxes}}{\text{Total Assets}}$

This Ratio suffers from the drawback that the interest paid to the creditors is excluded from net profit whereas the real return on the total assets is the net operating earnings including interest. A more reliable indicator of the true ROA would be the net profit inclusive of interest. Thus, the

(ii) ROA = $\frac{\text{Net Profit after Taxes + Interest}}{\text{Total Assets}}$

This Ratio measures the profitability of the enterprise on the funds invested by it in total assets.

(vii) Return on Capital Employer (ROCE)

In this ratio, profits are related to the total capital employed. The term "Capital Employed" means long term funds provided by bankers/creditors and owners. The ratio is calculated, as under :

ROCE = $\frac{\text{Net Profit before interest and Tax}}{\text{Average Capital Employed}}$

The Ratio gives an insight into how efficiently the long term funds of the owners and the creditors are being used. The higher the ratio, the more efficient is the use of capital employed ROCE can be improved by improving the profitability or by increasing the turnover of capital or by combination of both.

(viii) Return on Shareholders Equity

While ROCE expresses the profitability of an enterprise in relation to the long term funds provided by the bankers/creditors and the owners, the return on Shareholders equity measures exclusively the return on the owners funds.

The shareholders of a company comprise the preference shareholders and the ordinary shareholders. The preference shareholders are entitled to receive dividend on their holdings, in preference to equity share holders. In other words, from the net profits available for the shareholders, the dividend on preference shares is paid first and whatever remains thereafter is paid as divided to the equity shareholders, subject to the decision of the Board of directors and the approval of the said decision in the company's annual general Meeting. The profitability ratios based

on the shareholders equity are known as Return on Shareholders' Equity.

The rate of Return on Shareholders' Equity can be calculated from different angles, as under :

(i) Rate of return on

(a) Total Shareholders Equity and

(b) Ordinary Shareholders' Equity

(ii) Earning Per Share

(iii) Dividend Per Share

(iv) Dividend Pay-out Ratio, and

(v) Price Earning Ratio

(ix) Return on Total shareholders' Equity

The term "*Total Shareholders' Equity*" consists of (i) preference share capital and (ii) equity ahare capital. Again equity sahare capiutal, for the purpose of the ratio, includes (a) share premium and (b) reserves and surplus minus accumulated losses. The equity share capital, thus arrived atis also referred to as Net Worth.

The ratio is calculated by dividing the Net Profit after taxes but before preference dividend by the Average totalShareholders' equity, as under :

$$\text{Return on total Shareholders' Equity} = \frac{\text{Net Profit after Taxes}}{\text{Average Total Shareholders' Equity}}$$

(x) Return on Ordinary Shareholders' Equity

Although the preference shareholders contribute to the equity of a company and are considered as owners of the company, the fact remains that the ordinary shareholders, who bear all the risks and also participate in the management, are eligible for a share in the profit (in the form of dividend) only after all the outside claims including payment of dividend to the preference shareholders are met in full, could be considered as the real owners of the company. It is, therefore, desirable that, from the owners point of view, the profitability of a company should be assessed in terms of the return to the ordinary shareholders.

The Ratio is calculated by dividing the Net Profit after Taxes and Preference dividend by the average Ordinary shareholders Equity (Net Worth) as under :

$$\text{Return on Ordinary Shareholders Equity} = \frac{\text{Net profit after Taxes – Preference Dividend}}{\text{Average Ordinary Shareholders' Equity or Net Worth}}$$

This is considered to be an important ratio to Judge whether there has been a satisfactory return for the equity shareholders. The adequacy or otherwise of the rate of return could be judges by comparing it with that of the earlier years, by inter firm comparison and by comparison with the industry average.

(xi) Earning Per Share (EPS)

EPS indicates the quantum of net profit of the year that would be ranking for dividend for each share of the company being held by the equity shareholders. It is arrived at by dividing Net Profit after taxes andnPreference Dividend bythe Number of equity Shares, as under :

$$\text{EPS} = \frac{\text{Net Profit after Taxes and Preference Dividend}}{\text{Number of equity shares}}$$

EPS is a measure of profitability from the shareholders point of view. The more the EPS, the better are the performance and the prospects of the company. The increasing trend of EPS enhances the possibility of more cash dividend or bonus shares. The ultimately has a favourable effect on the market price of the company's sharers. In view of this many companies give information about the trend in the ratio in their published accounts.

Although EPS is probably the most widely published and used data, it should not be relied upon blindly. First EPS cannot represent the various financial operations of the business. Secondly comparisons of the EPS of different companies can be distorted by the effect of different accounting procedures relating to stocks depreciation and the like. Therefore the figure of EPSA must not be used blindly. The financial data, on the basis of which EPS has been calculated must also be studied.

(xii) Dividend Per Share (DPS)

EPS represents what the equity shareholders, as owners, are theoretically entitled to receive as dividend from a company. However, a part of the Net Profit is retained in the business and the balance is paid to them as dividend, if so decided by the company.

The dividend per equity share paid to the shareholders is the DPS, DPS is a better indicator than EPS as it shows what exactly is received by the equi9tyshreholdeers.

It is calculated by dividing the Net Profit (Distributable) after taxes and Preference Dividend divided by the Number of Equity Shares, as under :

DPS = Net Profit (distributable) after Taxes and Preference Dividend

Number of Equity shares

(xiii) Dividend Payout Ratio

The Ratio is also called *Pay-out Ratio* It indicates the relationship between the dividend distributed and the net earnings of a company. It can be calculated by dividing the Total Dividend paid to equity shareholders by the Total Net Profit available for equity Shareholders. It can also be calculated by dividing Dividend per Equity share by |earning Per share, Thus,

(i) Dividend Payout Ratio = Total Dividend Paid to Equity Shareholders

Net Profit Available for Equity Shareholders

(ii) Dividend Payout Ratio = Dividend Per Equity Share

Earning Per Equity share

The Dividend Payout Ratio reveals as to what portion of earning per share has been used for paying dividend and what has been ploughed back into the business. The lower the Payout ratio, the higher will be the amount of earning ploughed back into the business and vice versa. The profit thus ploughed back and retained may be utilized to take care of future growth.

Low Dividend may affect the market price of a company's shares. However rise in Payout ratio raises the market sentiments for a company's shares but it affects adversely a company's ability to finance future projects from internal accruals. A company, therefore, has to strike a balance so that either the market value of its shares comes down or its future growth prospects suffer :

(xiv) Price earning ratio (PE RATIO)

The Ratio indicates the number of times the Earning Per share is covered by its market price. This is calculated as under :

$$\text{PE Ratio} = \frac{\text{Market Price Per equity share}}{\text{Earning Per Share}}$$

Let us take an example. If the market price of a share is Rs.30.00 and the earning Per share is Rs.5.00 the PE Ratio would be 6 (i.e. 30.00 divided by 5.,00) It means that the market value of every one rupee of earnings is 6 times or Rs.6.00

The Ratio is useful in financial forecasting. It also helps in knowing whether the shares of a company are under valued or over valued. For example if the earning Per Share of X Company Ltd. Is Rs.20.00 and the market price of its shares is Rs.140.00 per share, the PE ratio of the company will be 7. If the P.E. Ratio of another similar company is 8, it means that the market price of the shares of X company Ltd. Should be Rs.160.00 (i.e. 8 x 20) per share the shares of X com Ratio of similar companies is only 6, the values of the shares of X Company Ltd. Should have been Rs.120.00 (i.e. 6x 20) and thus, the shares of the Company are over valued by Rs.20.00

Module – 5 : ACTIVITY RATIOS

Activity Ratios measure the efficiency with which an enterprise is managing and utilizing its assets. For this reason, these ratios are also called *Efficiency Ratios or Asset Utilization ratios.*

The efficiency with which the assets are utilized is reflected in the speed and rapidity with which the assets are converted (or turned over) into sales. The higher the rate of conversion or turnover, the more efficient is the utilization or management of the assets. These ratios are, therefore, also referred to as Turnover Ratios.

Turnover is, thus, the primary mode for measuring the efficient management of assets by relating the various assrts to sales or more appropriate to cost of sales and depending upon the various types of assets, there are various types of Activity Ratios.

Some of the Activity ratios like Inventory Turnover ratio, Debtors' Turnover ratio etc. have been discussed earlier as a supplement to the Liquidity ratios. The other important and widely used activity ratio is discussed below.

(i) Assets Turnover Ratio

The Ratio is also known as the Investment turnover Ratio and establishes the relationship between the cost of goods sold and the assets/Investments (in assets) of an enterprise. Investments in fixed assets are necessary to commence/continue the production process and achieve the targeted levels of production and sales. The purpose of the ratio is, therefore, to find out whether the investment in the relative fixed assets have been judicious and whether such investments have contributed towards achievement of the desired sales target.

The variants of this ratio are

(i) Total Assets Turnover = $\frac{\text{Cost of Goods Sold}}{\text{Average Total Assets}}$

(ii) Fixed Assets turnover = $\frac{\text{Cost of goods sold}}{\text{Average Fixed Assets}}$

(iii) Capital Turnover = $\frac{\text{Cost of Goods Sold}}{\text{Average Capital Employed}}$

(iv) Current Assets Turnover = Cost of Goods Sold / Average Current Assets

(v) Working Capital turnover Ration = Cost of Goods Sold / Net Working Capital

Total Assets and Fixed Assets are net of depreciation and the assets are exclusive of fictitious assets like debit balance of Profit and Loss account, deferred expenditure, etc. since the value of the asserts is to be considered on "net of depreciation" basis, the ratios are likely to be higher in the case of old assets, as compared to new ones. The turnover ratios, in such cases, are likely to give a misleading impression of the relative efficiency with which the assets are being used.

Under each of the above categories, a high ratio indicates an efficient and effective utilization of a particular type of asset, while a low ratio is indicative of under-utilisation of the asset. Under utilization points out to presence of "idle capacity" and the reasons for the installed capacity remaining idle, i.e. not being fully utilized have to be looked into. With full utilization of the capacity, increase in production and, in turn, sales would be possible without additional capital investment. In the case of high ratios, additional capital investments might be necessary to operate at higher level of activity

OTHER IMPORTANT RATIOS AND CONCEPTS

(i) Capital Gearing Ratio

The relation of equity capital (including all reserves and undistributed profits as may be regarded the share of equity share holders) to preference share capital and other types of fixed interest bearing loans is known as Capital gearing or Leverage In other words, the technique of raising finances for a company by resorting to fixed interest or dividend carrying securities is called "gearing" the capital. Therefore, if a company collects capital by issuing debentures or preference shares or by inviting public debts, which bear fixed rate of interest the company is said to have "geared" the capital. Gearing is said to be "high" if capital, carrying fixed rate of interest or dividend, is more than the equity capital. Similarly, gearing is "low", if capital, carrying fixed rate of interest or fixed rate of dividend, is less than the equity capital. It may be repeated that equity capital, for this purpose, stands for equity share capital plus all undistributed profits and reserves. From the following example, the idea of high and low gearing can be made clear ;

	Low Gearing (Rs)	High Gearing (Rs)
Equity Share Capital	15,00,000	6,00,000
8 per cent Preference Share Capital	4,00,000	4,00,000
7½ per cent Redeemable Preference Share Capital	1,00,000	8,00,000
7 per cent Debentures	3,00,000	4,00,000
General Reserves	1,00,000	1,00,000
Profit and Loss Appropriation Account	-	1,00,000
	24,00,000	24,00,000
Gearing Ratio	16 : 8`	8 : 16
	2 : 1	1 : 2

Whether a high gearing ratio is good for a company or not will depend on the circumstances of the case. A high gearing may result in some benefits to the equity shareholders, where the rate of interest/dividend on fixed interest/dividend-carrying securities is lower than the rate of return on total capital invested in the business. The surplus, thus earned on the funds, can be utilized for paying dividend to the equity shareholders at a rat higher than the rate of return on the total capital employed in the Company. Such a situation is called Trading on equity". In the case of loan capital, there is a benefit of tax shield, because interest on loan capital is a permissible deduction from profits for the purpose of ascertaining taxable income. Assuming 50 per cent corporate tax the effective rate of interest on loan capital will be half of what is paid. Thus, if 16 per cent interest is paid on loan capital the net rate, after taking into account the tax shied, works out to 8 per cent only.

As mentioned earlier, a large proportion of debentures and/or preference shares to equity shares indicate high gearing. If there is a high proportion of equity capital in relation to debentures and preference capital, it is case of low gearing.

(ii) Debt Service coverage Ratio (DSCR)

The Ratio indicates the ability of an enterprise to meet its liabilities by way of payment of instalments of germ loans and interest thereon from out of cash accruals and forms the basis for fixation of the repayment schedule in respect of the term loan(s) raised for a project. The ratio is calculated, as under :

Profit after Tax + Depreciation + Interest on Term

Borrowings and Deferred Credits + Lease Rentals, if any

DSCR =----------

Repayment (Instalments on Term Borrowings and Deferred Credits)

\+ Interest on Term Borrowings and deferred Credits + Lease Rentals, if any

DSCR may be calculated as an average for the total loan amount covering the whole repayment period after commencement of production or for the entire repayment period, separately for each year. Hence, the values in the denominator or and the numerator of the ratio may be taken as the sum total of the values for the entire period of the proposed term Loan, commencing from the year in which commercial production starts.

A study of the borrower's cash flow estimates and the DSCR will help a banker to decide on the following:

(i) when the repayment of the loan should begin

(ii) how much should it be, and

(iii) what should be the repayment period.

(iii) Return on Net Worth (RoNW)

Return on Net Worth measures the returns on the Net Worth i.e. equity and Reserves of a company and gives an idea of the way in which shareholders funds are being utilized. The ratio is calculated by dividing th4e net Profit by the Net Worth and is expressed as a percentage as under :

$$\text{RoNW} = \frac{\text{Net Profit}}{\text{Net Worth}} \times 100$$

A corporate can improve its RoNW both by leveraging itself and through efficient tax planning, given its return on Capital employed (RoCE). However, the best way for a corporate to generate a high RoNW is to maintain high productive efficiencies, since that would automatically lead to a higher RoCE.

To companies having similar Equity and EPS, the company having a better TONW is certainly better in the sense that it utilizes the shareholders funds better.

It may be noted that when a company issues b0onusshares, reserves get converted into equity and so, the Net worth remains the same. Thus, after a bonus issue, while EPS comes down, RoNW is not affected.

(iv) Over-trading

The term “Over-trading” means expansion of production and sales without adequate financial support. If a company finds itself on an easy market, it may increase its production and sales to meet ready demands. Reasonable and sometimes comparatively lage profits are made. In order to take full advantage of the favourable conditions, profits are ploughed back into purchase of new plaint and machinery, storage facilities etc. thereby depleting resources Creditors are made to wait for settlement of their dues, as further raw materials are purchased or finished goods are procured for direct resale. Meanwhile, production costs increase, particularly wages, and threes make further demands on cash resource, while settlements are waited from debtors. The time lat between the purchasers of raw materials processing thereof into finished products and the final settlement by debtors is often understated and the company can find itself in a difficult position with regard to liquid resources. In such a situation, raising of additional capital may also not be that easy, due to unhealthy appearance of the balance sheet. Likewise , where over trading has taken place, even temporary credit facilities may not be forthcoming from the lending banker without adequate security.

Apart from cash shortage, the other symptoms of over trading are (i) high inventory turnover ratio and (ii) low current ratio.

(v) Under-Trading

“Under-Trading” means trading at a level which is far below the level that the resources can permit Its major symptoms are (i) low inventory turnover ratio and (ii) high current ratio.

In case of under-trading, installed capacity remains underutilized. The fixed overheads will be largely uncovered and, as a result, the unit cost of fixed expenses will be very high. Due to low inventory turnover, there will be high inventory carrying costs. A general climate of lethargy and inertia clouds the organizational psychology, which is most dangerous to the survival and growth of any organization.

(vi) Over and Under-capitalisation

Any enterprise, in order to carry on its business, collects money from two sources, viz. owners and creditors. In the interests of prudent financial management, it is imperative that a proper balance between these two capitals (i.e. owned capital and borrowed capital) be maintained. Any imbalance will be termed either under capitalization or over capitalization.

(vii) Under-Capitalisation

If the owned capital of the business is much less than the total borrowed capital then it is a sign of *Under-Capitalisation.* This means that the owned capital of the business is disproportionate to the scale of its operations and hence, the business is dependent upon borrowed money and trade creditors. N Under capitalization may be the result of over trading, (It must be distinguished from high gearing as in the latter case, there is a comparison between equity capital and fixed interest bearing capital (which includes preference share capital also and excludes trade creditors) whereas in the former case, the comparison is between total owned capital (both equity) and preference share capital) and total borrowed capital (which includes trade creditors also).

Under-capitalisation is indicated by

(i) Low Proprietary Ratio

(ii) Low Current Ratio, and

(iii) High Return on |equity capital or on Proprietor's Funds

The effects of Under capitalization may be :

(i) Payment of excessive interest borrowed capital

(ii) Use of out-of-date appliances and equipments because of inability to purchase new plant equipments etc. and

(iii) High cost of production because of the use of old machines and excessive interest on loans and high cost of purchase due to extra credit period demanded on purchases.

(viii) Over-Capitalisation

An enterprise is said to be over capitalized if its earnings are not sufficient to justify a fair return on the amount of share capital and debentures that have been issued, it is also said to be over capitalized when the total of owned ad borrowed capital exceeds its fixed and current assets.

Over-Capitalisation can be remedied by reducing borrowed capital so as to strike a proper balance between owned capital and borrowed capital. In case over capitalization is the result of over valuation of assets, it can be remedied by bringing down thevalue of assets to their proper value.

USE OF ACCOUTING RATIOS

Ratio Analysis is the most powerful tool of financial analysis. The significance of ratio analysis lies in the fact that it affords a basis for comparing otherwise incomparable absolute figures and enables drawing of inferences on the performance of an enterprise. Ratio Analysis is relevant in assessing the performance of an enterprise in respect of the following aspects.

Liquidity Position

With the help of Ratio Analysis conclusions can be drawn on the liquidity position of a enterprise. The liquidity position would be considered satisfactorily if the enterprise is able to meet its current obligations, as and when due and pay as well, within a year, the interest and principal due on short term liabilities. The liquidity ratios are particularly useful in credit analysis carried out by hanks and other providers of short term loans.

Long-term Solvency

Ratio Analysis is equally useful for assessing the long term financial viability of an enterprise. This aspect of the financial position of a borrower is of concern to the long term creditors, security analysts and the present and potential owners of a business. The long term solvency is measured by the leverage/capital structure and the profitability ratios, which focus on earning power and operating efficiency.

Operating Efficiency

Another dimension of the usefulness of ratio analysis, relevant from the view point of management is that it throws light on the degree of efficiency in the management and utilization of the assets of the enterprise; the various activity ratios measured this kind of operational efficiency. In that, the solvency of an enterprise is, in the ultimately analysis, dependent upon the profit generated by the use of its assets.

Overall Profitability

Unlike outsiders, the management is constantly concerned about the overall profitability of the enterprise, its ability to meet short term as well as long term obligatio0ns to its creditors besides ensuring a

reasonable return to its owners and securing optimum utilization of the assets.

Inter-firm comparison

A single figures of a particular ratio is meaningless, unless it is related t0o some standard or norm. One of the popular techniques is to compare the ratio with the industry average. It should be reasonably expected that the performance of an enterprise, should he in confirmity with that of the industry to which it belongs. An inter-firm comparison would demonstrate the relative position vis-à-vis competitors. If the results are at variance with the industry average or with those of the competitors, the enterprise can seek to identify the probable reasons and in that light take remedial measures.

Trend Analysis

Ratio Analysis enables an enterprise to take the time dimension into account, i.e. whether the financial position of the enterprise is improving or deteriorating over the years. This is made possible by the use of trend Analysis. The significance of trend Analysis of ratios lies in the fact that the analyst can know the direction of movement i.e. whether the movement is favourable or unfavourable. For example, the ratio may be low, as compared to the norm/standard, but the trend may be up ware. On the other hand, though the present level may be satisfactory, the trend may be a declining one. Thus, trend Analysis is of great significance.

LIMITATIONS OF RATIO ANALYSIS

(i) **Ratios are only tools :** Their ultimate use depends on the personal judgments of the analyst. The background and understanding level of the analyst is very important in making inferences. For this reason it is said that ratios are not an end in themselves. Rather they are means to an end. They only pass guiding signals.

(ii) **Ratio Analysis communicates only a relative picture :** every organization, in one way or the other, is unique and, as such, any comparison may not be valid. For example, a government Undertaking, manufacturing iron and steel, is subject to numerous audits and the management may not enjoy the full freedom of decision making, due to accountability to Parliament, its comparison with a private sector company, with a different type of management, may not be 100 per cent valid. Ratios do not depict the circumstances in which the organizations are working.

(iii) Some times, attempts are made at window dressing the accounts, i.e. efforts are made to manipulate the accounts in a manner that the picture being presented is better than what actually it is. For example, a company may be having a lot of capital locked in inventory and might have allowed unwarranted price reduction to dispose of the inventory. This particular step may have far reaching consequences but this fact will not be revealed by ratio analysis.

(iv) Inflation distorts Financial Ratio Analysis. Changes in the reported performance of a company may be entirely due to inflation and not due to management. For this reason, a company may have to use replacement cost method or other suitable devices that are used to differentiate the impact of inflation.

(v) In the case of inter firm comparison, no two firms are similar in age size and product unit. Therefore, any comparison of ratios of two such firms must take these factors into account.

(vi) Ratio Analysis is helpful to spot out the symptoms. The analyst has to carry out further investigations and exercise his judgment in arriving at a correct diagnosis.

5

SOURCES OF FINANCE

Module-1 : Classification of Sources of Finance

If the financial manager's planned cash outflow exceeds cash inflow, and the cash balance is insufficient to absorb the deficiency, it will be necessary to obtain funds from outside the business. Just as a firm bid for labour in the labour market and for asset in the market place, so does it seek money in one or another of various markets for money. They are among the most competitive of all our markets because any one wh0o has money to invest may enter and bargain with those who are seeking funds.

Within these markets, funds e available for many sources, under different types of agreements and for varying periods of time. The financial manager's problem is to obtain the combination that most closely suits the anticipated needs of the business. Financing arrangements that may be desirable because of their relatively low costs typically involved fixed commitments. Consequently the attraction of the lower cost must be balanced against the risk of losing financial flexibility.

The future possibilities in the markets for funds must be related to the expected financial condition of the company as it might exist six months or six years from now, rather than to its present day condition. To illustrate, one must decide whether today is a better time to secure funds than six months from now or whether it is better to obtain owner's funds today than it would be to acquire funds from creditors six moths from now. Thus, the prediction of business needs that has already been made as part of the financial plan, the financial manner adds a second prediction one involving the future course of the markets from which funds are drawn.

Managing Specific Problems

The financial manager must also deal with infrequent but involved, problems that come in th3e course of a business. Although varied, they have a common core in that they require placing a value on a business or on some portion of assets. Let us take a proposal for the combination of two forms./ aside form the legal problems of how it should be done and the economic problem of whether it should be done at all, there remain the financial problems concerning the basis upon which the current owners shall exchange their securities of the new or surviving firm. This requires a determination of the respective values of the securities involved.

If things have gone poorly for a concern, the financial manager will be deeply involved in the readjustment or reorganization of the company's finances, to stave off eventual failure. Should the adjustments prove inadequate the financial manager will be there at the end, supervising the final disposition of the firm's remains to the creditors and owners. Also because of the growing international involvement of business firms, the financial manager must be capable of making sound financial planning, asset, management and funds acquisition decision in a multinational finance environment.

There are outstanding opportunities in financial management today. The problems faced are often complex and demanding but the rewards, financial and otherwise can be great for those who enjoy challenges.

SOURCES OF FINANCE –(LONG TERM AND SHORT TERM)

Financial Management also known as corporate finance or Managerial finance is primarily concerned with acquiring and allocating resources and anticipating the financial needs of the company. The fund needs of a company can be classified as Permanent, Long Term, Medium Term and Short-Term.

SOURCES OF COMPANY FINANCE

Permanent Sources	Long term Sources	Medium term Sources	Short term sources
(a) Share Capital	(a) Redeemable	(a) Medium term Loans	(a) Cash Credit
(b) Retained Profits	Preference Share	(b) Deferred Credit	(b) Overdraft
	(b) Debentures	(c) Public Fixed Deposit	(c) Bills Discounting
	(c) Long term Loans (i) Indian Rupees	(d) Working Capital Term Loans	(d) Commercial Paper
	(ii) Foreign Currency		(e) Trade Credit
	(d) Seed Capital		(f) Lease

MATCHING SOURCES OF FINANCE TO USE

Types of Capital	Uses	Matching Assets	Sources
1. Permanent	(a) Broaden borrowing Base	Freehold or very Long Terms Property	Share Capital
	(b) Financing Major		Detained Profit or Fixed assets
	(c) Financing take-over or merger	Shares of acquired or merged company	Redeemable

2. Long-term (5 yrs. To 20 yrs)	(a) Financing assets with log life Plant & Machinery	Freehold and Long Leasehold Property	Redeemable Redeemable Preference share
	(b) Permanent Working Capital	Permanent stock or Debtor Requirement	Long term loans
3. Medium-term	(a) Financing Fixed Assets	Vehicles, Plant and Fittings	Medium term loans
	(b) Working Capital	Stock Debtors Leasing	Hire Purchase
4. Short term (upto 1 year)	(a) Working Capital	Stock Debtors	Cash Credit
	(b) Financing Sea-sonal Fluctuatios		Bill Discounting Letter of Credit
	(c) Financing Export Orders		Creditors
	(d) Bridging finance		Export Credit
	(e) Minor Fixed Assets		

ORDINARY OR EQUITY CAPITAL

Equity Financing is overwhelmingly the most important in the corporate private sector. Both as regards the cumulative financing arrangements and the raising of new capital, equity finance is by far the largest source. Equities seem to attract a wide range of investors both private and institutional.

(A) Nature of Equity Capital

The equity shareholders are the owners of the firm, who, through the voting rights attaching to their shares, exercise ultimate control over the firm. As Owners of the firm, the equity shareholders bear the greatest risk. If the firm traces unsuccessfully, the equity shareholders are the first to suffer in terms of lack of evidences and probably falls in the market value of their shares. If the firm collapses (it is put into liquidation) it is again the equity share holders who will be at the bottom of the list with his claim for repayment of his investment.

On the other hand, the fruits of the firm's success principally benefit equity shareholders, other participants in the firm employees, lenders, suppliers etc. tend to earn returns not related to the firm's success. Thus once the claims of these other claimants are met, the balance accrues to the ordinary shareholders.

(B) Nominal Values

When the firm is first established, a decision would have been made about how much equity finance (the law requires that there is some) it wishes to raise and how many shares this is to be divided into.

In deciding this probably the major favour is marketability, Most investors could not find shares of very large nominal value very attractive as this would make it difficult to set aside an amount of money to be exactly invested in the firm. Few equity shares have nominal values larger than rs.10 each for the same reason.

Once the firm has invested its capital and has started to trade the market value of its equity shares will probably move away from the nominal value, as a result of market forces. Further issues of equity shares will normally be priced by reference to current market prices i.e. firms will seek to issue further equity shares at the highest price which the market will bear. In fact nominal values cease to have much significance once the firm has stared trading.

The decision on nominal value is not irrevocable. Firms may subsequently split or consolidate nominal, values. For example, a firm whose equity shares have a nominal value of rs.10 each, may split them to shares of Rs.2 each. In practice this is easily accomplished and culminates on each ordinary shareholder being sent a replacement share certificate showing five times as ay Rs.2 shares as the investor previously has Rs.10 ones. As we have seen the object of such a move seems to be reducing the unit price to make the shares more marketable.

(C) Factors to be Considered by the firm on Equity Financing

(a) Issue costs : these vary considerably according to the method used to raise the new equity, ranging from virtually nothing up to about 3 to 5 per cent of the new finance raised.

(b) Servicing costs : equity holders expect relatively high returns in terms of capital appreciation and dividends. Dividends represent an explicit cost. The capital appreciation results from the fact that sooner or later profits not paid out as dividends are expected to end up in the hands of the shareholders even if they have to wait until the firm is liquidated before this happens. Thus one way to another, the entire profits will eventually be paid out to shareholders.

© Obligation to pay dividends : dividend levels are a question of the discretion of directors and financial mangers. As we

saw in (b) above, ultimately the dividend must be paid, but shareholders cannot directly force payment of a particular level of dividend in a particular year.

(d) Obligation to redeem the investment : there is no such obligation unless(or nit) the firm is liquidated. Because of this and to some extend because of the flexibility on dividend levels, finance4 provided by ordinary shareholders does not impose much by way of cash flow obligation on the firm.

(e) Tax deductibility of dividends: In contrast with serving of virtually all other types of finance, dividends are not tax deductible in arriving at firm's income tax liability. This lends to make dividends more expensive than a similar gross equivale4nt loan interest rate.

(f) Effect on control and freedom of action : where new equity finance is raised from other than the existing shareholders in the same proportions as their original investment, voting power will shirt to some extent, perhaps to a large extend and possibly with it control of the firm. This is not necessarily a feature of all increase in equity financing In fact, the two most important means of raising equity finance for most firms, retained profits and right issues, generally avoid this problem.

It is somewhat doubtful whether this is really of much concern to the typical ordinary shareholder, since the seems not to use his vote in any cas. Most firms annual general meetings are characterized by a distinct absence of most of those entitled to be present and to vote. It is a factor which is more likely to be of concern to equity shareholders in small firms.

Advantages of Equity Financing:

- The company is not committed to paying a fixed annual return. Dividends can be varied up or down although in reality, equity shareholders usually expect either stable or rising dividends.

- Dividends yields relative to market price are often quite low. This is because shareholders in growing company will get much of their return from increases in the share price, and the dividends that grow in size year by year.

- Equit shares are permanent capital and are not redeemable (unless the company arranges to purchase and cancel some shares).

- Issuing new equity reduces the company's financial gearing, which will make it easier for the company to raise more capital from non/equity resources.

- Equity shares are on the whole more popular with investors than fixed interest securities because of the prospects of high returns (capital gains plus dividends).

- If new shares of a company are placed with old investors, the enlarged number of shareholders on the register will help to make the company's shares more marketable.

Disadvantages of Equity Financing:

- New equity issues for a public company must often be a rights issue. Existing shareholders might be reluctant to take up their rights, if they have reservations about the reasons why the company needs the finance.

- There might be a reduction in EPS especially in the short term, until profits are built up with the finance that has been raised.

- The issue might be costly in terms of transactions costs, underwriting costs and management time.

- The issue if taken up by new shareholders will reduce the proportionate shareholding of existing shareholders, eg. Founders/directors of the company.

- Equity shareholders expect a high return (dividends plus capital gains) and so the company's cost of capital may rise. This pressure on the company to achieve strong EPS growth might intensify.

- Dividends paid are not an allowable expense for corporation tax purposes.

RETAINED PROFITS (Earnings)

It may be surprising when it is stated that retained profits is a source of new equity finance. However, profits certainly lead to a net increase in funds and retaining these or part of them, rather than paying them out as dividends is effectively as way of raising finance. After all if the full profit were paid out as dividends and then share holders bough new shares with their

dividend money, this would have much the same, effect as retaining the funds in the first place.

In fact retained profits are a very important source of finance, accounting for over half of all the long term finance raised by firms over recent years.

A Free Source of Finance

At first sight, retined profits seem to be a source which costs nothing to service. A moment's reflection however, shows this not be true. From the ordinary shareholder's point of view, there is a clear opportunity costing that, if cash dividends were paid, that cash could be invested in some income yielding way. As the obvious comparison is an investment in equities of similar risk to those of the firm under consideration, retained profits logically have a cost similar to that of the original ordinary shares.

(B) Factors to Consider in Respect of Raising Finance by Retention of Profits

(a) *Does dividend policy affect the net wealth of the shareholder ?* If it does then retaining one proportion, rather than another proportion of the profit, will have some effect on the sum of the dividend paid and the ex-dividend price of the shares.

(b) *No issue costs :* Other means of raising additional equity have explicit issue costs are applicable to retain profits.

© *Profits are uncertain :* Once the need for raising further finance has been identified there is no guarantee that sufficiently large profits will subsequently be made to met the requirements. On the other hand once the funds have been generated from profits, their existence. is certain and their retention just a matter of a management decision. This latter point contrasts with other methods of raising equity finance.

(d) *No dilution of control :* Retaining profits does not alter the voting strength of any individual shareholder.

PREFERENCE SHARES

Preference shares form part of the risk bearing ownership of the firm but since preference shareholders usually have the right to the first slice of any dividend paid, they bear less risk than do ordinary

shares investors' expectations of returns from preference share are therefore, lower than expectation from ordinary shares in the same firm, Historically preference shares have been a significant source of corporate finance.

Off late, they seem to have fallen from favour and are currently of very little importance. They tend to arise most in special situations. For example, European Ferries pic. In UK until 1984 granted significant discounts on its ferry services (mainly across the English channel) to holders at least 300 of the firm's equity shares. The firm found that an incr3easing number of its shares were being held in small parcels by individuals seeking the concession. This was not only costly in commercial terms as an increasing number if its passengers were traveling at discounted pries but the attraction of the shares to individuals was crowing out the larger institutional investors as well the firm decided in 1984 to give its ordinary shareholders the choice of remaining as such and losing the concessions. By restricting the size of the preference share issue the firm has been able to limit the number of shareholders eligible for the concession yet it is able to make a further equity issues.

(A) Factors for the Firm to consider on Preference Share Financing

(a) *Issuing costs :* these are likely to be rather similar to those associated with raising new equity finance and similarly variable with the method used.

(b) *Servicing costs:* These would tend to be some what loser than those relating to ordinary shares since preference shares expose their holder to rather to less risk.

© *Obligation to pay dividends:* Preference shares do not impose the obligations to meet the preference dividend before any dividend may be paid to ordinary shareholders. Where preference shares are cumulative, arrears of unpaid preference dividend must also be made good before ordinary shareholders may participate in dividends. Ion practice despite the lack of legal obligations firms seem reluctant to miss paying preference dividend.

(d) *Obligation to redeem preference shares:* Some preference shares are expressly issued as redeemable and where this is the case, the firm must be mindful of the necessity to finance this redemption. By no means are all preference shares redeemable and where they are not, the position is similar to that or ordinary shares. Where preference shareholders cannot demand redemption this type of

financing is a relatively safe one from the ordinary share holder's view point.

(e) *Tax deductibility of preference share dividends :* The tax system does not distinguish between ordinary and preference dividends so they like ordinary share dividends are not deductible from the firm's profit for corporate tax purposes.

(f) *Effect on control and on freedom of action :* Normally preference shares do not imposed much by way of restriction on ordinary shareholders. Many firms' preference shares give the holders the right to vote only where their dividends are in arrears. Generally preference shareholders have no voting rights.

(B) Advantages and Disadvantages of Preference Shares from the Point of View of Issuing Company

Advantages :

(i) Unlike other forms of fixed interest finance, dividends can be forgone if the funds to pay them are not available.

(ii) The cost of preference shares is less than that for equity because the risk associated with them is less than that for equity. This is because of the preferred status of the shared for payment of income and capital.

(iii) Because preference shares are in a different risk category to debentures they may still be subscribed to when debentures may not be raised because of a lack of asset security.

(iv) Preference shares can act as a buffer in the company's gearing. The shares cannot be described as their fixed interest loans or as giving a right to participate fully in profits. Therefore, if the company is highly geared and does not want to issue more equity , it is a way of manipulating its financial structure.

Disadvantages –

(i) The cost of capital associated with preference shares is greater than that of loan capital because the risk associated with preference shares is greater and so investors will wasn't a higher return on their preference shares than they will on their debentures.

(ii) Preference shares are not allowable against corporate tax liabilities whereas interest payments on fixed interest loans are tax-deductible.

(C) How A Company can make Preference Shares More Attractive –

(i) The preference shares could be made participate – the holder receives a proportional share in the Company's profits over and above his fixed payment.

(ii) The dividends could be made cumulative, and so the investor receives any dividends owing to him from past years which were not paid then.

(iii) The liquidity of the investor's portfolio is usually improved by the redemption of preference shares, and it also allows him to invest in the company's ordinary shares if he wishes to.

(iv) The preference shares could be issued as convertible;

(v) The dividend yield could be improved (although this increases the cost of the shares to the company)

(vi) Preference shareholders could be offered discounts and other fringe benefits for holding the shares.

DEBENTURES :

Many firms borrow by issuing securities with a fixed interest rate and a pre-stated redemption date. They are typically issued for periods within the range of 7 to 10 years though some are issued for periods outside that range indeed perpetual loans stocks (no redemption date) do exist.

The popularity of loan stock or debentures to firm as a means of raising long term finance seems to fluctuate rather wildly from year to year.

Most loan stocks are secured either on specified assets of the borrowing firms or on the assts generally. Alternatively the loan stock holder may simply have the security which the law of contract gives him to enforce payment of his interest or capital if th4 firm defaults. Whether a loan stock is secured or not determines where in the queue for payment the loan stock holder will stand in the event of the liquidation of the borrowing firm.

Since it is not usually practical for individual loan stock holders to monitor their security at all times, trustees e often

appointed by the firm to do this for them. Firms will be prepared to do this so that the issue will attract lenders.

Many firms seek and obtain a capital market quotation for their loan stocks so that potential lenders can buy a firm's borrowings form a previous lender. The new owner of the loans tock will, from the date of his acquiring it, receive interest payments as ell as the capital repayment if he continues to hold the stock at the redemption date.

Debentures attract all types of investors who seek relatively low risk returns. Institutional investors are particularly attracted by them, particularly those institutions which need regular cash receipts to meet recurring payment obligations.

(A) Factors to be considered for Debenture Financing

(a) *Issue costs :* These tend to be relatively low; it has been estimated at about 3 per cent the value of the cash raised.

(b) *Servicing costs:* Since loan stocks represent a relatively low risk investment to investors expected returns tend to be low as compared with those typically sought by equity holders. Historically this has been reflected in actual returns.

© *Obligation to pay interest :* Loan stock holders have the basic right under the law of contract to take action to enforce payment of interest and repayment of capital o the due dates should they not be forthcoming. Fairly typically loan stock holders have the contractual right to take some more direct action (.e. effective seizure of an asset on which their loan is secured) should the borrowing firm default on payments.

This clear obligation to pay interest with potentially dire results for defaulting can make servicing the loan stock finance a considerable milestone around the neck of borrowing firm

(d) *Obligation to redeem loan stocks:* If loan stocks are issued as redeemable with a stated redemption date, which will usually be the case, the firm is under the contractual obligation to redeem. This could put the firm into a difficult cash flow position as the due date for redemption approaches..

(e) *Tax deductibility* of loan stock interest. Interest is fully deductible from the firm's profit for company tax purposes. This has tended in the past to make loan interest payments cheaper than ordinary preference share dividends. This is

now considered less the case in the light of the recent downward movement of Corporate Taxation.

(f) *Effect on control and on freedom of action :* The severity of the consequences of failing to meet interest payments and capital repayments can considerably limit the freedom of action of the firm whilst control in the sense of voting rights is not usually involved with loan stock financing, control in the sense or being able to manage affairs without impediment may well be seriously eroded by the issuing of loan stocks.

Module – 2 : LOAN CAPITAL (TERM LOANS)

Term loans are negotiated between the borrowing firm and some financial institution including clearing banks, insurance companies and merchant banks. This sort of finance is extremely important, perhaps accounting for as much as 25 per cent of new finance raised by a firm other than through retained profits.

In many ways term loans are like debentures if the security is usually given to the lender and loans are made for up to 20 years. They differ from debentures in that they are not usually transferred from lender to lender in the way that debentures are. They are not traded in the capital market. Some term loan stocks typically are. Some term loans are repayable in installments so that each monthly or annual payment consists of part interest in part interest part capital repayment in a similar manner to mortgage loan payments made by private house purchasers.

Term loans tend to be very cheap to negotiate, i.e. issue costs are very low since the borrowing firm deals with only one lender (at least in respect of each loan) and there is room for very much more flexibility in the conditions of the loan than is usually possible with an issue of loan stock.

Term loans closely resemble debentures that with the exception of the points concerning transferability and the possible spreading of Capital repayment, the factors concerning both borrower and lender are much the same as those which we reviewed in respect of loan stocks.

Summary of Conventions in Term Loan and Debentures

	Term loans	Debentures
Maturity	3-7 years	7-30 years	Medium-term bonds 7-10 years Long-term Debentures 10-30 years
Security	Unsecured or Secured Equipment	Most bonds secured by plant. equipment Mortgage bonds, mortgages, Debentures, unsecured.
Repayment Provision	Varies ranging from equal monthly payment To those custom Designed for the Company's needs	Usually semi annual interest payment principal repaid based on sinking fund, call and refunding provisions
Interest rate	Usually floating Tide to the prime rate or another accepted Rate, Sometimes fixed	Fixed

SEED CAPITAL

There are number of technically qualified entrepreneurs who lack financial capability to provide for promoter's contribution which are necessary for availing of Financial Institutions. Industrial Development Bank of India (IDBU) has launched schemes to provide such fund to the would be entrepreneur. Such scheme is known as seed capital assistance scheme. Such assistance are provided to the entrepreneurs through state level financial institutions. All projects are otherwise will have to be eligible for financial assistance from IDBI. There are at present two schemes I operation now. They are (a) Special seed Capital former scheme seed capital is provided for smaller project where assistance is restricted to 20 per cent of the pro0ject cost or Rs.2 lakh whichever is less. The scheme is managed by state level finance institutions out of funds provided by IDBI. However in certain cases concerned state governments also provide funds for seed capital.

Under second scheme, IDBI may directly provide financial assistance. However, in most cases the state financial institutions manage the scheme with due approval from IDBI.

MEDIUM TERM SOURCES

The difference between long term and medium term sources mainly center round the period of loans and the nature of investment of the loan fund. Medium-term, sources can be classified as : (a) Medium-term Loan (b) Deferred Credit (c) Public Fixed Deposit (d) Working Capital Term Loans. They are discussed hereunder.

(A) Medium term Loans –

These loans are generally provided by Banks/Financial Institutions. The periods of loans very from 3 to 7 years. The investment of these loan funds are in the plant and machinery, vehicles and certain other equipments. The procedure of granting such loans are almost same as in the case of Long term loans except that the amount of such loans may not be as high as in case of long term loans. Besides, in most cases consortium finance may not be required. In case of long term loan the fund is invested in freehold Land or in long leased land since their period of loan vary from 7 years to 20 years. Thus the difference between Medium term loan and Long term loan may be termed as of degree rather than of kind.

(B) Deferred Credit Bills rediscounting Scheme of IDBI

The Bills Rediscounting scheme was introduced in April, 1965 in terms of the powers vested in the Industrial Development

Bank of India under Section 9 (1) (b) of its Statue, which authorizes it to accept, discount or rediscount bills of exchange and promissory notes of industrial concerns subject to such conditions as may be prescribed. The objective of the scheme is to fold. The manufacturers of indigenous machinery Capital equipment can push up the sales of their products by offering deferred payment facilities to the prospective buyers-users. The buyer user of the machinery on the other hand is enabled to utilize the machinery acquired and repay its cost over a number of years. The manufacturer, of course, gets the value of the machinery within a few days of the4 delivery of the machinery by discounting with his banker the bills of exchange/promissory notes arising out of sale of the machinery. The scheme thus helps the indigenous machinery manufacturing industry to increase their turn over which in turn helps expansion/modernization/diversification programmes of existing industrial units, thereby contributing to the industrial progress of the country. The facilities under the scheme are available to the following.

(i) Manufacturing industries

(ii) Autonomous purchaser-users in the public sector such as electricity undertakings, transport corporations, municipal transport undertakings which maintain separate accounts for transport division and government companies;

(iii) Sale/purchase of equipment for use of renewable energy sources and for disposal/treatment of effluents by distillery units.

(iv) Commercial establishment institution (except the governments departments)or professionals(i.e. non industrial purchaser user) provided the item is purchased directly from the manufacturer.

(v) imported machinery/equipment provided the same is purchased from a local authorized agent of the foreign supplier.

(C) Public Fixed Deposit –

Such deposits are to be collected from public in general and shareholders. Section 58A of the companies act regulates such deposits. Such deposits can be taken for a maximum period of 36monthsand a minimum period of 6 months generally.

Maximum amount of deposits from public should be restricted to 25 percent of the Net worth of the Company according to the latest audited Balance sheet In case of shareholders such

deposits acceptance is restricted to 10 per cent of the Net worth of the Company's last audited Balance sheet. Thus total amount of 35 percent of paid up capital and free reserve an be raised. Interests on such deposits vary from period to period depending on the period deposit and policy of the government from time to time. The maximum amount of interest on such deposits restricted to 14 per cent per annum at present.

The deposits are unsecured loans and utilized by companies to part finance working capital requirements.

(D) Working Capital Term Loans

In separate chapter, we have discussed working capital management. It will appear that on the quantum of credit that a bank should disburse to and on committee suggested three methods of which banks generally follow the second method of lending.

As per this method, the borrower will have to contribute 25 per cent of the total current assets. The remaining working capital gap will be funded by bank borrowing. Where borrower fails to bring such additional fund the banks usually sanction Working Capital \term Loans which the borrower is to repay in a phased manner. Such repayment time allowed is maximum five years. To put a pressure on the borrower for early repayment of such loan, the banks generally charge 1 per cent higher rate on such loan over and above rates charged in cash Credit Account However, such excess charge of interest is entirely in the jurisdiction of the bank which may discriminate between borrowers depending financial status an future project of the concerned borrower.

The concept of Working Capital Term Loan has been introduced by Chore Committee which was appointed for reviewing working capital lending by banks subsequent to introduction of recommendation of Tandon Committee.

SHORT TERM SOURCES

Short term sources of finance are usually defined as those which allow a company to borrow money for up a year before repayment is due. It is particularly important to match the maturity of short term assets and liabilities. Since short-term funding has to be repaid within a relatively short time horizon, short-term finance should be invested in short term, self liquidating assets. In other words, short term sources of finance should be used to finance temporary cash requirements rather than major long term projects of fixed assets. If the maturity of short term assets and liabilities is not matched then the borrower may be forced to dispose of long

term assets which are needed in the running of the business in order to repay short term loans which have matured Normal uses of short term finance include buying stocks of raw materials financing production cycles (especially in seasonal businesses like farming where expenditures on seed occur months before any revenues from crops are generated) and buying minor fixed assets which, if necessary, an be sold to repay the debt without having a great effect on the business as a whole.

This chapter will examine the various alternative sources of short term finance available different companies and their respective advantage ex and drawbacks.

(A) Bank Loans

Bank term loans differ from over drafts by being for fixed periods, fixed amounts and by having fixed interest rates payable on them. Loans can be made for anything from a few months to six or seven years. Repayment on either be made in full at the end of the period or (more usually_ in installments throughout its life, interest being paid as part of those installments. Loans can also be granted in installments as well as in lump sums. Installment loans are often by companies to finance the construction of projects, however, with this type of loan if the whole amounts not drawn within a certain period the outstanding funds are cancelled.

Loans have the disadvantage that interest is payable on the entire amount regardless of whether the company uses all of the money or not, although it is possible to negotiate to repay some or all of the loan before it is due. Another possible disadvantage is that the interest rate is fixed for the duration of the loan or at least for each say, six months period ad so if market rates fall the company could loss out. On the other hand fixed rates are an advantage in times of raising interest rates.

The company will have to provide security for the loan, in the form of fixed and floating charges on its assets. Sometimes the bank will also want personal guarantee from the owners of directors in the form of pledges of their personal pr0perty. The bank may also impose other restrictions on the company in order to safeguard its money. These restrictions can take the form of limits on other borrowing and/or unsecured liabilities and regular enquiries into the company's financial position and working.

In spite of these draw backs loans are a popular source of finance because they are more secure than overdrafts especially in periods of credit limitation, because they are for a guaranteed length of time. Some loans are granted on the basis of the projected cash flows of the particular project for which they are

needed, not on the general creditworthiness of the company, which means that the company's creditworthiness is in fact extended through their use. However, most bank loans have to be baked by assets for security. Planning and budgeting arte also helped by financing projects by loans instead of overdrafts because of the fixed terms attached to them. Finally longer term loans can be used to invest in fixed assets because it is possible toknow exactly when cash will be needed to repay them.

Normally companies do not receive finance from Banks purely in the form of either overdrafts or loans but instead use a mixture of both to finance difference needs.

(B) Trade Credit

Credit extended by the supplier of goods to the purchaser is another very important source of finance for companies, because money and other benefits can be produced using these goods before they have to be paid for. Credit is normally given for between one and three months, although an important customer of the supplier may be able to obtain upto six months credit. The length of credit extended to cust0omers also depends on such things as the sort of goods being sold goods with a high sales turnover have short credit periods the supplier's financial position – if he is short of liquid capital he will prefer to sell on a cash basis or on short credit terms and on the availability of cash discounts – if there is a high cash discount the period of credit is liable to be Short. Another form of finance from suppliers which is a short of trade credit is that of loans for equipment and the fitting out of premises. This occurs in special circumstances when the purchaser of the suppliers is contracted to sell only those particular supplies. Petrol companies paying for garage fore counts to be fitted out is one example, another is brewery companies paying for garage forecourts to be fitted out is one example, another is brewery companies equipping pubs. The loans are often at favourable terms but they do tie the recipient to the supplier and limit his independence.

(C) Cash Credit and Overdraft

In cash credit the bank fixes a drawing limit for the borrower after providing for margin. The borrower is allowed to draw fund from bank within this drawing limit for financing day today activities of the company like paying salaries/wages buying material for production. The current assets of the borrower are hypothecated with the Bank. Generally, the drawing limit fixation is based on second method of lending affixed by Tandon Committee's norm.

Cash credit has been categorized as a short term source of finance because it is granted on early basis. At the end of each year the whole process of sanctioning credit is repeated to fid out whether the norms against which or the value of current Assts against which cash Credit facility was given are still valid. For example, if the borrower has incurred loss during the year under construction, the current assets may erode (reduce) in the meantime. Accordingly, the drawing limit of cash credit facility.

Overdraft on the other hand, is facility for drawing money in excess of credit balance of a borrower for a temporary period. Such facilities are given generally looking at the financial status of the borrower. Thus this is a discretionary facility which a banker mayor may not give depending on the past record and financial status of the borrower. Generally, no hypothecation of Current assets or pledge of stock as in case of cash credit are involved in case of overdraft facilities.

Overdraft on the other hand, is facility for drawing money in excess of credit balance of a borrower for a temporary period. Such facilities are given generally looking at the financial status of the borrower. Thus this is a discretionary facility which a banker may or may not give depending on the past record and financial status of the borrower. Generally no hypothecation of Current assets or pledge of stock in case of cash credit is involved in case of overdraft facilities.

Under cash credit normally, the maximum interest charged by the bank are generally 3 to 4 per cent over bank rate of RBI. At present the rate of interest in cash credits is 13 per cent. The rate of interest on overdraft is generally lower since the period of such loan is very short. In case of cash credit penal interest is charges for (a) drawing over sanctioned limit (b) non submission of stock statement and other return but in case of overdraft no such panel interest is charged.

(D) Bill Discounting

This is a facility extended by a bank to its customer when the customer is the seller of goods. On selling the goods, the seller draws a bill of exchanged on the buyer for a period of credit. When the purchaser signs such bill of exchange as a token of acceptance, such bill of exchange is presented by seller to its banker. The banker immediately release the principal money against certain charges/discount. On maturity the bankers collect the due amount in the bills of exchange including interest, if any, from the buyer of goods. In case of failure of the buyer to honour the bill the banker will revert back to the seller for hour of such bill against which banker has already released only to the seller. Such

credit to seller by banker extends generally for a period between 30 to 90 days.

(E) Commercial Paper

This is a comparatively new instrument in Money Market known as commercial Paper (CP) in common language. They are short term usance promissory notes with fixed maturity period. They are issued mostly by large companies who are reputed and have not got high creditworthiness. It is obvious that before issue of CP those companies get their credit rating certified by Credit rating agencies.

(F) Lease : Key Concept

A lease is a type of rental agreement that typically involves a series of fixed payments that extend over several periods.

A lease represents a contract under which one party is entitled to use an assets for a specified period. In consideration of this use, the user is required in make periodic payments to the owner of the asst. Stated differently, a lease is a contract between a lessor and a lessee wherein the owner of an asset allows another party to use it for a leasing fee.

Key Concept 1 he lessor in lease arrangement is the party that has the title to (i.e. owns) the property being leased.

2. The lessee in a lease arrangement is the party that has the right of use of the asset being leased.

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Module – 3 : STATEMENT OF SOURCES AND APPLICATION OF FUNDS

FUNDS FLOW STATEMENT

When a company approaches its banker with a request for providing funds, it is customary for the banker to examine its published accounts, with a view to assessing the company's profitability and Financial strength. From the Profit and Loss Account, the banker obtains information on the working results for the period under consideration. From the Balance sheet, the banker gets an idea of the company's financial status as on the given date. Very often, it becomes necessary for the banker to go beyo0nd these statements and obtain information relating to the company's operations.

The various sources from which the company has obtained funds for its long term and operating requirements and the extent of these obligations are available from the Liabilities Side of the Balance Sheet. The applications of these funds towards different types of assets are also available from the assets side of the Balance Sheet. The Balance Sheet, thus shows the status of the sources and the uses of the funds as on the given date In that sense the Balance sheet presents a status view of the position as on the date of the Balance Sheet.

The next step for the banker is to compare the Balance Sheets as at the beginning and as at the close of the period, to find out the movement of the funds as between the individual sources and uses. Towards that end, a statement of changes in financial position needs to be prepared to analyse the resources that have been available during the period to finance the activities of the company and the uses to which such resources have been put. The statement, thus prepared, is known as the Funds Flow Statement, which serves as the link between two Balance sheets and is also referred to as the Balance Sheet Variation Statement. Since the Statement shows the sources that have generated the additional funds during the period and the items that used up these funds, it is also popularly known as sources and Users of Funds Statement.

Let us consider the following Balance Sheet data of a Company as on 31st March, 2005 and 2006

Balance Sheet as on 31st March

Liabilities			Assets		
	2006	2005		2006	2005
Paid up Share Capital	2.41	2.41	Fixed Assets (net)	4.46	4.23
Reserve and Surplus	2.74	2.60			
Loans	6.61	6.84	Investments	0.13	0.13
Current liabilities	3.08	1.47	Expenses on new Projects	0.05	0.04
Provision for Taxation	0.30	1.93	current Assets	8.02	9.41
	15.14	15.25		15.14	15.25

The Balance sheet Variation Statement will be prepared as under :-

Balance Sheet as on 31st March

Liabilities			Assets		
	Increase	Decrease		Increase	Decrease
Paid up Share Capital	…	…	Fixed Assets (net)	0.23	….
Reserve and Surplus	0.14	…			
Loans	…..	0.23	Investments	…..	……
Current liabilities	1.61	…	Loans and Advances	1.04	….
Provision for Taxation	….	1.63	Expenses on New Projects	0.01	…..
			Current Assets	….	1.39
	1.75	1.86		1.28	1.39

From the above Statement, the “Increase” and “Decrease” in Liabilities and Assets are segregated into “Sources of funds” and “Uses of funds”, as shown in the following table.

Sources of funds		Uses of Funds	
Increase I Liabilities	1.75	Increase in assets	1.28
Decrease in Assets	1.39	Decrease in Liabilities	1.86
Total sources	3.14	Total Uses	3.14

A simple Funds Flow Statement can also be prepared in the following manner :

Funds Flow Statement 2005-06

Sources of Funds				
(a)	Increase in Liabilities			
	(i) Reserves and Surplus			0.14
	(ii) current Liabilities			1.61
				1.75
(b)	Decrease in Assets			
	Current Assets			1.39
	Total Sources : (a) + (b)			3.14
	Uses of funds			
(c)	Increase in ASSETS			
	(I) Fixed Assets (net)			0.23
	(ii) Loans and Advances			1.04
	(iii) New Projects			0.01
				1.28
(d)	Decrease in Liabilities			
	(i) Loans	0.23		
	(ii) Provision for taxation	1.63		1.86
	Total Uses (c) +(d)			3.14

The Statement reveals that additional funds for the year came mainly from additional current Liabilities and a reduction in current assets and that the internal generation was very small. These funds were primarily used for reducing tax liability and for giving additional Loans and Advances. The increase in Fixed Assets was nominal and so was the reduction in loan obligations.

To have a proper understanding of the Patten of funds movements, the banker has to seek detailed information, pertaining to the year, on the following :

(i) The operating surplus generated by the company, before tax and dividend.
(ii) Whether any additional fixed assets have been acquired and, if so, the amount spent therefore.
(iii) Whether any fixed asserts have been sold and if so, the sale proceeds thereof.
(iv) Whether any miscellaneous income, extraneous to the normal operations of the company has been received and, if so, the amount thereof.
(v) Dividend paid by the company and if so whether it was paid out of the earnings of the year or out of profits of earlier year(s)
(vi) The extent of funds generated by way of depreciation charge.

The preparation of a comprehensive funds flow Statement, that will adequately clarify the above queries, requires reference to the company's Profit and Loss account and some additional data. Let us consider the following Balance sheet data of the company as on 31st March, 2005 and 31St March, 2006.

Balance Sheet as on 31st March

Liabilities			Assets		
	2006	2005		2006	2005
Paid up Share Capital	2.41	2.41	Fixed Assets (net)	4.46	4.23
Reserve and Surplus	2.74	2.60			
Loans	6.61	6.84	Investments	0.13	0.13
Current liabilities	3.08	1.47	Expenses on new Projects	0.05	0.04
Provision for Taxation	0.30	1.93	current Assets	8.02	9.41
	15.14	15.25		15.14	15.25

Profit and Loss account for the Year Ended 31st March

	2006	2005		2006	2005
Opening stock	6.14	4.10	Sales	21.63	18.65
Purchases	11.11	10.18	Closing Stock	5.71	6.14
Other expenses	9.35	7.53	Other income	0.38	0.32
Depreciation	0.43	0.55			
Ta x	0.27	1.95			
Net Profit	0.42	0.80			
	27.72	25.11		27.72	25.11

Other details for 2005-06	Rs.In lac
Payment of dividends	0.28
Sale of fixed assets in which profit Is Rs.0.02 lac	0.04

The funds Flow Statement prepared on the basis of the above details, will be, as under :

Funds Flow Statement for the Year 2005-06

(Rs. In lac)

Sources of funds	
Profit before taxes (0.42 + 0.27)	0.09
Less : Profit on sale of Fixed Assets	0.02
	0.67
Depreciation	0.43
Increase in current Liabilities	1.61
Sale of fixed Assets	0.04
Decrease in current assets	1.39
Total sources	4.14
Uses of funds	
Payment of dividends	0.28
Decrease in Loans	0.23
Increase in fixed assets	0.68
Increase in Loans and Advances	1.04
Increase in Project Expenditure	0.01

Taxes Paid	1.90
Total uses	4.14

Increase in fixed Assets

Gross Fixed Assets on 31st March, 2006	8.80
Add Cost of Fixed Assets sold during the year	0.02
	8.82
Less : Gross Fixed Assets as on 31st March,2005	8.14
Increase in fixed Assets during 2005-06	0.68

This comprehensive funds flow Statement is much more than a mere Balance Sheet variation statement and it provides a wider range of relevant information on movement of funds. From the above Statement, the data can also be presented in a different manner, as shown in the following table.

Sources of funds		Use of funds	
Profit before taxes (excluding profit on Sale of Fixed Assets	0.67	Payment of dividend	0.28
Depreciation	0.43	Decrease in Loans	0.23
Increase in current Liabilities	1.61	Increase in Fixed assets	0.68
Sale of Fixed Assets	0.04	Increase in Project Expenditure	0.01
Decrease in Current Assets	1.39	Taxes Paid	1.90
Total Sources	4.14	Total Uses	4.14

The banker, who is mainly concerned with financing working capital, may find use of the funds Flow Statement, which focuses attention on the changes in working capital. For the purpose of the working capital banker, the required Statement may, therefore, be prepared, as under :

Funds Flow Statement for the Year 2005-06

Sources	
Profit before Tax	0.69
Depreciation	0.43
Funds from Operations	1.12
Reduction in working capital	1.96
	3,08
Increase in Gross Fixed Assets	0.66
Increase in Project Expenses	0.01
Reduction in Loans	0.23
Taxes paid	1.90
Dividends paid	0.28
	3.08

Changes in Working Capital

Sources		Uses	
Increase in Loans & advances	1.04	Increase in current Liabilities	1.61
Amount diverted for Uses other than on Working capital	1.96	Decreases in Current Assets	1.39
	3.00		3.00

It may be observed that the funds from operations are inadequate even to pay the tax arrears and, therefore, resources available by way of reduction in working capital had to be utilized for payment of taxes, dividends and for acquiring Fixed assets. Where such funds are used for adding to fixed Assets, it is tantamount to diversion of short term working capital funds for long term uses, which will have an adverse effect in liquidity. The banker has, therefore, every reason to call for a satisfactory clarification from the company.

Module – 4 : CASH FLOW STATEMENT

Cash, as component of current assets, forms part of working capital and plays an important role in determining the liquidity of an enterprise. An organization should have, at any point of time, sufficient cash to meet its day to day commitments including ad hoc payments, if any. However, it should also be ensure, at the same time, that no excessive idle cash, which is totally unremunerative, remains in hand. The management is, therefore, seriously concerned aboutth4 preparation of a statement of cash flows, which provides detailed information of cash inflows and outflows, preferably on a monthly basis.

The statement is useful for the management to assess the ability of the enterprise to meet obligations to trade creditors, to make timely payment of interest on and instalments of bank loans as and when due to pay interest to debenture holders as also dividends to its shareholders etc. The statement also provides information of excess cash, if any, in some months and shortage of cash in others. Availability of such advance information enables the management to make necessary planning so that in the months when cash receipts are expected to be higher than cash payments, the surplus funds could be utilized for repayment of bank over draft, purchase of short term government securities, and availment of cash discounts and so on. Likewise in the months when cash payments are expected to exceed cash receipts, the management could make arrangements for quick collection of outstanding book debts or temporary bank overdraft or sell the marketable securities to bridge the gap. The banker should know the liquidity position and the cash requirements of an enterprise, before taking a decision to lend particularly for a short period. The banker should hadean idea of the volume of receipts and payments, so that he can, not only estimate the extent of his financing but also satisfy himself about the payment of periodical interest and repayment of the loan.

PREPARATION OF CASH FLOW STATEMENT

Cash Flow Statement is basically a summary of all the entries that are normally recorded in the cash Book, cash receipts from sales, from accounts receivables and from other parties, sources are a deed to the until opening cash balance to arrive at the total cash available. Cash payments for purchase of raw materials payment of wages and salaries, tax, payment of interest on and instalments of bank loan etc. are deducted from total cash available and the net result will be the closing cash balance. The closing cash balance could be either positive or negative Incase of its being negative, the required cash should have to be arranged to meet the gap. A specimen of the Cash Flow Statement is shown below.

Cash Flow Statement
April to September, 2006

Receipts	April	May	June	July	Aug	Sep.
Collection from Debtors	1,50,000	1,50,000	1,50,000	1,57,500	1,80,000	1.80,000
Total	1,50,000	1,50,000	1,50,000	1,57,500	1.80.000	1,80,000
Payments						
Payment to Creditors	1,20,000	1,60,000	1,60,000	60,000	60,000	60,000
Wages and Salaries	30,000	30,000	36,000	36,000	36,000	36,000
Factory						
Administration	9,000	9,000	9,000	9,000	9,000	9,000
Tax	….	….	….	10,000	…..	…..
Payment for Machinery	….	….	….	……..	4,000	…….
Total	1,59,000	1,99,000	2,05,000	1,15,000	1,09,000	1,05,000
Cash Surplus/ Deficit	(9,000)	(49,000)	(55,000)	42,500	71,000	75,000
Opening Balance	8,000	(1000)	(50,000)	(1,05,000)	(62,000)	8,500
Closing balance	(1,000)	(50,000)	(1,05,000)	(62,500)	8,500	83,500

DISTINCTION BETWEEN FUNDS FLOW AND CASH FLOW STATEMENTS

Many a time, people have a notion that Funds Flow Statement is the same as cash flow Statement. This may be due to the fact that the world “funds” is synonymously used with “Cash”. However, this is not so. The funds Flow Statement is different from the cash Flow Statement. The maintenance distinction between these two Statements, is, as under :

(i) Transactions not involving cash are excluded for the purp0oseof Cash Flow Statement for example, transactions involving change of “finalized goods” to “Receivables” are ignored in Cash Flow Statement, whereas these from part or runes flow Statement. Similarly, if Term Loan is converted into equity, it will not figure in cash flow, but will figure in funds flow.

(ii) The accrual concept is ignored in Cash Flow Statement, but it is considered in funds flow Statement since the relative items form part of cash flow at the time of receiving or effecting the payments;

(iii) The Funds Flow Statement is an extension of the Balance sheet and is a part of appraisal process, whereas the Cash Flow Statement is used by the management as a tool for monitoring the cash balance to ensure timely receipt and payment of cash and also maintain cash balance in hand to the extent required.

The Funds Flow Statement and the Cash Flow Statement are important tools for the management of an organization to ensure sound and profitable operations. It is very essential that the lending banker understands these Statements and ensures that these are prepared and presented to him. By a study of these Statements relating to the previous periods, he can assess the strengths and weaknesses of the organization he deals with. The projected statements would reveal the funds requirements under different categories and also the ability to repay. The Statements relating to the actual periods, subsequent to granting of finance would reveal how actually the funds were utilized and whether the management had adhered to the estimates/projections submitted earlier.

On the whole, the funds Flow Statement and the Cash Flow Statement together with the Profit and Loss Account and the Balance Sheet, form the basic documents which are relied upon by the lending banker in his effort to study the credit worthiness of the borrower and the profitability of the business to which the banker is lending his funds.

Module- 5 : WORKING CAPITAL

INTRODUCTION

When firms make investment decisions they must not only consider the financial outlay involved with acquiring the new machine or the new building etc. they must also take account of the additional curr3ent assets which are usually involved with any expansion of activity. Increased sales usually mean that the level of debtors will increase.

A general increase in the firm's scale of operations trends to imply a need for greater levels of cash, increased sales usually mean that the level of debtors will increase.

The current assets (stock-in-trade, debtors and cash) tend not to be financed entirely from the firm's long term sources of finance. Most firms also have access to two major short term sources of finance.

The first of these is a trade credit arising from the fact that purchase or goods and services are usually on credit, i.e. the buying firm does not have to pay immediately on delivery but musty be allowed to delay payment for a period, say 30 days. The second is a source with which many of us are all too familiar in our private lives, the bank over draft.

As the relationship between these short term sources of firm or current liabilities and the current assets tends to be very close, it is logical to deal with both of them in the same unit.

CONCEPT OF WORKING CAPITAL

Issues of Working Capital Management
Working capital Management involves.

__ The level of cash needs to be on call at various dates.
__ The level of inventory do we need to maintain
__ The bank overdraft
__ The period of credit do we grant to our debtors.
__ Suppliers Payments
__ Proportion of current assets should be financed by short term funds.
__ Level of Working Capital.

Definition of Working Capital

Working Capital is defined as the excess of current assets over current liabilities. It is the same as net Current Assets. It

represents the investment of a company's funds in assets which are expected to be realized within a relatively short period of time. It is not an investment in an asset with a long life but, as the name implies, represents funds which are continually in use and are turned over many times in a year, It is capital used to finance production, to support levels of stock and to provide credit for customers.

The three maintenance current assets are stock debtors and cash. They can be funded by short-term finance, i.e. current liabilities or by medium and long term finance in case of permanent current assets or crew current assets.

Components of Working Capital

The firm's Working Capital may be viewed as being comprised of two components.

1. Permanent working capital : These funds represent the current assets required on a continuing basis over the entire year. It represents the amount of cash, receivables and inventory maintained as a minimum to carry on operations at any time, as a safety measure.

2. Variable working capital : these funds represent additional assets required at different times during the operating year. Added inventory must be maintained to support the peak selling periods. Receivables increase and must be financed following periods of high sales. Extra cash may be needed to pay for increased supplies preceding high activity.

Working Capital Cycle

The Working Capital cycle is illustrated below :

A Dynamic View of Working Capital Flows

Raw Material Stock

Cash — Work in progress

Debtors — Finished Goods

Sales

Working Capital = Cash + Debtors + Stock – Short term liabilities. It can also be defined as :

Working capital = Equity + Long and Medium-term debt – Fixed assets

2. Structure of Current Assets and Current Liabilities

	Current Assets		Current Liabilities
1.	Cash and Bank Balance	1.	Creditors for raw materials consumables etc.
2.	Investment held for short term purpose and also securities which are easily marketable (Money Market securities any other like instruments)	2.	Advance payment for stock payment received from customers
3.	Short term Fixed Deposit (within one year maturity)	3.	Deposit from Authorised Agents and the like.
4.	Sundry Debtors or Receivable Bill purchasing and discounting by Bank/Non-banking Financial Institutions included)	4.	Deferred instalment payable within a year term loan/ Debenture or deferred payment for credit.
5.	Deferred receivable l limited to instalments due within one year	5.	Interest/other charges payable
6.	Raw Materials in transit	6.	Public deposit repayable with in a year.
7.	Raw Material/Components in stock and is used in course of normal production.	7.	Unsecured loans payable with in year
8.	Stock of works in progress	8.	Statutory Liabilities like ESI Cooperative Dues, PF, Sales Tax, Excise Duty, Salaries
9.	Finished goods and goods in transit	9.	Other current Liabilities like Dividend, Gratuity payable yearly and other similar Liabilities for Expenses.
10.	Consumable stores	10.	
11.	Prepaid expenses including advance payment of tax.		
12.	Advances to suppliers for raw materials, consumable etc.		
13.	Security/Earnest/Money Deposit returnable within Reasonable production Cycle.		

OPERATING CYCLE

The operating cycle is the length of time that elapses between the company's outlay 9nraw materials, wages and other expenditures and the inflow of cash from the sale of the goods. In a manufacturing business it is calculated as follows :

Operating cycle= Average time that raw materials remain in stock

Less. The period of Credit taken from suppliers
Add The time taken for producing the goods
Add The time the goods remain in finished inventory
Add The time taken by customers to pay for the goods.

On some occasions this cycle is referred to as the cash cycle.

This is an important concept for the management of cash or working capital because the longer the operating cycle the more financial resources the company needs. The Management of a company needs to monitor this cycle and keep it short.

Allowances should be made for any significant changes in the level of stocks taking place over the period if, for example, the company is deliberately building up its level of stocks, this will lengthen the operating cycle will lengthen.

Computation of an annual operating cycle and a cycle for each quarter has been advocated as with a seasonable business, the cycle would vary over different periods. The numerators in the equations can be found by taking the arithmetic mean of the opening and closing balances for stocks, creditors and debtors. If a quarterly statement is being prepared, the opening and closing balances for the quarter would be used.

A number of steps could be taken to shorten this operating cycle.

1. The amount of debtors could be reduced by a quicker collection of accounts.
2. Finished goods could be turned over more rapidly.
3. The level of raw material inventory could be reduced or
4. The production period could be shortened.

The operating cycle is only the time span between production costs and cash returns; it says nothing in itself of the amount of working capital that will be needed over this period. In fact less will be required at the beginning then at th4 end, initially the only expenditure is on materials but as wages and other expenses are

incurred the amount of working capital required increases over the cycle.

It is not necessary to have as available cash at the beginning of the period a sum equal to the estimated cost of the production, although over the cycle as a whole it must be possible for the company to have access to such an amount.

Short term working capital is required to support a given level of turnover, i.e to pay for the goods and services before the cash is received from sales to customers. To determine the amount required it is necessary to kno0w the estimated sales for the period and the characteristics and scale of the operating cycle.

Calculating the Operating Cycle for a Period

1. Raw materials period 9fturnover of raw material stock = Average value of raw material stock/purchase of raw materials per day = Days
   Less : period of credit granted by suppliers = Average level of creditors/purchase of raw materials per day = days

Add:

2. Period of producti0n = Average value of work-in-progress/Average cost of goods sold per day = Days

Add:

3. Period of turnover of finished goods stock = Average value of stock of finished goods/Average cost of goods sold per day = Days

Add

4. Period of credit taken by cusat0mers = average value of debtors/Average value of sales per day = days

Total Operating Cycle

1. Assessment of Working Capital requirement – Usual Method –

We know that working capital is the excess of current assets over current liabilities. In reality such excess of current assets over current liabilities may be either more or less than the working capital requirement of the company. Accordingly it is necessary to calculate the working capital requirement of a company. This is illustrated with an example. Such computation of working capital requirement may also be necessary for plan to increase of sale form existing level.

Example

BALAJI Company plans to attain a sales of Rs. 5 Crore. It has the following information for production and selling activity. It is assumed that the activities are evenly spread throughout the year.

(a) Average time raw materials are kept in store prior to issue for production 2 months

(b) Production cycle time or work in progress cycle time 2 months

(c) Average time finished stocks are kept in sale in unsold condition ½ months

(d) Average credit available from suppliers 1½ months

(e) Average credit allowed to customer 1½ months

(f) Analysis of cost plus profit for above sales:

	%	Rs. In Crore
Raw Materials	50	2.50
Direct Labour	20	1.00
Overheads	10	0.50
Profit	20	1.00
Total	100	5.00

Calculation of Working Capital Requirement :

1. Total months to be financed to raw material

Months	
Time in raw material store	2
Working progress cycle	2
Finished goods store	½
Credit given to customer	1½
	6
Less : Credit available from suppliers	1½
Total months to be financed to raw materials	4½

2. Total months to be financed to labour

Production cycle	2
In finished stock store	½
Credit to customer	1½
Total months to be financed	4

3. Total months to be financed to overhead

production cycle	2
In finished goods stores	½
Credit to customer	1½
	4

Less : Credit from suppliers	1½
Total months to be financed	2½

4. Maximum working capital required

Rs.in crore

Raw materials 41/2/12 x 2.50	0.94
Direct labour 41/2 x 1.00	0.33
Overheads 21/2 x 0.50	0.10
Maximum Working Capital	1.37

FACTORS AFFECTING WORKING CAPITAL :

Controllability of Working Capital

Element	Influence
Debtors	Volume of credit sale Length of credit given Effective credit control and cash collection
Stocks	Lead time and safety level Variability of demand Production cycle No. of product lines Volume of - planned output - actual output - sales
Payables	Volume of purchases Length of credit allowed
Short term finance	All the above Other payments/receipts Availability of credit interest rates

The table illustrated above lists the factors that influence working capital items. When you considering the control of debtors and stocks. It is possible to calculate ratios which can be used to monitor movements in these items.

Example

You can see the average length of credit being allowed on debtors can be seen from the ratio of debtors to credit sales. Unfortunately

it is not possible to introduce meaningful monitoring ratios for the control of creditors.

Purchases and Inventories

Purchases, and consequently the creditors' figures are made up of a mixture of items:

- Materials for stock
- Materials for consumption
- Wages and salaries
- Payment for services
- Energy
- Rent
- Purchase of capital equipment and other such items.

The management of inventories is as important for the company's short-term financial situation as the management of cash. A balance between the tying up to money that is not earning anything and losing sales, and profits through not being able to meet an order when it comes in has to be found.

It is not possible to find an effective measure of volume for purchases, and so control ratios for payables cannot easily be calculated. However, it is possible to observe the movements in the creditor's figure on a week by week basis or a month by month basis. Any unusual changes can be examined on an item by item basis. Relevant questions can then be asked.

Working Capital Levels in Different Industries

The type of working capital required can vary from one industry to another. These industry differences have to be allowed for in any comparisons across companies. What is an acceptable working capital position in the retailing industry would not be acceptable in a manufacturing industry.

A retailing company usually has high levels of finished goods stock and very low levels of debtors. Most of the retailer's sales will be for cash and an independent credit card company or a financial subsidiary of the retail business (which on occasions is not consolidated in the group accounts). The retailing company, however, usually has high levels of creditors. It pays its suppliers after an agreed period of credit. The levels of working capital requi5ed are therefore low, in fact, they can be very low, with some retailers having high levels of short term borrowing.

In contrast, a manufacturing company will require relatively high levels of working capital with investments in raw materials,

work-in-progress and finished goods stocks, and with high levels of debtors. The credit terms offered on sales and taken on purchases will be influenced the normal contractual arrangements in the industry.

Cash Levels

To determine the level of cash that a company requires, it is necessary to prepare a cash budget where the minimum balances needed from month to month will be defined. If expenditures are lumpy or business is seasonal cash shortages may arise in certain periods. Generally it is thought better to keep only sufficient cash to satisfy short-term needs and to borrow it longer term requirements occur. Maintaining a very large cash balance to meet every eventuality likely to arise throughout the planning period is thus discouraged in favour of ad hoc borrowing. The problem of course is to balance the cost of this borrowing against any income that might be obtained from investing the cash balances. Since cash needs can hardly ever be predicted will absolute certainly, some firms will no doubt opt for a safety st0ck of cash with which to meet the unexpected. Like any other insurance premium this particular brand of peace of mind involves an opportunity cost like any other insurance medium.

The difficulty of pinpointing the 'right' level for cash is a theme with variations. Many attempts have been made to develop a model for the control of cash. The famous square root inventory model has been applied in theory to the problem of an optimal level of cash.

The size of the cash balance that a company might need depends on the availability of other sources of funds at short notice, the credit standing of the company and the control of debtors and creditors – a crucial factor for short term financial planning. The flow of cash in and out of the business can to some extent be controlled by such tactics as speeding up the collection of debts (perhaps by offering an attractive discount to buyers)factoring debts, or delaying disbursements of cash to creditors.

Debtors

The debtors problem again revolves around the choice between profitability and liquidity, it might for instance, be possible to increase sales by allowing customers more time to pay, but since this policy would reduce the company's liquid resources it would not necessarily result in higher profits. Often the terms of sale are dictated by common practice within the industry, if not the company can design its own terms with a view to regulating the level of

debtors. A company free to exercise some judgment in the matter of its customers can control the total risks attached to its sales, assuming, of course, that it is possible through historical analysis or the use of established credit ratings to classify groups of customers in terms of credit risk through historical analysis or the use of established credit ratings.

As out put changes in relation to capacity the company may choose to change its credit policy, in some industries certain firms devote generous sums to the machinery of debt collection, some times with significant results.

Discounting and Factoring

If a company has a short term liquidity problem it can resort to invoice discounting or factoring. These measures have now become accepted particularly among rapidly expanding small or medium sized firms whose grt5owth would normally be hampered if large amounts of capital were tied up in book debts.

A proportion of the company's book debts can be converted into cash by discounting through the services of a specialized financed company. Three quarters of the value of sales invoices can be advanced in return for a bill of exchange for future payment of the advance plus interest. Factors provide added services such as

purchase of all the client's invoiced debts and the arrangement of all debtor control debt collection and sales ledger accounting. It is even possible to have an undisclosed factor, of whose operations as third party the buyer is quite unaware since the purchaser pays the debts t0o the seller in the conventional manner. In this situation, in fact, the seller collects the debts on behalf of the factory. All these services have a cost but for companies short of working capital the cost may justify itself.

Cost of Working Capital

The other aspect of the working capital problem concerns obtaining short term funds. Every source of finance, including taking credit from suppliers, has a cost, the point is to keep this cost to the minimum. The cost involved in using trade credit might include forfeiting the discount normally given for prompt payment or loss of goodwill through relying on this strategy to the point of abuse. Some other sources of short term funds are bank credit, overdrafts and loans from other institutions. These can be unsecured or secured, with charges made against inventories specific assets or general assets.

The short term financial problem is one of balancing the options. Cash requirements with seasonal patterns involve deciding whether to use short term funds take credit offer varying discounts employ factors or maintain large balances. Given the forecasting requirements and the alternative costs, it is theoretically possible to make an optimal decision.

MANAGEMENT OF WORKING CAPITAL

Another aspect of the working capital problem concerns obtaining short term funds. Every source of finance, including taking credit from suppliers, has a cost, the point is to keep this cost to the minimum. The cost involved in using trade credit might include forfeiting the discount normally given for prompt payment, or loss of goodwill through relying on this strategy to the point of abuse. Some other sources of short term funds are bank credit, overdrafts and loans from other institutions. These can be unsecured or secured with charges made against inventories, specific assets or general assets.

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MANAGEMENT OF WORKING CAPITAL

Managing Working Capital involves following processes :

Forecasting Funds Requirement

Changes in the firm’s operations can have almost immediate effects on the working capital needed.

Example

If suppliers increase the price of raw materials, more money will be tied up in inventories than previously. Even if the firm can increase the price for its final product, it will need additional working capital to support its sales efforts.

An inteligent manager will observe operating activities and estimate the level of working capital required for future periods.

Acquiring Funds

Once the needs have been estimated, the manager must acquire the necessary funds from the best source, for the lowest cost, and for the time period involved. The effective management of working capital is the primary means of achieving the firm’s goal of

adequate liquidity. It is, after, all, the working capital – cash marketable securities, receivables and inventory – that will be available to pay bills and meet obligations. It is the net working capital – excess of current assets over current liabilities – that helps measure the degree of protection against problems that might cause a shortage of funds.

Monitoring Levels of cash, Receivables and Inventory

In a daily or weekly basis, the manager should know the amount of funds that are tied u- in each of the current asset, issues that need to be addressed are :

- Amounts invested in each of the current assets
- Comparing the current asset levels with historical levels
- Analysing deviations and reasons for the same.

Knowing Percentage of funds in Current Accounts

Working capital represents a large investment for most firms. Some 30 to 60 per cent of a firm's total assets will be tie up in current accounts. The manager should be aware of the relationship between current and fixed assets and any changes in the percentage of funds in current assets.

Recording Time Spent Managing current Accounts

Between one third and two thirds of the financial manager's time is spent managing the working capital. A knowledge of how much time each member of the finance department spends with current accounts can offer an insight into the effectiveness of working capital management.

Identifying Excess Working Capital

To avoid tax management of working capital, the manager should make regular checks to identify excess current assets. Ratio analysis offers a quick and reasonably a curate method for doing this. By comparing ratios with previous periods and industry norms, the manager can locate deviations.

Example

The following table compares the current accounts using ratios with prior figures and the norm for the industry. The table indicates that current assets are becoming excessive compared to total assets and current liabilities. Based on these data, the manager should carry out further investigations.

TATA ELECTRICALS Working Capital Ratios Compared to Prior Periods and Industry Norms

Ratio	2005	2004	2003	2002	Industry
Current assets/Total Assets	0.40	0.35	0.31	0.28	0.32
Liabilities	3.2/1	2.7/1	2.3/1	2.0/1	2.2/1
Current assets-Inventory/current Liabilities	1.6/1	1.4/1	1.2/1	1.0/1	1.1/1
Cash + marketable Securities Current Assets.	0.20	0.18	0.19	0.21	0.20

An Investigation of TATA ELECTRICALS. may reveal that current assets have grown out of proportion to total assets. But something is missing from the table above. Current assets are not compared to sales. If the firm has been able to increase sales on the same approximate asset base of buildings and land, we would expect the current assets to increase. Checking this, the manager discovers that the ratio of current assets to sales has remained relatively constant at a range of 0.21/1. To correctly measure whether current assets are excessive, they must be compared with assets and sales to correctly measure whether they are excessive.

6

CAPITAL BUDGETING

OBJECTIVES

- To Introduce the topic.
- To Understand the meaning and importance of Capital Budgeting.
- To Explain the techniques of capital budgeting.
- To Explain the Merits and Demerits of the techniques.
- To Know the calculation procedure of the techniques.
- To Illustrate the Evaluating techniques namely NPV and Payback Method.

INTRODUCTION

Budget is the term especially used in the Government department Budget means to plan for future. During the early years Budgetary Control has become a very popular technique of cost control. Now a day it exists in almost all the organization in various forms. Capital Budget is one of the forms.

MEANING

The final Objective of each organization is to earn more and more profit. Thatswhy to plan and control the capital expenditure to achieve the profit goal is the vital part of every business unit. The capital expenditures means the expenditures incurred on acquiring or for extension of the long term asset. Capital Asset or a Long term assets may be a new building, a new machinery or a new project. Capital Budget relates to the investment in capital expenditures. Capital expenditure decisions include current outlays but are beneficial over a period of time longer than one year. The term capital budget is used interchangeable with Capital Expenditure Decision, Long Term Investments Decision. **Capital Budget means long term investment decisions and management of fixed assets.** Capital Budget is the decision whether or not the money should be invested in long term project. Capital Budgeting involves the preparation of cost and revenue estimates for all the possible projects, an examination of the merits and demerits of each and every possibility and finally selection of the project giving the highest return on investment. The Capital Budget includes the planning and utilization of available capital to increase the profitability of the business organization.

The Capital expenditure decisions are of two types :

1. **Investment Decisions which increases Revenues** : It means here the decision have been taken for adding New Capital Assets or New Plant or Introducing New Product Line which increase the production and finally brings additional revenue.
2. **Investment Decisions which reduces Cost :** Here the decisions have been taken for Replacement of Old Asset or Old Plant with New One, which reduces cost.

Importance Of Capital Budgeting

According to Joe Dean, "**Today's capital expenditure make the bed that company must lie in tomorrow. The capital expenditure budget embraces a company's plans for replacing, improving and adding to its capital equipment."** These words show that capital budgeting is a vital function of management. Capital Budgeting is very important for survival and growth of the organization as it is related to the decisions of long term investment.

Following points explain the importance of capital budgeting :-

1) For Careful Investment Decisions :- As the capital investment is a long term investment therefore if once the decision has been taken it becomes very difficult to reverse from it. Even any modification or alternations are also become impossible. Capital budgeting helps in taking careful capital expenditure decisions.

2) To avoid over and under investment :- Capital budgeting includes the decisions about Acquisition of assets and an estimation of earnings during the life time of such assets. An incorrect decision in this matter leads to over or under investment. Both the situations are risky from the profitability point of view. Hence proper planning of capital expenditure is essential.

3) To avoid unessential blocking :- Ensure the proper timing of assets acquisition, is the main feature of Capital budgeting. If the assets are not acquired on proper time, it is the unessential blocking of funds. It results into loss of revenue.

4) To arrange for the necessary finance in time :- Capital budgeting means the Estimation of capital investment decisions. Therefore it enables the organization to arrange for the necessary funds in time for long term investment.

5) To look into the various aspects and alternatives :- Deep study of various proposals and their various aspects is a vital stage in the process of capital budgeting. It ensures that the investment will be made in the most profitable proposal. It increases the productivity of the concern and finally the overall economy of the country.

6) To investigate and evaluate the technological changes :- For facing cut throat competition investigation of technological changes is needful. To investigate and evaluate the technological changes is the important function of capital budgeting. Thorough investigation, evaluation and application of advanced techniques decreases the cost of production and increases the probability which enables the business ready for facing the cut throat computation.

EVALUATION TECHNIQUES

The technique used in capital budgeting for the appraisal or reappraisal of an investment proposal is termed as Evaluation Technique. While taking long term investment decisions the comparison among the various investment proposals is needful. After comparison and evaluation of all the proposals one proposal should be selected for investment which gives the best results.

Types of Evaluation Techniques

Traditional Techniques	**Time Adjusted/Discounted Cash Flow Techniques**
1) Average Rate of Return	1) Net Present Value Method
2) Payback Period Method	2) Internal Rate of Return Method
	3) Profitability Index

The main Techniques are discussed below :-

PAY BACK PERIOD TECHNIQUE:-

it is the traditional technique of Capital Budgeting. Here the period is calculated within which the cost of the project will be completely recovered. Such period is termed as Pay Back Period.

Advantages

1) This method is easy to calculate
2) It is simple to understand
3) Here investment recovery period is calculated therefore business unit can know about the period within which the funds will remain tied up.

4) The project having short pay- back period are accepted here this method is more suitable to the industries where risk of obsolescence is high.

Disadvantages

1) This method completely ignores all cash inflows after the pay- back period. This can be very misleading as it does not consider the total benefits occurring from the project.

2) It ignores the time value of money. In this method money received now and receivable in future are considered as of equal value.

3) This method does not take into consideration the entire life of the project. As a result project with large cash inflows in the latter part of payback period and less cash inflows in the earlier years may be rejected.

4) This method ignores residual value.

in spite of these limitations the industries having high risk of obsolescence prefer this method. Likewise where, quick return to recover the investment is the primary goal this method is preferred.

The terms used in this method :-

- Cash outflows : It means the original cost of proposal or investment
- Cash inflows : It means the profits before depreciation but after tax.

Procedure

1) If the cash inflows are uniform :

$$\textbf{Pay Back Period} = \frac{\textbf{Cash Outflow}}{\textbf{Cash Inflow}}$$

For e.g. An investment of Rs. 32,000 in a machine is expected to yield Rs. 8,000 for a period of 10 years, here the

$$\textbf{Pay Back Period} = \frac{32000}{8000} = 4 \text{ years}$$

2) If the cash inflows are not uniform :

A) Prepare the column for cumulative cash inflows

B) Here the pay back period is the time when the cumulative cash inflows become equal to the original cost of proposal.

For e.g.

When an investment of Rs. 70,000 in a machine is expected to yield earnings of Rs. 6,000, Rs. 12,000, Rs. 17,000, Rs. 20,000,Rs.

20,000 and Rs. 25,000 in 6 years are estimated calculate the pay back period.

SOLUTION :

YEAR	Annual earnings Rs.	Cumulative earnings Rs.
1	6,000	6,000
2	12,000	18,000
3	17,000	35,000
4	20,000	55,000
5	20,000	75,000
6	25,000	1,00,000

Here the Cash Out flow = Rs. 70,000

Pay Back Period lies between the 4th and the 5th year

Pay Back Period = 4 years + Part of the 5th year to cover the cost of the Machine Rs. 70,000 which is calculated as below

Pay Back Period = 4 Years + (Cash Outflows – Cumulative earnings of the 4th year)

$$= 4 \text{ years} + \frac{(70{,}000 - 55{,}000)}{\text{Annual earnings of 5th year } 20{,}000}$$

$$= 4 \text{ years and } \frac{15{,}000}{20{,}000}$$

= 4years and ¾ months

Pay Back Period = 4 Years and 9 months

Accept or reject criterion :-

The project having lower pay back period will be accepted.

DISCOUNTED CASH FLOW TECHNIQUE:

This technique takes into consideration the time value of money while evaluating the project. The meaning of Time Value of money is that the sum received today is worth more than the same to be received tomorrow.

For e.g. if Rs.1,000/- are invested at @ 15% Rs 1,150 will be received after a year It means Rs.1,150/- to be received in the next year has a present value of Rs. 150/- represents the time value of money.

The main features of this technique are :

1) This technique takes into consideration the time value of the money.
2) Here all the benefits and costs occurring during the entire life of the project are taken into account.
3) Here the cash in flows are discounted at certain rate.

4) The Discounted Cash Flow Technique is sub divided as :
   - ❖ Net Present Value method
   - ❖ Internal Rate of Return Method
   - ❖ Profitability Index

PROFITABILITY INDEX / BENEFIT COST RATIO

It represents a ration of the present value of future cost benefit at the required rate of return to the initial cash outflow of the investment. It is similar to the Net Present Value approach.

Merits:-

1. This method is helpful in comparing the project having different amounts of investment therefore it is superior to Net Present Value method.
2. It considers the time value of money.
3. It considers all cash inflows.

Demerits:-

1. It is difficult to understand and to calculate.
2. In case of mutually exclusive nature investment the Present Value Method is superior than of this method.

Procedure :-

1) Calculate Cash Out Flows and its present value.
2) Calculate the present value of Cash Inflows.
3) Calculate the ratio of present value of cash in flows to the present value of cash outflows. This ratio is called as profitability index.

$$\text{Formula} = \frac{\text{Sum of Present Value of Cash Inflows /Discounted Cash Inflows}}{\text{Present Value of Cash Outflows/ Discounted Cash Outflows}}$$

Accept / Reject :-

The selection of project has based on ranking i.e. the project with the highest Profitability Index is given the first rank followed by others.

RETURN INTERNAL RATE OF METHOD:

It is also a Discounted Cash Flow Technique. It is also known as Yield on Investment Technique, Marginal Efficiency of Capital,

Marginal Productivity of capital, Time Adjusted Rate of Return. Here the discounted rate of return is calculated by picking up the estimated rates. This process is continued up to the time one can get the estimated rate which equalize the cash inflows and out flows. This Discounted Rate is known as Internal Rate of Return. It means the Internal Rate of Return is the interest rate at which present values of cash inflows and cash out flows are equal. The internal rate of return is usually the rate of return that a project earns. It is defined as, " The Discounted Rate which equates the aggregate present value of the net cash inflows with the aggregate present value of cash out flows." In other words , it is the rate which gives the project Net Present Value ZERO.

Merits :-

1. It considers the Time Value of money.
2. It takes into account the total cash inflows and out flows.
3. It does not use the required rate of return or the cost of capital. Therefore calculations for cost of capital are not necessary. It provides a separate rate of return which indicates the profitability of the proposal.

Demerits :-

1. This method is difficult to understand and to calculate.
2. It is based on future earnings as the estimates of future earnings cannot be made correctly.
3. It provides the multiple rates which can be confusing.

Accept / Reject criterion :

While taking the decision for accept or reject of the project the Internal Rate of Return is compared with the Required Rate of Return. If the Internal Rate of Return exceeds the required rate the project would be accepted.

PROBLEMS AND SOLUTIONS

The initial outlay of the project is Rs. 50,000 and it generates cash inflows of Rs. 25,000, Rs. 20,000, Rs. 15,000 and Rs. 10,000 in the four years of its lifespan. Your are required to calculate the Net Present Value of the project assuming 10% rate of discount. The present value of Re. 1 at 10% discount rate is as follows:

Year:	1st	2nd	3rd	4th
Present Value:	0.909	0.826	0.751	0.683

You are required to calculate the Net Present Value of the project.

SOLUTION:

YEAR	Cash Inflows Rs.	Discounted Factor At 10%	Present Value Rs.
1	25,000	0.909	22,725
2	20,000	0.826	16,520
3	15,000	0.751	11,265
4	10,000	0.683	6,830
			57,340
		Less :Cash outflows	50,000
			7,340
		Net Present Value	

❖ Given below is the information regarding two machines A and B each costing

Rs. 1,00,000. In comparing the profitability of the machines, a discount rate of 9% is to be used. Earnings after taxation are expected to be as follows:

Cash Inflows

YEAR	Machine A	Machine B
1	30,000	10,000
2	40,000	30,000
3	50,000	40,000
4	30,000	60,000
5	20,000	40,000

Indicate which machine would be more profitable investment under the :

1) Pay Back Period Method
2) Net Present Value Method

Calculate the Pay Back Profitability

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The Present Value of Rs. 1 at 9% discount rate is as follows :

YEAR:	1st	2nd	3rd	4th	5th
PRESENT VALUE:	0.92	0.84	0.77	0.71	0.65

SOLUTION:

Pay Back Period Method :

YEAR	Machine A		Machine B	
	Cash Inflows Rs.	Cumulative Cash Inflows Rs.	Cash Inflows Rs.	Cumulative Cash Inflows Rs.
1	30,000	30,000	10,000	10,000
2	40,000	70,000	30,000	40,000
3	50,000	1,20,000	40,000	80,000
4	30,000	1,50,000	60,000	1,40,000
5	20,000	1,70,000	40,000	1,80,000

Pay Back Period of Machine A :
Cash Outflow/ cost of Machine A = Rs. 1,00,000
i.e. The Pay Back Period lies between 2nd and 3rd year
Pay Back Period = 2 Years and $\frac{1,00,000 - 70,000}{50,000}$

Pay Back Period = 2 Years and $\frac{30,000}{50,000}$

Pay Back Period of Machine A = 2 and 3/5 Years i.e. 2.6 Years.

Pay Back Period of Machine B
Cash Outflow / cost of Machine B = 1,00,000
i.e. The Pay Back Period of Machine B lies between 3rd and 4th year
Pay Back Period = 3 Years and $\frac{1,00,000 - 80,000}{60,000}$

= 3 Years and $\frac{20,000}{60,000}$

Pay Back Period of Machine B = 3 and 1/3 Years i.e. 3 Years and 4 months

As the Pay Back Period of Machine A is less than of Machine B therefore the investment in Machine A is more profitable as per the Pay Back Period Method.

Pay Back Profitability

	Machine A	Machine B
Total Cash Inflows	1,70,000	1,80,000
***Less: Total* Cash Outflows / Cost of the Machine**	1, 00,000	1,00,000
Pay Back Profitability	**70,000**	**80,000**

Net Present Value Method :

Profitability statement (at 9% Discount Factor)

YEAR	Present Value Factor at 9% Discount	Machine A		Machine B	
		Cash inflow Rs.	Present value Rs.	Cash inflow Rs.	Present Value Rs.
1	0.92	30,000	27,600	10,000	9,200
2	0.84	40,000	33,600	30,000	25,200
3	0.77	50,000	38,500	40,000	30,800
4	0.71	30,000	21,300	60,000	42,600
5	0.65	20,000	13,000	40,000	18,000
			1,34,000		1,25,800
		*Less :*Cash outflow	1,00,000	*Less:* Cash outflow	1,00,000
		Net Present Value	**34,000**	Net Present Value	**25,800**

As per the Net Present Value Method the investment in Machine A is profitable as its Net Present Value is more than Machine B.

- A limited company considering to purchase a new machine which will carry out some operations performed by labour. X and Y are alternative models. From the following information, you are required to prepare a profitability statement and work out the Pay Back Period in respect of each assets :

Particulars	Machine X	Machine Y
Estimated life of machine (YEARS)	5	5
	Rs	Rs.
	15,000	25,000
Cost of machine	3,000	4,000
Cost of indirect materials	5,000	7,500
Estimated savings in scrap	9,500	13,500
Additional cost of maintenance		
Estimated savings in direct wages :	75	100
Employees not required	300	300
Wages per employee		

Taxation is to be regarded as 50% of profit (ignore depreciation for calculation of tax).

Solution:

Calculation of annual Cash Inflows

Particulars	Machine X		Machine Y	
Saving per annum :	300x75	22,500	300x100	30,000
Labour		5,000		7,500
Scrap		27,500		37,500
TOTAL SAVINGS				4,000
Less:Additional	3,000	12,500	13,500	17,500
cost per annum	9,500	15,000		20,000
Indirect Material		7,500		10,000
Maintenance		3,000	25,000	5,000
Profit before Tax and Depreciation	15,000 5	**4,500**	5	**5,000**
Tax @ 50%		**7,500**		**10,000**
Depreciation			5,000	
	4,500		5,000	
Net increase in Savings	3,000			
ANNUAL CASH INFLOWS = Net increase in savings +Depreciation				

PAY BACK PERIOD = $\frac{\text{Cost of Machine}}{\text{Annual Cash Inflows}}$

Pay Back Period of Machine X = $\frac{15,000}{7,500}$

= 2 YEARS

Pay Back Period of Machine Y = $\frac{25,000}{10,000}$

= 2.5 YEARS

❖❖❖

7

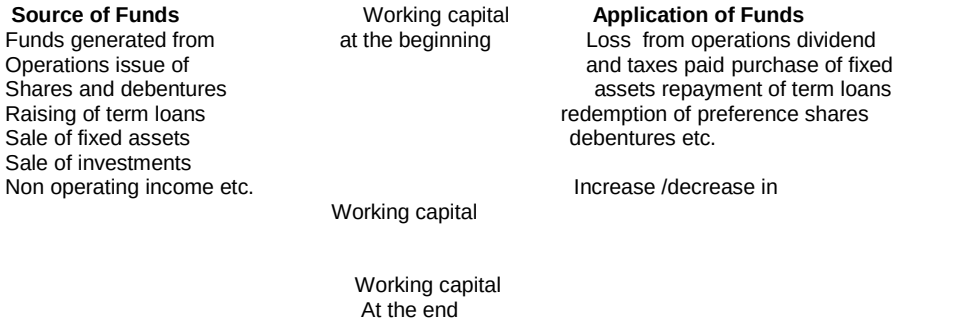
WORKING CAPITAL

Module- 1 : IMPORTANCE OF WORKING CAPITAL

Working capital management is a significant in Financial Management due to the fact that it plays a pivotal role in keeping the wheels of a business enterprise running. Working Capital Management is concerned with short term financial decisions. Shortage of funds for working capital has caused many business to fail and in many cases, has retarded their growth Lack of efficient and effective utilization of working capital leads to earn low rate of return o capital employed or even compels to sustain losses. The need for skilled working capital management has thus become greater in recent years. A firm invests a part of its permanent capital in fixed assets and keeps a part of it for working capital i.e. for meeting the day to day requirements. We will hardly find a firm which does not require any amount of working capital for its normal operations. The requirement of working capital varies from firm to firm depending upon the nature of business, production policy market conditions seasonality of operations, conditions of supply et. Working capital to a company is like the blood to human body. It is the most vital ingredient of a business. Working capital management if carried out effectively, efficiently and consistently will ensure the health of an organization. A company invests its funds for log term purposes and for short-term operations. That portion of a company's capital, invested in a short term or current assets to carry on its day to day operations smoothly is called the "*working capital".* Working capital refers to a firm's investment in short term assets viz. cash, short term securities amounts receivables and inventories of raw materials work in progress and finished goods. It refers to all aspects of current assets and current liabilities. The management of working capital is no less important than the management of long term financial investment. Sufficient liquidity is necessary and must be achieved and maintained to provide that funds to pay off obligation as they arise or mature. The adequacy of ash and other current assets together with their efficient handling virtually determine the survival of the company. The efficient working capital management is necessary to maintain a balance of liquidity and profitability If the funds are tied up in idle current assets represent proper and in efficient working capital management which affects the firm's liquidity as sell as profitability.

Working capital is defined as "the excess of current assets over current liabilities". All elements of working capital are quick moving in nature and therefore require constant monitoring for

proper management. For proper management of working capital, it is required that a proper assessment of its requirement is made. Working capital is also known as circulating capital, fluctuating capital and revolving capital. The magnitude and composition keep on changing continuously in the course of business. If the working capital level is not properly maintained and managed then it may result in unnecessary blockage of scarce resources of the company. Therefore, the Finance Managers should give utmost care in management of working capital.



FLOW OF FUNDS AND WORKING CAPITAL CHANGES

Objectives of Working Capital Management

The basic objectives of working capital management are as follows :

- By optimizing the investment in current assets and by reducing the level of current liabilities the company can reduce the locking up of funds in working capital thereby, it fan improve the return on capital employed in the business.

- The second important objective of working capital management is that the company should always be a position to meet its current obligations which should properly be supported by the current assets available with the firm. But maintaining excess funds in working capital means locking of funds without return.

- The firm should manage its current assets in such away that the marginal return on investment in these assets is not less than the cost of capital employed to finance the current assets.

- The firm should maintain proper balance between current assets and current liabilities to enable the firm to meet its day to day financial obligations.

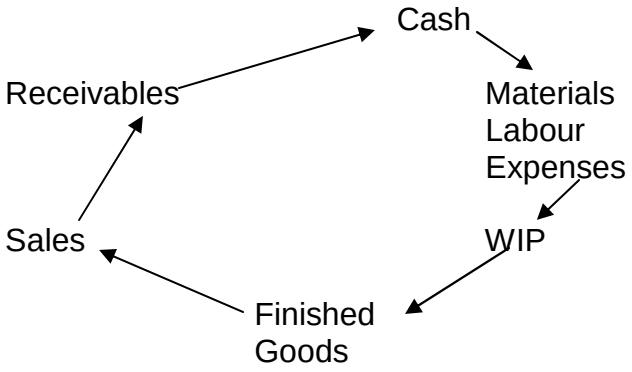
Classification of Working Capital

Current Assets Current assets are those asserts which are convertible into cash within a period of one year and are those which re required to meet the day to day operations of the business. The working capital management, to be more precise is the management of current assts. The current assets are cash or near cash resources. They are :

(a) Cash and Bank balances
(b) Temporary investments
(c) Short term advances
(d) Prepaid expenses
(e) Receivables
(f) Inventory of raw materials stores and spares
(g) Inventory of work-in-progress
(h) Inventory of finished goods

Current Liabilities : Current liabilities are those claims of outsiders which are expected to mature for payment within an accounting year : these include :

(1) Creditors for goods purchased
(2) Outstanding expenses
(3) Short term borrowings
(4) Advances received against sales
(5) Taxes and dividends payable
(6) Other liabilities maturing within a year



CASH CYCLE

Gross and Net Working Capital

Generally the working capital has its significance in two perspectives. These are gross working capital and net working capital are called B*alance sheet approach"* of working capital.

Gross Working Capital The terms gross working capital refers to the firm's investment in current assets. According to this concept working capital refers to a firm's investment in current assets. The amount or current liabilities is not deducted from the total of current assets. The concept of gross working capital is advocated for the following reasons

- Profits of the firm are earned by making investment of its funds in fixed and current assets. This suggests the part of the earning relate to investment in current assets.Therefore aggregate of current assets should be taken to mean the working capital.

- The management is more concerned with the total current assets as they constitute the total funds available for operating purposes than with the sources from which the founds come.

- An increase in the overall investment in the enterprise also brings in increase in the working capital.

Net Working Capital : The term net working capital refers to the excess of current assets over current liabilities. It refers to the difference between current assets and current liabilities. The net working capital is a qualitative concept which indicates the liquidity position of a firm and the extent to which working capital needs may be financed by permanent source of funds. The concept looks into the angle of judicious mix of long term and short term funds for financing current assets. A portion of et working Capital should be financed with permanent sources of funds. the gross and net working Capital are ascertained as shown below "

Current assets

Raw material stock	
xxx	
Work in process stock	**xxx**
Finished goods stock	**xxx**
Sundry debtors	**xxx**
Bills receivable	**xxx**

Short term investments		**xxx**
Cash and bank balances		**xxx**

Gross Working capital		**xxx**
Less : Current liabilities		
Creditors for materials	**xxx**	
Creditors for expenses	**xxx**	
Bills payable		**xxx**
Tax liability	**xxx**	
Short term loans		**xxx**

Net working capital		**xxx**

Permanent and Variable Working Capital

Considering time as the basis of classification, there are two types of working capital viz. *Permanent and temporary"*

Permanent Working Capital The magnitude of investment in working capital may increase or decrease over a period of time according to the level of production. But, there is a need for minimum level of working capital to carry its business irrespective of change in level of production. Such minimum level of working capital is called permanent working capital or fixed working capital. It is the irreducible minimum amount necessary for maintaining the circulation of current assets. The minimum level of investment in current assets is permanently locked up in business and it is also referred to as regular working capital. It represents the assets required on continuing basis over the entire year. The permanent component current assets which are required throughout the year will, generally, be financed from long term debt and equity. Tandon committee has referred to this type of working capital as core curre3nt assets, Core current assets are those required by the firm to e4nsure the continuity of operations which represents the minimum level of various items or current assets viz. Stock of raw materials stock of work in process stock of finished goods debtors balances ash and bank etc. This minimum level of current assets will be financed by the long-term sources and any fluctuations over the minimum level of curr3ent assets will be financed by the short term financing.

Variable Working Capital It is also known as "fluctuating working capital". It depends upon the changes in production and sales, over and above the permanent working capital. It is the extra

working capital needed to support the changing business activities. It represents additional assets required at different items during the operation of the year. A firm will finance its seasonal and current fluctuations in business operations through short term debt financing. For example, in peak seasons, more raw materials to be purchased more manufacturing expenses to be incurred, more funds will be locked in debtors balances etc. In such times excess requirement of working capital would be financed from short term financing sources

Total Assets.

Variable current assets Financed from short term source

Permanent Current assets

Long term finance

Fixed assets

:"PERMANENT AND VARIABLE WORKING CAPITAL

The management of working capital is concerned with maximum the return to share holders within the accepted risk constraints carried by the participants in the company. Just as excessive long term debt puts a company at risk, so an inordinate quantity of short term debt also increases the risk to a company by straining its solvency. The suppliers of permanent working capital look for long term return on funds invested whereas the suppliers of temporary working capital will look for immediate return and the cost of such financing will also be costlier than the cost of permanent funds used for working capital.

Positive and Negative Working Capital

The net working capital of a firm may be positive or negative "

- The positive net working capital represents the excess of current assets over current liabilities.

- Sometimes the net working capital turn to be negative when current liabilities are exceeding the current assets. The negative working capital position will adversely affect the operations of the firm and its profitability. The chronic negative working capital situation will lead to closure of

business and the enterprise is said to be technically insolvent.

Disadvantages of Negative Working Capital The disadvantages suffered by a company with negative working capital are as follows :

- The company is unable to take advantage of new opportunities or adopt to changes
- Fixed assets cannot be used effectively in situation of working capital shortage
- The operating pans cannot be achieved and will reduce the profitability of the firm.
- It will stagnate the growth of the firm.
- Employee morale will be lowered due to financial difficulties
- The operating inefficiencies will creep into daily activities
- Trade discounts are lost. A company with ample working capital is able to finance large stocks and can, therefore, place large orders.
- Cash discounts are lost. Some companies will try to persuade their debtors to pay early by offering them a cash discount, off the price owed.
- The advantage of being able to offer a credit line to customers are foregone.
- Financial reputation is lost result in non cooperation from trade creditors in times of difficulty.
- There may be concerned action by creditors and will apply to court for winding up.
- It would be difficult to get adequate working capital finance from banks, financial institutions.

Factors Determining Working Capital Requirement

There is no set of universally applicable rules to ascertain working capital needs of a business organisation. The factors which influence the need level are discussed below :

Nature of Business: If we look at the balance sheet of any trading organisation, find major part of the resources are deployed on current assets, particularly stock-in- trade. Whereas in case of a transport organization

Major part of funds would be locked up in fixed asserts like motor vehicles spares and work shed etc. and the working capital component would be negligible. The service organizations will require lesser working capital than trading and financial organizations. Therefore, the requirement of working capital depends upon the nature of business carried by the organization.

Manufacturing Time span required for conversion of raw materials cycle to finished goods is a block period. The period in reality, extends a little before and after the WIPThis cycle determines the Need of working Capital. In case of industries with long anufacturing processor production cycle, more funds are required for working capital. The industries involved in quick conversion of raw materials into finished units or having lesser production cycle requires lesser amount of working capital.

Production In case of labour intensive Industries more working Process capital is needed, but in case of capital intensive
Industries the production process is faster and it requires lesser amount of working capital due to lesser conversion costs.

Business This is another factor which determines the need
Cycle level. Barring exceptional cases, there are variations in the demand for goods/services handled by any organization. Economic boom or recession etc. have their influence on the transactions and consequently on the quantum of working capital required. More working capital is needed during peak or boom conditions. But in case of economic recession or low inflationary conditions, the company requires low or moderate working capital.

Seasonal Variation apart seasonality factor creates production and
Variations even storage problem. Mustard and many other oil seeds are Rabbi Crops. These are to be purchased in a season to ensure

	continuous operation of oil plant. Further there are woolen garments which have demand during winter only. But manufacturing operation has to be conducted during the whole year resulting in working capital blockage during off season.
Scale of Operations	Operational level determines working capital demand during a given period. Higher the sale, higher will be the need for working capital. However, pace of sales turn over (quick or slow) is another factor. Quick turnover calls for lesser investment in inventory, while low turn over rate necessitates larger investment.
Inventory Policy	The traditional production systems generate more stocks of finished goods and high levels of raw materials and WIP stocks are maintained and the stock holding period is also more. In such cases more working capital is needed. The adoption of JIT supply chain management, vendor management will drastically reduce the levels of raw materials, WIP and finished goods stocks and therefore less amount of funds are invested in inventory.
Credit Policy	Credit policy of the business organization includes to whom, when and to what extent credit may be allowed. Amount of money locked up in account receivables has its impact on working capital. The liberal credit period and follow up proceedings will increase the investment in debtors balances and simultaneously increased the working capital requirement than concerns resorting to strict credit and collection procedures
Accessibility to credit	Credit worthiness is the precondition for assured accessibility to credit. Accessibility in banks depends on the flow of credit i.e. the level of working capital. .
Business Standing	In case of newly established concerns the materials are required to be purchased in cash and the sales are to be made on credit basis.

	Such new concerns require high levels of working capital. But the established companies can negotiate for credit terms with suppliers and sell the products at lesser credit period to customers. Therefore, it requires less working capital than concerns with lesser business standing.
Growth of Business	Growth and diversification of business call for larger amount of working capital. The need for increased working capital does not follow the growth of business operations but precedes it. Working capital need is in fact assessed in advance in reference to the business plan.
Market Conditions	In a buyers market i.e. the market with fierce competition, the companies are forced to sell on credit with liberal credit and collection policies. This increases the level of investment on working capital due to increased debtors balances and its administration costs. But if the sellers market prevails the quick disposal of stocks, high percentage of cash sales, strict credit and collection policies etc. reduces the need for working capital.
Supply Situation	In easy and stable supply situation no contingency plan is necessary and precautionary steps in inventory investment can be avoided. But in case of supply uncertainties, lead time, may be longer necessitating larger basic inventory, higher carrying cost and working capital need for the purpose. Aggressive approach cannot be adopted in such situation.
Environment Factors	Political stability brings in stability in money market and trading world Things mostly go smooth. Risk ventures are possible with enhanced need for working capital finance. Similarly, availability of local infrastructural facilities like road, transport, storage and market etc. influence business and working capital need as well..

Symptoms of Poor Working Capital Management

The following cases are seen in inefficient management of

working capital.

* Excessive carriage of inventory ogerth4e normal levels required for the business will result in more balance in trade creditors accounts. More creditors balances will cause strain on the management in management of cash.

* Working capital problems will arise when there is a slow down in the collection of debtors.

* Sometimes capital goods will be purchased from the funds available for working capital. This will result in shortage of working capital and its impact is on operations of the company.

* Unplanned production schedules will cause excessive stocks of finished goods or failures in meeting dispatch schedules.

* More funds kept in the form of cash will not generate any profit for the business.

* Inefficiency in using pot3ntial trade credit require more funds for financing working capital.

* Overtrading will cause shortage of working capital and its ultimate effects on the operations of the company.

* Dependence on short term sources for financing permanent working capital cause lesser profitability and will increase strain on the management in managing working capital.

* Inefficiency in cash management cause embezzlement of cash.

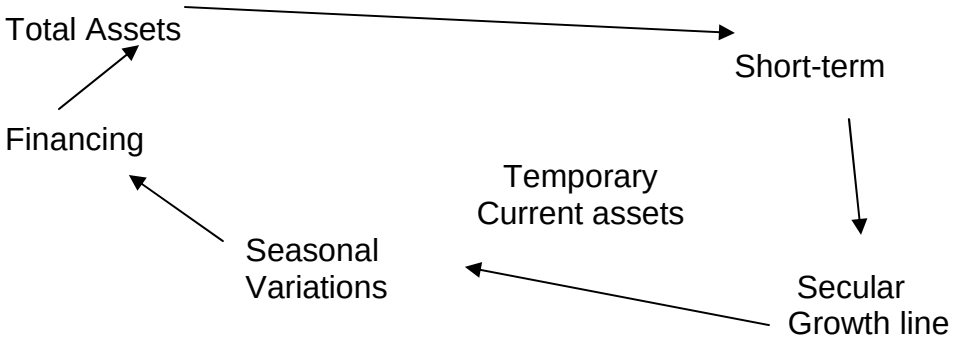
* Inability to get working capital limits will cause serious concern to the company and sometimes may turnout to be sick.

Module – 2 : Strategies in Working Capital Management

So far the banks were the sole source of funds for working capital needs of business sector. At present more finance options are available to a finance Manager to see the operations of his firm go smoothly. Depending on the risk exposure of business, the following strategies re evolved to manage the working capital.

Conservative Approach

A conservative strategy suggests not to take any risk in working capital management and to carry high levels of current assets in relation to sales. Surplus current assets enable the firm to absorb sudden variations in sales, production plans and procurement time without disrupting production plans. It requires to maintain a high level of working capital and it should be financed by long term funds like share capital or long term debt. Availability of sufficient working capital will enable the smooth operational activities of the firm and there would be no stoppages of production for want of raw materials, consumables. Sufficient quantity of finished goods are maintained to met the market fluctuations. The higher liquidity levels reduce the risk of insolvency. But lower risk translates into lower return. Large investments in current assets lead to higher interest and carrying costs and encouragement for inefficiency. But lower risk translates into lower return. Large investments in current assets lead to higher interest and carrying costs and encouragement for inefficiency. But conservative oily will enable the firm to absurd day to day business risks. It assures continuous flow of operations and eliminates worry about recurring obligations. Under this strategy long term financing covers more than the total requirement for working capital. The excess cash is invested in short term marketable securities and in need, these securities are sold off in the market in meet the urgent requirements of working capital.



Financing Strategy

Long term funds = Fixed assets + Total permanent current assets+ Part of temporary current assets.

Short-term funds = Part of temporary current assets.

Aggressive Approach

Under this approach current assets are maintained just to meet the current liabilities without keeping any cushion for the variations in working capital needs. The core working capital is financed by long term sources of capital and seasonal variations are met through short term borrowings. Adoption of this strategy will minimize the investment in net working capital and ultimately it lower the cost of fining working capital. The maintenance drawbacks of this strategy is that if necessitates frequent financing and also increases risk as the firm is vulnerable to sudden shocks. A conservative current asset financing strategy would go for more long term finance which reduces the risk of uncertainty associated with frequent refinancing. The price of this strategy is higher financing costs since long term rates will normally exceed short term rates. But when aggressive strategy is adopted, sometimes the firm runs into mismatches and defaults. It is the cardinal principle of corporate finance that long terms assets should be financed by long term sources and short term assets by a mix of long and short term sources.

Financing Strategy

Long term funds = Fixed assets + Part of permanent current assets

Short term funds = Part of permanent current assets + Total temporary current assets.

==========

Total Assets

Short-term

Financing

Temporary
Current assets

Seasonal
Variations

Secular
Growth line

Permanent
Current assets

Long Term
Financing

Fixed
Assets

Matching Approach

Under matching approach to financing working capital requirements of a firm, each asset in the balance sheet assets side would be offer with a financing instrument of the same approximate maturity. The basic objective of this method of financing is that the permanent component of current assets, and fixed assets would be met with long term funds and the short term or seasonal variations in current assets would be financed with short term debt. If the long term funds are used for short term needs of the firm, it can identify and take steps to correct the mismatch in financing. Efficient working capital management techniques are thus that impress the operating cycle. The length of the operating cycles is equal to the sum or the lengths of the inventory period and the receivables period. Just in time inventory management technique reduce carrying costs by slashing the time that goods are parked as inventories. To shorten the receivables period without necessarily reducing the credit period, corporate can offer trade discounts for prompt payment. This strategy is also called as “hedging approach”.

Financing Strategy :

Long term funds = Fixed assets + Total permanent current assets

Short term funds = Total temporary current assets

Zero Working Capital Approach

This is one of the latest trends in working capital management. The idea is to have zero working capital i.e. at all times the current assets shall equal the current liabilities. Excess investment in current assets is avoided and firm meets its current liabilities out of the matching current assets. As current ratio is1 and the quick ratio below l. there may be apprehensions about the liquidity, but if all current assets are performing and are accounted at their realisable values, these fears are misplaced. The firm saves opportunity cost on excess investments in current assets and as bank cash credit limits are linked to the inventory levels interest costs are also

saved. There would be a self imposed financial discipline on the firm to manage their activities within their current liabilities are current assets ad there may not be a tendency to over borrow or divert funds. Zero working capital also ensure a smooth and uninterrupted working capital cycle and it would pressure the finance Managers to improve the quality of the current asses at all times, to keep them 100% realizable. There would also be a constant displacement in the current liabilities and the possibility of having over dues may diminish. The tendency to postpone current liability payments has to be curbed and working capital always maintained at zero. Zero working capital would call for a fine balancing act in Financial Management and the success in the Endeavour would get reflected in healthier bottom lines.

Total Current Assets = Total current Liabilities
Or Total current Assets – Total Current Liabilities = Zero

Working Capital Policies

The degree of current assets that a company employs for achieving a desired level of sales is manifested in working capital policy. In practice, the business concerns follow three forms of working Capital policies which are discussed in brief as follows :

Restricted Policy It involves the rigid estimation of working capital to the requirements of the concern and then forcing it to adhere to the estimate. Deviations from the estimate are not allowed and the estimate will not provide for any contingencies or for any unexpected events.

Relaxed Policy It involves the allowing of sufficient cushion for fluctuations in funds requirement for financing various items of working capital. The estimate is made after taking into account the provision for contingencies and unexpected events.

Moderate Policy The working capital level estimated in between the two extremes i.e. restricted and relaxed policies. The relationship of sales and corresponding levels of investment current assets is show in Figure below:

Figure : Level of Current Assets Indifferent Policies

When the company adopts restricted policy for a sales level of 'S' It maintains the current assets level of 'C' Under this policy the company maintains lower investments incurrent assets, represents aggressive approach, intend to yield high return and accepting higher risk. The management is ready to counter any financial difficulties arising out of restricted policy. Under relaxed policy, the company maintains current assets up to the level of 'C' , for the same level of sales(S) as in restricted policy.

This policy represents conservative approach. It allows the company to have sufficient cushion for uncertainties contingencies seasonal fluctuations, changes in activity, levels changes in sales etc. The level of investment in current assets is high which results in lesser return, but the risk level is also reduced. In moderate policy, the investment in currents lies in between C and C2 With this policy, the expected profitability and risk levels fall between relaxed policy and restricted policy. The higher the level of investment in current assets represents the liberal working capital policy in which the risk level is less and also the marginal return is also lesser. In restricted policy the level of investment in current assets lesser and high risk is perceived for increase of marginal return on investment. The determination of level of investment in currents is dependent on risk return perception of the management.

Illustration 2

The financing pattern, current ratio, profitability net working capital position is explained under conservative moderate and aggressive working capital policies are explained by way of hypothetical figures as follows :

Particulars	Working Capital Policy		
	Conservative	Moderate	Aggressive
Fixed assets	40	40	40
Current assets	40	35	30
Total assets	80	75	70
Share Capital	40	35	30
Debentures (@ 12%)	30	25	20
Current liabilities (short-term Loan @ 8%)	10	15	20

	---	---	---
	80	75	70
	---	---	---
Current assets	40	35	30
Less: Current liabilities	10	15	20
	---	----	---
Net working capital	30	20	10
	----	----	---
Current assets financed by :			
Short term sources	10	15	20
Long term sources	30	20	10
	----	---	----
	40	35	30
Current ratio (current assets/ current/liabilities) (times)	4.0	2.33	1.5
Sales	180	180	180
	-----	-----	------
EBIT (15% on sales)	27.00	27.00	27.00
Less : Interest			
Interest on Debentures (@ 12%)	3.60	3.00	2.40
Interest on short term Loans @ 8%)	0.80	1.20	1.60
	------	------	------
	22.60	22.80	23.00
Less : Tax @ 40%	9.04	9.12	9.20
	------	-------	-------
EAT	13.56	13.68	13.80
	------	-------	-------
Return on investment (Eat/Total assets) x100	16.95 %	18.24%	19.71%

Analysis – We can observe from the above analysis that current ratio is 4 times if conservative policy is followed, it has dropped to 1.5 in management of working capital under aggressive policy. However, the return on investment has increased from 16.95% to 19.71%, if aggressive approach is adopted Higher risk is attached with the higher return, under aggressive policy. In conservative approach majority of current assets are financed from long term sources of finance. When it comes to financing current asserts under aggressive approach, majority of current assets are financed from short term sources. The moderate policy stands in between

two extremes of conservative and aggressive financing approaches. Majority of the corporates follow the moderate policy of working capital financing which enables to avoid higher risk and to earn moderate profit margin on additional investments in current assets.

Illustration – 3

The Balaji Company is attempting to establish a current assets policy. Fixed assets are Rs.6 lakhs and the firm plans to maintain a 50% debt-to-assets ratio. The interest rate is 10% on all debts. Three alternative current assets policies are under consideration.- 40%, 50% and 60% of projected sales. The company expects to earn 15% before interest and taxes on sales or Rs.30 lakhs. Calgary's effective tax rate is 40%. What is the expected return on equity under each alternative ? (C.S. Final Dec. 1908).

Balance sheets Under Different Current Assets Policies

Particulars	Restricted Policy (40% of sales)	Moderate Policy (50% of sales)	Relaxed Policy (60% of sales)
Current assets	12,00,000	15,00,000	18,00,000
Fixed assets	6,00,000	6,00,000	6,00,000
Total Assets	18,00,000	21,00,000	24,00,000
10% Debt (50% of total Assets)	9,00,000	10,50,000	12,00,000
Equity	9,00,000	10,50,000	12,00,000
Total Claims	18,00,000	21,00,000	24,00,000

Income Statement Under Different Current Assets Policies

Particulars	Restricted Policy (aggressive)	Moderate Policy	Relaxed Policy (conservative)
Sales	30,00,000	30,00,000	30,00,000
EBIT (15% OF SALES)	4,50,000	4,50,000	4,50,000
Interest (10%)	90,000	1,05,000	1,20,000
Earnings before taxes	3,60,000	3,45,000	3,30,000
Taxes (40%)	1,44,000	1,38,000	1,98,000
Net Income	2,16,000	2,07,000	1,98,000

Return on Equity (ROE)			
(2,16,000) (2,07,000) (---------- x 100) (---------- x 100) (9,00,000)(10,50,000)			
(1,98,000) ---------- x 100) 12,00,000)	24%	19.71%	16.5%

Module- 3 : Working Capital Ratios

Working capital ratios indicate the ability of a business concern in meeting its current obligations as well as its efficiency in managing the current assets for generation of sales. These ratios are applied to evaluate the efficiency with which the firm managers and utilises its current assets. The following three categories of ratios are used for efficient management of working capital (1) Efficiency ratios (2) Liquidity ratios (3) Structural health ratios.

Efficiency ratios

Working Capital to Sales Ratio This ratio is computed by dividing sales by working capital . this ratio helps to measure the efficiency of the utilization of net working capital. It signifies that for an amount of sales, a relative amount of working Capital is needed. If any increase in sales is contemplated working capital should be adequate and thus the ratio helps management to maintain the adequate level of working Capital. This ratio measures the efficiency with which the working capital is being used by a firm. A high ratio indicates efficient utilization of working capital. But a very high ratio is not a good indication for any firm, which may be due to overtrading..

$$\frac{\text{Sales}}{\text{Working Capital}}$$

Inventory Turnover Ratio The ratio establishes relationship between the sales with average stock. It measures the velocity of converting stock into sales. This ratio indicates the effectiveness and efficiency of the inventory management. The ratio shows how speedily the inventory is turned into accounts receivable through sales. The higher the ratio, the more efficiency the inventory is said to be managed and vice versa. A high ratio indicates efficient management of inventory because more frequently the stocks are sold, the lesser amount of money is requi5edto finance the inventory. A low ratio indicates an inefficient management of inventory over investment in inventory. Sluggish business poor quality of goods and lower profit as compared to total investment.

$$\frac{\text{Sales}}{\text{Inventory}}$$

Current Assets Turnover Ratio – This ratio indicates the efficiency with which current assets turn into sales. A higher ratio implies by and large a more efficient use of funs. Thus, a high turn over rate indicates reduced lock up of funds in current assets. An

analysis of this ratio over a period of time reflects working capital management of a firm.

$$\frac{\text{Sales}}{\text{Current Assets}}$$

LIQUIDITY RATIOS

Current Ratio - The current ratio is calculated by dividing current assets to current liabilities. The current ratio is a measure of firm's short term solvency. It indicates the availability of current asserts in rupees for every one rupee of current liability. This ratio indicates the extent of the soundness of the current financial position of an undertaking and the degree of safety provided to the creditors. The higher the current ratio, the larger amount of rupee available per rupee of current liability, the more the firm's ability to meet current obligations and the greater safety of funds of short term creditors current assets are those assets which an be converted into cash within a year. Current liabilities and provisions are those liabilities that are payable within a year. A current ratio of 2:1 indicates a highly solvent position. A current ratio of 1.33: 1 is considered by banks as minimum acceptable level for providing working capital finance. The constituents of the current assets are as important as the current assets themselves for evaluation of company's solvency position.

$$\frac{\text{Current Assets, Loans \& Advances}}{\text{Current Liabilities \& Provisions}}$$

Quick Ratio/Liquid ratio/ Acid test ratio: .
Quick ratio express the relationship between quick (current) assets and quick (current) liabilities. While calculating of quick ratio, inventories are excluded from current assets, sine inventories cannot be converted in to cash in short time without loss of value. This ratio is a more refined tool to measure the liquidity of an organization. It is a better test of financial strength than the current ratio because it excludes very slow moving inventories and the items of current assets which cannot be converted into cash easily. This ratio shows the extent of cushion of protection provided from the quick assets to the current creditors. A quick ratio of 1:1 is usually considered satisfactory though it is again a rule of thumb only.

$$\frac{\text{Current Assets, Loans and Advances} - \text{Inventories}}{\text{Current Liabilities \& Provisions} - \text{Bank Overdraft}}$$

Absolute Liquid Ratio Even though debtors and bills receivable are considered as more liquid than inventories, it cannot be converted into cash immediately or in time. Therefore, while calculation of absolute liquid ratio, only the absolute liquid assets like cash in hand, cash at bank, short term marketable securities are taken into consideration, to measure the ability of company in meeting short term financial obligations. An ideal ratio is 0:5:1 :

$$\frac{\text{Absolute Liquid Assets}}{\text{Current Liabilities}}$$

Structural Health Ratios

Current Assets to Total Net Assets This ratio explains the relationship between current assets and total investment in assets. A business enterprise should use its current assets effectively and economically because it is out of the management of these assets that profits accrue. A business will end up in losses if there is any lacuna in managing the asserts to the advantage of business.

$$\frac{\text{Total Net Assets}}{\text{Current Assets}}$$

Composition of Current Assets An analysis of current assets component enables one to examine in which component the working capital funds are locked up. A large tie up of funds in inventories effects profitability of the business adversely owing to carry over costs. In addition, losses are likely to occur by way of depreciation, decay, obsolescence, evaporation and so on. Receivables, constituting another component of current assets. If the major portion of current asserts are made up of cash alone, the profitability will be decreased because cash is a non earning asset. If the portion of cash balance is excessive, then it can be said that management is not efficient to employ the surplus cash.

Debtors Turnover Ratio This ratio shows the extent of trade credit granted and the efficiency in the collection of debts. Thus, it is an indicative of efficiency of the credit management. The lower the debtors to sales ratio, the better the trade credit management and better the quality (liquidity) of debts. The lower debtors mean prompt payment by customers. An excessively long collection period, on the other hand, indicates a very liberal, ineffective and inefficient credit and collection policy.

$$\frac{\text{Credit Sales}}{\text{Debtors}}$$

Debtors Collection Period (In days) This ratio measures how long it takes to collect amounts from debtors. The ratio represents the average number of days, for which a firm has to wait before their receivables are converted into cash. It measures the quality of debtors. The shorter average collection period is considered the high quality debtors. A higher collection period implies inefficiency in collection of debtors, which in turn adversely affects the liquidity or short term paying capacity of the firm. The longer the average collection period higher the chances for turning into bad debts. The actual collection period can be compared with the stated credit terms of the company. If it is loner than those terms, then this indicates some insufficiency in the procedures for collecting debts.

$$\frac{\text{Debtors}}{\text{Credit Sales}} \times 365$$

Bad Debts to Sales This ratio indicates the efficiency of the control procedures of the company. The actual ratio is compared with the target or norm to decide whether or not it is acceptable.

$$\frac{\text{Bad Debts}}{\text{Sales}}$$

Creditors Payment Period (In days) The measurement of the credit or payment period shows the average time taken to pay for goods and services purchased by the company. In generally the longer of the credit period achieved the better because delays in payment mean that the operations of the company are being financed interest free by suppliers funds. But there will be a point beyond which, if they are operating in a seller's market, may harm the company. If too long a period is taken to pay creditors, the credit rating of the company may suffer, thereby making it more difficult to obtain suppliers credit in the future.

$$\frac{\text{Creditors}}{\text{Credit Purchasers}} \times 365$$

Illustration

Bajaj Ltd. manufacturer water filters. The current ratio at the end of the last year was 3 : 1 which appeared to be comfortable. However, the cash flow position, in reality, is rather weak and the company finds it difficult to effect payments to the suppliers and

workers on time. The composition of working capital as per the last balance sheet is provided hereto.

(Rs)

Current Assets:	
Inventories	18,00,000
Receivables	12,00,000
Cash and bank balances	1,00,000
Loans and advances	20,00,000
	51,00,000
Current Liabilities	17,00,000

Mention specific possibilities of what might be causing cash flow difficulties in this context. Suggest any better ratios which the company might use to gauge its liquidity in future.

SOLUTION:

		Rs
Current Assets :		
Inventories		18,00,000
Receivables		12,00,000
Cash and Bank balances		1,00,000
	(i)	51,00,000
Current Liabilities	(ii)	17,00,000
Working Capital	(i) - (ii)	34,00,000

Analysis

(a) Current Ratio

$$\frac{\text{Current assets, loans and advances}}{\text{Current liabilities}} = \frac{51,00,000}{17,00,000} = 3 : 1$$

The current ratio is satisfactory, since it is above the ideal current ratio of 2 : 1

(b) Quick Ratio

$$\frac{\text{Current assets, loans and advances} - \text{Stock}}{\text{Current liabilities}} = \frac{51,00,000 - 18,00,000}{17,00,000} \times 1.94 : 1$$

The quick ratio is also satisfactory, since the desired quick ratio is 1 : 1 but the actual quick ratio is 1.94 : 1. the company is in a position to meet its short term financial obligations :

(c) Super Quick Ratio

$$\frac{\text{Cash and marketable securities}}{\text{Current liabilities}} = \frac{1,00,000}{17,00,000} = 0.06 : 1$$

The Company's cash and bank balances are grossly insufficient to meet the day to day financial needs and contingencies.

(d) Composition of Current Assets

Current assets	Rs.	Proportion (%)
Inventories	18,00,000	35.29
Receivables	12,00,000	23.53
Cash ad bank	1,00,000	1.96
Loans and advances	20,00,000	39.22
	51,00,000	100%

The analysis of composition of current assets indicate the following

- Excess investments in inventories could be held. Dormant and non moving stock may also include in inventories.

- The receivables should be further classified into good doubtful and bad amounts.

- Cash and bank balances may not be sufficient to meet the4 day to day obligation.

- Substantial amount of working capital is locked up in loans and advances which may not relate to the business.

(e) Stock turn over ratio, Receivables turnover ratio, debtors, collection period, Creditors payment period, working capital turnover ratio, current assets to total assets ratio should also be calculated for the ascertainment or efficiency in working capital management.

Illustration

ABC Distribution has the following Balance sheet and Income Statement

Balance Sheet

Liabilities	Rs	Assets	Rs.
Accounts payable	80,000	Cash	25,000
Other current liabilities	20,000	Accounts receivables	60,000
Long term debt	1,00,000	Inventory	65,000
Shareholders equity (50,000) shares	3,00,000	Long term assets	3,50,000
	5,00,000		5,00,000

Working Capital Leverage

One of the important objectives of working capital management is by maintaining the optimum levels of investment in current assets and by reducing the levels of current liabilities, the company can minimize the investments in working capital thereby improvement in return on capital employed is achieved. The term working capital leverage, refers a to the impact of level of working capital on company's profitability. The working capital management

should improve the productivity of investments in current assets ad ultimately it will increase the return on capital employed. Higher levels of investment in current assets than is actually required mean increase ion the cost of interest charges on the short term loans and working capital finance raised from banks etc. and will result in lower return on capital employed and vice versa. Working capital leverage measures the responsiveness of ROCE for changes in current assets. It is measured by applying the following formula :

$$\text{Working Capital Leverage} = \frac{\%\text{ change in ROCE}}{\%\text{ change in Current Assets}}$$

$$\text{Return on Capital Employed (ROCE)} = \frac{\text{Earnings Before Interest and Taxes}}{\text{Total Assets}}$$

The working capital leverage reflects the sensitivity of the return on capital employed to the changes in level of current assets. Working capital leverage would be less in the case of capital intensive units, even though total capital employed is same. Working Capital leverage expresses the relation of efficiency of working Capital management with the profitability of the company.

$$\text{Working Capital Leverage} = \frac{CA}{T.A. - C.A.}$$

Where C.A. = Current Assets

T.A = Total Assets (i.e. Net Fixed Assets + Current Assets)

C.A = Changes in Current Assets

Illustration

From the following information calculate the responsiveness of ROCE for changes in current assets :

Particulars	Company A	Company B
Fixed assets	300	200
Current assets	200	300

Total Assets	500	500
EBT	90	90
ROCE	18%	18%

Calculation of responsiveness of ROCE if the current assets decline by 20% over the existing level is calculated by applying the following formula.:

$$\text{Working Capital Leverage} = \frac{\text{C.A}}{\text{T.A. - C.A.}}$$

$$\text{Company A} = \frac{\text{Rs.200 lakhs}}{\text{Rs.500 lakhs – Rs.40 lakhs}} = 0.435$$

$$\text{Company B} = \frac{\text{Rs.300 lakhs}}{\text{Rs.500 lakhs – Rs.60 lakhs}} = 0.682$$

Analysis - From the above analysis it is observed that working capital leverage is higher for Company B and therefore it is more responsive as compared to Company A

Illustration

Following information is given of Stars Ltd.	(Rs. Lakhs)
Fixed assets	300
Current assets	200
Total assets	500

The entire current assets are being financed by the bank fiancé @ 16% p.a. The earnings before tax (EBT) of the company is Rs.100 lakhs. The company is planning to reduce its level of investments in current assets by Rs.100 lakhs with an efficient working capital management. Show the impact of change in working capital on the Company's Return on Investment (ROI).

(i) Calculation of ROI prior to Reduction in current Assets

$$\text{ROI} = \frac{\text{EBT}}{\text{Total assets}} \times 100 = \frac{\text{Rs.100 lakhs}}{\text{Rs.500 lakhs}} \times 100 = 20\%$$

(ii) Calculations of ROI after Reduction of current Assets to Rs.100 lakhs

EBT	100
Add: Savings in interest charges due to reduction In investment in current assets	16
Total EBT	116

$$\text{Revised ROI} = \frac{\text{Rs.116 lakhs}}{\text{Rs.400 lakhs}} \times 1\text{--} = 29\%$$

Analysis : With the efficient management of working capital, by reducing the level of investments in current assets the company can improve its return on investment from 20% to 29%

Estimation of Working Capital

There are three methods for estimating the working capital requirements of a firm : (i) Percentage of sales method (ii) Regression analysis method (iii) Operating cycle method.

Percentage of Sales Method

It is a traditional and simple method of determining the level of working capital and its components. In this method, working capital is determined on the basis of past experience. If, over the years, the relationship between sales and working capital is found to be stable then this relationship may be taken as a base for determining the working capital for future. This method is simple, easy to understand ad useful for projecting relatively short t4rm changes in working capital. However, this method cannot be recommended for universal application because the assumption of linear relationship between sales and working capital may not hold good in all cases.

Illustration

ABC Ltd. has achieved a turn over of Rs.85 Crores for the accounting year 2006-07. It is anticipated that the turnover of the company will reach rs.110 crores for the year 2007-08. The financial position of the company as o 31satMarch, 2005 as follows

Liabilities	Rs.Crores	Assets	Rs. Crores
Equity share capital	10	Land and Buildings	4
Reserves and surplus	4	Plant and machinery	5
Secured loans	5	Inventories	11
Unsecured loans	3	Receivables	7
Sundry creditors	6	Cash and bank	3
Provision for taxation	2		
	30		30

Estimate the working capital requirement for the year 2007-08?

Estimation of Working Capital Requirement for 2007-08

Particulars	Actuals 2006-07 (Rs.crores_	% to sales 2006-07	Estimate 2007-08 (Rs.Crores)
Sales	85	100	110
Current Assets			
Inventories	11	12.9	14.19
Receivables	7	8.2	9.02
Cash in bank	3	3.5	3.85
(a)	21	24.6	27.06
Current Liabilities			
Sundry creditors	6	7.1	7.81
Provision for taxation	2	2.4	2.64
(b)	8	9.5	10.45
Working capital (a)-(b)	13	15.01	16.61

Illustration

The following are the extracts from the balance sheet of a Company as on 31.3.2005. Compute the additional working Capital required by the company for the year ending 31.3.2006.

Balance sheet (extracts only) as on 31.3.2005 (Assets) (Rs.)

Fixed Assets ::	
Land and buildings	5,00,000
Plant and machinery	3,00,000
	8,00,000
Current Assets	
Stock	8,00,000
Debtors	3,00,000
Cash and bank	2,00,000
	13,00,000

Steps in Determination of Working Capital

The individual components method of estimation of working capital involves the following steps :

Step 1 Identify the various items of current assets and current liabilities which consist in determination of working capital. The4 current assets include inventory of raw materials, WIP and finished goods, sundry debtors, pre-paid expenses desired cash balance etc. The current liabilities include, creditors for raw materials stores and consumables, creditors for wages creditors for expenses etc.

Step 2 (a) Estimate the holding period of each item stock
i.e. raw materials, work in progress and finished goods.

(b) Estimate the collection period of sundry debtors

(c) Estimate the desired cash balance for meeting the requirements of day to day operations.

(d) Estimate the desired cash balance for meeting the requirements of day to day operations.

(e) Estimate the lag in payment of wages and expenses

Step (i) Determine the raw material, labour and overheads cost per unit

(ii) Determine the operating level.

(iii) Determine the percentage of conversion cost incurred on WIP

(iv) Determine the cost of sale and selling price per unit.

Step 4 Ascertain the value of each item of current assets and current liabilities taking into account the information in step (2) and step (3)

Step 5 Put the values of current assets and current liabilities in a statement form and ascertain the net working capital (i.e. current assets – current liabilities) after adding up the desired cashbalance and amount needed for meeting contingencies.

Illustration

The Board of Directors of INDIGO Ltd. requests you to prepare a statement showing the working capital requirements forecast for a level of activity of 1,56,000 units of production. The following information is available for your calculation :

Raw materials	90
Direct labour	40
Overheads	75

	205
Profit	60

Selling price per unit	265

(a) Raw materials are in stock on average one month.
(b) Materials are in process on average 2 weeks
(c) Finished goods are in stock on average one month
(d) Credit allowed by suppliers one month.
(e) Time lag in payment from debtors – 2 months
(f) Lag in payment of wages - 1½ weeks
(g) Lag in payment of overheads – one month

20% of the out put is sold against ash. Cash in hand and at bank is expected to be Rs.60,000. It is to be assumed that production is carried on evenly throughout the year. Wages and overheads accrue similarly and a time period of 4 weeks is equivalent to a month

Working Notes

(1) Raw Material = $\frac{1,56,000 \text{ units}}{52 \text{ weeks}}$ x 4 weeks x Rs.90 = Rs.10,80,000

(2) Work in progress = $\frac{1,56,000 \text{ units}}{52 \text{ weeks}}$ x 2 weeks = Rs.6, 000 units

Raw materials	(6,000 units @ Rs.90)	5,40,000
Wages	(6,000 units @ Rs.40 x ½)	1,20,000
Overheads	(6,000 units @ Rs.75 x ½)	2,25,000
Total value of WIP		8,85,000

(3) Finished Goods = $\frac{1,56.000}{52 \text{ weeks}}$ x 4 weeks x Rs.205 = Rs.24,60,000

(4) Debtors = $\frac{1,56,000 \text{ units}}{52 \text{ weeks}}$ x 8 weeks x Rs.205 x $\frac{80}{100}$ = Rs. 39,36,000

(5) Creditors = $\frac{1,56,000 \text{ units}}{52 \text{ weeks}}$ x 4 weeks x Rs.90 = Rs. 10,80,000

(6) Wages = $\frac{1,56,000}{52 \text{ weeks}}$ x 1.5 weeks x rs.40 = Rs. 1,80,000

(7) Expenses = $\frac{1,56,000 \text{ units}}{\textbf{52 weeks}}$ x 4 weeks x Rs.75 = Rs. 9,00,000

Statement of Working Capital Required (Rs)

Current Assets :			
Cash in hand and cash at bank			60,000
Stock in hand :			
Raw materials		10,80,000	
Work in process		8,85,000	
Finished goods		24,60,000	
		----------	44,25,000
Sundry debtors 39,36,000			

	(a)		84,24,000
Current liabilities			
Sundry creditors			10,80,000
Wages payable			1,80,000
Expenses payable			9,00,000

	(b)		21,60,000

Net working capital employed	(a) - (b)		61,61,000

Illustration

From the following details you are required to make an assessment of the average amount of working capital requirement of HINDALCO Ltd.

Particulars	Average period of credit	Estimate for the 1st year (Rs)
Purchase of material	6 weeks	26,00,000
Wages	1½ weeks	19,50,000
Overheads :		
Rent rates etc.	6 months	1,00,000
Salaries	1 month	8,00,000
Other overheads	2 months	7,50,000
Sale cash		2,00,000
Credit sales	2 months	60,00,000
Average amount of stocks and work in progress		4,00,000
Average amount of un drawn profit		3,00,000

It is to be assumed that all expenses and income were made at even rate for the year.

Assessment of average amount of Working capital requirement

Current Assets		
Stock and work in progress		4,00,000
Debtors	(Rs.60,00,000 x 2/12)	10,00,000
	(a)	14,00,000
Current Liabilities :		
Lag in payments :		
Purchases	(Rs.26,00,000 x 6/52)	3,00,000
Wages	(Rs.19,50,000 x 15/52)	56,250
Rent	(Rs.1,00,000 x 6/12)	50,000
Salaries	(Rs.8,00,000 x 1/12)	66,667
Other overheads	(Rs.7,50,000 x 2/12)	1,25,000
	(b)	5,97,917
Total Working Capital Requirements	(a) - (b)	8,02,083
Less : Average amount of undrawn profit		3,00,000
Working Capital Required		5,02,083

8

RECEIVABLE MANAGEMENT

Module – 1 : Meaning and Importance :

The term 'receivables' is defined as 'debt' owed to the firm by customers arising from sale of goods or services in the ordinary course of business. When a firm makes an ordinary sale of goods or services and does not receive payment, the firm grants trade credit and creates accounts receivable which could be collected in the future. Receivables management is also called *trade credit management*. Thus, accounts receivable represent an extension of credit of customers, allowing them a reasonable period of time which to pay for the goods received.

The sale of goods on credit is an essential part of the modern competitive economic systems. In fact, credit sales and therefore, receivables are treated as a marketing tool to aid the sale of goods. The credit sales are generally made o open account in the sense that there are no formal acknowledgements of debt obligations through a financial instrument. As a marketing tool, they are intended to promote sales and thereby profits. However, extension of credit involves risk and cost Management should weight the benefits as well as cost to determine the goal of receivables management. The objective of receivables management is "to promote sales and profits *until that point is* reached where the return on investment in further funding receivables is less than the cost of funds raised to finance that additional credit (i.e. cost of capital). The specific costs and benefits which are relevant to the determination of the objectives of receivables management are examined below.

Costs

The major categories of costs associated with the extension of credit and accounts receivable are : (i) collection cost,(ii) capital cost, (iii) delinquency cost and (iv) default cost.

Collection Cost

Collection costs are administrative costs incurred in collecting the receivables from the customers to whom credit sales have been made. Included in this category of costs are (a) additional expenses on the creation and maintenance of a credit department with staff, accounting records, stationery postage and other related items, (b) expenses involved in acquiring credit information either through outside specialist agencies or by the staff of the firm itself.

These expenses would not be incurred if the firm does not sell in credit.

Capital Cost

The increased level of accounts receivable is an investment in assets. They have to be financed thereby involving a cost. There is a time lag between the sale of goods to, and payment by, the customers. Meanwhile, the firm has to pay employees and suppliers of raw materials, there by implying that the firm should arrange for additional funds to meet its own obligations while waiting for payment from its customers. The cost on the use of additional capital to support credit sales, which alternatively could be profitably employed elsewhere, is therefore, a part of the cost of extending credit or receivables.

Delinquency Cost

This cost arises out of the failure of the customers to met their obligations when payment on credit sales become due after the expiry of the credit period. Such costs are called delinquency costs. The important components of this cost are : (i) blocking up of funds for an extended period (ii) cost associated with steps that have to be initiated to collect the over dues, such as reminders and other collection efforts, legal charges, where necessary, and so on.

Default Cost

Finally, the firm may not be able to recover the overdoes because of the inability of the customers. Such debts are treated as bad debts and have to be written off as they cannot be realised. Such costs re known as default costs associated with credit sales and accounts receivable.

Benefits

Apart from the costs, another factor that has a bearing on accounts receivable management is the benefit emanating from credit sales. The benefits are the increased sales and anticipated profits because of a more liberal policy. When firms extend trade credit, that is, invest in receivables, they intend to increase the sales. The impact of a liberal trade credit policy is likely to take two forms. First, it is oriented to sales expansion. In other words, a firm may grant trade credit either to in crease sales to existing customers or attract new customers. This motive for investment in receivables is growth oriented. Secondly the firm may extend credit to protect its current sales against emerging competition. Here, the motive is sales retention. As a result of increased sales, the profits of the firm will increase

From the above discussion, it is clear that investments in receivables involve both benefits and costs. The extension of trade credit has a major impact on sales, costs and profitability. Other things being equal, a relatively liberal policy and, therefore, higher investments in receivables, will produce larger sales. However, costs will be higher with liberal policies than with more stringent measures. Therefore, accounts receivable management should aim to a trade off between profit (benefit) and risk (cost). That is to say, *the decision to commit funds to receivables(or the decision to grant credit) will be based on a comparison of the benefits and costs involved, while determining the optimum level of receivables*. **The costs and benefits to be compared are marginal costs and benefits.** The firm should only consider the incremental (additional) benefits and costs that result from a change in their receivables or trade credit policy.

While it is true that general economic conditions and industry practices have a strong impact on the level of receivables, a firm's investments in this type of current asses is also greatly affected by its internal policy. A firm has little or no control over environmental factors, such as economic conditions and industry practices. But it can improve its profitability through a property conceived trade credit policy or receivables management.

CREDIT POLICIES

In the preceding discussions it has been clearly shows that the firm's objective with respect to receivables management is not merely to collect receivables quickly, but attention should also be given to the benefit-cost trade-off involved in the various areas of accounts receivable management. The first decision area is credit policies.

The **credit policy** of a firm provides the framework to determine (a) whether or not to extend credit to a customer and (b) how much credit to extend. The credit policy decision of a firm has two broad dimensions : (i) Credit standards and (ii) Credit analysis. A firm has to establish and use standards in making credit decisions, develop appropriate sources of credit information and methods of credit analysis. We illustrate below how these two aspects are relevant to the accounts receivable management of a firm.

Credit Standards

The term '**credit standards'** Represents the basic criteria for the extension of credit to customers. The quantitative basis of establishing credit standards are factors such as credit ratings, credit references, average payment period and certain financial

ratios. Since we are interested in illustrating the trade off between benefit and cost to the firm as a whole, we do not consider here these individual components of credit standards. To illustrate the effect, we have divided the overall standards into (a) tight or restrictive and (b) liberal or non restrictive. That is to say, our aim is to show what happens to the trade off when standards are relaxed or alternatively tightened. The trade off with reference to credit standards covers (i) the collection cost, (ii) the average collection period/cost of investment in accounts receivable (iii) level of bad debt losses and (iv) level of sales. These factors should be considered while deciding whether to relax credit standards or not. If standards are relaxed, it means more credit will be extended while if standards are tightened, less credit will be extended. The implications of the four factors are elaborated below.

Collection Costs

The implications of relaxed credit are (i) more credit, (ii) a large credit department to service accounts receivable and related matters, (iii) increase in collection costs. The effect of tightening of credit standards will be exactly the opposite. These costs are likely to be semi variable. This is because up to a certain point the existing staff will he able to carry on the increased work load, but beyond that, additional staff would be required. These are assumed to be included in the variable cost per unit and need not be separately identified.

Investments in Receivables or the Average Collection Period.

The investment in accounts receivable involves, a capital cost as funds have to be arranged by the firm to fiancé them till customers make payments. Moreover, the higher the average accounts receivable, the higher is the capital or carrying cost. A change in the credit standards relaxation or tightening leads to a change in the level of accounts receivable either through a change in (a) sales or (b) collections.

A relaxation in credit standards, as already stated, implies an increase in sales which in turn would lead to higher average accounts receivable. Further, relaxed standards would mean that credit is extended liberally so that it is available to even less creditworthy customers who will take a longer period to pay overdue. The extension of trade credit to slow paying customers would result in a higher level of accounts receivable.

In contrast, a tightening of credit stands would signify (i) a decrease in sales and lower average accounts receivable ad(ii) an extension of credit limited to more credit worthy customers who an

promptly pay their bills and thus, a lower average level of accounts receivable.

Thus a change in sales and change in collection period together with a relaxation in standards would produce a higher carying costs while changes in sales and collection period result in lower costs when credit standards are tightened. These basic reactions also occur when changes in credit terms or collection procedures are made. We have discussed these in the subsequent sections of this chapter.

Bad Debt Expenses

Bad Debt is another factor which is expected to be affected by changes in the credit standards is bad debt (default) expenses. They can be expected to increase with relaxation in credit standards and decrease if credit standards become more restrictive..

Sales Volume

Changing credit standards can also be expected to change the volume of sales. As standards are relaxed, sales are expected to increase; conversely, a tightening is expected to cause a decline in sales.

The basic changes and effects on profits arising from a relaxation of credit standards are summarized in the following paragraphs. If the credit standards are tightened, the opposite effects, as shown in the brackets would follow :

Effect of Relaxation of Standards

	Item	Direction of Change (Increase = 1 Decrease = D)	Effect on Profits (Positive + Negative -)
1.	Sales Volume	1(D)	+(-)
2.	Average Collection Period	1(D)	-(+)
3.	Bad Debt	1(D)	-(+)

The effect of alternative credit standards is illustrated in the following example.

Example :

A firm is currently selling a product @ Rs.10 per unit. The most recent annual sales (all credit) were 30,000 units. The variable cost

per unit is rs.6 and the average cost per Unit, given a sales volume of 30,000 units, is Rs.8. the total fixed cost is Rs.60,000. the average collection period may be assumed to be 30 days.

The firm is contemplating a relaxation of credit standards that is expected to result in a 15 per cent increase in units sales, the average collection period would increase to 45 days with no change in bad debt expenses. It is also expecte4d that increased sales will result in additional net working capital to the extent of rs.10,000. the increase in collection expenses may be assumed to be eligible. The required return on investment is 15 per cent.

Should the firm relax the credit standard?

Solution The decision to put the proposed relaxation in the credit standards into effect should be based on a comparison of (i) additional profits on sales and (ii) cost of the incremental investments in receivables. If the former exceeds the latter, the proposal should be implemented, otherwise not.

Profit on Incremental Sales – This can be computed in two ways : (1i) long approach and (ii) short cut method.

Long Approach According to this approach, the costs and profits on both the present and the proposed sales level are calculated and the difference in profit at the two levels will be the incremental profit as shown below.

Long Method to Calculate Marginal Profits

(A)	Proposed Plan :		
	1. Sales revenue (34,500 x units Rs.10)		Rs.3,45,000
	2. Less : Costs ":		
	(a) Variable (34,500 x Rs.6)	Rs.2,07,000	
	(b) Fixed	60,000	
		2,67,000	
	3. Profits from sales (1)		78,000
(B)	Current Plan :		
	1. Sales revenue (30,000 x units Rs.10)		3,00,000
	2. Less Costs :		
	a) Variable (30,000 x Rs.6)	1,80,000	
	b) Fixed	60,000	
		2,40,000	
	3. Profits from sales (ii)	60,000	
(C)	Marginal profits with new plan(1 – II)	18,000	

Short Cut Method

The profits on sales will increase by an amount equal to the product of the additional units sold and additional profit per unit. Since the 30,000 units representing the current level of sales absorb all the fixed costs, any additional units sold will cost only the variable cost per unit. The marginal profit per unit will be equal to the difference between the sales price per unit (Rs.10) and the variable cost per unit (Rs.6). The marginal profit/contribution margin per unit would therefore, be Rs.4. The total additional (marginal) profits from incremental sales will be Rs.18,000 (Rs.4,500 x Rs.4).

Cost of Marginal/Incremental Investment in Receivables – The second variable relevant to the decision to relax credit standards is the cost of marginal investment in accounts receivable. This cost can be computed by finding the difference between the cost of carrying receivables before and after the proposed relaxation in credit standards. It can be calculated as follows:

(1) Turnover of accounts receivable :

$$\text{Proposed Plan} = \frac{\text{Number of days in the year}}{\text{Average collection period}} = \frac{360}{45} = 8$$

$$\textbf{Present Plan} = \frac{\mathbf{360}}{\mathbf{30}} = \mathbf{12}$$

(ii) Total cost of sales :

Present Plan = Number of units x cost per unit
= 30,000 x Rs.8 = Rs.2,40,000

Proposed Plan = (30,000 x Rs.8) + (4,500 x Rs.6)
= Rs.2,67,000

(iii) Average investment in accounts receivable :

Present Plan	=	Rs.2,40,000/12	= Rs.20,000
Proposed Plan	=	Rs.2,67,000/8	= Rs.33,375

(iv) The cost of marginal investments in accounts receivable : This is the difference between the average investments in accounts receivable under (i) the proposed plan and (ii) under the present plan. It is calculated as follows :

Average investment with proposed Plan	Rs.33,375

Less : Average investment with present plan	20,000
Marginal investments	13,375

Marginal investments represent the amount of additional funds required to finance incremental accounts receivable if the proposal to relax the credit standards is implemented. The additional cost of rs.13,375 is the cost of marginal investment in accounts receivable.

Given 15 per cent as required return on the Investments, the cost

$$= \frac{\text{Rs.13,375} \times 15}{100}$$

$$= \text{Rs.2,006.25}$$

This is an opportunity cost in that the firm would earn this amount from alternative uses if the funds are not tied up in additional accounts receivable.

(v) Cost of working capital : Rs.10,000 x 0.15 = Rs.1,500

In the above above illustration, since the additional profits on increased sales as a result of relaxed credit standards (Rs.18,000) is considerably more than the cost of incremental investments in accounts receivable (Rs.2,006.25) and working capital (Rs.1,500), the firm should relax its credit standards. Such an action would lead to an overall increase in the profits a of the firm by Rs,.14,493.75 (Rs.18,000) – Rs.2,006.25 – Rs.1,500).

The effect of tightening credit standards would be just the opposite and can be illustrated on the above lines.

Module – 2 : Credit Evaluation

In addition to establishing Credit standards, a firm should develop procedures for evaluating credit applicants. The second aspect of credit policies of a firm is credit analysis and investigation. Two basic steps are involved in the credit investigation process : (a) obtaining credit information and (b) analysis of credit information It is on the basis of credit analysis that the decisions to grant credit to a customer as well as the quantum of credit would be taken.

Obtaining Credit Information

The first step in credit analysis is obtaining credit information on which to base the evaluation of a customer. The sources of information, broadly speaking, are (i) internal and (ii) external.

Internal - Usually firms require their customers to fill various forms and documents giving details about financial operations. They are also required to furnish trade reference with whom the firms can have contacts to judge the suitability of the customer for credit. This type of information is obtained from internal sources of credit information. Another internal source of credit information is derived from the records of the firms contemplating an extension of credit. It is likely that a particular customer/applicant may have enjoyed credit facility in the past. In that case, the firm would have information on the behaviour of the applicant(s) in terms of the historical payment pattern. This type of information may not be adequate and may, therefore, have to be supplemented by information from other sources.

External The availability of information from external sources to assess the credit-worthiness of customers depends upon the development of institutional facilities and industry practices. In India, the external sources of credit information are not as developed as in the industrially advanced countries of the world. Depending upon the availability, the following external sources may be employed to collect information.

Financial Statements One external source of credit information is the published financial statements, that is, the balance sheet and the profit and loss account. The financial statements contain very useful information. They throw light on an applicant's financial, viability, liquidity, profitability and debt capacity. Although the final statements do not directly reveal the past payment record of the applicant, they are very useful in assessing the over all financial position of a firm, which significantly determines its credit standing.

Bank References Another useful source of credit information is the bank of the firm which is contemplating the extension of credit. The modus operandi here is that the firm's banker collects the necessary information from the applicant's bank. Alternatively, the applicant may be required to ask his banker to provide the necessary information either directly to the firm or to its bank.

Trade References These refer to the collection of information from firms with whom the applicant has dealings and who on the basis of their experience would vouch for the applicant.

Credit Bureau Reports Finally, specialist credit bureau reports from organizations specializing in supplying credit information can also be utilized.

Analysis of Credit Information Once the credit information has been collected from different sources, it should be analysed to determine the credit worthiness of the applicant. Although there are no established procedures to analyse the information, the firm should devices one to suit its needs. The analysis should over two aspects (i) quantitative, and (ii) qualitative.

Quantitative The assessment of the quantitative aspects is based on the factual information available from the financial statements, the past records of the firm and so on. The first step involved in this type of assessment is to prepare an Aging Schedule of the accounts payable of the applicant as well as calculate the average age of the accounts payable. This exercise will give an insight into the past payment pattern of the customer. Another step in analyzing the credit information is through a ratio analysis of the liquidity, profitability and debt capacity of the applicant. These ratios should be compared with the industry average. Moreover, trend analysis over a period of time would reveal the financial strength of the customer.

The quantitative assessment should be supplemented by a qualitative/subjective interpretation of the applicant's creditworthiness. The subjective judgment would cover aspects relating to the quality of management. Here, the references from other suppliers, bank references and specialist bureau reports would form the basis for the conclusions to be drawn. In the ultimate analysis therefore the decision whether to extend credit to the applicant and what amount to extend will depend upon the subjective interpretation of his credit standing.

CREDIT TERMS

The second decision area in accounts receivable management is the credit terms. After the credit standards have been established

and the creditworthiness of the customers has been assessed, the management of a firm must determine the terms and conditions on which trade credit will be made available. The stipulations under which goods are sold on credit referred to as **credit terms.** These relate to the repayment of the amount under the credit sale. Thus, credit terms specify the repayment terms of receivables.

Credit terms have three components : (i) credit period, in terms of the duration of time for which trade credit is extended – during this period the overdue amount must be paid by the customer (b) cash discount, if any, which the customer can take advantage of that is, the over due amount will be reduced by this amount, and (c) cash discount period, which refers to the duration during which the discount can be availed of. These terms are usually written in abbreviations, for instance, 2/10 net 30. The three numerals are explained below :

- 2 signifies the rate of cash discount (2 per cent) which will be available to the customers if they pay the overdue within the stipulated time;
- 10 represents the time duration (10 days) within which a customer must pay to be entitled to the discount;
- 30 means the maximum period for which credit is available and the amount must be paid in any case before the expiry of 30 days.

In other words, the abbreviation 2/10 net 30 means that the customer is entitled to 2 per cent cash discount (discount rate) if he pays within 10 days (discount period) after the beginning of the credit period (30 days). If, however, he does not want to take advantage of the discount, he may pay within 30 days. If the payment is not made within a maximum period of 30 days, the customer would be deemed to have defaulted.

The credit terms, like the credit standards, affect the profitability as well as the cost of a firm. A firm should determine the credit terms on the basis of cost benefit trade off. We illustrate below how the three components of credit terms, namely, rate of discount period of discount and the credit period, affect the trade off. It should be noted that our focus in analysis the credit terms is from the view point of suppliers of trade credit and not the recipients for whom it is a source of financing.

Cash Discount

The cash discount has implications for the sales volumes, average collection period/average investment in receivables, bad debt expenses and profit per unit. In taking a decision regarding the grant of cash discount, the management has to see what happens

to these factors if it initiates increase or decrease in the discount rate. The changes in the discount rate would have both positive and negative effects. The implications of increasing or initiating cash discount are as follows :

1. The sales volume will increase. The grant of discount implies reduced prices. If the demand for the products is elastic, reduction in prides will result in higher sales volume.

2. Since the customers to take advantage of the discount, would like to pay within the discount period, the average collection period would be reduced. The reduction in the collection period would lead to a reduction in the investment in receivables as also the cost. The decrease in the average collection period would also cause a fall in bad debt expenses. As a result, profits would increase.

3. The discount would have a negative effect on the profits. This is because the decrease in prices would affect the profit margin per unit of sale.

The effects of increase in the cash discount are summarized in a Table below. The effect of decrease in cash discount will be exactly opposite.

Effects of Increase in Cash Discount

Item	Direction of change (1=increase D=Decrease)	Effect on Profits (Positive or Negative)
Sales volume	1	+
Average Collection Period	D	+
Bad Debt Expenses	D	+
Profit Per Unit	D	-

The cash discount decision is illustrated in the following example.

Assume that the firm in our Example is contemplating to allow 2 per cent discount for payment within 10 days after accredit purchase. It is expected that if discounts are offered, sales will increase by 15 per cent and the average collection period will drop to 15 days. Assume bad debt expenses will not be effected return on investment expected by the firm is 15 peer cent 60 per cent of the total sales will be on discount should the firm implement the proposals?

Solution

(i) Profit on sales. The profit on sale = sale of additional units multiplied by the difference between the sales price and the variable cost per unit = 4,500 (Rs.10 – Rs/6) = 4,500 x Rs.4 = Rs.18,000

(ii) Saving on average collection period. This sing is what would have been earned on the reduced investments in accounts receivable as a result of the cash discount.

$$\text{Average investment in accounts receivable} = \frac{\text{Cost of sales}}{\text{Receivables turn over}}$$

$$\text{(a) Present plan (without discount)} = \frac{(30{,}000 \times \text{Rs.}8)}{12 \text{ (i.e.}360/30)} = \text{Rs.}20{,}000$$

$$\text{(b) Proposed plan (with discount)} = \frac{(30{,}000 \times \text{Rs.}8) + (4500 \times \text{Rs.}6)}{24 \text{ (i.e. } 360/15}$$

$$= \frac{\text{Rs.}2{,}67{,}000}{24} = \text{Rs.}11{,}125$$

Thus, if cash discount is allowed, the average investments in receivable will decline by Rs.8,875 (i.e. Rs.20,000 – Rs.11,125) Given a 15 per cent rate of return, the firm could earn Rs.1,331,25 on Rs.8,875. Thus, the saving resulting from a drop in the average collection period is Rs.1331.25

(iii) The total benefits associated with the cash discount –

Profit on additional sale	Rs.18,000.00
Saving in cost	1,331.25
Total	19,331..25

(iv) Cash discount : The cost involved in the cash discount on credit sales, that is, 2 per cent of credit sales = 0.02 x Rs.2,07,000 (i.e. 0.60 x Rs.3,45,000) = Rs.4,140

Thus against a cost of Rs.4,140 the benefit from initiating cash discount is Rs.19331.25 that is, there is a net gain of Rs.15,191.25 (Rs.19,331.25 – Rs.4,140). The firm should,

therefore, implement the proposal to allow 2 per cent cash discount for payment within 10 days of the credit purchase by the customers.

A similar type of analysis can be made to illustrate the effect of either reduction or elimination of cash discount.

Credit Period

The second component of credit terms is the credit period. The expected effect of an increase in the credit period is summarized bellow..

Effect of Increase in Credit Period

Item	Direction of change (1=increase D=Decrease)	Effect on Profits (Positive or Negative)
Sales volume	1	+
Average Collection Period	1	-
Bad Debt Expenses	1	-

A reduction in the credit period is likely to have an opposite effect. The credit period decision is explained through the following example.

Example :

Suppose, a firm contemplating an increase in the credit period from 30 to 60 days. The average collection period which is at present 45 says is expected to increase to 75 days. It is also likely that he bad debt expenses will increase from the current level of 1 per cent to 3 per cent of sale. Total sales are expected o increase from the level of 30,000 units to 34,500 units. The present average cost per unit is rs.8, the variable cost and sales per unit is rs.6 and Rs.10 per unit respectively. Assume the firm expects a rate of returns of 15 per cent.

Should the firm extend the credit period ?

Solution

(i) Profit on additional sales = (Rs.4 x 4,500) = Rs.18,000

(ii) Cost of additional investments in receivables = Average investments with the proposed credit period less

$$\text{Proposed plan} = \frac{\text{Cost of sales}}{\text{Turnover of receivalues}} \quad \frac{(\text{Rs.8} \times 30{,}000) + \text{Rs..6} \times 4{,}500}{360 + 75}$$

= Rs.55,625

$$\text{Present Plan} = \frac{(\text{Rs.8} \times 30{,}000)}{360 + 45} = \text{Rs.30,000}$$

Additional investment in accounts receivable = Rs.55,625 – Rs.30,000
= Rs.25,625

Cost of additional investment at
15 per cent = m 0.15 x Rs.25,625 = Rs.3,843.75

(iii) Additional bad debt expenses : This is the difference between the bad debt expenses with the proposed and present credit periods.

Bad debt with proposed credit period = 0.03 x Rs.3,45,000 = Rs.10,350
Bad debt with present Credit period = 0.01 x Rs.3,00,000 = Rs.3,000
Additional bad debt expense = (Rs.10,350 – Rs.3,000) = Rs.7,350

Module – 3 : Control of Accounts Receivables

The third area involved in the accounts receivable management is collection policies. They refer to the procedures followed to collect accounts receivable when, after the expiry of the credit period, they become due. These policies cover two aspects : (i) degree of effort to collect the over dues and (ii) type of collection efforts.

Degree of Collection Effort

To illustrate the effect of the collection effort, the credit policies of a firm may be categorized into (i) strict/light, and (ii) lenient. The collection policy would be tight if very rigorous procedures are followed. A tight collection policy has implications which involve benefits a well as costs. The management has to consider a trade off between them. Likewise, a lenient collection effort also affect the cost benefit trade off. The effect of tightening the collection is discussed below.

In the first place, the bad debt expenses (default cost) would decline. Moreover, the average collection period will be reduced. As a result of these two effects, the firm will benefit and its profits will increase. But, there would be a negative effects also. A very rigorous collection strategy would involve increased collection costs. Yet another negative effect may be in the form of a decline in the volume of sales. This may be because some customers may not like the pressure and intense efforts initiated by the firm, and may switch to other firms.

Basic Trade-off From Tight Collection Effort

Item	Direction of change (1=increase D=Decrease)	Effect on Profits (Positive or Negative)
Bad Debt Expenses	D	+
Average Collection Period	D	+
Sales volume	D	-
Collection Expenditure	1	-

The effect of the lenient policy will be just the opposite. .

Example 1

A firm is contemplating stricter collection policies. The following details are available.

1. At present, the firm is selling 36,000 units on credit at a price of Rs.32 each; the variable cost per unit is Rs.25 while the average cost per unit is Rs.29; average collection period is 58 days' and collection expenses amount to Rs.10,000; bad debts are 3 per cent;

2. If the collection procedures are tightened additional collection charges, amounting to Rs.20,000 would be required, bad debts will be 1 per cent, the collection period will be 40 days; sales volume is likely to decline by 500 units;

Assuming a 20 per cent rate of return on investment, what would be your recommendation? Should the firm implement the decision ?

Solution

(i) Bad debt expenses :

Present plan : (0.03 x Rs.11,52,000) Rs.34,560	
Proposed Plan (0.01 x Rs.11,36,000)	11,360
Savings in bad debt expenses	23,200

(ii) Average collection period/average investment in receivables

$$\text{Present Plan} = \frac{36{,}000 \times \text{Rs.}29}{360 + 58} = \text{Rs.}1{,}68{,}200 \text{ (a)}$$

$$\text{Proposed Plan} = \frac{(36{,}000 \times \text{Rs.}29) - (500 \times \text{Rs.}25)}{360 + 40} = \text{Rs.}1{,}14{,}611 \text{ (b)}$$

Savings in average investments (a – b) Rs.53,589

Assuming a 20 per cent return, the firm will be able to Earn Rs.10,718 on this saving.

(iii) Sales volume : Since the sales volume will decline by 500 units, there would be a loss of Rs.3,500 (500 x Rs.7)

(iv) Additional collection charges = Rs.20,000

Thus, the total benefits from a tightening of the collection policy will be Rs.33,918 (Rs.23,200 + Rs.10,718) and the total cost will be Rs.23,500 (Rs.3,500 + Rs.20,000). Therefore, there would be a net gain of Rs.10,418 (Rs.33,918 – Rs.23,500). The firm should, therefore, implement the proposed strategy.

Example2

Super Sports, de

aling in sports goods, has an annual sale of Rs.50 lakhs and currently extending 30 days credit to the dealers. It is felt that salers can pick up considerably if the dealers are willing to carry increased stocks, but the dealers have difficulty in financing their inventory. The firm is, therefore, considering shifts in credit policy. The following information is available.

The average collection period now is 30 days
Variable costs, 80 per cent of sales.
Fixed costs, Rs.6 lakh per annum
Required (pre-tax) return on investment : 20 per cent

Credit Policy (Rs.lakh)	Average collection period (days)	Annual Sales
A	45	56
B	60	60
C	75	62
D	90	63

Solution

Evaluation of Proposed Credit Policies

Particulars	Present	Proposed (number of days)			
	(30)	A(45)	B(60)	C(75)	D(9)
(a) Sales revenue	50	56	60	62	63
Less: Variable costs (80% of sales)	40	44.8	48	49.6	50.4
Total contribution	10	11.2	12	12.4	12.6
Less : Fixed costs	6	6	6	6	6
Profit	4	5.2	6	6.4	6.6

Increase in profits due To increase in total Contribution (20% of Sales) compared to Present profits	---	1.2	2	2.4	2.6
(b) Investment in debts: Total cost (VC+FC)	46	50.8	54	55.6	56.4
Debtors turnover (DT) (360 days collection period)	12	8	6	4.8	4
Average investment (total cost + DT)	3.83	6.35	9	11.58	14.10
Additional Investment Compared to present Level	- -	2.52	5.17	7.75	10.27
Cost of additional Investment	-	0.50	1.03	1.55	2.05
(c) Incremental profit (a – b)	-	0.70	0.97	0.85	0.55

Example 3

ABC Corporation is considering relaxing its present credit policy and is in the process of evaluating two alternative policies. Currently the firm has annual credit sales of Rs.50 lakh and accounts receivable turnover ratio of 4 times a year. The current level of loss due to bad debts is Rs.1,50,000. the firm is required to give a return of 25 per cent on the investment in new accounts receivable. The company's variable costs ate 70 percent of the selling price. Given the following information, which is a better option?

Particular	Present policy	Policy option I	Policy option II
Annual credit sales	Rs.50,00,000	Rs.60,00,000	Rs.67,50,000
Accounts receivable Turnover ratio	4	3	2.4
Bad debt losses	1,50,000	3,00,000	4,50,000

Solution

Relative Suitability of Policy Options

Particulars	Present policy	Policy option-I	Policy option II
Sales revenue	Rs.50,00,000	Rs.60,00,000	Rs.67,50,000
Less: Variable cost (70%)	35,00,000	42,00,000	47,25,000
Contribution margin (manufacturing)	15,00,000	18,00,000	20,25,000
Less: Other relevant Costs:			
Bad debt losses	1,50,000	3,00,000	4,50,000
Investment cost (see working notes)	2,18,750	3,50,000	4,92,187.,50
Contribution margin (final)	11,31,250	11,50,000	10,82,812.50

Working notes

Strictly speaking, investment in accounts receivable should be determined with reference to total cost of goods sold on credit. However, fixed costs re not given. It is assumed that there are no fixed costs and investment in debtors/receivables is determined with reference to variable costs only.

$$\text{Present policy : } \frac{\text{Rs.35,00,000}}{4} = \text{Rs.8,75,000 x 0.25 = Rs.2,18,750}$$

$$\text{Policy option I: } \frac{\text{Rs.42,00,000}}{3} = \text{Rs.14,00,000 x 0.25 = Rs.3,50,000}$$

$$\text{Policy option II} \frac{\text{Rs.47,25,000}}{2.4} = \text{Rs.19,68,750 x 0.25 = Rs.4,92,187.5}$$

Types of Collection Efforts

Another aspect of collection policies relates to the steps that should be taken to collect over dues from the cust0mers. A well established collection policy should have clear cut guidelines as to the sequence of collection efforts. After the credit period is over and payment remains due the firm should initiate measures to collect them. The effort should in the beginning be polite but with the passé of time, it should gradually become strict. The steps

usually taken are (i) letters, including reminders to expedite payment (ii) telephone calls for personal contact; (iii) personal visits; (iv) help[of collection agencies and finally, (v) legal action. The firm should take recourse to very stringent measures like legal action only after all other avenues have been fully exhausted. They not only involve a cost but also affect the relationship with the customers. The aim should be to collect as early as possible genuine difficulties of the customers should be given due consideration.

9

MANAGEMENT OF CASH AND MARKETABLE SECURITIES

Module – 1 : Motives of Holding Cash

Cash Management is one of the key areas of working capital management. Apart from the fact that it is the most liquid current asset, cash is the common denominator to which all current assets can be reduced because the other major liquid assts, that is, receivable and inent0ry get eventually converted into cash. This underlines the significance of cash management.

The present Chapter gives a detailed account of the problems involved in managing cash. The first Section outlines the motives for holding cash followed by the objectives of cash management in Section two. Section 3 presents a discussion of the factors determining cash needs. The approaches to derive optimal cash balances, namely, cash management models and cash budgets are examined in depth in section 4. the basic strategies for efficient management of cash are the subject matter of Section 5. we have explained specific techniques to manage cash subsequently. The remainder of the chapter is devoted to the discussion of marketable securities. the Chapter concludes with a summary of the major points.

The term '**cash'** with reference to cash management is used in two senses. In a narrow sense, it it used broadly to cover currency and generally accepted equivalents of cash, such as cheques, drafts and demand deposits in banks. The Broadview of cash also includes **near cash** assets, such as **marketable securities** and time deposits in banks. The maintenance characteristics of these is that they can be readily sold and converted into cash. They serve as a reserve pool of liquidity that provides cash quickly when needed. They also provide a short-term investment outlet for exceeds cash and are also useful for meeting planned outflow of funds. Here, the term cash management is employed in the broader sense. Irrespective of the form in which it is held, a distinguishing feature of cash as an asset is that it has no earning poser If cash does not earn any return, why is it held? There are four primary motives for maintaining cash balances : (i) Transaction motive; (ii) Precautionary motive; (iii) Speculative motive and (iv) compensating motive.

Transaction Motive

An important reasons for maintaining cash balances is the **transaction motive.** This refers to the holding of cash to meet routine cash requirements to finance the transactions which a firm carries on in the ordinary course of business. A firm enters into a variety of transactions to accomplish its objectives which have to be paid for in the form of cash. For example, cash payments have to be made for purchases, wages operating expenses, financial charges like interest, taxes, dividends and so on. Similarly, there is a regular inflow of cash to the firm from sales operations, returns on outside investments and so on. These receipts and payments constitute a continuous two way flow of cash. But the inflows (receipts) and outflows (disbursements) do not perfectly coincide or synchronize. At times, receipts exceed outflows while, at other times, payments exceed inflows. To ensure that the firm can meet its obligations when payments become due in a situation in which disbursements are in excess of the current receipts, it must have an adequate cash balance. The requirement of cash balances to meet routine cash needs is known as the **transaction motive** and such motive refers to the holding of cash to meet anticipated obligations whose timing is not perfectly synchronized with cash receipts. If the receipts of cash and its disbursements could exactly coincide in the normal course of operations, a firm would not need cash for transaction purposes. Although a major part of transaction balances are held in cash, a part may also be in such marketable securities whose maturity conforms to the timing of the anticipated payments, such as payment of taxes, dividends, and so on.

Precautionary Motive

In addition to the non synchronization of anticipated cash inflows and outflows in the ordinary course of business, a firm may have to pay cash for purposes which cannot be predicted or anticipated. The unexpected cash need at short notice may be the result of :

- Floods, strikes and failure of important customers;
- Bills may be presented for settlement earlier than expected;
- Unexpected slow down in collection of accounts receivable;
- Cancellation of some order for goods as the customer is not satisfied; and
- Sharp increase in cost of raw materials.

The cash balances held in reserve for such random and unforeseen fluctuations in cash flows are called as **precautionary balances.** In other words, precautionary motive of holding cash

implies the need to hold cash to meet unpredictable obligations. Thus, precautionary cash balance serves to provide **a cushion to meet unexpected contingencies.** The more unpredictable are the cash flows, the larger is the need for such balances.

Another factor which has a bearing on the level of such cash balances is the availability of short term credit. If a firm can borrow at short notice to pay for unforeseen obligations, it will need to maintain a relatively small balance and vice versa.

Such cash balances are usually held in the form of marketable securities so that they earn a return.

Speculative Motive

It refers to the desire of a firm to take advantage of opporttnities which present themselves unexpected moments and which re typically outside the normal course of business. While the precautionary motive is defensive in nature in that firms must make provisions to tide over unexpected contingencies, the speculative motive represents a positive and aggressive approach. Firms aim to exploit profitable opportunities and keep cash in reserve to do so. The speculative motive helps to take advantage of :

- An opportunity to purchase raw materials at a reduced price on payment of immediate cash;
- A chance to speculate on interest rate movements by buying securities when interest rates are expected to decline;
- Delay purchase of raw materials on the anticipation of decline in prices; and
- Make purchase at favourable prices.

Compensating Motive

Yet another motive to hold cash balance is to compensate banks for providing certain services and loans.

Banks provide a variety of services to business firms, such as clearance of cheque, supply of credit information, transfer of funds, and so on. While for some of these services banks charge a commission or fee, for others they seek indirect compensation. Usually clients are required to maintain a minimum balance of cash at the bank. Since this balance cannot be utilized by the firms for transaction purposes, the banks themselves can use the amount to earn a return. Such balances are **compensating balances.**

Compensating balances are also required by some loan agreements between a bank and its customers. During periods when the supply of credit is restricted and interest rates are rising, banks require a burrower to maintain a minimum balance in his account as a condition precedent to the grant of loan. This is presumably to compensate the bank for a rise in the interest rate during the period when the loan will be pending.

The compensating cash balances can take either of two forms (i) an absolute minimum, say, Rs.5 lakh, below which the actual bank balance will never fall;(ii) a minimum average balance, say, Rs.5 lakh over the month. The first alternative is more restrictive as the average amount of cash held during the month must be above Rs.5 lakh by the amount of the transaction balance. From the firm's view point, this is obviously dead money. Under the second alternative the balance could fall to zero one day provided it was Rs.10 lakh some other day with the average working to Rs.5 lakh.

Of the four primary motives of the holding cash balances, the two most important are the transactions motive and the compensation motive. Business firms normally do not speculate and need not have speculative balances. The requirement of precautionary balances can be met out of short term borrowings.

OBJECTIVES OF CASH MANAGEMENT

The basic objectives of cash management are two fold (a) to meet the cash disbursement needs (payment schedule);and (b) to minimize funds committed to cash balance. These are conflicting and mutually contradictory and the task of cash management is to reconcile them.

Meeting Payments Schedule

In the normal course of business, firms have to make payments of cash on a continuous and regular basis to suppliers of goods, employees and so on. At the same time, there is a constant inflow of cash through collections from debtors. Cash is, therefore, aptly described as the oil to lubricate the ever turning wheels of business, without it the process grinds to a stop. A basic objective of cash management is to me the payment schedule, that is, to have sufficient cash to met the cash disbursement needs of a firm.

The importance of sufficient cash to meet the payment schedule can hardly be overemphasized. The advantages of adequate cash are : (i) it prevents insolvency or bankruptcy arising out of the inability of a firm to meet its obligations; (ii) the relationship with the bank is not strained; (iii) it helps in fostering

good relations with trade creditors and suppliers of raw materials, as prompt payment may help their own cash management; (iv) a cash discount can be availed of if payment is made within the due date. For example, a firm is entitled to 2 percent discount for a payment made within 10 days when the entire payment is to be made within 30 days. Since the net amount is due in 30 days, failure to take the discount means paying an extra 2 per cent for using the money for an additional 20 days. If a firm were to pay 2 per cent for every 20 days period over a year, there would be 18 such periods (360 days + 20 days). This represents an annual interest rate of 36 per cent. (v) it leads to a strong credit rating which enables the firm to purchase goods on favourable terms and to maintain its line of credit with banks and other sources of credit, (vi) to take advantage of favourable business opportunities that may be available periodically and finally, (vii) the firm can meet unanticipated cash expenditure with a minimum or strain during emergencies such as strikes fires or a new marketing campaign by competitors. Keeping large cash balances, however, implies a high cost. The advantage of prompt payment of cash can well be realized by **sufficient** and not **excessive** cash.

Minimising Funds Committed to cash Balances

The second objective of cash management is to minimize cash balance. In minimizing the cash balances, two conflicting aspects have to be reconciled. A high level of cash balances will, as shown above, ensure prompt payment together with all the advantages. But it also implies that large funds will remain idle, as cash is anon earning asst and the firm will have to forgo profits. A low level of cash balances, on the other hand, may mean failure to met the payment schedule. The aim of cash management therefore should be to have an optimal amount of cash balances.

Keeping in view these conflicting aspects of cash management, we propose to discuss the planning/determination of the need for cash balances. There are two aspects involved in cash planning : first an examination of those factors which have a bearing on the firm's required cash balance; second, a review of the approaches to achieve optimum cash balances.

FACTORS DETERMINING CASH NEEDS

The factors that determine the required cash balances are : (i) synchronization of cash flows, (ii) short costs (iii) excess cash balance (iv) procurement and management and(v) uncertainty.

Synchronization of Cash Flows

The need for maintaining cash balances arises from the non-synchronization of the inflows and outflows of cash, if the receipts and payments of cash perfectly coincide or balance each other, there would be no need for cash balances. The first consideration in determining the cash need is, therefore, the extent of non-synchronization of cash receipts and disbursements. For this purpose, the inflows and outflows have to be forecast over a period of time, depending upon the planning horizon which is typically a one year period with each of the 12 months being a sub-period. The technique adopted is a cash budget. The preparation of a cash budget is discussed in the next section of this chapter. A property prepared budget will pinpoint the months/period when the firm will have an excess or a shortage of cash.

Short Costs

Another general factor to be considered in determining cash needs is the cost associated with a shortfall in the cash needs. The cash forecast presented in the cash budget would reveal periods of cash shortage. In addition, there may be some unexpected shortfall. Every shortage of cash whether expected or unexpected involves a cost depending upon the severity, duration and frequency of the shortfall and how the shortage is covered. Expenses incurred as a result of shortfall are called **short costs** Included in the short costs are the following :

(i) **Transaction costs** associated with raising cash to tide over the shortage. This is usually the brokerageincu55red in relation to the sale of some short term near cash assets such as marketable securities;

(ii) **Borrowing costs** associated with borrowing to cover the shortage. These include items such as interest on loan, commitment charges and other expenses relating to the loan;

(iii) **Loss of cash discount,** that is, a substantial loss because of a temporary shortage of cash.

(iv) **Cost associated with deterioration of the credit rating** which is reflected in higher bank charges on loans, stoppage of supplies, demands for cash payment, refusal to sell, loss of image and the attendant decline in sales and profits.

(v) **Penalty rates** by banks to meet a shortfall in compensating balances.

Excess Cash Balance Costs

The cost of having excessively large cash balances is known as the *excess cash balance cost.* If large funds are idle, the implication is that the firm has missed opportunities to invest those funds and has thereby lost interest which it would otherwise have earned. This loss of interest is primarily the excess cost.

Procurement and Management

These are the costs associated with establishing and operating cash management staff and activities. They are generally fixed and are mainly accounted for by salary, storage handling of securities and so on.

Uncertainty and Cash Management

Finally, the impact of uncertainty on cash management strategy is also relevant as cash flows cannot be predicted with complete accuracy. The first requirement is a precautionary cushion to cope with irregularities in cash flows, unexpected delays in collections and disbursements defaults and unexpected cash needs.

The impact of uncertainty on cash management can, however be mitigated through (i) improved forecasting of tax payments capital expenditure, dividends and soon and (ii) increased ability to borrow through overdraft facility.

DETERMINING CASH NEED

After the examination of the pertinent considerations and cost that determine cash needs, the next aspect relates to the determination of cash needs.

There are two approaches to derive an optimal cash balance, namely, (a) minimizing cost cash models and (b) cash budget.

Cash Budget :Management Tool

A firm is well advised to hold adequate cash balances but should avoid *excessive balances.* The firm has, therefore, to assess its need for cash properly. The cash budget is probably the most important tool in cash management. It is a device to help a firm to plan and control the use of cash. It is a statement showing the estimated cash inflows and cash outflows over the planning horizon. In other words, the net cash position (surplus or deficiency) of a firm as it moves from one budgeting sub period to another is highlighted by the cash budget.

The various purposes of cash budgets are: (i) to coordinate the timings of cash needs. It identifies the period(s) when there might either be a shortage of cash or a abnormally large cash requirements; (ii) it pinpoints the period(s) when there is likely to be excess cash; (iii) it enables a firm which has sufficient cash to take advantage of cash discounts on its accounts payable, to pay obligations when due, to formulate dividend policy, to plan financing of capital expansion and to help unify the production schedule during the year so that the firm can smooth out costly seasonal fluctuations, finally, (iv) it helps to arrange needed funds on the most favourable terms and prevents the accumulation of excess funds. With adequate time to study his needs, the finance manager can select the best alternative, In contrast a firm which does not budget its cash requirements, may suddenly find itself short of funds. With pressing needs and little time to explore alternative avenues of financing, the management would be forced to accept the best terms offered in a difficult situation. These terms will not be as favourable, since the lack of planning indicates to the lender, that there is an organizational deficiency. The firm therefore represents a higher risk.

Elements/Preparation of Cash Budget

Thus, the principal aim of the cash budget, as a tool to predict cash flows over a given period of time, is to ascertain whether at any point of time there is likely to be an excess or shortage of cash. The preparation of a cash budget involves various steps, these may be described as the elements of the cash budgeting system.

The first element of a cash budget is the selection of the period of time to be covered by the budget, It is referred to as the planning horizon. The planning horizon means the time span and the sub-periods within that time span over which the cash flows are to be projected. There was no fixed rule. The coverage of a cash budget will differ from firm to firm depending upon its nature and the degree of accuracy with which the estimate can be made. As a general rule, the period selected should be neither too long nor too short. If it is too long, it is likely that the estimates will be inaccurate. If, on the other hand, the time span is too small, many important events which lie just beyond the period cannot be accounted for and the work associated with the preparation of the budget becomes excessive.

The planning horizon of a cash budget should be determined in the light of the circumstances and requirements of a particular case. For instance, if the flows are expected to be stable and dependable, such a firm may prepare a cash budget covering a long period, say, a year and divide it into quarterly intervals. In the

case of a firm whose flows are uncertain, a quarterly budget, divided into monthly intervals may be appropriate. Where flows are affected by seasonal variations, monthly budgets, subdivided on a weekly or even a daily basis may be necessary. the flows are subject to extreme fluctuations, even a daily budget may be called for. The idea behind subdividing the budgeting period into smaller intervals is to highlight the movement of cash from one sub period to another. The sub-division will provide information on the fluctuations in the cash reservoir level during the time span covered by the budget.

The second element of the cash budget is **the selection of the factors** that have bearing on cash flows. The items included in the cash budget are only dash items, non cash items such as depreciation and amortization are excluded. The facts that generate cash flows are generally divided, for purposes of the construction of cash budget into two broad categories (a) operating and (b) financial This two fold classification of cash budget items is based on their nature. While the former category includes cash flows generated by the operations of the firms and are known as **0perating cash flows**. The latter consists of **financial cash flows.**

Module – 2 : Operating Cash Flows

The main operating factors/items which generate cash outflows and inflows over the time span of a cash budget are tabulated in Exhibit -1.

Exhibit-1 Operating Cash Flow items

Inflow/cash receipts	Outflow/Disbursements
1. Cash sales	1. Accounts payable/Payable payments
2. Collection of Accounts receivable	2. Purchase of raw materials.
3. Disposal of fixed assets	3. Wages and salary (payroll)
	4. Factory expenses
	5. Administrative and selling expenses
	6. Maintenance expenses
	7. Purchase of fixed assets

Among the operating factors affecting cash flows, are the collection of accounts receivable (inflows) and accounts payable (outflows). The terms of credit and the speed with which the customers pay would determine the lag between the creation of the accounts receivable and their collection. Also, discounts and allowances for early payments, returns from customers and bad debts affected cash inflows. Similarly, in the case of accounts payable relating to credit purchase cash outflow are affected by the purchase terms.

The calculation of the collection on credit sales and payments on credit purchases, is generally done in the form of a statement known as the worksheet.

Example-1

A firm sells goods on credit and allows a cash discount for payments made within 20 days. If the discount is not availed of the buyer must pay the full amount in 40 days. However, the firm finds that some of its customers delay payments up to 90 days. The experience has been that on 20 per cent of sales, payment is made during the month in which the sale is made, on 70 per cent of the

sales payment is made during the second month after sale and on 10 per cent of sales payment is made during the third month.

The raw materials and other supplies required for production amount to 70 per cent of sales and are bought in the month before the firm expects to sell its finished products. Its purchase terms allow the firm to delay payment on its purchases for one month.

The credit sales of the firm are :

May	10	August	30	November	20
June	10	September	40	December	10
July	20	October	20	January	10

Prepare a worksheet, showing the anticipated cash inflows on account of collection of receivables and disbursement of payables.

Solution The expected cash inflows through collection of receivables and the anticipated outflows on account of accounts payable are presented in Table 1 in the form of a worksheet.

Work Sheet

(Rs lakh)

	May	June	July	Aug	Sep.	Oct.	Nov.	Dec	Jan
1. Credit Sales	10	10	20	30	40	20	20	10	10
2. Collections:									
During month Of sale (20%)	2	2	4	6	8	4	4	2	2
During the 1st Month after Sale (70%)-		7	7	14	21	28	14	14	7
During 2nd Month after Sale (10%)-		-	1	1	2	3	4	2	2
Total Collections	**2**	**9**	**12**	**21**	**31**	**35**	**22**	**18**	**11**
3. Credit purchase (70%) of ext month's sale	7	7	14	21	28	14	14	7	7
Payment (one									

Month lag)-	7	14	21	28	14	14	7	7
Total payments	- 7	14	21	28	14	14	7	7

Financial Cash Flows The major financial factors/items affecting the generation of cash flows are explained below.

Financial Cash Flow Items

Cash Inflow/Receipts		Cash Outflow/Payments	
1.	Loans/Borrowings	1.	Income-tax/Tax Payments
2.	Sales of securities	2.	Redemption of loan
3.	Interest received	3.	Repurchase of shares
4.	Dividend received	4.	Interest paid
5.	Rent received	5.	Dividends paid
6.	Refund of tax		
7.	Issue of new shares and securities		

Preparation pf Cash Budget After the time span of the cash budget has been decided and pertinent operating and financial factors have been identified, the final step is the construction of the as budget. The preparation of a cash budget is illustrated in Examples-2 and 3.

Example – 2

A firm adopts a six monthly time span, subdivided into monthly intervals for its cash budget.

(A) The following information is available in respect of its operations :

Particulars		Months					
		1	2	3	4	5	6
1.	Sales	40	50	60	60	60	60
2.	Purchases	1	1.50	2	2	2	1
3.	Direct labour	6	7	8	8	8	6
4.	Manufacturing overheads	13	13.50	14	14	14	13
5.	Administrative expenses	2	2	2	2	2	2

6.	Distribution expenses	2	3	4	4	4	2
7.	Raw materials (30 days credit)	14	15	16	16	16	15

(B) Assume the following financial flows during the period

(a) Inflows

1. Interest received in month 1 and month 6 Rs.1 lakh each
2. Dividend received during months 3 and 6, Rs.2 lakh each
3. Sales of shares in month 6 Rs.160 lakh

(b) Outflows

1. Interest paid during month 1, Rs.0.4 lakh
2. Dividends paid during months 1 and 4 Rs.2 lakh each
3. Instalment payment on machine in month 6, Rs. 20 lakh
4. Repayment of loan in montjh 6, Rs.80 lakh

(c) Assume that 10 per cent of each month's sales are for cash; the balance 90 Per cent are on credit. The terms and Credit experience of the firm are ;

1. No cash discount
2. 1 per cent of credit sales is returned by the customers.
3. 1 per cent of total accounts receivable is bad debt;
4. 50 per cent of all accounts that are going to pay, do so within 30 days
5. 100 percent of all accounts that are going to pay, do so within 60 days

Using the above information prepare a cash budget.

Solution - The cash Budget is constructed as shown below.

Cash Budget for Six Months

Particulars	Months					
	1	2	3	4	5	6
(A) Cash inflows						
1. cash sales (10%) of total	4.00	5.00	6.00	6.00	6.00	6.00
2. Receivables collection-		17.84	39.68	48.50	52.92	52.92
3. Interest received	1.00	---	----	----	---	1.00
4. Dividends received	---	----	2.00	----	----	2.00
5. Sale of shares	---	----	----	----	----	160.00
Total (A)	5.00	22.64	47.68	54.50	58.92	221.92
(B) Cash outflows						
1. Purchases	1.00	1.50	2.00	2.00	2.00	1.00
2. Labour	6.00	7.00	8.00	8.00	8.00	6.00
3. Manufacturing overheads	13.00	13.50	14.00	14.00	14.00	13.00
4. Administrative expenses	2.00	2.00	2.00	2.00	2.00	2.00
5. Distribution charges	2.00	3.00	4.00	4.00	4.00	2.00
6. Raw materials (30 days credit)	-	14.00	15.00	16.00	16.00	16.00
7.Interest	0.40	---	----	-----	-----	-----
8. Dividend paid	2.00	----	----	2.00	----	-----
9. Instalment of machine	----	-----	-----	-----	-----	20.00
10. Repayment of loan	----	----	-----	----	-----	80.00
Total (B)	26.40	41.00	45.00	48.00	46.00	140.00
(C) Net Receipt or (Payment (A - B)	(21.40)	(18.36)	2.68	6.50	12.92	81.92

It can be seen from the above calculations that the cash budget helps to reconcile the need for cash with the financing arrangement. For instance, in the first two months, the cash receipts fall below the disbursements and the firm obviously needs temporary financing which it will be able to pay in the subsequent months. In month 6, it has, in fact, excess cash for which temporary investment will have to be made until the funds can be employed in business.

Example 3

The following information is available in respect of a firm.

(A) **Balance Sheet as on March 31**

Liabilities	Amount	Assets	Amount	
Accrued salaries	Rs.500	Cash	Rs.3000	
Other liabilities	2500	Inventory		
8000				
Capital	65000	Other assets	Rs.70,000	
		Less : Depreciation	13,000	57000
	68,000		68,000	

(B) **Sales Forecast**

April	Rs.10,000	July	Rs.50,000
May	20,000	August	40,000
June	30,000	September	20,000
		October	5,000

(C) **Salary Expenses Budget**

April	Rs.1,500	July	Rs. 4,000
May	2,000	August	3,000
June	2,500	September	2,000

(D) The firm is expected to operate on the following lines :

- Other expenses approximate 12 per cent of sales (paid in the same month)

- Sales will be 80 per cent dash and 20 percent credit. The all credit sales will be collected on the following month and no had debts are expected.
- All inventory purchases will be paid for during the month in which they are made.
- A basic inventory of Rs.2,000 (at cost) will be maintained. The firm will follow a policy of purchasing additional inventory each month to cover the following month's sale.
- A minimum cash balance of Rs.3,000 will be maintained.
- New orders for equipment amounting to s.20,000 scheduled for May1 delivery and Rs.10,000 for June 1 delivery have been made Payment will be made at the time of delivery.
- Accrued salaries and other liabilities will remain unchanged
- Gross profit margin is 40 per cent of sales.

Prepare a Cash budget for 6 months (April to September) Borrowings are made in thousands of rupees. Ignore interest.

Solution

Cash Budget (Amount in 000 rupees)

Particulars	April	May	June	July	Aug	Sept
(A) Cash inflows						
1. Cash sales (0.80)	8	16	24	40	32	16
2. Accounts receivable collections (o.2)	---	2	4	6	10	8
Total	8	18	28	46	42	24
(B) Cash outflows						
1. Inventory	12	18	30	24	12	3
2. Salary	1.5	2	2.5	4	3	2
3. Expenses	1.2	2.4	3.6	6	4.6	2.4

4. Equipment	---	20	10	---	----	----
Total	14.7	42.4	46.1	34	19.8	7.4
(C) Net monthly cash gain or loss by end of month (A - B)	(6.7)	(24.4)	(18.1)	12	22.2	16.6
Cumulative cash gain or Loss by end of month	(6.7)	(31.1)	(49.2)	(37.2)	(15)	1.6
Cumulative borrowing (month end)	7	32	50	38	15	---

Module- 3 : CASH MANAGEMENT MODELS

The cash budget, as a cash management tool, would throw on the net cash position of a firm. After knowing the cash position, the management should work out the basic strategies to be employed to manage its cash. The present section attempts to outline the basic strategies of cash management.

The broad cash management strategies are essentially related to the cash turnover process, that is the cash cycle together with the cash turnover. The **cash cycle** refers to the process by which cash is used to purchase materials from which are produced goods, which re then sold to customers, who later pay the bills. The firm receives cash from customers and the cycle repast itself. The **cash turnover** means the umber of times cash is used during each year. The cash cycle involves several steps along the way as funds flow from the firm's account, as shown in Exhibit 3.

Details of Cash Cycle

A	B	C	D	E	F	G	H	I

A	=	Materials ordered,	B	=	Materials received
C	=	Payments	D	=	Cheque clearance
E	=	Goods sold	F	=	Customer mails payments
G	=	Payment received			
H	=	Cheques deposited,			
I	=	Funds collected.			

In addressing the issue of cash management strategies, we are concerned with the time periods involved in stages B, C, D and F, G. H. I. a firm has no control over the time involved between stages A and B. the lag between D and E is determined by the production process and inventory policy. The time period between stages E and F is determined by credit terms and the payments policy of customers.

The cash cycles and cash turnover are illustrated in the following example :

A firm which purchases raw materials on credit is required by the credit terms to make payments within 30dsays On its side, the firm allows its credit buyers to pay within 60 days. Its experience has been that it takes, on an average,35 days to pay its accounts payable and 70 days to collect its accounts receivable Moreover 85 days elapse between the purchase of raw materials and the sale of finished goods, that is to say, the average age of inventory is 85 days. What is the firm's cash cycle ? Alco estimate the Cash turnover.

Solution : The cash cycle of the firm can be calculated by finding the average number of days that elapse between the cash outflows associated with paying accounts payable and the cash inflows associated with collecting accounts receivable :

(i) Cash cycle = 85 days + 70 days – 35 days = 120 days

(ii) cash turn over = the assumed number of days in a year divided by the cash cycle = 365/120 = 3

Minimum Operating Cash

The higher the cash turnover, the less is the cash a firm requires. A firm should therefore, try to maximize the cash turnover. But it must maintain a minimum amount of operating cash balance so that it does not run out of cash. The minimum level of operating cash is determined by dividing the total operating annual outlays by the cash turnover rate. If, for example, the total operating annual outlay of a firm is Rs.240 lakh, its minimum cash requirement is Rs.80 lakh (i.e. Rs.240 lakh + 3) . The operational implication of the minimum operating cash requirement is that if the firm has opening cash balance of Rs.80 lakh, it would be able to meet its obligation when they become due. In other words, it would not have to borrow anything. But the minimum operating cash involves a cost in terms the earnings forgone from investing it temporarily, that is to say, there is a opportunity cost. Assuming 10 per cent return on riskless investment (or retirement of a debt carrying 10 per cent interest), the cost of the minimum cash balance of Rs.60 lakhs works out to Rs.8 lakhs.

Cash Management strategies are intended to minimize the operating cash balance requirement. The basic strategies that can be employed to do the needful me as follows :

(a) Stretching Accounts Payable.
(b) Efficient Inventory – Production Management
(c) Speedy Collection of accounts Receivable, and
(d) Combined cash Management Strategies

We spelt out the implications of these strategies to the minimum cash balance and the associated cost with the underlying assumption that a firm should adopt such cash management strategies as we will lead to the minimizing of the operating casjh requirement. In other words, efficient cash management implies minimum cash balance consistent with the need to pay bills when they become due.

Stretching Accounts Payable

One basic strategy of efficient cash management is to stretch the accounts payable. In other words, a firm should pay its accounts payable as late as possible without damaging its credit standing. It should, however take advantage of the cash discount available on prompt payment

If the firm, in our Example can stretch is accounts payable from the current level of 35 days to 45 days, its cash cycle will be 110 days (i.e. reduced by 10 days a from the original 120 days). The reduction in cash cycle by 10 days as a result of the stretching of the accounts payable by 10 days will increase the dash turn over from 3 (initially) to 3.27 (360 + 110). This will lead to a decrease in the minimum cash requirement from Rs.80 lakhs to Rs.73.40 lakh (Rs.240 lakh + 3.27). \that is, the requirement has been reduced by Rs.6.60 lakh. Assuming a 10 per cent rate of interest, there will be a saving in cost to the firm to the extent of Rs.0.66 lakh.

Efficient Inventory Production Management

Another strategy is to increase the inventory turnover, avoiding stock outs, that is, shortage of stock. This can be done in the following ways

(1) Increasing the raw materials turnover by using more efficient inventory control techniques

(2) Decreasing the production cycle through better production planning, scheduling and control techniques, it will lead to an increase in the work in progress inventory turnover.

(3) Increasing the finished goods turn over through better forecasting of demand and a better planning of production.

Assume that the firm in our example is able to reduce the average age of its inventory from 85 to 70 that is by 15 days. As a result, the cash cycle will decline by 15 days from 120 days to 105 days. The cash turn over will increase to 3.43 (360 + 105) from the original level of 3. The effect of an increase in the cash turn over will be to reduce the minimum cash requirement from Rs.80 lakh to

Rs.70 lakh (Rs.240 lakh+ 3.43). the saving in cost on Rs.10 lakh will Rs.1 lakh (Rs.10 lakh x 0.10). thus, efficient inventory and production management causes a decline in the operating cash requirement and hence, a saving in cash operating cost.

Speeding Collection of Accounts Receivable –

Yet another strategy for efficient cash management is to collect accounts receivable as quickly as possible without losing future sales because of high pressure collection techniques. The average collection period of receivables can be reduced by charges in (i) credit terms, (ii) credit standards and (iii) collection policies. These are elaborated in the next chapter. In brief, **credit standards** represent the criteria for determining to whom credit should be extended. The collection policies determine the effort put forth to collect accounts receivable promptly.

If the firm in our Example 5 manages to reduce the average age of its accounts receivable from the current level of 70 days to 60 days, the cash cycle will be reduced to 100 days from 120 days (decline by 20 days). The cash turn over will increase in consequence to 3.60 (360 + 100) from the original level of 34. the operating cash requirement will fall from rs.80 lakhs to approximately Rs.66.67 lakh (Rs.240 + 3.60). the reduction in cash balance of aboutnRs.233.33 lakh will lead to a saving in cost amounting to Rs.1.33 lakh (o.10 x Rs.13.33 lakh). Thus a reduction in the average collection period by 20 days releases funds equivalent to rs.13.33 lakh and leads to saving in cash operating cost of rs.1.33 lakh)

Combined Cash Management Strategies

We have shown the effect of individual strategies on the efficiency of cash management. Each one of them has a favourable effect on the operating cash requirement. We now illustrate their combined effect, as firm will be well advised to use a combination of these strategies.

Assume the firm in our example, simultaneously (i) increases the average accounts payable by 10days; (ii) reduces the average age of inventory by 15 days; (iii) speeds up the collection of accounts receivable by 20 days. Now, the cash cycle will be 75 days (120 days – 10 days – 15 days – 20 days); the cash turnover will increase to 4.8 (360 + 75), the minimum operating cash requirement will go down to Rw.50 lakh, that is a reduction of Rs.30 lakh, assuming a 10 percent rate of interest the saving in cash 0perating cost will be Rs.3 lakh.

The foregoing discussion clearly shows that the three basic strategies of cash management, related to (1) accounts payable, (2) inventory and (3) accounts receivable ,lead to a reduction in the cash balance. But, they imply certain problems for the management. First, if the accounts payable are postponed too long, the credit standing of the firm may be adversely affected. Secondly, a low level of inventory may lead to a stoppage of production as sufficient raw materials may not be available for uninterrupted production, of the firm may be short or enough stock to met the demand for its product that is **stock out** finally restrictive credit standards credit terms and collection policies may jeopardize sales. These implications should be constantly kept in view while working out cash management strategies.

CASH MANAGEMENT TECHNIQUES/PROCESSES

The basic strategies of cash management have been outlines in the preceding section. It has been shown that the strategic aspects of efficient cash management are : (i) efficient inventory management (ii) speedy collection of accounts receivable and (iii) delaying payments on accounts payable. There are some specific techniques and process for speedy collection of receivables from customers and slowing disbursement.

Speedy Cash Collections

In managing cash efficiently, the dash inflow process can be accelerated through systematic planning and refined techniques. There are two broad approaches to do this. In the first place, the customers should be encouraged to pay as quickly as possible. Secondly, the payment from customers should be converted into cash without any delay.

Prompt Payment by Customers - One way to ensure prompt payment by customers is prompt billing. What the customer has to pay and the period of payment should be notified accurately and in advance. The use of mechanical derives for billing along with the enclosure of self addressed return envelope will speed up payment by customers, is the practice of offering cash discounts. The availability of discount implies considerable saving to the Customers to avail of the facility the customers would be eager to make payment early.

Early Conversion of Payments into Cash Once the customer makes the payment by issuing a cheque in favour of the firm, the collection can be expedited by prompt encashment of the cheque. There is lag between the time a cheque is prepared and mailed by

the customer and the time the funds are included in the cash reserve of the firm.

The collection of accounts receivable can be considerably accelerated by reducing transit, processing and collection time. An important cash management techniques is reduction in deposit float. This is possible if a firm adopts a policy of **decentralized collections.**. we discuss below some of the important processes that ensure decentralised collection so as to reduce (i) the amount of time that elapses between the mailing of a payment by a customer and (ii) the point the funds become available to the firm for use. The principal methods of establishing a decentralised collection network are (a) Concentration Banking and (b) Lock box System.

Concentration Banking In this system of decentralized collection of accounts receivable, large firms which have a large number of branches at different places, select some of the strategically located branches as collection centres for receiving p[payment from customers Instead of all the payments being collected at the head office of the firm, the cheques for a certain geographical area are collected at a specified local collection centre. Under this arrangement, the customers are required to send their payments (cheque) to the collection centre covering the area in which they live and these are deposited in the local account of the concerned collection centre, after meeting local expenses, if any. Funds beyond a predetermined minimum are transferred daily to a central or disbursing of concentration bank or account. A concentration bank is one with which the firm has a major account usually a disbursement account. Hence, this arrangement is referred to as concentration banking.

Concentration banking, as a system of decentralized billing and multiple collection points, is a useful t4echnique to expedite the collection of accounts receivable. It reduces the time needed to the collection process by reducing the mailing time. Since the collection centres are near the customers, the time involved in sending the bill to the customer is reduced. More3over, the time lag between the dispatch of the cheque by the customer and its receipt by the firm is also reduced. Mailing time is saved both in respect of sending the bill to the customers as well as in the receipt of payment. The second reason why deposit float is reduced by concentration banking is that the banks of the firm as well as the customers may be in a close proximity. Thus, the arrangement of multiple collection centres with concentration banking results in a saving of time in both mailing and clearance of customer payments and leads to a reduction in the operating cash requirements. Another advantage is that concentration permits the firm to ‘store’ its cash more efficiently. This is so mainly because by pooling

funds for disbursement in a single account, the aggregate requirement for cash balance is lower than it would be if balances are maintained at each branch office.

Lock-Box System - The concentration banking arrangement is instrumental in reducing the time involved in mailing and collection. But with this system of collection of accounts receivable, processing for purpose of internal accounting is involved, that is, some time elapses before a cheque is deposited by the local collection centre in its account. The lock box system takes care of this kind of problem, apart from effecting ec0nomy in mailing and clearance times. Under this arrangement, firms hire a post office lock box at important collection centres. The customers are required to remit payments to the post office lock box. The local banks of the firm, at the respective places, are authorized to open the box and pick up the remittances (cheques) received from the customers. Usually, the authorized banks pick up the cheques several times a day and deposit them in the firm's accounts. After crediting the account of the firm, the banks send a deposit slip along with the list of payments and other enclosures if any, to the firm by way of proof and record of the collection.

Thus the lock box system is like concentration banking in that the collection is decentralized and is done at the branch level. But they differ in one very important respect. While the custome sends the cheques under the concentration banking arrangement to the collection centre, he sends them to a post office box under the lock box system. The cheques are directly received by the bank which empties the box and not from the firm or its local branch.

In a way, the lock box arrangement is an improvement over the concentration banking system. Its superiority arises from the fact that one step-in the collection process is eliminated with the use of lock box, the receipt and deposit of cheques by the firm. In other words a the processing time within the firm before depositing a cheque in the bank is eliminated. Also, some extra saving 9n mailing timing is provided by the lock box system as the cheques received in the post office box are not delivered either by the post office or the firm itself to the bank, rather, the bank itself picks them up oat the post office.

Thus, the lock box system as a method of collection of receivables, has a two fold advantage : (i) the bank performs the clerical task of handling the remittances prior to deposits services which the bank may be able to perform at lower cost (ii) the process of collection through the banking system begins immediately upon the receipt of the cheque/remittance and does not have to wait until the firm completes its processing for internal accounting purposes.

In terms of the steps involves in the cash cycle, as shown in Exhibit 3. GH and HI would take place sim8ultaneously. As a result, the time lag between payment by a customer and the availability of funds to the firm for use would be reduced and thereby the collection of receivables would be accelerated.

Although the use of concentration banking and lock box systems accelerate the collection of receivables they involve a cost. While in the case of the former, the cost is in terms of the maintenance of multiple collection centres, compensation to the hank for services represents the cost associated with the latter. the justification for the use or otherwise of these special cash management techniques would be based on a comparison of the cost with the return generated on the released funds. If the income exceeds the cost the system is profitable and should be used, otherwise not. For this reason, these techniques can be pressed into service only by large firms which receive a large number of cheques from a wide geographical area.

Example

A firm uses a continuous billing system that results in an average daily receipt of Rs.40,00,000. It is contemplating the institution of concentration banking, instead of the current system of centralized billing and collection. It is estimated that such a system would reduce the collection period of accounts receivable by 2 days.

Concentration banking would cost Rs.75,000 annually and 8 per cent can be earned by the firm on its investments. It is also found that a lock box system could reduce its over all collection time by four days and could cost annually Rs.1,20,000

(i) How much cash would be freed by lock box system?

(ii) How much money can be saved due to reduction in the collection period by 2 days ? should the firm institute the concentration banking system ?

(iii) How much cash would be freed by lock box system, which is better ?

(iv) Between concentration banking and lock box system, which is better ?

Solution

(i) Cash released by the concentration banking system = Rs.40,00,000 x 2 days = Rs.80,00,000

(ii) Saving = 0.08 x Rs.80,00,000 = Rs.6,40,000

The firm should institute the concentration banking system. It costs only Rs.75,000 while the savings expected areras.Rs.6,40,000

(iii) Cash released by the lock box system = Rs.40,00,000 x 4 days = Rs.1,60,000

(iv) Saving in lock box system = Rs.1,60,000 = Rs.12,80,000
Lock box system is better. Its net savings rs.11,60,000 (Rs.12.80,000 – Rs.1,20,000) are higher than that of concentration banking.

Slowing Disbursements

Apart from speedy collection of accounts receivable, The operating cash requirement can be reduced by slow disbursements of accounts payable. In fact, slow disbursements represent a source of funds requiring no interest payments. There are several techniques to delay payment of accounts payable namely (i) avoidance of early payments (ii) centralized disbursements (iii) floats and (iv) accruals.

Avoidance of Early Payments One way to delay payments is to avoid early payments. According to the terms of credit, a firm is a required to make a payment within a stipulated period. It entitles a firm to cash discounts. If, however, payments are delayed beyond the due date, the credit standing may be adversely affected so that the firms would fid it difficult to secure trade credit later. But if the firm pays its accounts payable before the due date it has no special advantages. Thus, a firm would be well advised not to make p[payments early, that is, before the due date.

Centralised Disbursements Another method to slow down disbursements is to have centralized disbursements. All the payments should be made by the head office from a centralized disbursement account. Such an arrangement would enable a firm to delay payments and conserve ash for several reasons. Firstly, it involves increase in the transit time. The remittance from the head office to the customers in distant places would involve more mailing time than a decentralised payment by the local branch. The second reason for reduction in operating cash requirement is that

since the firm has a centralized bank account, a relatively smaller total cash balance will be needed. In the case of a decentralised arrangement a minimum cash balance will have to be maintained at each branch which will add to large operating cash balance. Finally, schedules can be tightly controlled and disbursements made exactly on the right day.

Float **A** very important technique of slow disbursements is float. The term float refers to the amount of money tied up in cheques that have been written but have yet to be collected and encashed. Alternatively, float represents the difference between the bank balance and book balance of cash of a firm. The difference between the balance as shown by the firm's record and the actual bank balance is due to transit and processing delays. There is a time lag between the issue of a cheque by the firm and its presentation to its bank by the customer's bank for payment. The implication is that although the cheque has been issued cash would be required later when the cheque is presented for encashment Therefore, a firm can send remittances although it does not have cash in its bank at the time of issuance of the cheque. Meanwhile, funds can be arranged to make payment when the cheque is presented for collection after a few days. Float used in this sense is called as cheque kiting. There are two ways of doing it (a) paying from a distant bank (b) scientific cheque cashing analysis..

Paying From a Distant Bank The firm may issue a cheque on banks away from the creditor's bank. This would involve relatively longer transit time for the creditor's bank to get payment and, thus, enable the firm to use its funds longer.

Cheque-encashment Analysis Another way to make use of float is to analyse, on the basis of past experience, the time lag in the issue of cheques and their encashment. For instance, cheques issued to pay wages and salary may not be encashed immediately, it may be spread over a few days, say, 25 per cent on one day, 50 per cent on the second day and the balance on the third day. It would mean that the firm should keep in the bank not the entire amount of a payroll but only a fraction represented by the actual withdrawal each day. This strategy would enable the firm to save operating cash.

Accruals Finally, a potential tool for stretching accounts payable is accruals which are defined as current liabilities that represent service or goods received by a firm but not yet paid for. For instance, payroll, that is, remuneration to employees who render service in advance and receive payment later. In a way, they extend credit to the firm for a period at the end of which they are paid say, a week or a month. The longer the period after which payment is made, the greater is the amount of free financing

consequently and the smaller is the amount of cash balances required. Thus, less frequent payrolls, that is, weekly as compared to monthly are an important source of accrual. They can be manipulated to slow down disbursements. Other examples of accrual are rent to lessors and taxes to government. But these can be utilized only to a limited extent as there are legal constraints beyond which such payments cannot be extended.

Module- 4 : MARKETABLE SECURITIES

This section presents a brief description of the marketable securities. Attention is focused on the meaning and characteristics of marketable securities the general selection criterion and the basis types of such securities.

Meaning and characteristics

Once the optimum level of cash balance of a firm has been determined the residual of its liquid assets is invested in marketable securities. Such securities are short-term investment instruments to obtain a return on temporarily idle funds. In other words, they are securities which can be converted into cash in a short period of time typically a few days. The basic characteristics of marketable securities affect the degree of their marketability/liquidity. To be liquid a security must have two basic characteristics; a ready market and safety of principal. Ready marketability minimize the amount of time required to convert a security into cash. A ready market should have both breadth in the sense of a large number of participants scattered over a wide geographical area as well as depth as determined by its ability to absorb the purchase/sale of large amounts of securities.

The second determinant of liquidity is that there should be little or no loss in the value of a marketable security over time. Only those securities that an be easily converted into cash without any reduction in the principal amount qualify for short-term investments. A firm would be better off leaving the balances in cash if the alternative were to risk a significant reduction in principal.

Selection Criterion

A major decision confronting the financial managers involves the determination of the mix of cash and marketable securities. Some of the quantitative models for determining the optimum amounts of marketable securities to hold in certain circumstances have been outlines in an earlier section. In general, the choice of the mix is based on a trade off between the opportunity to earn a return on idle funds (cash) during the holding period, and the brokerage costs associated with the purchase and sale of marketable securities. For example, take the case of a firm paying Rs.350 as brokerage costs to purchase and sell Rs.45,000 worth of marketable securities yielding an annual return of 8 per cent and held for one month. The interest earned on the securities works out a Rs.300 (1/12 x -08 x Rs.45,000). Since this amount is less than the cost of the transaction (Rs.350) it is not advisable for the firm to make the investments. This trade off between interest returns and brokerage

costs is a key factor in determining what proportion of liquid assts should be held in the form of marketable securities.

There are three motives for maintaining liquidity (cash as well as marketable securities) and, therefore, for holding marketable securities, transaction motive, safety/precautionary motive and speculative motive. Each motive is based on the premise that a firm should attempt to earn a return on temporarily idle funds. The type of marketable security purchased will depe3nd on the motive for the purchase. An assessment of certain criteria can provide the financial manager with a useful framework for selecting a proper marketable securities mix. These considerations include evaluation of (i) financial risk (ii) interest rate risk (iii) taxability (iv) liquidity and (v) yield among different financial assets.

Financial/Default Risk It refers to the uncertainty of expected returns from a security attributable to possible changes in the financial capacity of the security issuer to make future payments to the security owner. If the change of default on the terms of the investment is high (low) then the financial risk is said to be high (low). As the marketable securities portfolio is designed to provide a return on funds that would be otherwise tied up in ideal cash held for transaction or precautionary purposes, the financial manager will not usually be willing to assume such financial/default risk in the hope of greater return within the make up of the portfolio.

Interest Rate Risk The uncertainty that is associated with the expected returns from a financial instrument attributable to changes in interest rate is known as interest rate risk. Of particular concern to the corporate financial manager is the price volatility associated with instruments that have long, as opposed to short terms to maturity.

If prevailing interest rates rise compared with the date of purchase, the market price of the securities will fall to bring their yield to maturity in line with what financial managers could obtain by buying a new issue of a given instrument, for instance, treasury bills. The longer the maturity of the instrument t, the larger will be the fall in prices. To hedge against the price volatility caused by interest rat3e risk, the market securities portfolio will tend to be4 composed of instruments that mature over short periods.

Taxability Another factor affecting observed difference in market yields is the differential impact of taxes. Securities income on which is tax exempt sell in the market at lower yields to maturity than other securities 0f the same maturity. A differential impact on yields arises also because interest income is taxes at the ordinary

tax rate while capital gains are taxes at a lower rate. As a result fixed interest securities that sell at discount because of low coupon rate in relation to the prevailing yields are attractive to taxable investors. The reason is that part of the yield to maturity is a capital gain. Owing to the desirability of discount on low interest fixed income securities their yield to maturity tends to be lower than the yield on comparable securities with higher coupon rates. The greater the discount the greater is the capital gains attraction and the loser is its yield relative to what it would be if the coupon rate were such that the security was sold at par.

Liquidity With reference to marketable securities portfolio, liquidity refers to the ability to trans form a security into ash. Should an unforeseen event require that a significant amount of cash be immediately available, a sizeable portion of the portfolio might have to be sold. The financial manager will want the cash quickly and will not want to accept a large price reduction in order to convert the securities. Thus, in the formulation of preferences for the inclusion of particular instruments in the portfolio, consideration will be given to (i) the time period needed to sell the security and (ii) the likelihood that the security can be sold at or near its prevailing market price. The later element, here means that 'thin' market, where relatively few transactions take place or where traders are accomplished only with large price changes between transaction, should be avoided.

Yield The final selection criterion is the yields that are available on the different financial assets suitable for inclusion in the marketable/near cash portfolio. All the four factors factors listed above, financial risk, interest rate risk liquidity and taxability influence the available yields on financial instruments. Therefore the yield criterion involves a weighing of the risks and benefits inherent in these facts. If a given risk is assumed, such as lack of liquidity, then a higher yield may be expected on the instrument lacking the liquidity characteristics.

Marketable Security Alternatives

We describe below briefly the more prominent marketable/near cash securities available for investment. Our concern is with money market instruments.

Treasury Bills There are obligations of the government. They are sold on a discount basis. The investor does not receive an actual interest payment. The return is the difference between the purchase price and the face (par) value of the bill.

The treasury bills are issued only in bearer form. They are purchased, therefore, without the investors' name upon them. This

attribute makes them easily transferable from one investor to another. Ay active secondary market exists for these bills. The secondary market for bills not only makes them highly liquid but also allows purchase of bills with very short maturities. As the bills have the full financial backing of the government, they are, for all practical purposes, risk free. The negligible financial risk and the big degree of liquidity makes their yield lower than those on the other marketable securities. Due to their virtually risk free nature and because of active secondary market for them, treasury bills are one of the most popular marketable securities even though the yield on them is loser.

Negotiable Certificates of Deposit (CDs) These are marketable receipts for funds that have been deposited in a bank for a fixed period of time. The deposited funds earn a fixed rate of interest. The denomination and maturities are tailored to the investors' need. The CDs are offered by banks on a basis different from treasury bills, that is, they are not sold at a discount . Rather when the certificates mature, the owner receives the full amount deposited plus the earned interest. A secondary market exists for the CDs. While CDs may be issued in either registered or bearer form the latter facilitates transactions in the secondary market and thus, is the most common. The default risk is that of the bank failure, a possibility that is low in most cases.

Commercial Paper It refers to short term unsecured promissory note sold by large business firms to raise cash. AS they arte unsecured the issuing side of the market is dominated by large companies which typically maintain sound credit ratings. Commercial papers (CPs) can be sold either directly or through dealers. Companies with high credit rating can sell directly to investors. The denominations in which they can be bought vary over a wide range. They can be purchased similarly with varying maturities. These papers are generally sold on discount basis in bearer form although at times commercial papers can be issued carrying interest and made payable to the order of the investor. For all practical purposes, there is no active trading in secondary market for commercial paper although direct sellers of CPs often repurchase it on request. This feature distinguished CPs from all of the previously discussed short term investment vehicles. When, therefore a financial manager evaluates these for possible inclusion in marketable securities portfolio he should plan to hold it to maturity. Owing to its lack of marketability. CPs provide a yield advantage over other near cash assets of comparable maturity.

Bankers Acceptances These are drafts(order to pay) drawn on a specific bank by an exporter in order to obtain payment for goods he has shipped to a customer who maintains an account with that specific bank. They can also be used in financing domestic trade.

The draft guarantee payment by the accepting bank at a specific point of time. The Seller who hold such acceptance may sell it at a discount to get immediate funds. Thus, the acceptance becomes a marketable security. Since acceptances are used to finance the acquisition of goods by one –arty, the document is not issued in specialized denominations, its size/denomination is determined by the cost of goods being purchased. They serve a wide range of maturities and are sold on a discount basis, payable to the bearer. A secondary market for the acceptance of large banks does exist. Owing to their greater financial risk and lesser liquidity, acceptances provide investors a yield advantage over treasury bills of like maturity. In fact, the acceptance of major banks are a very safe investment, making the yield advantages over treasury bills worth looking for marketable securities portfolio.

Repurchase (Repo) Agreements These are legal contracts that involve the actual sale of securities by a borrower to the lender with a commitment on the part of the former to repurchase the securities at the current price ;us a stated interest charge. The securities involved are government securities and other money market instruments. The borrower is either a financial institution or security dealer.

There are two major reasons why a firm with excess cash prefers to buy repurchase agreements rather than a marketable security. First, the original maturities of the instrument being sold can, in effect, be adjusted to suit the particular needs of the investing firm. Therefore, funds available for a very short period, that is, one/two days can be employed to earn a return. Closely related to the first is the second reason, namely, since the contract price of the securities that make up the arrangement is fixed for the duration of the transaction, the firm buying the repurchase agreement is protected against market fluctuations throughout the contract period. This makes it a sound alternative investment for funds that are surplus for only short periods.

Units The units of mutual funds offer a reasonably convenient alternative avenue for investing surplus liquidity as (i) there is a very active secondary market for them, (ii) the income from units is tax exempt up to a specified amount and (iii) the units appreciate in a fairly predictable manner.

Intercorporate Deposits Intercorporate deposits, that is, short-term deposits with other companies is a fairly attractive form of investment of short term funds in terms of rate of return which currently ranges between 12 and 15 per cent. However, apart from the fact that one month’s time is required to convert them into cash, inter corporate deposits suffer from high degree of risk.

Bills Discounting Surplus funds may be deployed to purchase/discount bills. Bills of exchange are drawn by seller (drawer) on the buyer (drawee) for the value of goods delivered to him. During the pendency of the hill i9fthe seller is in need of funds, he may get it discounted. On maturity, the bill should be presented to the drawee for payment. A bill of exchange is a self liquidating instrument. Bill discounting is superior to intercorporate deposits for investing surplus funds. While parking surplus funds in bills discounting, it should be ensured that the bills are trade bills arising out of genuine commercial transaction and, as far as possible they should be backed by letter of credit/acceptance by banks to ensure absolute safety of funds.

Money Market Mutual Funds/Liquid Funds are professionally managed portfolios of marketable securities. They provide instant liquidity. Due to high liquidity, competitive yields and low transactions, these funds have achieved significant growth in size and popularity in recent years.

PRACTICAL PROBLEM 1 The following information is available in respect of a trading firm.

(i) On an average debtors are collected after 45 days inventories have an average holding period of 75 days and creditors payment period on an average is 30 days.

(ii) The firm spends a total of Rs.120 lakh annually at a constant rate.

(iii) It can earn 10 per cent on investments.

From the above information compute : (a) the cash cycle and cash turnover (b) minimum amounts of cash to be maintained to meet payments as they become due(c) savings by reducing the average inventory holding period by 30 days.

Solution

(a) Cash cycle = 45 days + 75 days – 30days = 90 days (3 months) Cash turnover = 12 months (360 days) 3 months (90 days) = 4

(b) The firm spends a total of rs.120 lakh annually at a constant rate

(c) Cash cycle = 45 days + 45 days – 30 days = 60days (2 months)

Cash turnover = 12 months (360 days)/2 months (60 days) = 6

Minimum operating cash = Rs.120 lakh/6 = Rs.20 lakh
Reduction in investments = Rs.30 lakh – Rs.20 lakh = Rs.10 lakh

Savings = 0.10 x Rs.10 lak = Rs.1 lakh

PROBLEM. 2 A firm has been offered, a cash management service by a bank for Rs.1,00,000 per year. It is estimated that such a service would not only eliminate "excess" cash on deposits (Rs.8,00,000) but also reduce its administration and other costs to the tune of Rs.5,000 per month. Assuming the cost of capital of 15 percent, is it worthwhile for the firm to engage the cash management service ?

Solution

Benefits (annual)	
Savings in interest(Rs.8,00,000 x 0.15)	Rs.1,20,000
Reducti0n in administration and other costs (Rs.5,000 x 120	60,000
Total	Rs.1,80,000
Less :Cost (annual)	
Bank service charges	1,00,000
Net annual benefits	80,000

Recommendation : It is worthwhile to engage the bank services.

PROBLEM.3

METRIT Industries feels a lock box system can shorten its accounts receivable collection period by 3 days credit sales are estimated at Rs.365 lakh per year billed on a continuous basis. The firm's opportunity cost of funds is `15 per cent. The cost of lock box system is Rs.50,000

(a) Will you advise "METRIT" to go for lock box system ?

(b) Will your answer be different if accounts receivable collection period is reduced by 5 days ?

Solution

(a) Cash released by lock box system (Rs.365 lakh/365 days = Rs.Rs.1 lakh x 3 days	Rs.3,00,000
Savings (Rs.3 lakh x 0.15)	45,000
Less: Cost of lock box system	50.000
Net loss	(5,000)

The firm is advised not to go for the lock box system

(b)	Cash released Rs.1 lakh x 5 days	Rs.5,00,000
	Savings (Rs.5 lakh x 0.15)	75,000
	Less : Cost of lock box system	50,000
	Net savings	25,000

The firm should go for the lock box system.

PROBLEM.4

EXCEL Industries sells ts products through widely dispersed distributors in Norhern India. It currently takes on an average 8 days for cash receipt cheques to become available to the firm from the data they are mailed. The firm is contemplating the institution of c0ncentration banking to reduce this period. It is estimated that such a system would reduce the collection period of accounts receivable by 3 days. The daily cheque receipts currently average Rs.10,00,000.

The concentration banking would cost rs.1,50,000 annually and the cost of funds is 15 per cent.

(a) Advise EXCEL whether it should introduce concentration banking system.

(b) Will your answer be different, if it is estimated that a lock box system can reduce the collection time by 45 days and its annual cost would be Rs.2,00,000 ?

Solution

(a)	Cash released by concentration banking system (Rs.10 lakh x 3 = Rs.30 lakh) Savings (Rs.30 lakh X 0.15)	Rs,4,50,000
	Less: Costs	1,50,000
	Net savings	3,00,000

The firm should introduce concentration banking system

(b)	cash released by lock system (Rs.10 lakh x 4 = Rs..40 lakh) Savings (Rs.40 lakh x 0.15) 6,00,000	
	Less : Costs	2,00,000
	Net Savings	4,00,000

The lock box system is better

PROBLEM.5

The following results are expected by AMERSONS Ltd. by quarters next year, in thousands of rupees.

Particulars	Quarter			
	1	2	3	4
Sales	7,500	10,500	18,000	10,500
Cash payments				
Production costs	7,000	10,000	8,000	8,500
Selling administrative And other costs	1,000	2,000	2,900	1,600
Purchases of plant and Other fixed assets	100	1,100	2,100	2,100

The debtors at the end of a quarte4r are one third of sales for the quarter. The opening balance of debtors is Rs.30,00,000 cash on hand at the beginning of the year is Rs.6,50,000 and the desired

minimum balance is Rs.5,00,000. Borrowings are made at the beginning f quarters in which the need will occur in multiplies of Rs.10,000 and are repaid at the end of quarters Interest charges maybe ignored You are required to prepare :

(a) a cash budget by quarters for the year and

(b) state the amount of loan outstanding at the end of the year

Solution

Particulars	Quarter				
	1	2	3	4	total
(A) Cash inflows Collection from debtors					
(i) From prior quarter (1/3 of sales	3,000	2,500	3,500	6,000	15,000
(ii) From current quarter (2/3 of sales)	5,000	7,000	12,000	7,000	31,000
Total	8,000	9,500	15,000	13,000	46,000
(B) Cash outflows					
Production costs	7,000	10,000	8,000	8,5000	33,5000
Selling administrative And other costs	1,000	2,000	2,900	1,600	7,500
Plant and other fixed Assets purchased	100	1,100	2,100	2,100	5,400
Total	8,100	13,100	13,000	12,200	46,400
(C) Surplus (deficiency)	(100)	(3600)	2,500	800	(400)
Beginning balance	650	550	500	500	650
Ending balance (ndicated)	550	(3050)	3,000	1,300	250
Borrowings required (deficiency + minimum cash required)		3,550			3,550
Repayment made					

(balance – minimum cash required			(2,500)	(88)	(3,300)
Ending balance (actually now Estimated)	550	500	500	500	500

(b) Loan outstanding = rs.35,50,000 – Rs.33,00,000 = Rs.2,50,000

PROBLEM. 6

From the following information prepare cash budget of a business firm for the month of April

(a) The firm makes 20 per cent cash sales. Credit sales are collected 40,30 and 25 per cent in the month of sales month after and second month after sales respectively. The remaining 5 per cent becomes bad debts.

(b) The firm has a policy of buying enough goods each month to maintain its inventory at two and one half times the following month's budgeted sales.

(c) The firm is enti5tled to 2 per cent discount on all its purchases if bills are paid within 15 days and the firm avails of all such discounts. Monthly purchases are made in two equal lots on fortnightly basis.

(d) Cost of goods sold, without considering the 2 per cent discount, is 50 per cent of selling prices. The firm records inventory net of discount.

(e) Other data is :

	Sales
January (actual)	Rs.1,00,000
February (actual)	1,20,000
March (actual)	1,50,000
April (budgeted)	1,70,000
May (budgeted)	1,40,000

Inventory on March 31, Rs.2,25,400

Cash on March 31, Rs.30,000

Gross purchasers in March Rs.1,00,000

Selling, general and administrative expenses budgeted for April Rs.45,000 (includes rs.10,000 depreciation)

Solution

Cash Budget for the month of April

Particulars	**Amount**
(a) Can inflows	
Balance in the beginning April 1	Rs.30,000
Collection from sales	
Cash sales 10.20 x Rs.1,70,000	34,000
Collection from debtors :	
For February sales Rs.(0.25 x Rs.96,000)	24,000
For March sales (0.30 x 1,20,000)	36,000
For April sales (0.40 x 1,36,000)	54,400

Total	1,78,400
(b) Cash outflows	
Payment for purchase	
March (Rs.1,00,000 x 0.98 x ½)	49,000
April (Rs.29,400 x ½) (see purchase budget)	14,700
Selling general and administrative expenses	
(Rs.45,000 – Rs.10,000)	35,000

Total	**98,700**

(c) Budgeted cash balance (end of April (a – b)	

Working notes

Particular budget (April) Net		Gross
Desired ending inventory-gross		
(Rs.1,40,000 x 0.50 x 2.5)	Rs.1,75,000	Rs.1,71,500
Add: Cost of sales in April-gross		
(Rs.1,70,000 x 0.50)	85,000	83,300

Total requirements	2,60,000	2,54,800
Less Beginning inventory – gross		
(Rs.2,25,400 x 100/98)	2,30,000	2,25,400
Required purchases	30,000	29.400

PROBLEM.7

Prepare cash budget for April-October from the following information supplied by ANGEL LTD.

Balance Sheet as at March 31

Proprietor's capital	Rs.1,00,00	Cash	Rs. 20,500
Outstanding liabilities	11,000	Stock in trade	50,500
		Sundry debtors	20,000
		Furniture 25,000	
		Less:	
		Depreciation 5,000	
		20,000	
	1,11,000		1,11,000

Sales and the expenditure on salaries are expected to be as under :

Months	Sales	Salaries
April	Rs.30,000	Rs. 3,000
May	52,000	3,500
June	50,000	3,500
July	75,000	4,000
August	90,000	4,000
September	35,000	3,000
October	25,000	3,000

The other expenses per month are : rent Rs.1,000 Depreciation Rs.1,000 Miscellaneous expenses Rs.500 and Commission 1 per cent of sales.

Of the total sales, 80 per cent is on credit and 20 percent for cash; 70 per cent of the credit sales are collected in the first month following sale and the balance in the second month. There are no bad debt losses. Gross margin on sales on an average is 30 per cent. Purchases equal to the next month's sales are made every month and they are paid during the month in which they are made. The firm maintains a minimum cash balance of Rs.10,000 cash deficiencies are made up by the bank loans which are repaid at the earlier opportunity available and cash in excess of Rs.15,000 is invested in securities (interest on bank loans and securities is to be ignored) Outstanding liabilities main unchanged. Debtors pertain to credit sales of March. State your assumptions if any.

Solution

Cash budget (April – October)

Particulars	April,	May	June	July	August	September	October
(a) Cash inflow							
Cash sales	Rs.6,000	Rs.10,400	Rs.10,000	Rs.15.000	Rs.18,000	Rs. 7,000	Rs. 5,000
Collection from							
Debtors first month							
Following sale(70%)	14,000	16,800	29,120	28,000	42,000	50,400	19,600
Second month							
Following sales							
(30%)	6,000	6,000	7,200	12,480	12,000	18,000	21,600
Total	26,000	33,200	46,320	55,480	72,000	75,400	46,200
(b) Cash outflows							
Payment to							
Creditors	36,400	35,000	52,500	63,000	24,500	17,500	17,500
Salaries	3,000	3,500	3,500	4,000	4,000	3,000	3,000
Rent	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Miscellaneous							
Expenses	500	500	500	500	500	500	500

Commission (1%)	300	520	500	750	900	350	250
Total	41,200	40,520	58,000	69,250	30,900	22,350	22,250
(c) Surplus/ deficiency(a-b)	(15200)	(7/320)	(11680)	(13770)	41100	53,050	23,950
Beginning balance	20,500	10,000	10,000	10,000	10,000	13,700	15,000
Ending balance	5,300	2,680	(1,680)	(3,770)	51,100	66,750	38,950
Borrowing required (minimum cashbalance+ deficiency-surplus)	4,700	7,320	11,680	13,700	----	----	----
Repayment made	----	--	----	----	37,400	----	----
Invesatment in Securities	----	---	---	---	---	51,750	23,950
Closing Bal.	10,000	10,000	10,000	10,000	13.700	15,.000	15,00

Working notes

Payment to creditors

Particulars	April	May	June	July	Augu.	Sept	Octob	Nov
Sales (Rs)	30,000	52,000	50,000	75,000	90,000	35,000	25,000	25,000 (assumed)
Cost of goods to Be purchased (70% of next month's sales and paid)	---	36,400	35,000	52,500	63,000	24,500	17,500	17,500

10

BASIC PRINCIPLES OF COST ACCOUNTING

OBJECTIVES

- To Introduce the topic
- To Know about the Meaning and Definitions of Cost Accounting
- To Explain the relationship between Financial Accounting and Cost Accounting
- To clear the concepts ost Centre and Cost Unit
- To Explain the Classification of cost and Elements of cost
- To Unable the students to prepare the Cost Sheet

INTRODUCTION

In the modern age of business the management needs much more information than supplied by the Financial Accounting. Usually Financial Accounting provides only the information related to the profits or losses of the business activities for a particular period and the financial position of the business on the particular date. This information is insufficient to take various managerial decisions. Here the new branch of accounting emerged namely Cost Accounting. Thus Cost Accounting is relatively a recent development. In the earlier stages it started as a branch of Financial Accounting but now it has been developed as a special profession due to its scope and importance. Now It is used in profit and non profit organisations engaged in manufacturing and non manufacturing organisations.

In the primary stages Cost Accounting largely used for- recording the expenditures, determining factory cost, inventory valuation, pricing and profit determination. Now it has become so wide that it includes administration, selling and distribution expenses and covers the areas like cost control, cost analysis, budgeting etc., which are useful for taking various managerial decisions.

MEANING AND DEFINITION OF COST ACCOUNTING

The term Costing and Cost Accounting are often used interchangeably. But there is a technical difference between the two. Costing is simply Cost finding by using the various

techniques and processes. On the other hand Cost Accounting includes the formal accounting mechanism by means of which various expenses are recorded and costs are ascertained. Cost Accounting relates to the collection, classification, ascertainment of cost , its accounting the control of cost.

DEFINITIONS OF COST ACCOUNTING

" Cost Accounting is the process of accounting for cost from the point at which expenditure is incurred or committed to the establishment of its ultimate relationship with cost centres and cost units. In its widest usage, it embraces the preparation of statistical data, the application of cost control methods and ascertainment of profitability of activities carried out or planned."

Chartered Institute of Management

" Cost Accounting is a set of procedures for determining the cost of a product and various activities involved in its manufacture and sale and for planning and measuring performance."

Gillespie

The Costing Accounting is a formal mechanism by means of which the cost of a product or a service is ascertained and controlled.The above definitions of Cost Accounting explains that Cost Accounting is the technique applied for classifying, recording and appropriate allocation of expenditures for the determination of the cost of products or services, and for the presentation of suitably arranged data for purpose of control and guidance of management.

SCOPE OF COST ACCOUNTING

The meaning of the term Scope is the areas covered.To know about the scope of Cost Accounting the opinion of Kohler is very important, he says, "Cost Accounting includes the design and operation of cost system and procedures, the determination of cost by departments functions, responsibilities, activities, products, territories, period and other units of forecast, future costs and standard costs, as well as historical costs ; the comparison of cost of different periods, of actual with estimated standard cost, the presentation and interpretation of cost data as an aid to management in controlling current and future operations." After analysing the definitions of Costing Accounting it can be said that Cost Accounting covers the following areas :

- **COST ASCERTAINMENT :-**

Cost Accounting collects the cost data from various sources under appropriate heads of accounts and then analyse the costs under the various elements of cost. Then various statements are prepared where the elements of cost are recorded systematically. Making

use of the relative information included in the respective statements Cost Accounting ascertains the cost for particular product, job or process.

- **COST CONTROL :-**

Cost Accounting includes various techniques like Standard Costing, Budgetary Control which are useful for cost control. Here the costs are pre-determined and such estimated costs are compared with the actual costs. Then various statements are prepared to analyse the difference for e.g. Variances analyses, Idle time analyses etc. Such statements are useful for cost control.

- **DECISION MAKING :-**

Cost Accounting technique like Marginal Costing is useful for price fixation and taking various decisions such as accept or reject the increased demand, make or buy the product, increase the profits or not etc.

- **COST AUDIT :-**

The purpose of Cost Audit is to ensure that the costing books are arithmetically accurate as well as to see that the principles and rules have been applied correctly. Cost Accounting includes Cost Audit also.

DIFFERENCE BETWEEN FINANCIAL ACCOUNTING AND COST ACCOUNTING

FINANCIAL ACCOUNTING	COST ACCOUNTING
1) OBJECT To provide the information about the profit or loss and the financial position of the business to the owners and other outside parties.	To provide detailed cost information to the management for proper planning, control and decision making purpose.
2) STATEMENTS PREPARED To fulfil the above objective statements as Profit and Loss Account and Balance Sheet are prepared here.	To fulfil the object the statement as Cost Sheet, Loss of Material Report, Idle Time Report, Variance Report etc., are prepared here.
3) PREPARATION PERIOD The above statements are usually prepared at the end of the year.	Here the various statements and reports are prepared as and when desired by management.
4) STATUTORY REQUIREMENT These accounts are kept obligatory to meet the requirement of Companies Act and Income Tax Act.	These accounts are kept voluntarily to meet the requirements of management. But now Companies Act has made it obligatory to keep cost records in some manufacturing industries.
5) CONTROL ASPECT It gives importance to recording the financial transactions. Control aspect is ignored here	The control aspect is very important here. For controlling purpose it provides techniques like Budgetary control, Standard costing etc.
6) NATURE OF TRANSACTION The transactions included here are based on actual facts and figures. Only the commercial transactions are included here.	The transactions included here are based partly on facts and partly on estimates. Commercial as well as internal transactions i.e. internal transfers etc., are also recorded here.

7) ANALYSIS OF COST AND PROFIT It shows the profits or losses of the whole business for a particular period.	It shows the detailed cost data as well as profits for each product, department, process etc., individually as and desired.

Concept of Cost Centre and Cost Unit

The total cost should be determined by applying different methods of costing. But for allocation and ascertainment purpose it becomes necessary to break up or separate the cost. For this purpose to study about the concepts Cost Centre and Cost Unit is very important.

COST CENTRE:-

Cost centres are set up to allocate the cost on each centre, thereby cost control should be possible. Chartered Institute of Management and Accountants London defines Cost Centres as," A location, person or item of equipment (or group of these), for which cost may be ascertained an used for the purpose of control."

Main Features of Cost Centres:-

1. It is the section or sub section of business to which the costs can be allocated.
2. It may be a location, i.e. a department, a sales area etc., on which the costs can be charged.
3. It may be an item of equipment i.e. a machine, a vehicle etc., to which the cost can be allocated.
4. It may be a person or group of persons i.e. a sales man, a machine operator etc. On which the cost may be allocated.

Cost centres are divided as :-

1. **Personal Cost Centre** – If includes a person or a group of person for e.g. a sales man, Machine Operator, group of Machine operator operating one Machine
2. **Impersonal Cost Centres –** It includes a location, an equipment or group of these.
3. **Production Cost Centres** - It includes the Cost Centre where the production work take place for e.g. Melting department, Welding, Finishing department etc. Cost incurred by these centres can be charged directly to a particular product.
4. **Service Cost Centre** – It includes ancillary departments which are rendering services to production and other departments in the business. The cost incurred by these centres are of indirect nature for e.g. Canteen, Tool room, Power house etc.

The Cost Centres are set up to ascertain the cost of that centre and to control the cost. Suppose if Sales man is a cost centre all the costs related to this centre i.e. his salary, commission, training expenses, allowances etc., are charged to it. Thus the total cost of that centre is ascertained. Cost control is the main objective to ascertain the cost of the centre. The person in charge of that centre is held responsible for the control of cost.

The number and size of cost centres depend upon the expenditures involved and the requirements of management for the purpose of cost control.

COST UNIT

Cost Unit is a device where the costs are further divided into smaller sub divisions than in the cost centres. Cost centre is the step where the total cost is allocated to allocation or an equipment or a person or group of these. On the other hand cost unit is the step where the above allocated cost is subdivided into smaller subdivisions thereby the cost of saleable products or services can be ascertained.

Chartered Institute of Management London defines Cost Unit as, " It is a unit of product, service or time in relation to which the cost may be ascertained or expressed." For e.g. cost per tonne in case of Mines, cost per metre in case of Textile Industries etc. Here a tonne, a metre are the units to measure the coal, cloth to determine the cost for selling purpose.

Main features of Cost Unit

1. It is the measurement of cost to be stated in the terms of number i.e. weight, length, area, volume etc.
2. It must be clearly defined and selected before the process of cost determination.
3. It must not be too big or too small. It means the cost unit must be applicable to the circumstances under consideration for e.g. cost for 1000 bricks not 1 brick, here 1000 bricks is the appropriate cost unit which is applicable in wholesale and retail transactions.

Cost Units are divided as :-

- **Units of production** :- Which are generally decided for production industries for e.g. in case of Mines Tonne of coal, in case of Printing Press Thousand copies, in case of Bricks Thousand Bricks.
- **Units of Services :-** Which are generally decided for service rendering industries, for e.g. Transport Service - Per Passenger Per Mile , Hotel Service – Room Per Day, Electricity Service - Kilowatt Hour etc.

CLASSIFICATION OF COST

For proper control and taking managerial decisions classification process is very essential. It is the systematic process where the costs are grouped according to their common characteristics

Cost are generally classified as below to achieve different objectives :-

- **On the basic of Identifiability :-**

1. **Direct Cost :-** These are the costs which can be directly charged to a particular cost centre or cost unit. It includes Direct material, Direct labour and Direct expenses.
2. **Indirect cost :-** These are the costs which are incurred for the benefit of a number of cost centres and cost units therefore cannot be charged to a particular cost centre or cost unit. These are of a general nature and incurred for the organisation as a whole. All the factory overheads, office and administration overheads, selling and distribution overheads are included in indirect cost.

- **On the basic of Behaviour :-**

1. **Fixed Cost :-** These costs remain constant in **'total'** amount and not related to the volume of production. For e.g. rent, insurance of building, managerial salaries, bank charges, office expenses etc. These costs do not increase or decrease in 'total' when the volume of production changes but fixed cost **'per unit'** increases when volume of production decreases, and vice versa.
2. **Variable Cost :-** These costs vary in **'total'** amount in direct proportion to the volume of production but the variable cost per unit remains fixed. For e.g. direct material, direct labour, power etc.
3. **Semi variable cost :-** These costs include both a fixed and a variable component. These are partly variable and partly fixed. For e.g. telephone expenses include a fixed portion of annul charges plus variable charge according to calls.

- **On the basic of time**

1. **Historical Cost :-**These costs are ascertained after they have been incurred. These are the actual costs. These costs are available only after the completion of the manufacturing activity.
2. **Pre-determined Cost :-** These costs are estimated costs which are ascertained in advance for the planning and control purpose.

- **On the basic of Controllability :-**

1. **Controllable Cost :-** The costs within the control of management are controllable costs. Variable costs are generally controllable costs which are controlled by department heads. For e.g. raw material cost.
2. **Non-controllable Costs :-** These are the costs on which management can have no control. These costs cannot be influenced by the action of a specified member of an organisation. For e.g. factory rent , managerial salary, costs of service centres etc.

- **On the basic of Normality :-**

1. **Normal cost :-** It is the cost which is normally incurred on expected lines at a given level of output. This cost is the part of Cost of Production.
2. **Abnormal cost :-** It is the cost which is not normally incurred at a given level of output. This cost is not incurred normally but incurred only in certain cases. Such cost is over and above the normal cost and is not treated as a part of the Cost of Production and charged to Costing Profit and Loss Account.

Determination of Total Cost :

A Cost is the composition of three elements i.e. material, labour and expenses. While determining the total cost it becomes necessary to study about these three elements thoroughly for proper control and managerial decisions. It is very important to analyse the total cost by elements of cost i. e. Material, Labour and Expenses.

There are Three elements of cost :

1] Material
2] Labour
3] Expenses

These elements further divided as :-

1] Direct material and Indirect material
2] Direct labour and Indirect labour
3] Direct Expenses and Indirect expenses [Overheads]

The degree of ease and feasibility with which the elements of cost can be charged to the finished product will determine what is to be treated as Direct and what is to be Indirect

Explanation to the elements of cost :-

DIRECT COST:	**INDIRECT COST/ OVER HEADS/ ON- COST**
• Direct material	Indirect material
• Direct labour	Indirect labour
• Direct expenses	Indirect expenses

* **Direct material** – These are the material which can be conveniently measured and direct charged to a particular product. For e.g. timber in Furniture making, bricks, cement, steel used in Building, leather used in Leather goods.

* **Direct Labour** - It includes the wages paid to those employees who directly operate the manufacturing machinery and equipments. These wages can conveniently identified with a particular product, job or process.

* **Direct Expenses** – These are the expenses which can be identified with and allocated to cost centres or cost units. It includes all the expenses other than direct material and direct labour that are specially incurred for a particular product, job or process. For e.g., Cost of patent right, Royalty on production, Experimental expenses, Depreciation or Hire of special plant or equipment for a particular job, Architect or Surveyor's fees etc.

* **Indirect Material** - These are the materials which cannot be conveniently identified with a particular product, job or process. It includes the materials which form part of the product but minor in importance and relatively inexpensive. For e.g. nails used in furniture, thread used in stitching garments, etc. Those items of materials which do not become a part of the finished products are also included here for e.g. coal, lubricating oil and grease, sand paper used in polishing etc.

* **Indirect Labour** – These are the labours which are not directly engaged in the production operations but only assist in the production operations. For e.g. Time keeper's wages, wages of factory clerk etc

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* **Indirect Expenses** – These are the expenses which cannot be directly identified with a particular product, job or process. These are so general in nature. This group of expenses is sub divided as :

1) **Factory overheads / Production overheads /Works overheads/ Manufacturing overheads:** It includes all the expenses related to factory. It includes indirect material, indirect labour and indirect expenses in producing goods and services. For e.g. factory rent, taxes, insurance, depreciation and repairs of factory building, plant & machinery, factory lighting, power etc.
2) **Office and Administration overheads :** It includes all the expenses related to general administrative function i.e., planning, organising, decision making, controlling, directing and motivating the personnel such as office staff salaries,

depreciation and repairs of office building, furniture, office rent, rates, taxes, insurance, printing and stationery etc.

3) **Selling and Distribution overheads** : The cost of promoting sales and retaining customers is termed as Selling expenses, for e.g. advertisement. Samples and free gifts, salaries and commission to salesmen etc.

Distribution overheads are those which incurred from the time the production is completed until it reaches to the final consumer for e.g. carriage and freight outward, delivery van expenses, ware housing, insurance of goods in transit etc.

Following are the steps to Determine the total cost

1. **PRIME COST = Direct Material + Direct Labour + Direct Expenses**

2. **WORKS COST / FACTORY COST = Prime cost + Factory Overheads**

3 **COST OF PRODUCTION = Works cost + Office / Administration Overheads**

4 **COST OF SALES / TOTAL COST = Cost of Production + Selling and Distribution Over heads.**

5 **SELLING PRICE = Total cost + Profit**

Non- Cost Items :-

There are some items which are excluded from cost accounts. The expenses which are related to capital assets, capital losses, payments by way of distribution of profits and purely financial items are excluded from cost. The examples are – Income Tax, dividends, debenture interest loan interest donations and Expenses not related to business, abnormal wastage of material, abnormal idle time and all capital Expenditures, cash discount, appropriation of profits(transfer to various reserves for e.g. general reserve, reserve for doubt full debts etc.), profit or loss on sale of assets, miscellaneous expense written off in the form of Discount on redemption of debentures, preliminary expenses, goodwill etc., written off, under writing commission. Such items are excluded while preparing the Cost Sheet.

Cost sheet / statement of cost :-

Cost Sheet is detailed analysis of the different elements of cost of a particular output for a particular accounting period. It shows the detailed cost of a product. It should be prepared at weekly, monthly, or other convenient intervals. There is no fixed form for preparing the cost sheet but generally it is prepared in columnar form where

the columns would depend upon the requirement of management Generally there are three columns viz. Particulars, Total cost and Unit cost.

A specimen of Cost Sheet is given below :-

PARTICULARS	Total cost	Cost Per Unit
	Rs.	Rs.
Direct Materials : Opening stock +Purchases... +Carriage inwards... Less : Closing stock... .		
Direct materials consumed +Direct wages +Direct expenses		
PRIME COST Add : Works or Factory Overheads : All expenses relating to Factory such as Indirect materials Indirect wages Factory Rent, Rates, Taxes, Insurance Lighting and heating Power and Fuel, Hauling charges Depreciation, Repairs, Insurance etc., of Factory Machinery, Building etc. Time Keeper's, Store Keeper's Wages Drawing office expenses Loose Tools written off Factory stores Works Manager's salary etc .		
Total Factory Overheads		
Add : Opening Balance of Work-in- Progress Less: Closing Balance of Work- in- Progress Less : Sale of Scrap		
WORKS OR FACTORY COST		
Add : Office and Administrative Overheads All expenses relating to Office such as Office Rent, Rates, Taxes, Insurance Depreciation, Repairs etc., of office		

building, furniture, equipments etc. Printing and stationary Postage and telegrams Counting house salary Legal expenses Bank charges etc. **COST OF PRODUCTION** Add : Opening stock of finished goods Less : Closing stock of finished goods **COST OF GOODS SOLD** Add : Selling and Distribution Overheads Showroom rent and rates Salesman's salary, commission, travelling expenses Advertising Bad debts Depreciation and expenses of delivery van Carriage and freight outward Sample and other free gifts etc. **TOTAL COST OF SALES** Add : Net Profit **SALES**		

PROBLEMS AND SOLLUTION

Prepare a Cost Sheet from the details given below :

Inventories (opening)	
Finished Stock	40,000
Raw Materials	70,000
Work-in-Process	1, 00,000
Office Appliances	8,000
Plant & Machinery	2, 30,000
Building	1, 00,000
Raw Materials Purchased	1, 60,000
Freight Inward	8,000
Purchases Returns	2,400
Sales	3, 84,000
Sales Returns	7,000
Direct Wages	80,000
Indirect Wages	9,000
Factory Supervision	5,000
Repairs and upkeep-Factory	7,000

Heat, Light, and Power	32,500
Rate & Taxes	3,000
Sundry Factory Expenses	9,500
Sales Commission	10,800
Sales Travelling	5,500
Sales promotion	11,250
Distribution Dept. - Salaries & Expenses	9,000
Office Salaries & Expenses	4,300
Income Tax paid	2,700
Dividend Paid	2,500
Closing Inventories	
Finished Goods	57,500
Raw Materials	90,000
Work-in-Progress	96,000
Accrued Expenses	
Indirect Labour	600

Depreciation to be provided as under :
Office Appliances @ 5% ; Plant & Machinery @ 10% and Building @4%.

Distribute the following costs:
Heat, Light and Power to Factory, Office and Distribution in the ratio 6 : 2 : 2
Rates and Taxes to Factory and Office in the ratio 2 : 1.
Depreciation on building to Factory, Office and Selling in the ratio 6 : 2: 2.

SOLUTION

COST SHEET

Particulars	Rs.	Rs.
Opening Stock of Raw Materials		70,000
+Purchases of Raw materials	1,60,000	
Less : Purchases Returns	2,400	1,57,600
+Freight Inward		8,000
		2,35,600
Less : Closing Stock of Raw Materials		90,000
MATERIALS CONSUMED		1,45,600
+Direct Wages		80,000
PRIME COST		2,25,600
Add : Works Overheads / Factory Overheads	9,600	
Indirect Wages	5,000	
9,000	7,000	
	23,000	
+Accrued Indirect Labour	2,400	
600	19,500	
Factory Supervision	2,000	
Repairs and Upkeep- Factory	9,500	78,000
Depreciation of Plant & Machinery		
Depreciation of Building (4,000 × 3/5)		
Heat, Light, Water (32,500 × 3/5)		1,00,000
Rates & Taxes (3,000 × 2/3)		4,03,600
Sundry factory expenses		96,000
		3,07,600
Add : Opening Work- in- Progress	4,300	
	6,500	
Less : Closing Work-in-Progress	1,000	
WORKS COST / FACTORY COST	800	
	400	13,000
Add : Administrative & Office Overheads		3,20,600
Office Salaries and Expenses		40,000
Heat, Light and Power (32,500 × 1/5)		3,60,600
Rates & Taxes (3,000 × 1/3)		57,500
Depreciation of Building (4,000 × 1/5)		3,03,100
Depreciation of Office Appliances		
COSST OF PRODUCTION	10,800	
	5,500	
Add : Opening Stock of Finished Goods	11,250	
	800	
Less : Closing Stock of Finished Goods	9,000	
COST OF GOODS SOLD	6,500	43,850
Add : Selling and Distribution Overheads		3,46,950

Sales Commission		30,050
Saes Travelling		
Sales Promotion	3,84,000	
Depreciation of Building (4,000 × 1/5)	7,000	3,77,000
Distribution Dept.- Salaries & Expenses		
Heat, Light & Power (32,500 × 1/5)		
TOTAL COST		
Add : Profit		
SALES		
Less : Sales Returns		
(PROFIT = SALES -- TOTAL COST)		

NOTE :- Income Tax Paid, Dividend Paid are the Non Cost items therefore excluded from Cost sheet. Office Appliances, Plant & Machinery, Building are the Assets hence only the depreciation is taken into account.

- The following is the Profit and Loss Account for the year ending 31st March, 2007 for a manufacturer of Table Fans. They manufactured and sold 2,000 fans during the year.

Particulars	Rs.	Particulars	Rs.
To Materials Consumed	1,20,000	By Sales	6,00,000
To Wages	1,80,000		
To Manufacturing Expenses	75,000		
	2,25,000		
	6,00,000		**6,00,000**
To Gross Profit c/d	15,000	By Gross Profit b/d	2,25,000
	30,000		
	90,000		
To Rent, Rates, Taxes	45,000		
	45,000		
To General Expenses	**2,25,000**		**2,25,000**
To Management Expenses			
To Sales & Distribution exp.			
To Net Profit			

Their estimate for the next year ending 31st March, 2008 are as under :-

1. The production and sales would increase to 3,000 fans
2. The price of materials per fan would increase by 20%.
3. The labour cost per fan would go up by 10%.
4. The manufacturing expenses would remain in the same proportion to combined cost of material consumed and wages as in the previous year.
5. Selling and distribution expenses per fan would remain unchanged.
6. Other expenses would remain unaffected on account of increase in production.

Prepare a statement of cost and profit per fan and total cost, total profit for the years 2006 - 07 and 2007-08.

SOLUTION

STATE MENT OF COST AND PROFIT
For the year ending 31st March 2007
Manufacture and sale of 2,000 fans

Particulars	**Total cost Rs.**	**Cost per fan Rs.**
Material Consumed	1,20,000	60.00
+ Direct Wages	1,80,000	90.00
PRIME COST	3,00,000	150.00
+ Manufacturing Expenses	75,000	37.50
WORKS COST	3,75,000	187.50
+ Office and Administration expenses		
Rent, rates, taxes 15,000	1,35,000	67.50
General Expenses 30,000	5,10,000	255.00
	45,000	22.50
Management Expenses 90,000	5,55,000	277.50
	45,000	22.50
COST OF PRODUCTION	6,00.000	
+ Sales and Distribution Expenses		
TOTAL COST		
+ Profit		
SALES		

STATE MENT OF COST AND PROFIT
For the year ending 31st March 2008
Manufacture and sale of 3,000 fans

Particulars	Total cost Rs.	Cost Per Unit Rs.
Material consumed (Rs. 72 per fan × 3,000 fans)	2,16,000	72.00
+ Direct Wages (Rs. 99 per fan × 3,000 fans)	2,97,000	99.00
PRIME COST	5,13,000	171.00
+ Manufacturing expenses (25% of Prime Cost i.e. 25% of Rs. 5,13,000)	1,28,250	42.75
WORKS COST	6,41,250	213.75
+Office and Administration expenses		
Rent, rates, taxes 15,000		
General Expenses 30,000	1,35,000	45.00
	7,76,250	258.75
Management Expenses 90,000	67,500	22.50
COST OF PRODUCTION	8,43,750	281.25
+Sale and Distribution Expenses (Rs.22.50 per fan × 3,000 fans)	56,250	18.75
TOTAL COST	9,00,000	300.00
+PROFIT		
SALES (Selling price Rs. 300 per fan × 3,000 fans)		
Note : It is assumed that the selling price per unit has remained the same		

WORKING NOTES :

- Calculation of Material Consumed :

	Rs.
Material Cost per fan	60
+ 20% increase in per unit cost	12
Material consumed per unit	**72**

- Calculation of Labour Cost

Labour cost per unit	90
+10 % increase in per unit cost	9
Labour cost per unit	**99**

- Calculation of Manufacturing Expenses in the proportion of PRIME COST

$$\frac{75,000 \times 100}{3,00,000} = 25\%$$

EXERCISE :

Theory Questions:

1. Distinguish between Financial Accounting and Cost Accounting.
2. Write notes on –
   (a) Cost Unit (b) Cost Centre (c) Classification of cost
3. Define the following terms –
   (a) Cost Accounting (b) Direct material (c) Indirect labour (d) Works Overheads
   (e) Selling and distribution Overheads (f) Fixed cost (g) Pre Determined Cost
4. Define Indirect Expenses/ Overheads. Explain the classification of Indirect Expenses.

Practical Problems:

The accounts of a machine manufacturing company disclose the following information for the six months ending 31st March 2007.

Particulars	Rs.
Material used	1,50,000
Productive Wages	1,20,000
Factory Overhead Expenses	24,000
Establishment and General Expenses	17,640

You are required to prepare a statement showing :

1. Factory cost and total cost of production.
2. The percentage of,
   a) The Factory overheads to productive wages
   b) The establishment and general expenses to factory cost
3. The price which the company should quote for the manufacturing of a machine requiring materials valued at Rs, 1,250 and expenditure on productive wages Rs. 750, so that the price may yield a profit of 20% on the selling price.

A manufacturing company has provided you the following details for the year ending 31st March 2006 :

Particulars	Rs.
Stock of Materials –Opening	1,88,000
Closing	2,00,000
Materials Purchased during the year	8,32,000
Direct Wages paid	2,38,400
Indirect Wages	16,000
Salaries to administrative staff	40,000
Freight Inwards	32,000
Freight Outwards	20,000
Cash Discount allowed	14,000
Bad Debts Written off	18,800
Repairs to Plant and Machinery	42,400
Rent, Rates and Taxes (Factory)	12,000

Rent, Rates and Taxes (Office)	6,400
Travelling Expenses	12,400
Salesman's Salaries and Commission	33,600
Depreciation Written off – Plant and Machinery	28,400
Depreciation Written off – Furniture	2,400
Director's Fees	24,000
Electricity charges (Factory)	48,000
Fuel (for boiler)	64,000
General charges	24,800
Manager's salary	48,000

The Manager's time is shared between the factory and the office in the ratio of 1 : 4.
From the above details you are required to prepare a statement showing Total Cost.

❖ A factory has given you the following information. You are required to prepare a Cost Sheet for the period ended 31st March 2007.

	Units	Rs.
Consumable Materials		
Opening Stock		20,000
Purchases		1,70,000
Closing Stock		8,000
Direct Wages		40,000
Other Direct Expenses		20,000
Factory Overheads		100 % OF Direct Labour
Office Overheads		10 % Works Cost
Selling and Distribution Expenses		Rs. 2 per unit
Unites of Finished Product	1,000	16,000
In hand at the beginning of the period	10,000	
Produced during the period	2,000	
In hand at the end of the period		

Also find out the selling price per unit on the basis to yield a profit of 20% of the selling price. There was no work-in-progress at the beginning or at the end of the period.

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11

MARGINAL COSTING

Module – 1 : Marginal Costing Meaning Advantages and imitations -

Marginal cost is defined as “The variable cost of one unit of a product or service, i.e. a cost which can be avoided if the unit was not produced or provide (CIMA, Official Terminology)

As already discussed, under marginal costing system products are barged with only those costs which vary directly with the change in the volume of production. In other words under this system only prime cost (the total of direct material cost, direct labour cost and direct expenses) and variable factory over head are treated as product cost while fixed factory overhead along with selling and distribution overhead and administration overhead is treated as period cost.

Variable costing and Direct costing are synonyms of marginal costing.

SALES MINUS VARIABLE COSTS IS EQUAL TO CONTRIBUTION.

Variable manufacturing costs :

- Direct material
- Direct expenses
- Variable factory overhead
- Variable Selling and distribution overhead
- Variable administration overhead

CONTRIBUTION MARGIN

MINUS : Fixed costs :

- Fixed Manufacturing overhead
- Fixed Selling & Distribution overhead
- Fixed Administration overhead

NET INCOME

The contribution margin figure, which is determined at the first step in matching cost with revenue in the marginal costing income statement is very useful for forecasting and reporting

income for internal management purposes. The underlying principle in income forecasting and decisions making using contribution margin is that the fixed costs remain unchanged over a relevant period and within the relevant range of activity and therefore, variable costs which vary in direct proportion to the changes in the activity level are the only RELEVANT COSTS when decisions variables lie within the relevant range and decisions over the relevant period.

One of the greatest advantages of marginal costing income statement is that it focuses on the impact that period costs (synonym of fixed costs)have on profits. This makes marginal costing income statement very useful for internal reporting.

Contribution as an Indicator of Profitability

The following diagram reflects how individual products contribute towards over all profit of the firm.

PRODUCT X	PROUCT Y	PRODUCT Z
Total Sales Value	Total Sales Value	Total Sales Value
Minus	Minus	Minus
Marginal cost of Goods sold	Marginal cost of goods sold	Marginal cost of goods sold
Yields	Yields	Yields
Contribution margin	Contribution Margin	Contribution Margin
	Contribution Fund	
	Minus	
	Fixed Cost	
	Leaves	
	Profit	

The above diagram reflects that contribution from each product towards fixed cost and profit determines the profit of the firm as a whole. Fixed cost being a constant factor, overall profit depends 0on the size of the contribution fund. Management endeavours to maximize the contribution fund by selecting between various alternatives. Short term decisions(often termed as tactical decisions)make extensive use of the marginal costing concept.

Contribution per unit is taken as the profitability index for each product. Profit per unit (i.e. selling price per unit minus average cost of sales per unit) may lead to wrong decisions. To illustrate the point, let us consider the following example.

Management is considering utilization of spare capacity by introducing a new product A which has the following cost structure

Variable manufacturing cost per unit Rs.80
Allocated average fixed factory overhead per unitrs.20
There is no additional expenditure on selling and distribution.

The product is expected to be sold at Rs.95 per unit.

Prima facie it may appear that the new product is unprofitable because the selling price of Rs.95 per unit is lover than the cost of sales of Rs.100 However, if we compare marginal cost per unit of Rs.80 with the selling price of Rs.95 we find that the product will contribute towards fixed cost and profit at the rate of Rs.15 per unit and therefore it is advisable to introduce the product. Allocated fixed cost is irrelevant for the decisions became total fixed cost will not be affected by the decision.

Contribution Per Unit of Limiting Factor

Limiting factor has been defined as "The factor in the activities of an undertaking which at a particular point of time or over a particular period will limit the volume of out put. Limiting factor restricts the number of Units the can be produced or sold. Typical examples of limiting factor are :

(i) Demand in quantity;
(ii) Demand in value
(iii) Availability of material
(iv) Availability of Labour
(v) Plant capacity in terms of available machine hours.

More than one limiting factor may opera at a particular point of time. Under such a situation the factor which keeps the activity level at the minimum should be considered as the key factor. However, the impact of other factors should also be considered in arriving at the final decision.

Maximum contribution fund can be achieved by manufacturing and selling that product which best utilizes the limiting factor. Profitability index, in such a situation, is contribution per unit of the limiting factor. The following example further clarifies the point.

Example : A firm can produce two products 'X' and 'Y'. the following are the cost structures :

	Per Unit (Rs)	
	X	Y
Selling price	20	22
Variable manufacturing cost	5	6
Variable selling expenses	3	2
Labour hours	2	3

Total available labour hours is 1,200 per week. There is no other limiting factor in operation. Which of the products should be manufactured and sold?

Contribution Statement :

		X	Y
		Rs.	Rs.
(i)	Selling price	20	22
(ii)	Variable manufacturing cost	5	6
	Variable selling expenses	3	2
	Total Variable cost	8	8
(iii)	Contribution per unit (I – ii)	12	14
(iv)	Contribution per labour hour	2	3
		- Rs.6	- Rs.4.67

If we take contribution per unit as profitability index, product Y is considered to be more profitable as compared to X because contribution per unit of Y is higher as compared to the Contribution per unit of X.. However, in the given situation this profitability index misleads the decision maker. Let us verify :

Total available labour hours are 1.200

Maximum number of units, that can be produced and sold

X $\frac{\text{1,200 hours}}{\text{2 hrs}}$ i.e. 600 units

Y $\frac{\text{1,200 hrs.}}{\text{3 hrs.}}$ i.e. 400 units

Maximum contribution :

X = 600 units x Rs.12 per unit i.e. Rs.7,200
Y = 400 units x Rs.14 per unit i.e. Rs.5,600

From the above it is clear that total contribution from product a is more as compared to the contribution from product Y, hence, product a should be selected to maximize the total contribution. This is contrary to that indicated by the Profitability Index if contribution per unit is used to measure profitability.

The decision maker would be guided correctly if Contribution per unit of limiting factor is used as Profitability Index. Contribution per labour hour is more for X as compared to that for Y and therefore, X is more profitable. This leads to the selection of a which makes the best utilization of the available labour hours the limiting factor.

The Maximum contribution from each product may be worked out as follows :

Maximum contribution – Available hours contribution per hour

Maximum contribution from A = 1.200 x Rs.6 = Rs.7,200
Maximum contribution from B = 1.200 x Rs.4.67 = Rs.5,600

Determination of the limit9ing factor poses problems because it changes rapidly. A detailed study of the economic environment and the supply market of various resources as well as a study of the internal factors is necessary to identify the potential limiting factors. This is important for performance planning. The determination of limiting factor is comparatively simple when only one product is produced or when more than one product is produced using the same raw material labour and other resources and through the same process. However, it becomes very complex when a number of products are manufactured from a variety of materials with different types of labour using different types of machines or applying different processes.

Short Term (Tactical) Decisions

Marginal costing technique is frequently used by managers for short term decision making in the following paragraphs we shall discuss the applications of the technique in decision making. However, we must keep in mind that the basic assumption of linear relationship between cost and revenue does not hold good beyond the relevant range and this limits the precision and reliability of decisions based on marginal costing. Similarly in practice, it is difficult to segregate the total cost into fixed and variable elements accurately Inspite of these limitations, marginal costing t4chnique has emerged as an important management tool.

Determination of the Most Profitable Products Mix

In determining the most profitable product mix, the short term profitability of products is assessed by measuring contribution per unit when no limiting factor is in operation and by measuring contribution per unit of the limiting factor when a limiting factor is in operation. The most profitable product is the one which has the highest contribution as unit or the highest contribution per unit of

the limiting factor as the case may be. The products are to be ranked accordingly for profitability.

Example :

(a) The following particulars are extracted from the records of a company

	Product X	Product Y
Sales (per unit)	100	120
Consumption of material	2kg	3kg
Material cost	Rs.10	Rs.15
Direct wages cost	Rs.15	Rs.10
Direct Expenses	Rs.5	Rs.6
Machine hours used	3	2
Overhead expenses :		
Fixed	Rs.5	Rs.10
Variable	Rs.15	Rs.20

Direct wage per hours is Rs.5. Comment on the profitability of each product (both use the same raw material) when

(i) Total sales potential is units is limited
(ii) Total sales potential in value is limited;
(iii) Raw material is in short supply
(iv) Production capacity (in terms of machine hours) is the limiting favor

(b) Assuming Raw – material is the key factor – availability of which is 10,000 kg. and maximum sales potential of each product being 3,500 units, find the product mix which will yield the maximum profit.

Solution –

		Per Unit	
		Product X Rs.	Product Y Rs.
(i)	Sales	100	100
(ii)	Variable cost :		
	Direct material	10	15
	Direct wages	15	10
	Direct expenses	5	6
	Variable overhead	15	20
	Total variable cost	45	51
(iii)	Contribution per unit (I – ii)	55	69

(a) Ranking of Products in terms of Profitability –

(i) Total sales potential in units is limited
Basis : Contribution per unit : Product X Rs.55
Product Y Rs.69

Ranking 1st Product X
2nd Product Y

(ii) Total sales potential is value is limited :

Basis Contribution per rupee of sales value i.e.

$$\frac{\text{Contribution per unit}}{\text{Selling price per unit}}$$

Product X $\frac{\text{Rs.55}}{\text{Rs.100}}$ = Rs.0.55

Product Y $\frac{\text{Rs.69}}{120}$ = Rs.0.575

Ranking : 1st Product Y
2nd Product X

(iii) Raw material is in short supply
Basis : Contribution per unit of raw material consumption

i.e. $\frac{\text{Contribution per unit}}{\text{Material consumption (in quantity) per unit}}$

Product X $\frac{\text{Rs.55}}{\text{2 kg}}$ = Rs.27.50 per kg.

Product Y $\frac{\text{Rs.69}}{\text{3 kg}}$ = Rs.23.00 per kg.

Ranking 1st Product X
2nd Product Y

(iv) Production capacity (in terms of machine hours) is the limiting factor)

Basis : Contribution per unit of machine hour.

$$\text{i.e} \quad \frac{\text{Contribution per unit}}{\text{Machine hours used per unit}}$$

$$\text{Product X} \quad \frac{\text{Rs.55}}{\text{3 hrs.}} = \text{Rs.18.33 per hour}$$

$$\text{Product Y} \quad \frac{\text{Rs.69}}{\text{2 hrs.}} = \text{Rs.34.50 per hour}$$

Ranking : 1st Product B
2nd Product A

(b) When raw material is the key factor, our ranking is Product X – 1st and Product Y – 2nd Management would, therefore, intend to produce Product X which best utilize the available raw material.

However, there is another limiting factor in operation, that is, maximum sales potential. This factor will set the limit for production of product X. The following will be the allotment of available raw material between Product X and Product Y.

Available raw material	10.000 kg.
Maximum Sales potential for Product X (ranked 1st) 3,500 units	
Raw material required for X 3.500 x 2 kg.	(7.000 kg)
Balance available for Product Y	3,000 kg

Maximum number of Product Y that Can be produced with available

$$\text{raw-material} \quad \frac{3{,}000}{3} \text{ kg. i.e. 1,000 units}$$

Product mix which will yield the maximum profit :
Product X 3,500 units
Product Y 1,000 units

Total contribution :

Product X 3,500 x Rs.55	=	1,92,500

Product Y 1,000 x Rs.69		69,000
Total		Rs. 2,61,500

Total Fixed cost :

Product X 3,500 x Rs.5	=	Rs.17,500
Product Y 1,000 x Rs.10	=	Rs.10,000
Total		Rs.27,500

Total Profit = Total contribution-Total fixed cost
= Rs.2,61,500 – Rs.27,500
= Rs.2,34,000

Module - 2 : Make or Buy Decision

If no limiting factor is in operation the decision to buy or to manufacture a product rests on whether the bought out price is hither or lower than marginal cost. The fixed cost is irrelevant for our decision because fixed cost will not change as a result of buying the product/component from outside.

If the bought-out price of an article is lower than its marginal cost, it will be profitable to buy the article from outside in all circumstances.

If a limiting factor is in operation, the excess of bought out price over marginal cost per unit of the limiting factor is to be considered. The article having the lowest excess of bought out price over its marginal cost per unit of the limiting factor will be least costly.

Illustration

Problem

The Cost of manufacturing and bought out prices of the four articles are as follows :-

Articles	A	B	C	D
Production cost per article :				
Marginal cost	Rs.10	Rs.12.	Rs.15	Rs.15
Fixed out	Rs. 2	Rs. 4	Rs. 5	Rs.15
Total	Rs.12	Rs.16	Rs.20	Rs.30
Production per man hour	0.25	0.20	0.20	0.33
Production per machine Hour	1.00	0.50	0.25	0.20
Bought out Price	Rs.9	Rs.17	Rs.22	Rs.26

Rank the products in order of your preference for buying them from outside (i) when there is no limiting factor; (ii) if man power is the limiting factor; (iii) if machine capacity is the limiting factor.

Solution

	A	B	C	D
Bought out price per unit	Rs.9	Rs.17	Rs.22	Rs.26
Marginal cost (per unit) of production	Rs.10	Rs.12	Rs.15	Rs.15
Excess of brought out Price over marginal cost				
Per article	-100	5.00	7.00	11.00
Per manhour	-100x25	5.00x20	7.00x20	11,00x33
	- 0.25	- 100	- 1.40	- 3.63
per machine hour	- 1.00x1	5.00x50	7.00x25	11.00x20
	- 1.00	2.50	- 1.75	- 2.20

In case of article A, the bought – out price is lower than the marginal cost, hence to purchase A from outsiders always profitable.

Ranking ofproducts in order ofpreference for buying out :

(1) When there is no limiting factor
1st A
2nd B
3rd C
4th D

(2) When manpower is the limiting factor
1st A
2nd B
3rd C
4th D

(3) When machine capacity is the limiting factor
1st A
2nd C
3rd D
4th B

Following Points may be taken in to account while making your Rankings -

(1) The application of marginal costing technique reveals that it is least desirable to buy not the article whose excess of bought out price over its marginal cost is the highest because the extra cost of buying results in loss of contribution.

Even when production facilities are available, it is desirable to purchase those articles from outside whose bought out prices e lower as compared to their marginal cost of production because this would result in additional contribution.

(2) Contribution per unit cannot be the basis for make or buy decisions, as contribution involves the use of selling price. Sale is not relevant because decision to make or buy in no way affects the

sale volume or the selling price. “the only relevant information is extra cost of buying as opposed to contribution.

(3) The following non cost factors are impor5ant in ‘make’ or buy decisions;

(a) Loss of control over the source of supply; Reliability of the source of supply is important because costs which arise due to material shortage are very high for most of the organizations.

(b) Laying off of employees may impair the employer employee relations.

Decision on Methods of Manufacturing

Marginal Costing technique can be used in deciding which of the alternative methods of manufacturing should be adopted., the method which generates the highest contribution is the ,most desirable method. The decision, therefore, rests on the contribution per unit or the contribution per unit of the limiting factor when l9miting factor is in operation.

Illustration

AN undertaking is producing a PRODUCT, the selling price of which is Rs.20 per unit. A decision has to be taken whether :

To produce by hand (Method A)

To produce by machine one operator to one machine (Method B)

To produce by machine one operator to two machines (Method C)

To produce by machine, one operator to three machines (Method D);

The cost of manufacturing the article by different methods are as follows :

Method	A	B	C	D
Cost per article (Rs)				
Material 1 unit	5.00	5.00	5.00	5.00
Direct labour @ Rs.3 per				
Man hour	5.00	3.00	1.70	1.50
Variable overhead @ Rs.2				

Per man hour	3.30	2.00	1.10	1.00
Variable overheads @ Rs.1				
Per man hour	-	1.00	1.10	1.50
Total marginal cost	13.30	11.00	8.90	9.00
Fixed overhead @ Re.1/-				
Per man hour	1.70	1.00	0.60	0.50
Fixed overhead at Rs.6 per				
Machine hour	-	6.00	6.90	9.00
Total cost	Rs.15.00	18.00	16.40	18.50
Production per man hour	0.60	1	1.75	2.00
Production per machine hour	--	1	0.875	0.66

Solution

Method	**A**	**B**	**C**	**D**
Selling price per unit (Rs)	20.00	20.00	20.00	20.00
Marginal cost per unit (Rs)	(13.30)	(11.00)	(8.90)	(9.00)
Contribution per unit	6.70	9.00	11.1`0	11.00
Contribution per unit of				
Material	6.70	9.00	11.10	11.00
	1	1	1	1
	. Rs.6.70	- Rs.9.00	- Rs.11.10	- Rs.11.00
Contribution				

Per man hour	6.70 x 6	9.00 x 1	11.10 x 1.75	11.00 x 2
	- Rs.4.00	- Rs.9.00	- Rs.19.40	-Rs.22.00
Contribution per				
Machine hour	-	9.00 x 1	11.10 x 8.75	11.00x66
		- Rs.9.00	- Rs.9.70	- Rs.7.30

If there is no limiting factor, Method C. should be selected as it generates the highest contribution per unit..

If a limiting factor was in 0peration, the method to be adopted should be the one which gives the highest contribution per unit of the limiting factor.

Thus

(1) If material is the limiting factor, method C should be adopted.

(2) If manpower is the limiting factor, method D should be adopted.

(3) If machine capacity is the limiting factor method c should be adopted.

Points to Remember

1. The decision would hold good till the machine capacity is fully utilised. After that if additional production is required it could be produced by hand.

2. The decisions would hold good where only one product is manufactured. If a variety of products are manufactured and full capacity has been reached, further investigation is required. Under such a situation the effect of various alternatives on the total contribution needs to be considered.

Marginal Cost and Product Pricing

A long term pricing policy should aim to recover more than the full cost to ensure a reasonable return on capital employed. Affirm cannot survive of it has to sell its products continuously below full cost.

Marginal cost may be used as a basis for Short term pricing decisions specially with respect to non repetitive orders under difficult business conditions when acceptance of lower contributions and profit margins may be necessary.

When capacity is unused, acceptance of an order with lower contribution will at l3ast particularly meet the fixed cost. Even that amount of contribution would not be earned if the order is refused.

The following factors need to be c0osidered in fixing selling prices when demand is below normal :

(a) the amount amount the rate of contribution which a proposed selling price would yield.

(b) the probability of securing an order with higher contribution during the period of execution of the order.

(c) the proposed concession, when compared with the normal selling price on full cost basis;

(d) the probable adverse effects on future sales

When one or more of the resources are scarce (e.g. material is scarce), the first consideration must be to reserve the same for orders which would yield the highest rates of contribution per unit of the scarce resource (limiting factor).

A decision to sell at a lower price might also have an adverse upon the firm's general level of selling prices in its established market. This aspect should also be carefully evaluated before accepting an order with lower contribution.

The following may be other considerations which strongly justify acceptance of an ordered with lower contribution at the time of adverse trade situations :

(i) To hold together the skilled labour force

(ii) To keep the plant and machinery in operation and the workers busy

(iii) To utilise the materials already received

(iv) To obviate the costs involved in the closing and reopening of the plant.

(v) To maintain the sales of complementary products at a satisfactory level.

(vi) To maintain the established markets to obviate additional sales promotion expenses in re establishing the markets.

Selling below full cost prices even under a normal situation, may be adopt5ed in order to :

(i) introduce a new product

(ii) execute an order in a special market segment (say defence supply) which is immune from other market segments

(iii) expand the export market and

(iv) dispose of a product which deteriorates fast

Example –

The BALAJI & Company manufactures and sells direct to consumers 10,000 jars of Balaji JARS per month at Rs.1.25 per Jar. The company's normal production capacity is 20,000 jars of now per month. An analysis of cost for 10,000 jars is given below :

	Rs.
Direct material	1,000
Direct labour	2,475
Power	140
Miscellaneous supplies	430
Jars	600
Fixed expenses of manufacturing, selling And administration	7,955
Total	Rs. 12,600

The Company has received on offer for the export under a different brand name of 1,20,000 jars of at 10,000 jars per month at 75 paise a jar.

Write a short report on the advisability or otherwise of accepting the offer.

Solution

Statement of Contribution from the Export Order

			Rs.
Selling price per unit			0.7500
Variable cost per unit :			
Direct material	Rs.1,000	1000	0.1000
Direct labour	Rs.2,475	1000	0.2475
Power	Rs. 140	10.000	0.0140
Misc.supplies	Rs. 430	10,000	0.0430
Jars	Rs. 600	10,000	0.0600

			(0.4645)

Contribution margin per unit			Rs.0.2855

Contribution per month:			
Rs.0.2855 x 10,000			Rs.2,855

Acceptance of the export order would result in incremental contribution of Rs.2,855 per month :

The following statement reveals monthly profit with and without acceptance of order.

	Present Position	Proposed offer	Total
	(1000 jars)	(10,000 jars)	(20000 jars)
	Rs.	Rs.	Rs.
Sale value	12,500	7,500	20,000
Variable cost of per unit	sales @! Rs.0.4646 (4,645)	(4.645)	(9.290)
	---	---	---
Contribution	7,855	2,855	10,710
Fixed cost	(7955)	-	(7955)
	---	---	---
Profit	- 100	2.855	2.755

It is advisable to accept the order provided.

(i) Interest on incremental working capital would be lower than the total contribution from the export order.

(ii) Acceptance of the export order with lower contribution would not adversely affect the price in home market or the future sales.

(iii) There is no possibility for dumping i.e. re-export to the supplier.

(iv) There is no possibility of securing an order with higher contribution during the period of execution of the order.

Cost Volume Profit Analysis

Introduction :

The aim of Cost Volume Profit (CVP analysis is to have a fair estimate of the total cost, total reven7ueand thereby profit at various sale volumes. Determination of the Breakeven point (the sales volume at which total sales revenue equals the total cost i.e. the point at which neither profit is earned nor loss is made) and the Margin of safety (the difference between Break even sale and total sales) is incidental to C.V.P analysis.

The following underlying simplistic assumptions limit the precision and reliability of a given C.V.P. analysis :

(i) Fixed and variable cost patterns can be established with reasonable accuracy and that fixed costs remain static and marginal costs are completely variable at all levels of output.

(ii) Selling prices are constant at all sales volumes;

(iii) Factor prices(.e.g. material prices, wage rates) are constant at all sales volumes.

(iv) Efficiency and productivity are to be unchanged

(v) In a multi product situation there is constant sales mix at all levels of sales

(vi) Volume is the only relevant factor affecting cost.

(vii) The volume of production equals the volume of sales or accretion/decretion to inventory levels are insignificant.

The following are the uses of C – V – P Analysis :

(i) To determine the Break even points in terms of unit or sale value;

(ii) To ascertain the Margin of Safety

(iii) To estimate profits or losses at various levels of output

(iv) To assess the likely effect of management decisions such as an increase or a reduction in selling price, adoption of a new method of production to reduce direct labour and increase output, etc.

(v) to determine the optimum selling price.

Marginal Cost Equation

The fundamental concept underlying marginal costing technique can be expressed in the form of a mathematical equation which is as below :

Sn = Sale value of ‘n’th level of activity/

Vn = Toptal variable cost at ‘n’ the level of activity

Cn = Total contribution of ‘n’ th level of activity

F = Total fixed cost.

Pn = Profit at ‘n’ the level of activity.

It is worth nothing that F is not written as Fn(to be read as F sub n)because fixed cost remains the same at all levels of activity.

In any given problem, if out of the four factors (i.e. Sn Vn F and Pn) any three are known, the fourth can be worked out.

At Break even point, profit is 'zero', that is, contribution is equal to fixed cost. The following diagram brings this point to focus and also reveals that the profit is equal to contribution from the "Margin of safety":

TOTAOL SALES = BREAK EVEN SALES + MARGIN OF SAFETY

Contribution	Contribution	Contribution
Equals	equals	equals
Fixed cost + Profit	Fixed cost	Profit

Contribution/Sales Ratio (C/S Ratio)

This is given by the formula

$$\text{C/s ratio} = \frac{Cn}{Sn} \times 100 = \frac{Sn - Vn}{Sn} \times 100$$

C/S ratio expresses the percentage of sales which contribute towards fixed costs and profit. If we assume that contribution per unit is constant. C/S ratio will remain constant at all sale volumes.

C/S ratio is loosely referred to as P/V (Profit/volume) Ratio

Break-Even Sales

Break even sales is the sales volume, expressed either in the terms of the number of units or in terms of sale valu7e, at which the total sales revenue equals the total cost.

In determining Break-even sales, we need to know

(i) Fixed cost and

(ii) Contribution per unit or C/S ratio

At Break even point total contribution equals the fixed costs, hence Break even point in terms of unit is calculated by dividing total fixed costs by contribution per unit. The following simple example illustrates the point.

Example

The following information is available from the annual budget of a company manufacturing only one item :

Budgeted output and sales		5,000 units
Budgets Selling price per unit		Rs.40
Budgeted costs per unit		
Material	Rs.15	
Direct labour	Rs. 5	
Variable overhead	Rs.10	
Fixed cost per unit	Rs. 5	
	-------	(35)
Budgeted profit per unit		Rs.5

Calculate the Break even point both in terms of the number of nits and sale value.

Solution

In the absence of any other information it is assumed that direct materials and direct labour cost are variable costs. Contribution per unit of the given product is as follows :

Sales price		**Rs.40**
Material	Rs.15	
Direct labour	5	
Variable overhead	10	
	----	30

		10

Fixed cost per unit, included in the total cost per unit, is average fixed cost per unit, calculated on the basis of budgeted fixed cost (total) and budged output. Therefore, budgeted fixed cost (total) must be :

Rs.5 x 5,000 (i.e. Rs.25,000)

The two factors (.e.g. fixed costs and contribution margin per unit) are now known to us and therefore we can calculate the Break even point.

$$\text{Break even point} = \frac{\text{Fixed cost}}{\text{Contribution per unit}}$$

$$= \frac{\text{Rs.25,000}}{\text{Rs.10}} = 2{,}500 \text{ units}$$

Proof (Not required in examination)

Sales (2,500 x Rs.40)		Rs.1,00,0 00
Variable costs (2,500 x Rs.30)	Rs.75,000	
Fixed costs	Rs.25,000	Rs.1,00,000
Profit		Nil

Break even point in terms of sales value is usually calculated by using C/ ratio.

C/S ratio can be calculated with reference to either contribution per unit or total contribution at the given sale volume.

$$\text{C/S ration} = \frac{\text{Contribution margin per unit}}{\text{Selling price per unit}} \times 100$$

$$= \frac{10}{40} \times 100 = 25\%$$

$$\text{or C/S Ratio} = \frac{\text{Budgeted sales} - \text{Variable costs of sales}}{\text{Budged Sales}} \times 100$$

$$= \text{Rs.}\frac{50{,}000}{2{,}oo{,}000} \times 100 = 25\%$$

Note :

Budgeted sales = Rs.40 x 5000 = Rs.20,00,000

Variable costs of sales = 30 x 5,000 = Rs.1,50,000

Break even sales in terms of sale value (but not in terms of units)is calculated by dividing fixed cost by CS ratio.

$$\text{Break even point} = \frac{\text{Fixed costs}}{\text{C/S ratio}}$$

$$= \frac{\text{Rs.25,000}}{25\%} = \frac{\text{Rs.25,000}}{25/100}$$

$$= \frac{\text{Rs.25,000 x 100}}{25}$$

= Rs.1,00,000

Proof (Not required in examination)

Break even point in terms of units 2,500 units

Selling price per unit Rs.40

Break even point in terms of sales value Rs.40 x 2,500 = Rs.1,00,000

Module- 3 : Margin of Safety

Margin of safety is the d98fference between the total sales and sales at the break even point. This provide very useful information to management, that is, by how much can sales drop below the budgeted sales before a loss is incurred.. Margin of safety is usually expressed as a percentage of expected sales.

In our previous illustration, margin of safety is 2,500 units or 50% of budgeted sales as calculated below :

Budgeted sales	5,000 units
Break even point	(2,500 units)
Margin of safety	2500 units

i.e. $\frac{2,500 \text{units}}{5,000 \text{ units}} \times 100 = 50$ of Budgeted Sales

C/S Ratio and Break Even Point in a Multi Product Situation

In multi product situation it is not possible to express break even point in terms of units. It is quite likely that different measuring units or used to express sales quantity of different products, products may not be comparable and contribution per unit would be different.

Therefore, under a multi product situation break even point needs to be calculated in terms of sale value by using C/S ratio. This may, however, pose a difficulty because all the products might not have the same C/S ratio. We may obviate this difficulty by assuming a constant mix of sales, at all sale, volumes, in other words, it is assumed that a percentage movement in total sales is accompanied by the same percentage movement in sales of all the products in the product mix.

Break even point is calculated with the following assumptions :

(i) Constant C/S ratio for each product

(ii) Constant sales mix

(iii) Constant fixed cost.

The following are the steps involved in calculating the break even point:

(i) Calculate the C/S ratio for each product.

(ii) Calculate weighted average C/S ratio in relation to expected proportion of sales

(iii) Use the weighted average C/S ratio to calculate break even pointing terms of sale value.

Example

(a) Asian Paints Ltd. Manufactures and sells four types of products under the brand names A, B, C and D.. The sales mix in value comprises 331%, 41 2%,, 162% and 81% of A, B, C, and D respectively.

The total budgeted sales (100%) are Rs.60,000 per month. Operating costs are :

Variable costs:

Product	A	60% of selling price
	B	68% of selling price
	C	80% of selling price
	D	40% of selling price

Fixed cost Rs.14,700 per month

Calculate the break even point for the products as on overall basis.

(b) It has been proposed to introduce a change in the sales mix as follows, the total sales per month remaining Rs.60,000

Product	A	25%
	B	40%
	C	30%
	D	5%

Assuming that the proposals is implemented calculate the break even point.

Solution

(a) C/S ratio for each product :

Product	Variable cost to sales ratio	C/S ratio (100-Variable cost to sales ratio)

A	60%	(100-60) i.e. 40%
B	68%	(100-68) i.e. 32%
C	80%	(100-80) i.e. 20%
D	40%	(100-40) i.e. 60%

Weighted average c/S ratio :

Product		C/S ratio (%age)
A	331/3 % x 40	13.33
B	41 2/3 % x 32	13.34
C	16 2/3 % x 20	3.33
D	8 1/3% x 60	5.00

		35.00

Break even point : $\frac{\text{Fixed costs}}{\text{C/S ratio}} = \frac{\text{Rs.14,700}}{35\%}$

$= \frac{\text{Rs.14,700}}{35/100} = \frac{\text{Rs.14,700 x 100}}{35}$

= Rs.42,000 in term s of sale value per month

(b) Weighted average C/S ratio with changed sales mix, without any change in individual C/S ratio :

Product		C/S ratio (% age)
A	25% x 40	10.00
B	40% x 32	12.80
C	30% x 20	6.00
D	5% x 60	3.00
		31.80

Break-even point : $\frac{\text{Fixed cost}}{\text{C/S ratio}}$

$$= \frac{\text{Rs.14,700}}{31.80\ \%} = \frac{\text{Rs.14,700}}{31.80/100}$$

$$= \frac{\text{Rs.14700 x 100}}{31.80}$$

= Rs.46,226

Proof (Not required in examination)

Product	Old sales Mix		New Sales Mix	
	Sales	Contribution	Sales	Contribution
	Rs.	Rs.	Rs.	Rs.
A	60,000x331/3%	20,000x40%	60,000x235%	15,000x40%
	i.e.20,000	i.e.8,000	i.e. 15,000	i.e. 6,000
B	60,000x412/3%	25,000x32%	60,000x40%	24,000x32%
	i.e. 25,000	i.e.8,000	i.e.24,000	i..e 7,680
C	60,000x162/3%	10,000x20%	60,000x30%	18,000x20%
	i.e. 10,000	i.e. 2000	i.e.18,000	i.e.3,600
D	60,000x81/3%	5000x60%	60,000x5%	3,000x60%
	i.e.5,000	i.e.3,000	i.e.3 000	i.e.1,800
	---	---	---	---
Total	Rs.60,000	Rs.21,000	Rs.60,000	Rs.19,080
	Weighted average C/S ratio		Weighted average C/S ratio	
	$\frac{\text{Rs.21,000}}{\text{Rs.60,000}}$ x 100		$\frac{\text{Rs.19,080}}{\text{Rs.60,000}}$ x 100	
	i.e. 35%		i.e. 31.80%	

Uses of CVP Aalysis

We have covered the basic principles of CXVP analysis which can be applied to specific management problems. The following illustrations Have shown the application of these principles in decision making.

Example

A manufacturing company produces three products P, Q and R. the following information is available :

	PER UNIT		
	P	Q	R
	Rs.	Rs.	Rs.
Budgeted selling price	25	12	30
Standard variable costs	20	8	20
Budgeted output (units)	2,000	5,000	20,000

Budged fixed cost Rs.1,60,000

The Marketing manager is confident that he would be able to achieve budgeted sales for products P and Q. However he is unable to estimate correctly the sales of R. According to his estimate it can be anything between 10,000 units and 30,000 units

Calculate how many units of R need to be sold to achieve break even. Assume that sales of Q will be as per budget.

Solution

Contribution per unit :

	P	Q	R
	Rs.	Rs.	Rs.
Selling price per unit	25	12	30
Variable cost per unit	(20)	(8)	(20)
Contribution per unit	5	4	10

At break even point, contribution fund (i.e. total contribution from all the products) is equal to fixed cost and, therefore, required contribution is Rs.1.60,000. Contribution from products P and Q at budgeted output :

Product P : Rs.5 x 2,000 i.e.	Rs.10,000
Product Q: Rs.4 x 5,000 =	Rs.20,000
Total	Rs.30,000

Required contribution from Product R :

Required contribution fund	Rs.1,60,000
Contribution from P and Q	(Rs. 30,000)
Required contribution from R	Rs.1,30,000

Number of units of R to be sold to achieve break even.

$$= \frac{\text{Contribution required}}{\text{Contribution per unit}}$$

$$= \frac{\text{Rs.1,30,000}}{\text{Rs.10}}$$

= 13,000 units.